5.B DSM2 Modeling and Results

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5.B.1 Introduction

The overall analytical framework used for the CWF BA effects analysis is summarized in the Appendix 5A, *CalSim II Modeling and Results*. The current appendix summarizes the tools and methods used to characterize Delta hydrodynamics and water quality conditions for the NAA and PA considered under this BA.

Appendix 5A, *CalSim II Modeling and Results* includes a summary of the CalSim II modeling for the CWF BA, and Appendix 5C, *Upstream Water Temperature Methods and Results* includes a summary of the reservoir and upstream river water temperature modeling for the CWF BA.

5.B.2 Delta Hydrodynamics and Water Quality

Hydrodynamics and water quality modeling is essential to understand the impact of proposed modifications to the Delta and the operations of the CVP/SWP. Changes to the configuration of the Delta and project operations will influence the tidal hydrodynamics and water quality conditions in the Delta. The analysis and understanding of the hydrodynamics and water quality changes as a result of these complex changes are critical in understanding the impacts to habitat, species and water users that depend on the Delta.

The main components of the CWF BA that can significantly alter the hydrodynamics in the Delta are the north Delta diversion and Head of Old River gate, along with the sea level rise assumed inherent to the NAA and PA at Year 2030. Delta morphology was assumed to remain unchanged for the quantitative analysis of changes in the hydrodynamics and the water quality, even though some tidal habitat restoration is likely under both the NAA and PA.

This document describes in detail the methodology used for simulating Delta hydrodynamics and water quality for evaluating the changes under the PA relative to the NAA. It briefly describes the primary tool (DSM2) used in this process and specific improvements performed for application in the CWF BA. Additional detail is included in the Attachments to this appendix and appropriate references are provided herein.

5.B.2.1 Overview of Hydrodynamics and Water Quality Modeling Approach

The proposed north Delta diversion and the Head of Old River (HOR) gate in the PA will affect flow through the Delta along with the changes in sea level that are assumed in the analysis of the future NAA and PA scenarios. These changes have the potential to result in modified hydrodynamics and salinity transport in the Sacramento – San Joaquin Delta.

There are several tools available to simulate hydrodynamics and water quality in the Delta. Some tools simulate detailed processes with two or three dimensional representation, however they are computationally intensive and have long runtimes. Other tools approximate certain processes and have short runtimes, while only compromising slightly on the accuracy of the results. For a long-term planning level analysis such as the current BA it is ideal to understand the resulting changes than can occur over the span of several years and as such, the simulation period cover a range of hydrologic and tidal conditions. A tool which can simulate the changed hydrodynamics and water quality in the Delta accurately and that has short runtimes is desired. The Delta Simulation Model (DSM2), a one-dimensional hydrodynamics and water quality model serves this purpose.

DSM2 has a limited ability to simulate two-dimensional features such as open water bodies (reservoir, flooded islands, tidal marshes etc.) and three-dimensional transport processes such as gravitational circulation which is found to increase with sea level rise in the estuaries. Therefore, it is imperative that DSM2 be recalibrated or corroborated based on a dataset that accurately represents the conditions in the Delta with sea level rise. Since the proposed conditions are hypothetical, the best available approach to estimate the Delta hydrodynamics would be to simulate the Delta with higher dimensional models which can resolve the three-dimensional processes well. These models would generate the datasets needed to corroborate or recalibrate DSM2 under the future conditions so that it can simulate the hydrodynamics and salinity transport with reasonable accuracy.

Figure 5.B.2-1 shows a schematic of how the hydrodynamics and water quality modeling was formulated for the CWF BA. UnTRIM Bay-Delta Model (MacWilliams et al., 2009), a three-dimensional hydrodynamics and water quality model was used to simulate the sea level rise effects on hydrodynamics and salinity transport under the historical operations in the Delta. UnTrim modeling is described in Appendix B, Attachment 2, *UnTRIM San Francisco Bay-Delta Model Sea Level Rise Scenario Modeling Report*. The results from the UnTRIM model were used to corroborate DSM2 models so that DSM2 can simulate the effect of sea level rise consistent with a higher order model that can better resolve estuarine processes such as UnTRIM. The DSM2 – UnTRIM corroboration process and the results are presented in Appendix B, Attachment 3, *DSM2 SLR corroboration*.

The corroborated DSM2 was used to simulate hydrodynamics and water quality in the Delta by integrating sea level rise effects over a 82-year period (WY 1922 – 2003), using the hydrological inputs and exports determined by CalSim II under the projected operations for the NAA and the PA. It was also used to retrain ANNs (Section 5.A.4.2, *Artificial Neural Network*) that can emulate modified flow-salinity relationships in the Delta.

5.B.2.2 Delta Simulation Model (DSM2)

DSM2 is a one-dimensional hydrodynamics, water quality and particle tracking simulation model used to simulate hydrodynamics, water quality, and particle tracking in the Sacramento-San Joaquin Delta (Anderson and Mierzwa, 2002). DSM2 is appropriate for describing the existing conditions in the Delta, as well as performing simulations for the assessment of incremental environmental impacts caused by future facilities and operations. The DSM2 model has three separate components: HYDRO, QUAL, and PTM. HYDRO simulates one-dimensional hydrodynamics including flows, velocities, depth, and water surface elevations. HYDRO provides the flow input for QUAL and PTM. QUAL simulates one-dimensional fate and transport of conservative and non-conservative water quality constituents given a flow field simulated by HYDRO. PTM simulates pseudo 3-D transport of neutrally buoyant particles based on the flow field simulated by HYDRO.

DSM2 v8.0.6 (DWR, 2010) was used in modeling of the hydrodynamics and salinity transport in the Delta under the CWF BA NAA and PA scenarios. Version 8 of the DSM2 includes several enhancements compared to Version 6 such as improved data management, increased speed and robustness, ability to simulate gates with multiple structures and the ability to specify Operating Rules in the HYDRO module. The Operating Rules form a powerful tool which triggers changes in gate operations or source/sink flow boundaries while the model is running, based on the current value of a state variable (flow, stage or velocity), pre-specified timeseries or the simulation timestep.

DSM2 hydrodynamics and salinity (EC) were initially calibrated in 1997 (DWR, 1997). In 2000, a group of agencies, water users, and stakeholders recalibrated and validated DSM2 in an open process resulting in a model that could replicate the observed data more closely than the 1997 version (DSM2PWT, 2001). In 2009, CH2M HILL performed a calibration and validation of DSM2 by including the flooded Liberty Island in the DSM2 grid, which allowed for an improved simulation of tidal hydrodynamics and EC transport in DSM2 (CH2M HILL, 2009). Technical report documenting this calibration effort is included in Appendix B, Attachment 1, *DSM2 Recalibration for Bay-Delta Conservation Plan*. The model used for evaluating the CWF BA scenarios was based on this calibration version, i.e., DSM2 version 8.0.6 .

Since 2009 DWR has released DSM2 version 8.1.2, which includes major changes such as updated bathymetric reference to NAVD 88 and modified representation of dispersion in the QUAL. DWR also recalibrated DSM2 model given the magnitude of changes in the version 8.1.2, which found that the performance of the model in simulating observed hydrodynamics and salinity conditions was very close to the 2009 calibration (Liu and Sandhu, 2013). Given that the ANNs used to emulate flow-salinity relationship in the Delta (Section 5.B.2.3.4, *ANN Retraining*) were based on the DSM2 version 8.0.6, for the CWF BA DSM2 version 8.0.6 was used to simulate Delta hydrodynamics and salinity transport under the NAA and the PA.

Simulation of Dissolved Organic Carbon (DOC) transport in DSM2 was successfully validated in 2001 by DWR (Pandey, 2001). The temperature and Dissolved Oxygen calibration was initially performed in 2003 by DWR (Rajbhandari, 2003). Recent effort by RMA since 2009 allowed for improved calibration of temperature, DO and the nutrients transport in DSM2 (Guerin, 2010 and Guerin, 2011).

5.B.2.2.1 Delta Hydrodynamics (DSM2-HYDRO)

The HYDRO module is a one-dimensional, implicit, unsteady, open channel flow model that DWR developed from FOURPT, a four-point finite difference model originally developed by the USGS in Reston, Virginia. DWR adapted the model to the Delta by revising the input-output system, including open water elements, and incorporating water project facilities, such as gates, barriers, and the Clifton Court Forebay. HYDRO simulates water surface elevations, velocities and flows in the Delta channels (Nader-Tehrani, 1998). HYDRO provides the flow input necessary for QUAL and PTM modules.

The HYDRO module solves the continuity and momentum equations fully implicitly. These partial differential equations are solved using a finite difference scheme requiring four points of computation. The equations are integrated in time and space, which leads to a solution of stage and flow at the computational points. HYDRO enforces an "equal stage" boundary condition for all the channels connected to a junction. The model can handle both irregular cross-sections derived from the bathymetric surveys and trapezoidal cross-sections. Even though, the model formulation includes a baroclinic term, the density is held constant, generally, in the HYDRO simulations.

HYDRO allows the simulation of hydraulic gates in the channels. A gate may have a number of associated hydraulic structures such as radial gates, flash boards, boat ramps etc., each of which may be operated independently to control flow. Gates can be placed either at the upstream or downstream end of a channel. Once the location of a gate is defined, the boundary condition for the gated channel is modified from "equal stage" to "known flow," with the calculated flow. The gates can be opened or closed in one or both directions by specifying a coefficient of zero or one.

Reservoirs are used to represent open bodies of water that store flow. These "reservoirs" in the Delta are represented by cylindrical tanks in DSM2, with a known surface area and bottom elevation and are considered instantly well-mixed. The flow interaction between the open water area and one or more of the connecting channels is determined using the general orifice formula. The flow in and out of the reservoir is controlled using the flow coefficient in the orifice equation, which can be different in each direction. DSM2 does not allow the cross-sectional area of the inlet to vary with the water level.

DSM2 version 8.0.6 includes a feature called "operating rules" by which the gate operations or the flow boundaries can be modified dynamically when the model is running based on the current value of a state variable (flow, stage or velocity). The change can also be triggered based on a timeseries input to the model (e.g. daily averaged Martinez EC) or based on the current timestep of the simulation (e.g. a change can occur at the end of the day or end of the season). The operating rules include many functions which allow derivation of the quantities to be used as triggers, from the model data or outside timeseries data. Operating rules allow a change or an action to occur when the trigger value changes from false to true.

5.B.2.2.2 Delta Water Quality (DSM2-QUAL)

The QUAL module is a one-dimensional water quality transport model that DWR adapted from the Branched Lagrangian Transport Model originally developed by the USGS in Reston, Virginia. DWR added many enhancements to the QUAL module, such as open water areas and gates. A Lagrangian feature in the formulation eliminates the numerical dispersion that is inherent in other segmented formulations, although the tidal dispersion coefficients must still be specified. QUAL simulates fate and transport of conservative and non-conservative water quality constituents given a flow field simulated by HYDRO. It can calculate mass transport processes for salts, water temperature, nutrients, dissolved oxygen, and trihalomethane formation potential.

The main processes contributing to the fate and transport of the constituents include flow dependent advection and tidal dispersion in the longitudinal direction. Mass balance equations are solved for all quality constituents in each parcel of water using the tidal flows and volumes calculated by the HYDRO module. Additional information and the equations used are specified in the 19th annual progress report by DWR (Rajbhandari, 1998).

For the CWF BA application DSM2 QUAL was used to quantify Delta salinity conditions, water temperatures and sourcewater fingerprinting. A brief description is provided below for each of the constituents.

5.B.2.2.2.1 Delta Salinity

Salinity is the primary conservative constituent simulated using the DSM2 QUAL model. Electrical Conductivity (EC) is used as a surrogate for salinity in DSM2 given the availability of observed data across the Delta (DSM2PWT 2001). As noted above, DSM2 QUAL version 8.0.6 was calibrated for simulating salinity conditions in the Delta in 2009 (CH2M HILL, 2009). DSM2 QUAL was corroborated based on the higher order UnTRIM3D model to account for sea level rise effects on Delta salinity conditions as described in Section 5.B.2.3.3, *Incorporating Sea Level Rise Effects in DSM2 Planning Simulations*. As shown Appendix 5B Attachment 1 and 3, DSM2 performs well in simulating observed salinity conditions in the Delta, and in replicating expected salinity conditions under sea level rise as estimated by UnTRIM3D.

5.B.2.2.2.2 Delta Sourcewater Fingerprinting

The QUAL module was also used to simulate source water finger printing which allows determining the relative contributions of water sources to the volume at any specified location. It is also used to simulate constituent finger printing which determines the relative contributions of conservative constituent sources to the concentration at any specified location. For fingerprinting studies, six main sources are typically tracked: Sacramento River, San Joaquin River, Martinez, eastside streams (Mokelumne, Cosumnes and Calaveras combined), agricultural drains (all combined), and Yolo Bypass. For source water fingerprinting a tracer with constant concentration is assumed for each inflow source tracked, while keeping the concentrations at other inflows as zero. For constituent (e.g., EC) fingerprinting analysis, the concentrations of the desired constituent is specified at each tracked source, while keeping the concentrations at other inflows as zero (Anderson, 2003). Results provide, for each time step, the % distribution of either water or constituent concentration at any given location in the Delta from each of the six potential sources.

5.B.2.2.2.3 Delta Water Temperature

DSM2 QUAL was also used to simulate water temperatures in the Delta. For the CWF BA application, DSM2 QUAL version 8.1.2 was used to simulate water temperatures instead of version 8.0.6, even though hydrodynamics were modeled using version 8.0.6. Appendix 5A, Attachment 4, *DSM2 Temperature Modeling* provides a detailed description of the DSM2 temperature model and the application to the CWF BA NAA and PA.

5.B.2.2.3 DSM2 Input Requirements

DSM2 requires input assumptions relating to physical description of the system (e.g. Delta channel, marsh, and island configuration), description of flow control structures such as gates, initial estimates for stage, flow and EC throughout the Delta, and time-varying input for all boundary river flows and exports, tidal boundary conditions, gate operations, and constituent concentrations at each inflow. Figure 5.B.2-2 illustrates the hydrodynamic and water quality boundary conditions required in DSM2. For long-term planning simulations, output from the CalSim II model generally provides the necessary input for the river flows and exports.

. Assumptions relating to Delta configuration and gate operations are directly input into the hydrodynamic models. Adjusted astronomical tide (Ateljevich, 2001a) normalized for sea level rise (Ateljevich and Yu, 2007) is forced at Martinez boundary. Constituent concentrations are specified at the inflow boundaries, which are either estimated from historical information or CalSim II results. EC boundary condition at Vernalis location is derived from the CalSim II results. Martinez EC boundary condition is derived based on the simulated net Delta outflow from CalSim II and using a modified G-model (Atljevich, 2001b). For other northern boundary freshwater inflows, constant low EC values are assumed based on historical salnity data.

The major hydrodynamic boundary conditions are listed in Table 5.B.2-1 and the locations at which constituent concentrations are specified for the water quality model are listed in Table 5.B.2-2.

For DSM2 temperature simulations additional source flows are included to account for the effluent discharges from the wastewater treatment plants located in the Delta. Temperature modeling also requires meteorological inputs. The input requirements for the DSM2 temperature simulations are provided in the Appendix 5B Attachment 4, *DSM2 Temperature Modeling*.

5.B.2.3 Application of DSM2 to Evaluate CWF BA NAA and PA

Several long-term planning analyses have used DSM2 to evaluate Delta hydrodynamics and water quality. For CWF BA, DSM2 was run for an 82-year period from WY1922 to WY2003, on a 15-min timestep. The inputs needed for DSM2 – inflows, exports, and Delta Cross Channel (DCC) gate operations were provided by the 82-year CalSim II simulations. The tidal boundary condition at Martinez was provided by an adjusted astronomical tide (Ateljevich and Yu, 2007). Monthly Delta channel depletions (i.e., diversions, seepage and drainage) were estimated using DWR's Delta Island Consumptive Use (DICU) model (Mahadevan, 1995).

CalSim II provides monthly inflows and exports in the Delta. Traditionally, the Sacramento and San Joaquin River inflows are disaggregated to a daily time step for use in DSM2 either by applying rational histosplines, or by assuming that the monthly average flow as constant over the whole month. The splines allow a smooth transition between the months. The smoothing reduces sharp transitions at the start of the month, but still results in constant flows for most of the month. Other inflows, exports and diversions were assumed to be constant over the month. For CWF BA modifications to these traditional methods are discussed below.

Delta Cross Channel gate operation input in DSM2 is based on CalSim II output. For each month, DSM2 assumes the DCC gates are open for the "number of the days open" simulated in CalSim II, from the start of the month. See Section 5.A.5.1.5.2 *Delta Cross Channel Gate Operations* for a description of the modeling of the DCC operations in CalSim II.

The operation of the south Delta Temporary Barriers is determined dynamically in using the operating rules feature in DSM2. These operations depend on the season, San Joaquin River flow at Vernalis and tidal condition in the south Delta. Similarly, the Montezuma Slough Salinity Control Gate operations are determined using an operating rule that sets the operations based on the season, Martinez salinity and tidal condition in the Montezuma Slough.

For salinity, EC at Martinez is estimated using the G-model on a 15-min timestep, based on the Delta outflow simulated in CalSim II and the pure astronomical tide at Martinez (Ateljevich, 2001a). The monthly averaged EC for the San Joaquin River at Vernalis estimated in CalSim II for the 82-year period is used in DSM2. For other river flows, which have low salinity, constant values are assumed. For the Sacramento River and Yolo Bypass boundary inflows, a constant EC of 175 µmhos/cm was used. For the Eastside streams, a constant EC of 150 µmhos/cm was used. Monthly average timeseries of the EC values associated with Delta agricultural drainage and return flows was estimated for three regions in the Delta based on observed data identifying the seasonal trend. These values are repeated for each year of the simulation.

For CWF BA, several enhancements were incorporated in the planning analysis approach traditionally used for DSM2. Some of the changes were to address the assumptions for CWF BA while the others are improvements which make the DSM2 planning simulations more realistic.

The changes that are based on the CWF BA assumptions include modifications to DSM2 to capture the effect of sea level rise and north Delta diversion intakes. The DSM2 models incorporating these changes were used in developing new ANNs for CalSim II.

The other enhancement is with regard to the flow boundary conditions used in DSM2. As described above, the traditional approach does not represent the variability that would exist in the Delta inflows within a month. As described in Appendix 5.A, CalSimII was modified to account for daily flow variability in estimating flows for Yolo Bypass and Sacramento at Freeport for limited purposes. A new approach was developed to incorporate daily variability into the DSM2 boundary flows using a similar approach.

The following sections describe in detail various enhancements and changes made to the DSM2 hydrodynamics, salinity and nutrient modeling methods as part of the CWF BA analyses.

5.B.2.3.1 Changes to the DSM2 Grid

The DSM2 model grid from the 2009 recalibration (CH2M HILL, 2009) was further modified in the north Delta to locate the DSM2 nodes at the proposed north Delta diversion intake locations as agreed on January 29th 2010 BDCP Steering Committee meeting. Two new nodes and two new channels were added to the grid and several existing nodes were relocated and channel lengths were modified for the Sacramento River in the reach upstream of Delta Cross Channel. One of the new node added was located downstream of the Delta Cross Channel. Figure 5.B.2-3 shows the grid used in the NAA model for the CWF BA. The DSM2 grid for PA includes several other changes related to the north Delta diversion intakes and is shown in Figure 5.B.2-6.

5.B.2.3.2 Incorporation of Daily Hydrologic Inputs to DSM2

DSM2 is simulated on a 15-minute time step to address the changing tidal dynamics of the Delta system. However, the boundary flows are typically provided from monthly CalSim II results. In the previous planning-level evaluations, the DSM2 boundary flow inputs were applied on a daily time step but used constant flows equivalent to the monthly average CalSim II flows except at month transitions.

As shown in Figures 5.B.2-4 and 5.B.2-5, Sacramento River flow at Freeport exhibits significant daily variability around the monthly mean in the winter and spring period in most water year types. The winter-spring daily variability is deemed important to species of concern. In an effort to better represent the sub-monthly flow variability, particularly in early winter, a monthly-to-daily flow mapping technique is applied to the main boundary inflow inputs to DSM2 (Yolo Bypass, Sacramento River, Cosumnes River, Mokelumne River, Calaveras River and San Joaquin River) . The daily mapping approach used in CalSim II and DSM2 are consistent. The incorporation of daily mapping in CalSim II is described in the Section 5.A.4.3.2, *Incorporation of Sacramento River Daily Variability*. A detailed description of the implementation of the daily variability in DSM2 boundary conditions is provided in Appendix 5B Attachment 5, *Incorporation of Daily Variability in CWF BA Modeling*.

It is important to note that this daily mapping approach does not in any way represent the flows that would result from any operational responses on a daily time step. It is simply a technique to incorporate representative daily variability into the flows resulting from CalSim II's monthly operational decisions.

5.B.2.3.3 Incorporating Sea Level Rise Effects in DSM2 Planning Simulations

A sea level rise of 15 cm at the Golden Gate Bridge was assumed at year 2030 for the analysis in this BA. The hydrodynamics and salinity changes in the Delta due to sea level rise were determined from the UnTRIM 3D Bay-Delta model. DSM2 model results were corroborated for the assumed sea level using the UnTRIM results. Detailed descriptions of the UnTRIM modeling of the sea level rise scenarios and DSM2 corroboration are included in Appendix 5B, Attachments 2 and 3, respectively.

Based on the outcome of the sea level rise corroboration an updated DSM2 grid configuration and model setup was prepared for use in the CWF BA NAA and PA planning simulations to account for the projected 15cm sea level rise. Using the results from the UnTRIM models, two correlations were developed to compute the resulting stage and EC at Martinez location for the 15cm sea level rise scenario. Table 5.B.2-3 shows the Martinez stage and EC correlations for the 15cm sea level rise scenario. It also shows the lag in minutes between the baseline stage or EC and the resulting stage or EC under the scenario with sea level rise. The regressed baseline stage or EC timeseries needs to be shifted by the lag time noted in the Table 5.B.2-3.

As noted earlier, adjusted astronomical tide at Martinez is used as the downstream stage boundary in the DSM2 planning simulation representing current Delta configuration without any sea level rise. This stage timeseries is modified using the stage correlation equation identified in Table 5.B.2-3 for use in a planning simulation with 15cm sea level rise. The EC boundary condition in a DSM2 planning simulation is estimated using the G-model based on the monthly net Delta outflow simulated in CalSim II and the pure astronomical tide (Ateljevich, 2001b). Even though the rim flows and exports are patterned on a daily step in DSM2, the operational decisions, including exports, are still on a monthly timestep. This means that the net Delta outflow may or may not meet the standards on a daily timestep. Therefore, to estimate the EC boundary condition at Martinez, monthly net Delta outflow simulated in CalSim II is used. For a planning simulation with 15cm sea level rise, the EC timeseries from the G-model was adjusted using the EC correlation listed in Table 5.B.2-3 to account for the anticipated changes at Martinez.

5.B.2.3.4 ANN Retraining

ANNs are used for flow-salinity relationships in CalSim II. They are trained on DSM2 outputs and therefore, emulate DSM2 results. Such an ANN requires retraining whenever the flow – salinity relationship in the Delta changes. The CWF BA analysis, with its assumed 15cm sea level rise at Year 2030, is expected to have a different flow – salinity relationship in the Delta compared to the current conditions, and therefore requires a new ANN.

DWR Bay-Delta Modeling staff has retrained the ANN for the 15cm sea level rise scenario. ANN retraining process involved following steps:

- Corroboration of the DSM2 model using UnTRIM model to account for sea level rise effects, as described above
- Development of a range of example long-term CalSim II scenarios to provide a broad range of boundary conditions for the DSM2 models
- Using the grid configuration and the correlations from the corroboration process, several 16-year (WY 1976-1991) DSM2 planning runs are simulated based on the boundary conditions from the identified CalSim II scenarios to create a training dataset for each new ANN
- ANNs are trained using the Delta flows and DCC operations from CalSim II, along with the EC results from DSM2 and the Martinez tide
- The training dataset is divided into two parts. One is used for training the ANN and the other for validating
- Once the ANN is ready, a full circle analysis is performed to assess the performance of the ANN

A detailed description of the ANN training procedure and the full circle analysis is provided in DWR’s 2007 annual report (Seneviratne and Wu, 2007).

5.B.2.3.5 North Delta Diversion Operations

California WaterFix PA includes three new intakes on Sacramento River upstream of Sutter Slough, in the north Delta. The diversions at the intakes are governed by the bypass rules. The bypass rules are simulated in CalSim II using daily mapped Sacramento River flow, which provides the maximum potential diversion that can occur in the north Delta for each day. CalSim II uses the monthly average of this daily potential diversion as one of the constraints in determining the final monthly north Delta diversion. For use in DSM2, the monthly diversion output from CalSim II at the north Delta intakes is mapped onto the daily pattern of the potential diversion estimated in CalSim II.

In the DSM2 simulation of the PA, diversion at each intake is determined on a 15 min timestep, subject to a minimum sweeping velocity criteria so that the fish migrating past the fish screens do not impinge on them. For the CWF BA, it was assumed for modeling purposes that water could be diverted at an intake only if the sweeping velocity was at least 0.4 fps, based on the combination of the required approach velocity for Delta Smelt protection (0.2 fps) and the CDFW (2009) sweeping velocity criterion for streams and rivers (i.e., at least two times the allowable approach velocity). For the PA DSM2 simulation a minimum sweeping velocity of 0.4 fps was used in determining whether or not water can be diverted at an intake, as described below. The assumed intake operations are also subjected to ramping rates while shutting off or starting of the diversion at the intakespartly to minimize potential model instabilities from a sharp and sudden change. These criteria cannot be simulated in CalSim II. However, they are dynamically simulated using the operating rules feature in DSM2.

The north Delta diversion operating rule in the DSM2 allows diverting up to the amount specified by CalSim II each day while subjecting each intake to the sweeping velocity and the ramping criteria. The intakes are operated as long as the daily diversion volume specified by CalSim II is not met. Once the specified volume is diverted for the day, the diversions at the intakes are shut off until the next day.

The volume corresponding to the first 100cfs per intake (for three intakes 300 cfs) of the daily north Delta diversion specified by CalSim II is diverted equally at all the intakes included for the PA. The remaining volume for the day will be diverted such that operation of the upstream intakes is prioritized over the downstream intakes. Intake diversions are ramped over an hour to allow smooth transitions without numerical instabilites when the diversions at the intakes are turned on and off.

In the current modeling of the PA, the diversion flow at an intake for each time step is estimated assuming that the remaining diversion volume in a day will have to be diverted in one time step at the upstream-most intake first and immediate downstream one next and so on until the daily specified total is diverted. However, the estimated amount of diversion at each intake is only diverted when the cross-section's average velocity measured just downstream of the DSM2 diversion node is greater than or equal to 0.4fps. If in any time step this criteria is violated then the diversion occurs in a future time step when the velocity is above 0.4fps or may occur at a different intake. The sweeping velocity criterion is measured at 1000ft downstream from the diversion node in DSM2 to minimize potential instabilities in the model. Even though DSM2 produces a cross-sectional averaged velocity due to its one-dimensional nature, it is not corrected for the velocity profile across the cross-section for this application..

This dynamic operation of the proposed north Delta diversion intakes modeled in DSM2 is only a simplified representation to account for the variability in the sub-daily flows in the channels downstream of the intakes, and to estimate potential effects on the sub-daily hydrodynamic conditions in the vicinity of the intakes, for the CWF planning effort. The assumed sub-daily operations criteria for the intakes in the DSM2 model are not meant to represent the standard operating procedures of the proposed intakes. The simplified assumptions used in here attempted to consider various factors such as sweeping velocity requirements, ramping rates, north to south intake priority etc., that are likely to be part of the regulatory criteria required by the fishery agencies. The actual values and criteria for these and any other factors to be considered in operating the proposed intakes are anticipated to be determined through operational testing prior to the full operation of the intakes in consultation with regulatory agencies, as alluded to in section 3.3.2.1 of the BA.

New channels, transfers and a reservoir are added to the DSM2 grid to simulate three (3) north Delta diversion intakes as shown in the Figure 5.B.2-6. Three channels, 602, 603, and 605, divert water off the Sacramento River and transfer to channel 607 and 608, from where the total diverted water is transferred to a new reservoir (IF_FOREBAY). Figure 5.B.2-7 shows an example timeseries of sweeping velocities and the diversions at each intake. The plot shows how the intakes are ramped up and down when the velocity falls below 0.4 ft/s.

5.B.2.4 Output Parameters

DSM2 HYDRO provides the following outputs on a 15-minute time step:

- Cross-section Average Flow Rate in the Channelsat nodes
- Stage
- Cross-section Average Velocity

The following variables can be derived from the above outputs:

- Net flows for a specified period, e.g., day
- Mean sea level, mean higher high water, mean lower low water and tidal range
- Water depth
- Tidal reversals
- Flow splits, etc.

DSM2 QUAL provides the following outputs on a 15-minute time step:

- Salinity (EC)
- Source water and constituent fingerprinting
- Water temperature

Following variables can be derived from the above QUAL outputs:

- Bromide, chloride, and total dissolved solids
- Selenium

In a planning analysis, the flow boundary conditions that drive DSM2 are obtained from the monthly CalSim II model. The agricultural diversions, return flows and corresponding salinities used in DSM2 are on a monthly time step. The implementation of Delta Cross Channel gate operations in DSM2 assumes that the gates are open from the beginning of a month, irrespective of the water quality needs in the south Delta.

The input assumptions stated above should be considered when DSM2 EC results are used to evaluate performance of a baseline or an alternative against the standards. Even though CalSim II releases sufficient flow to meet the standards on a monthly average basis, the resulting EC from DSM2 may be over the standard for part of a month and under the standard for part of the month, depending on the spring/neap tide and other factors (e.g. simplification of operations). It is recommended that the results are presented on a monthly basis. Frequency of compliance with a criterion should be computed based on monthly average results. Averaging on a sub-monthly (14-day or more) scale may be appropriate as long as the limitations with respect to the compliance of the baseline model are described in detail and the alternative results are presented as an incremental change from the baseline model. A detailed discussion is required in this case.

In general, it is appropriate to present DSM2 QUAL results including EC, DOC, volumetric fingerprinting and constituent fingerprinting on a monthly time step. When comparing results from two scenarios, computing differences based on these mean monthly statistics would be appropriate.

5.B.2.5 Linkages to Other Models

The Delta boundary flows and exports from CalSim II are used to drive the DSM2 Delta hydrodynamic and water quality models for estimating tidally-based flows, stage, velocity, and salt transport within the estuary. DSM2 water quality and volumetric fingerprinting results are used to assess changes in concentration of selenium in Delta waters. DSM2 results are also used in fisheries models (IOS, DPM) or aquatics species survival/habitat relationships developed based on peer reviewed scientific publications, and other secondary hydrodynamics analyses to assess the effects on listed fish species in the Delta.

5.B.2.6 Modeling Limitations

DSM2 is a one-dimensional model with inherent limitations in simulating hydrodynamic and transport processes in a complex estuarine environment such as the Sacramento – San Joaquin Delta. DSM2 assumes that velocity in a channel can be adequately represented by a single average velocity over the channel cross-section, meaning that variations both across the width of the channel and through the water column are negligible. DSM2 does not have the ability to model short-circuiting of flow through a reach, where a majority of the flow in a cross-section is confined to a small portion of the cross-section. DSM2 does not conserve momentum at the channel junctions and does not model the secondary currents in a channel. DSM2 also does not explicitly account for dispersion due to flow accelerating through channel bends. It cannot model the vertical salinity stratification in the channels.

It has inherent limitations in simulating the hydrodynamics related to the open water areas. Since a reservoir surface area is constant in DSM2, it impacts the stage in the reservoir and thereby impacting the flow exchange with the adjoining channel. Due to the inability to change the cross-sectional area of the reservoir inlets with changing water surface elevation, the final entrance and exit coefficients were fine tuned to match a median flow range. This causes errors in the flow exchange at breaches during the extreme spring and neap tides. Using an arbitrary bottom elevation value for the reservoirs representing the proposed marsh areas to get around the wetting-drying limitation of DSM2 may increase the dilution of salinity in the reservoirs.

For open water bodies DSM2 assumes uniform and instantaneous mixing over entire open water area. Thus it does not account for the any salinity gradients that may exist within the open water bodies. Significant uncertainty exists in flow and EC input data related to in-Delta agriculture, which leads to uncertainty in the simulated EC values. Caution needs to be exercised when using EC outputs on a sub-monthly scale.

5.B.3 Delta Particle Tracking Modeling

Particle tracking models (PTM) are excellent tools to visualize and summarize the impacts of modified hydrodynamics in the Delta. These tools can simulate the movement of passive particles or particles with behavior representing either larval or adult fish through the Delta. The PTM tools can provide important information relating hydrodynamic results to the analysis needs of biologists that are essential in assessing the impacts to the fisheries and habitat in the Delta.

5.B.3.1 DSM2-PTM

DSM2-PTM simulates pseudo 3-D transport of neutrally buoyant particles based on the flows simulated by HYDRO. The PTM module simulates the transport and fate of individual particles traveling throughout the Delta. The model uses geometry files, velocity, flow, and stage output from the HYDRO module to monitor the location of each individual particle using assumed vertical and lateral velocity profiles and specified random movement to simulate mixing. The location of a particle in a channel is determined as the distance from the downstream end of the channel segment (x), the distance from the centerline of the channel (y), and the distance above the channel bottom (z).PTM has multiple applications ranging from visualization of flow patterns to simulation of discrete organisms such as fish eggs and larvae.

The longitudinal distance traveled by a particle is determined from a combination of the lateral and vertical velocity profiles in each channel. The transverse velocity profile simulates the effects of channel shear that occurs along the sides of a channel. The result is varying velocities across the width of the channel. The average cross-sectional velocity is multiplied by a factor based on the particle’s transverse location in the channel. The model uses a fourth order polynomial to represent the velocity profile. The vertical velocity profile shows that particles located near the bottom of the channel move more slowly than particles located near the surface. The model uses the Von Karman logarithmic profile to create the velocity profile. Particles also move because of random mixing. The mixing rates (i.e., distances) are a function of the water depth and the velocity in the channel. High velocities and deeper water result in greater mixing.

At a junction the path of a particle is determined randomly based on the proportion of flow. The proportion of flow determines the probability of movement into each reach. A random number based on this determined probability then determines where the particle will go. A particle that moves into an open water area, such as a reservoir, no longer retains its position information. A DSM2 open water area is considered a fully mixed reactor. The path out of the open water area is a decision based on the volume in the open water area, the time step, and the flow out of the area. At the beginning of a time step, the volume of the open water area and the volume of water leaving at each opening of the open water area are determined. From that, the probability of the particle leaving the open water area is calculated. Particles entering exports or agricultural diversions are considered "lost" from the system. Their final destination is recorded. Once particles pass the Martinez boundary, they have no opportunity to return to the Delta. (Smith, 1998, Wilbur, 2001, Miller, 2002)

5.B.3.2 Application of DSM2-PTM to Evaluate CWF

DSM2 PTM was used in multiple applications for the CWF BA effects analysis. The key applications are outlined below. A detailed description of each application along with the modeling assumption are provided in the following sections.

- *Use of DSM2-PTM for evaluating larval delta smelt:* PTM simulations were performed to characterize the potential entrainment effects of larval delta smelt at the key export/diversion locations in the Delta under the NAA and the PA, during March through June months.

- *Use of DSM2-PTM for evaluating larval longfin smelt:* PTM simulations were performed to characterize the potential entrainment effects of larval longfin smelt at the key export/diversion locations in the Delta under the NAA and the PA, primarily during January through March months.

- *Use of DSM2-PTM for evaluating Delta residence times:* PTM simulations were performed to characterize the Delta residence times under the NAA and the PA, for a range of hydrologic conditions and operations in the Delta, during July through November months.

- *Use of DSM2-PTM for evaluating adult delta smelt:* PTM simulations were performed to characterize the potential for adult delta smelt to migrate upstream on the Sacramento River mainstem towards the proposed north Delta intakes under the PA, primarily during December through February months. Unlike the above PTM applications which use neutrally buoyant passive particles, this application includes particle behavior.

DSM2 PTM version 8.1.2 was used for the CWF BA PTM analyses even though the hydrodynamics are simulated using version 8.0.6, to take advantage of new PTM features such as the particle filtering to limit particles from leaving the Delta through in-Delta agricultural diversion and seepage sources.

5.B.3.3 DSM2-PTM for Evaluating Larval Delta Smelt

DSM2 PTM was used to assess the potential for entrainment of delta smelt larvae at various water exports and diversions locations in the Delta (i.e., the south Delta export facilities, the NDD, and the NBA Barker Slough Pumping Plant).

5.B.3.3.1 PTM Period Selection

PTM runs were simulated for March, April, May and June months in each year from 1922 to 2003, leading to a total of 328 release periods for this application.

5.B.3.3.2 PTM Simulations

Particles were released at the 39 locations shown in Figure 5.B.3-1. These locations are also listed in Table 5.B.3-1. PTM simulations, one for each release locations, were performed in a batch mode, for each of the 328 insertion periods. This brought the total PTM simulations performed for four release periods per year and 82 years, to 12,792 under this application. 4,000 neutrally buoyant passive particles were released over a 24.75 hour period, starting on the first day of the selected month for each PTM simulation. Particle entrainment at the Delta agricultural locations was turned off in these simulations.

Each PTM simulation was run for a 60 day period, from the date of release, and the fate of the released particles was tracked continuously over the 60 days. The particle flux was tracked at the key exit locations – south Delta exports (CVP Jones Pumping Plant, SWP Clifton Court Forebay), north Delta intakes, North Bay Aqueduct, past Martinez and particles remaining in the Delta channels, and at several internal tracking locations as shown in Figure 5.B.3-1. The timeseries output was post-processed to determine the % of particles ended up at the above locations at the end of 30 days after release and used in the larval delta smelt entrainment evaluation.

5.B.3.4 DSM2-PTM for Evaluating Larval Longfin Smelt

DSM2 PTM was used to assess the potential for entrainment of longfin smelt larvae at various water exports and diversions locations in the Delta (i.e., the south Delta export facilities, the NDD, and the NBA Barker Slough Pumping Plant).

5.B.3.4.1 PTM Period Selection

PTM runs were simulated for December, January, February and March months in each water year from 1922 to 2003, leading to a total of 328 release periods for this application.

5.B.3.4.2 PTM Simulations

Particles were released at the 39 locations shown in Figure 5.B.3-1. These locations are also listed in Table 5.B.3-1. PTM simulations, one for each release locations, were performed in a batch mode, for each of the 328 insertion periods. This brought the total PTM simulations performed for four release periods per year and 82 years, to 12,792 under this application. 4,000 neutrally buoyant passive particles were released over a 24.75 hour period, starting on the first day of the selected month for each PTM simulation. Particle entrainment at the Delta agricultural locations was turned off in these simulations.

Each PTM simulation was run for a 60 day period, from the date of release, and the fate of the released particles was tracked continuously over the 60 days. The particle flux was tracked at the key exit locations – south Delta exports, north Delta intakes, past Chipps Island, to Suisun Marsh and past Martinez and at several internal tracking locations as shown in Figure 5.B.3-1. Specifically, % of particles entrained at the SWP's Clifton Court Forebay, the CVP's Jones Pumping Plant, the proposed NDD, and the NBA Barker Slough Pumping Plant, and % of particles entered into the south Delta (defined as the sum of particles entering Big Break, Dutch Slough, False River, Fishermans Cut, Old River mouth, Middle River mouth, Columbia Cut, and Turner Cut) were reported. The timeseries output was post-processed to determine the % of particles at above locations, at the end of 45 days after release and used in the larval longfin smelt entrainment evaluation.

5.B.3.5 DSM2-PTM for Evaluating Delta Residence Times

DSM2 PTM was used to assess the water residence time in the Delta for use in the evaluation of the potential for the Microcystis blooms in the Delta.

5.B.3.5.1 PTM Period Selection

A subset of 25 years that are representative of the range of hydrologic conditions, and the range of Delta operations over the 82-year period (1922 – 2003) were identified for this application.

To this end, the mean July to November Delta exports, outflow, and inflow across all 82 years were computed for the NAA scenario. The 82 years were sorted into four CVP/SWP total Delta export bins (2500-5000 cfs, 5000 – 7500 cfs, 7500 – 10000 cfs, and 10000 – 12500 cfs) , and several years were selected within each bin after examining plots of inflow versus outflow, in order to represent the range of inflow versus outflow conditions. A total of 25 years were chosen, and DSM2-PTM simulations were run based on the DSM2-HYDRO simulations for these years. Figures 5.B.3-2 to 5.B.3-5 contain plots of the selected outflow and inflow combinations for different export ranges. Table 5.B.3-2 lists the selected years along with the July through November average Delta exports, outflow and inflow for the NAA scenario.

5.B.3.5.2 PTM Simulations

For each of the 25 years selected for this analysis, 90-day DSM2-PTM runs were simulated beginning on the first day in each month, for July to November. There were a total of 125 runs performed per each scenario. Particles were released at locations that were grouped based on Delta subregions shown in Figure 5.B.3-6. Four thousand particles were inserted per subregion, and were evenly divided between the release locations within each subregion. The simulated particle fates were used to estimate residence time under each of these 125 sets of conditions.

25 PTM simulations, one for each sub-region, were performed in a batch mode, for each insertion period. This brought the total PTM simulations performed for five release periods per year and 25 years, to 3125. For each simulation, particles were inserted at the DSM2 nodes identified in each sub-region as shown in Figure 5.B.3-7 and Table 5.B.3-3. Hourly timeseries of

number of particles remained in each sub-region was saved from each run over the 90-day simulation period. Residence time (in hours) was calculated as the time since the start of the simulation i weighted by the number of particles remaining in the subregion at time i:

$$Residence\ time\ (hours) = \frac{\sum_{i=1}^{90*24} (No.of\ particles\ in\ the\ subregion)_i * i}{\sum_{i=1}^{90*24} (No.of\ particles\ in\ the\ subregion)_i}$$

5.B.3.6 DSM2-PTM for Adult Delta Smelt

DSM2 PTM was used to assess the potential for upstream migration of the adult delta smelt towards the NDD intakes.

5.B.3.6.1 PTM Period Selections

Periods were selected based on a turbidity trigger. In modeling the USFWS RPA Component 1, Action 1, the turbidity trigger was based on the following (Appendix 5.A Attachment 6):

- If the monthly average unimpaired Sacramento River Index (four-river index: sum of Sacramento, Yuba, Feather, and American Rivers) exceeds 20,000 cfs, then it was assumed that an event, in which the 3-day average turbidity at Hood exceeded 12 NTU, had occurred within the month (see Figure 5.B.3-8).

The above criteria was used to identify the month (Dec, Jan, or Feb) in each of the 82 water years, when the particles would be released. For each of the months identified, daily averaged Freeport (RSAC155) flow output from the NAA DSM2 simulation was used to identify the day when the peak flow occurred in the month. The particles were released on the day when the peak flow occurred in the month. In the water years if the above turbidity criteria was not triggered during Dec – Feb months, then the particles were released on Feb 1st for that year irrespective of the flow. Selected periods are summarized in Table 5.B.3-4 and in Figure 5.B.3-9.

5.B.3.6.2 PTM Simulations

Particles were released at Chipps Island (DSM2 node 465), Decker Island (DSM2 node 353), Montezuma Slough (DSM2 node 420), and Cache Slough at Liberty Island (DSM2 node 323). 4000 particles were released uniformly over a tidal day (1485 minutes) and tracked for 30 days. Particles released were assumed to have vertical migration behavior such that they remain in the upper 10% of water level during flood tide, and remain in the lower 10% of water level during the ebb tide.

The entrainment at each of the major pumping facilities (North Delta Diversion, Clifton Court Forebay, Jones Pumping Plant, and NBA) at the end of 30-days was reported. Also, the particle flux across key transects in the Sacramento River (at Isleton and past Chipps Island) were reported at the end of the 30-day period. Particles remaining within each of the sub-regions shown in Figure 5.B.3-6 were also reported at the end of 30 days.

5.B.3.7 Limitations

PTM results are most often used to understand the potential movement of eggs and larval fish with flow changes. Similarly, the PTM is also used to study the changes in the residence time (residence time being a surrogate of the water quality conditions in the Delta) in the Delta associated with flow changes. PTM approximates movement of neutrally-buoyant particles or particles with assumed behavior based on the hydrodynamics. The PTM model requires input of channel velocity fields from HYDRO model, which leads to the translation of the limitations inherent to HYDRO to the PTM model. The partitioning of the particles at a junction in the PTM is simplistic and is based on the flow split into different branches at a junction. Information related to higher order hydraulics such as acceleration around the bend and secondary currents are not simulated in the PTM, despite its use of an approximate 3D velocity field. Use of the PTM results to analyze certain species and life stages with significant active behavior responses should be used with caution. While some uncertainty exists in the PTM results, the model is a reasonable tool to compare the movement and fate of particles between various scenarios, if results are interpreted within the context of these limitations.

5.B.4 DSM2 Modeling Assumptions

This section presents the assumptions used in developing the DSM2 simulations of the NAA and PA for use in the CWF BA evaluation. The assumptions were selected based on the recommendations from the agencies involved in the SCT. The DSM2 assumptions for the NAA and the PA are listed in Table 5.B.4-1.

5.B.4.1 DSM2 Assumptions for the NAA

5.B.4.1.1 River Flows

For the NAA DSM2 simulation, the river flows at the DSM2 boundaries are based on the monthly flow time series from CalSim II.

5.B.4.1.2 Tidal Boundary

For the NAA, the tidal boundary condition at Martinez is based on an adjusted astronomical tide normalized for sea level rise (Ateljevich and Yu, 2007) and is modified to account for the sea level rise using the correlations derived based on three-dimensional (UnTRIM) modeling of the Bay-Delta with sea level rise at Year 2030.

5.B.4.1.3 Water Quality

5.B.4.1.3.1 Martinez EC

For the NAA, the Martinez EC boundary condition in the DSM2 planning simulation is estimated using the G-model based on the net Delta outflow simulated in CalSim II and the pure astronomical tide (Ateljevich, 2001), as modified to account for the salinity changes related to the sea level rise using the correlations derived based on the three-dimensional (UnTRIM) modeling of the Bay-Delta with sea level rise at Year 2030.

5.B.4.1.3.2 Vernalis EC
For the NAA DSM2 simulation, the Vernalis EC boundary condition is based on the monthly San Joaquin EC time series estimated in CalSim II.

5.B.4.1.4 Morphological Changes

No additional morphological changes were assumed as part of the NAA simulation. The DSM2 model and grid developed as part of the 2009 recalibration effort (CH2M HILL, 2009) was used for the NAA modeling.

5.B.4.1.5 Facilities

5.B.4.1.5.1 Delta Cross Channel Gates
Delta Cross Channel gate operations are modeled in DSM2. The number of days in a month the DCC gates are open is based on the monthly time series from CalSim II.

5.B.4.1.5.2 South Delta Temporary Barriers
South Delta Temporary Barriers are included in the NAA simulation. The three agricultural temporary barriers located on Old River, Middle River and Grant Line Canal are included in the model. The temporary fish barrier located at the Head of Old River is also included in the model.

5.B.4.1.5.3 Clifton Court Forebay Gates
Clifton Court Forebay gates are operated based on the Priority 3 operation, where the gate operations are synchronized with the incoming tide to minimize the impacts to low water levels in nearby channels. The Priority 3 operation is described in the 2008 OCAP BA Appendix F Section 5.2 (USBR, 2008b).

5.B.4.1.6 Operations Criteria

5.B.4.1.6.1 South Delta Temporary Barriers
South Delta Temporary Barriers are operated based on San Joaquin flow conditions. Head of Old River Barrier is assumed to be only installed from September 16 to November 30 and is not installed in the spring months, based on the USFWS Delta Smelt BiOp Action 5. The agricultural barriers on Old and Middle Rivers are assumed to be installed starting from May 16 and the one on Grant Line Canal from June 1. All three agricultural barriers are allowed to operate until November 30. The tidal gates on Old and Middle River agricultural barriers are assumed to be tied open from May 16 to May 31.

5.B.4.1.6.2 Montezuma Salinity Control Gate
The radial gates in the Montezuma Slough Salinity Control Gate Structure are assumed to be tidally operating from October through February each year, to minimize propagation of high salinity conditions into the interior Delta.

5.B.4.2 DSM2 Assumptions for the PA

5.B.4.2.1 River Flows

Consistent with the NAA

5.B.4.2.2 Tidal Boundary

Consistent with the NAA

5.B.4.2.3 Water Quality

5.B.4.2.3.1 Martinez EC

Consistent with the NAA

5.B.4.2.3.2 Vernalis EC

Consistent with the NAA

5.B.4.2.4 Morphological Changes

Consistent with the NAA

5.B.4.2.5 Facilities

5.B.4.2.5.1 Delta Cross Channel

Consistent with the NAA.

5.B.4.2.5.2 South Delta Temporary Barriers and HOR Gate

The temporary agricultural barriers under the PA are consistent with the NAA. A permanent HOR gate is assumed under the PA in place of the temporary HOR barrier included under the NAA.

5.B.4.2.5.1 Clifton Court Forebay Gates

Consistent with the NAA

5.B.4.2.5.2 North Delta Diversion Intakes

North Delta diversion intakes 2, 3, and 5 are modeled in DSM2 for the PA, with 3,000 cfs diversion capacity at each intake. A detailed description of the modeling of the north Delta diversion intakes in DSM2 for the PA is included in the Section 5.B.2.3.5, *North Delta Diversion Operations*.

5.B.4.2.6 Operations Criteria

5.B.4.2.6.1 South Delta Temporary Barriers and HOR Gate

The operations of the agricultural barriers are consistent with the NAA. The HOR gate operations under the PA are assumed such that appropriate gate opening is simulated to allow the fraction of "the flow that would have entered the Old River if the barrier were fully open", as noted in Table 5.B. 4-2. For October, the HORB is closed for the last two weeks, during the San Joaquin River pulse flows.

5.B.4.2.6.2 Montezuma Salinity Control Gate

Consistent with the NAA.

5.B.4.2.6.3 North Delta Diversion Intakes

The diversion operation at the north Delta intakes are dynamically simulated in DSM2 such that the amount specified by CalSim II each day is diverted while subjecting each intake to the sweeping velocity and the ramping criteria. A maximum of 3,000 cfs is withdrawn at each intake while meeting a velocity requirement of 0.4 fps downstream of each intake. The intakes are operated as long as the daily diversion volume specified by CalSim II is not diverted. Once the specified volume is diverted for the day, the diversions at the intakes are shut off until next day. The volume corresponding to first 300 cfs of the daily north Delta diversion specified by CalSim II is diverted equally at all the three intakes. The remaining volume for the day will be diverted such that operation of the upstream intake is prioritized over the downstream one. Intake diversions are ramped over an hour to allow smooth transitions when they are turned on and off.

5.B.5 DSM2 Results

This section provides DSM2 model simulation results for the NAA and the PA evaluated for the CWF BA. For each parameter listed below figures and tables in various formats are included to provide the reader with tools for multiple ways of analysis. Different types of presentations are explained below:

- Long Term Average Summary and Water Year Type Based Statistics Summary Tables: These tables provide parameter values for each 10% increment of exceedance probability (rows) for each month (columns) as well as long-term and year-type averages, using the Sacramento Valley 40-30-30 Index for the locations in the Delta and 60-20-20 Index for the San Joaquin River developed by the SWRCB for projected climate at Year 2030 (under Q5 scenario) for each month.

- Probability of Exceedance Plots: Probability of exceedance plots are provided for each month over the period of record as well as monthly plots by water year type. Probability of exceedance plots provide the frequency of occurrence of values of a parameter that exceed a reference value. For this appendix, the calculation of exceedance probability is done by ranking the data. For example, for Sacramento River downstream of North Delta Intakes Flow exceedance plot, Sacramento River flow values for each month, for each simulated year are sorted in ascending order. The smallest value would have a probability of exceedance of 100% since all other values would be greater than that value; and the largest value would have a probability of exceedance of 0%. All the values are plotted with probability of exceedance on the x-axis and the value of the parameter on the y-axis. Following the same example, if for one scenario, Sacramento River downstream of North Delta Intakes Flow in October of 7,000 cfs corresponds to 80% probability; it implies that Sacramento River downstream of North Delta Intakes Flow in October is higher than 7,000 cfs in 80% of the years under the simulated conditions.

- Box and Whisker Plots: These plots show the monthly DSM2 results under the NAA and the PA for each month for each water year type. The plots display the distribution of data based on the following statistical summary.
  - 5th percentile that corresponds to 95% exceedance probability,
  - first quartile (25th percentile that corresponds to 75% exceedance probability),
  - median (50% exceedance probability),
  - third quartile (75th percentile that corresponds to 25% exceedance probability),
  - 95th percentile that corresponds to 5% exceedance probability, and
  - mean

Monthly average flows, salinity, volumetric fingerprinting and water temperature results as listed below are presented in this appendix. For each of the parameter identified below a table comparing monthly results, a monthly exceedance plot, and box-whisker plot by water year type are included.

5.B.5-1 Sacramento River downstream of North Delta Intakes Flow

5.B.5-2 Sutter Slough Flow

5.B.5-3 Steamboat Slough Flow

5.B.5-4 Delta Cross Channel Flow

5.B.5-5 Georgiana Slough Flow

5.B.5-6 Sacramento River at Rio Vista Flow

5.B.5-7 San Joaquin River at Antioch Flow

5.B.5-8 Head of Old River Flow

5.B.5-9 Sacramento River downstream of Georgiana Slough Salinity

5.B.5-10 Cache Slough at Ryer Island Salinity

5.B.5-11 Sacramento River at Rio Vista Salinity

5.B.5-12 Sacramento River at Emmaton Salinity

5.B.5-13 San Joaquin River at Jersey Point Salinity

5.B.5-14 Sacramento River at Collinsville Salinity

5.B.5-40 Sacramento River at Rio Vista Monthly Temperature

5.B.5-41 San Joaquin River at Prisoners Point Monthly Temperature

5.B.5-42 San Joaquin River at Brandt Bridge Monthly Temperature

5.B.5-43 Stockton Deep Water Ship Channel Monthly Temperature

5.B.6 References

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Wilbur, R. and Munévar, A. (2001). “Chapter 7 – Integration of CalSim and Artificial Neural Networks Models for Sacramento-San Joaquin Delta Flow-Salinity Relationships”. Methodology for Flow and Salinity Estimates in the Sacramento-San Joaquin Delta and Suisun Marsh.22nd Annual Progress Report to the State Water Resources Control Board. Sacramento, CA.

Attachment 1: DSM2 Recalibration for Bay-Delta Conservation Plan

DWR’s DSM2 is the primary analytical tool used to evaluate the changes to Delta hydrodynamics and water quality associated with the proposed elements of the CWF PA. The ability to accurately simulate tidal flows and salt transport in the northern Delta and Cache Slough region is of particular importance for the CWF considering the proposed diversion intakes on the Sacramento River. In preparing the analytical tools for use in the BDCP modeling, DSM2 model was recalibrated using recent historical flow, stage and salinity data in the Delta (CH2M HILL 2009). The DSM2 grid was modified to include recent morphological changes such as the flooded Liberty Island, in addition to some updated bathymetric data in the north Delta region. The recalibration effort significantly improved DSM2’s simulation of the observed tidal stage, flows and salt transport in the Delta. Detailed description of the recalibration process and results are included in a technical report previously documented. This technical report is included as the Attachment 1 to the Appendix 5B (separate PDF file).

Attachment 2: UnTRIM San Francisco Bay-Delta Model Sea Level Rise Scenario Modeling Report

CWF BA NAA and PA scenarios include the effects of future projections of sea level rise on the hydrodynamics and salinity intrusion in the Sacramento-San Joaquin Delta. For the selected sea level rise scenarios, three-dimensional UnTRIM Bay-Delta model was simulated to evaluate the Delta hydrodynamic and salinity conditions under historical conditions. UnTRIM results were used in corroborating the hydrodynamics and salinity results from the one-dimensional DSM2 model (described in Appendix 5B Attachment 3, *DSM2 Corroboration*) for projected 15 cm sea level rise at year 2030. A technical report prepared for the BDCP Effects Analysis summarizes the UnTRIM results for various projections of sea level rise values. This technical report is included as the Attachment 2 to the Appendix 5B (separate PDF file).

Even though, CWF BA analyses used 15 cm sea level rise at Year 2030, several other values were simulated using UnTRIM to capture the range of uncertainty in the sea level rise projections and to understand the potential impact on the CVP/SWP operations. UnTRIM was simulated for sea level rise values including 15 cm, 30 cm, 45 cm, 60 cm, 140 cm and 140 cm with 5% tidal range amplification. UnTRIM results for the simulated sea level rise scenarios are included in the Appendix 5B Attachment 2.

Attachment 3: DSM2 Sea Level Rise Corroboration

In the analysis of the CWF BA NAA and PA scenarios, simulation of the effects related to the projected sea level rise are integral parts of the physical modeling to understand the overall effects. CWF PA evaluation requires long-term analysis of hydrodynamics and water quality in the Delta resulting from the proposed physical and operational changes. DSM2 is an appropriate model for this type of analysis. It has been successfully used in analyzing several projects in the Delta. However, DSM2 has a limited ability to simulate three-dimensional processes such as gravitational circulation which is known to increase with sea level rise in the estuaries. Therefore, it is imperative that DSM2 be recalibrated or corroborated based on a dataset that accurately represents the Delta conditions under sea level rise.

Since the proposed conditions are hypothetical, the Delta hydrodynamics conditions under the proposed conditions were estimated by simulating higher order model, which can resolve the three-dimensional processes well, over a short time period. The results from the higher order model provided the data sets needed to corroborate or recalibrate DSM2 under the future conditions so that the hydrodynamics and salinity transport in the Delta can be simulated with reasonable accuracy.

DSM2 was corroborated using results from the three-dimensional UnTRIM model for 15cm sea level rise scenarios. Detailed descriptions of the corroboration process and results are documented in a technical report included as the Attachment 3 to the Appendix 5B.

Attachment 4: DSM2 Temperature Modeling

Attachment 4 includes a summary of the Delta water temperature modeling performed for the CWF NAA and PA scenarios using DSM2 QUAL. The attachment includes an overview of the model setup, boundary conditions, meteorological boundary conditions development, and application to the CWF NAA and PA scenarios. The attachment also includes a brief summary of the calibration results for the DSM2 temperature modeling, and the bias in the simulated temperatures based on the calibration results.

Attachment 5: Incorporation of Daily Variability in the CalSim II and DSM2 Modeling

CalSim II is the primary model that integrates all the proposed CWF elements with existing system and regulatory framework. It provides operational decisions on a monthly timestep. The operation of some of the proposed CWF elements such as the north Delta intakes were found to be sensitive to the daily variability of flows. This section summarizes the approach used to incorporate daily variability in the Sacramento River flows into CalSim II and DSM2 modeling performed for the CWF BA.

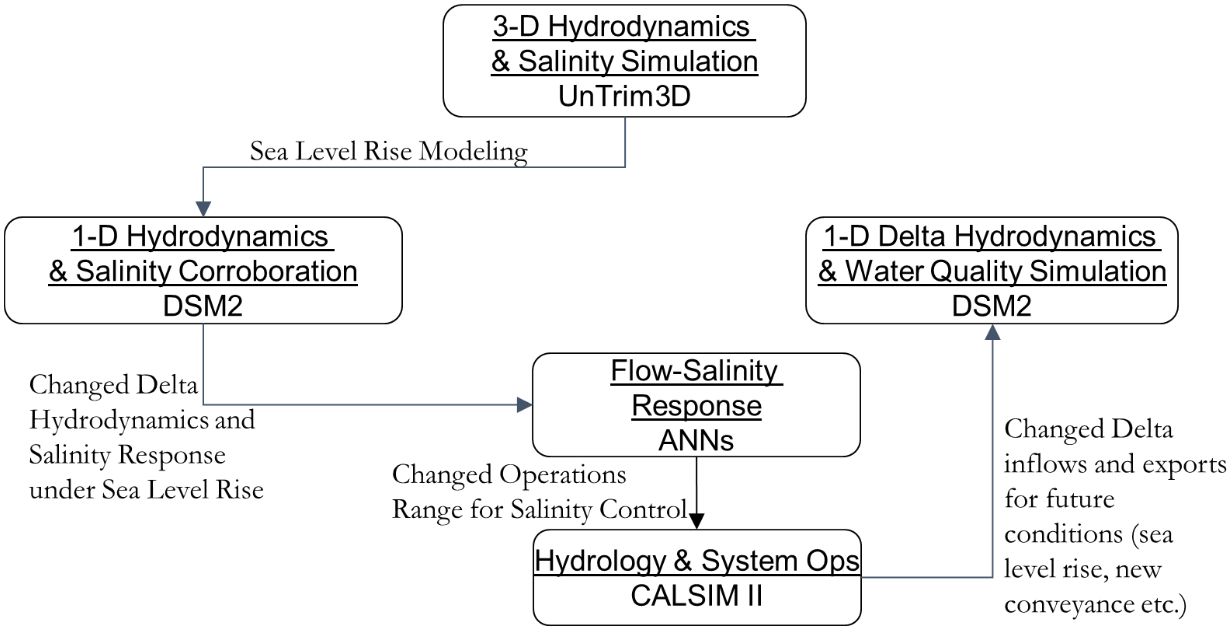


Figure 5.B.2-1: Hydrodynamics and Water Quality Modeling Approach used in the CWF BA

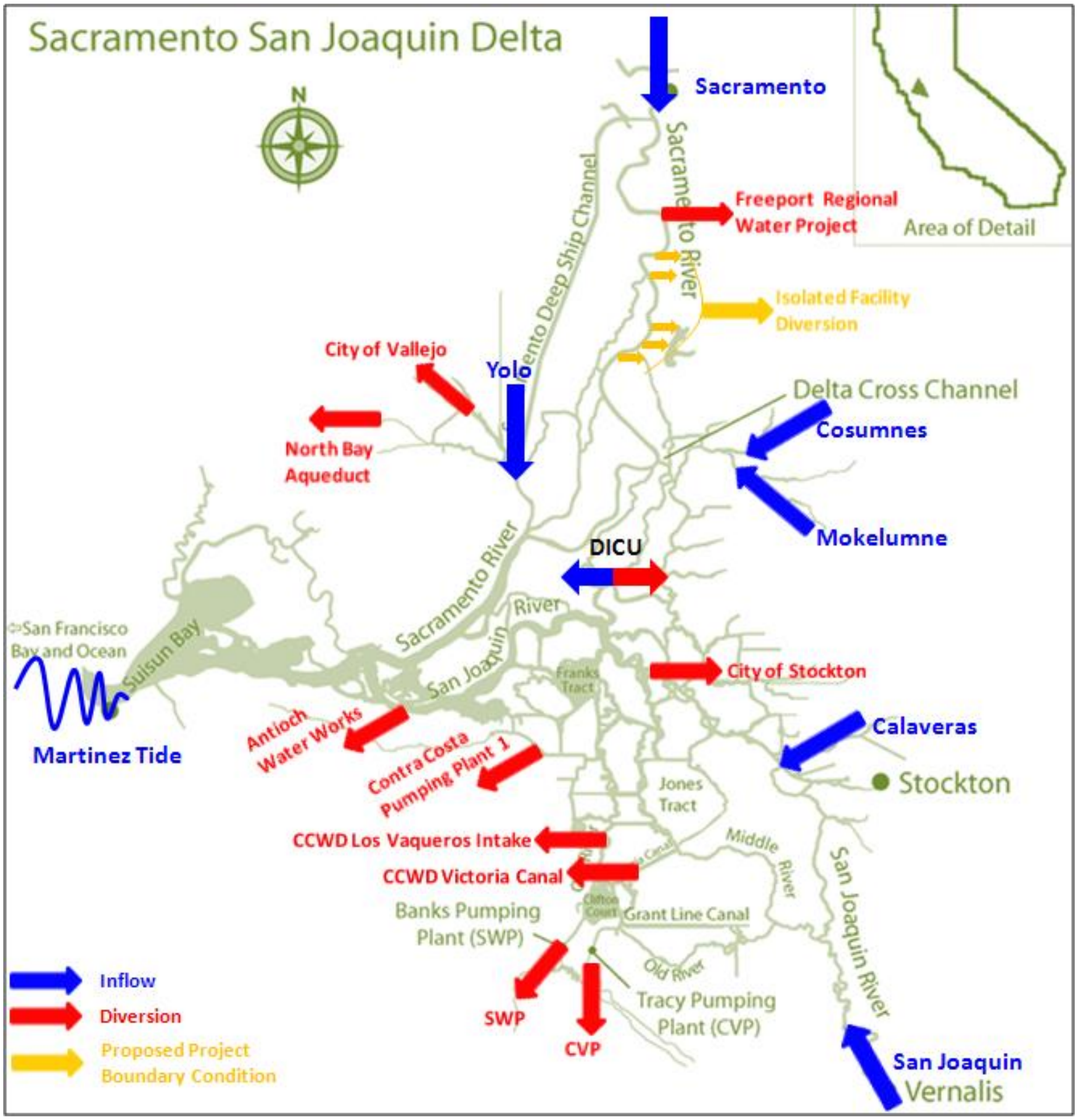


Figure 5.B.2-2: Hydrodynamic and Water Quality Boundary Conditions in DSM2

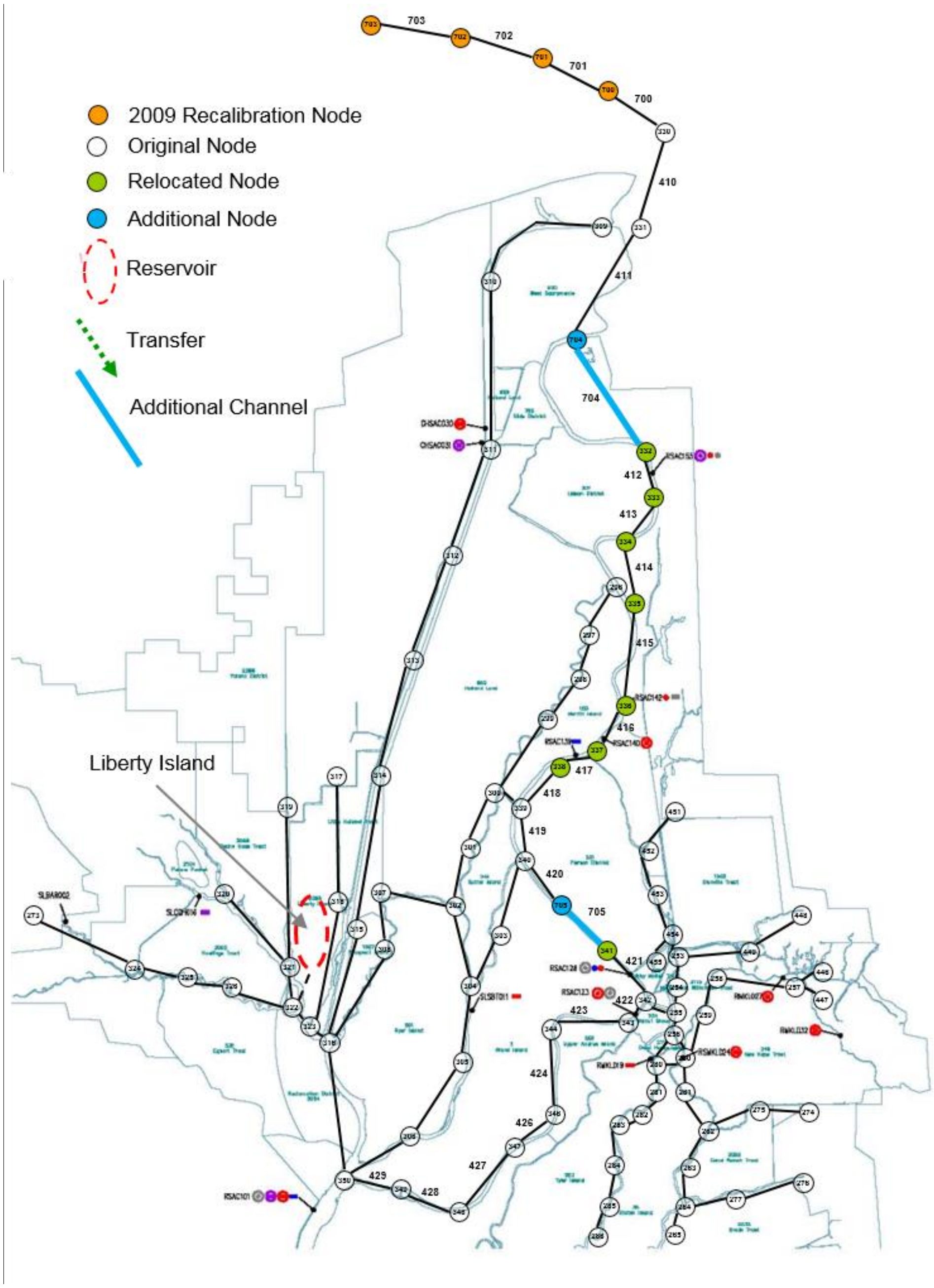


Figure 5.B.2-3: North Delta DSM2 grid used in the CWF BA Modeling

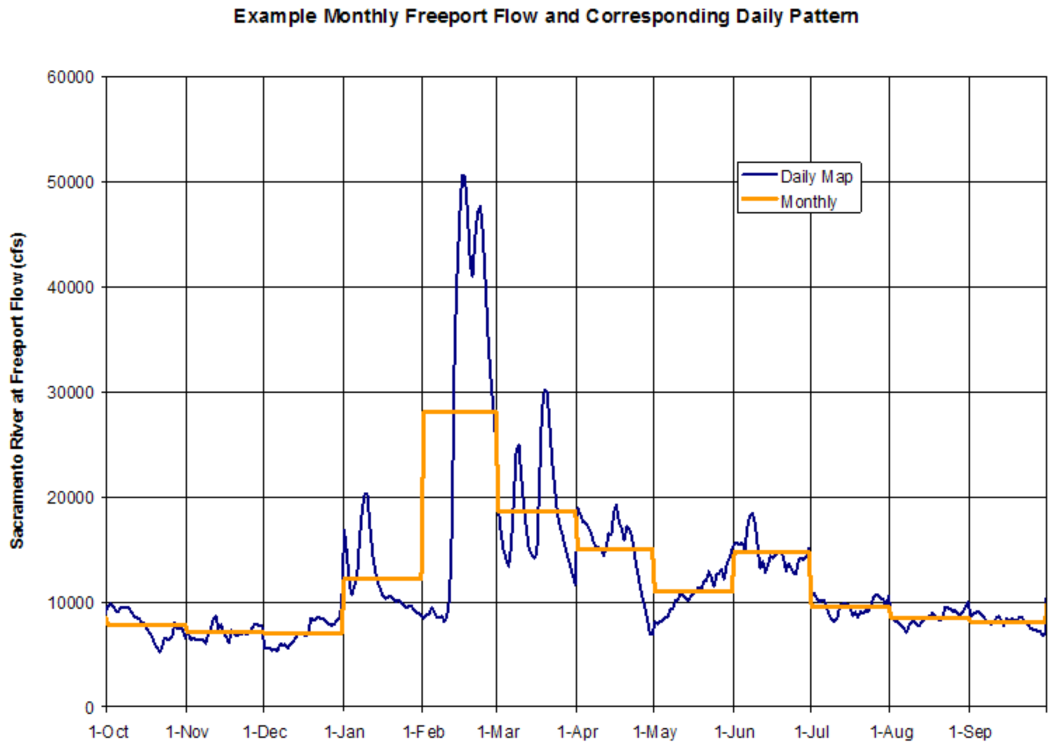


Figure 5.B.2-4: Example monthly-averaged and daily-averaged flow for Sacramento River at Freeport

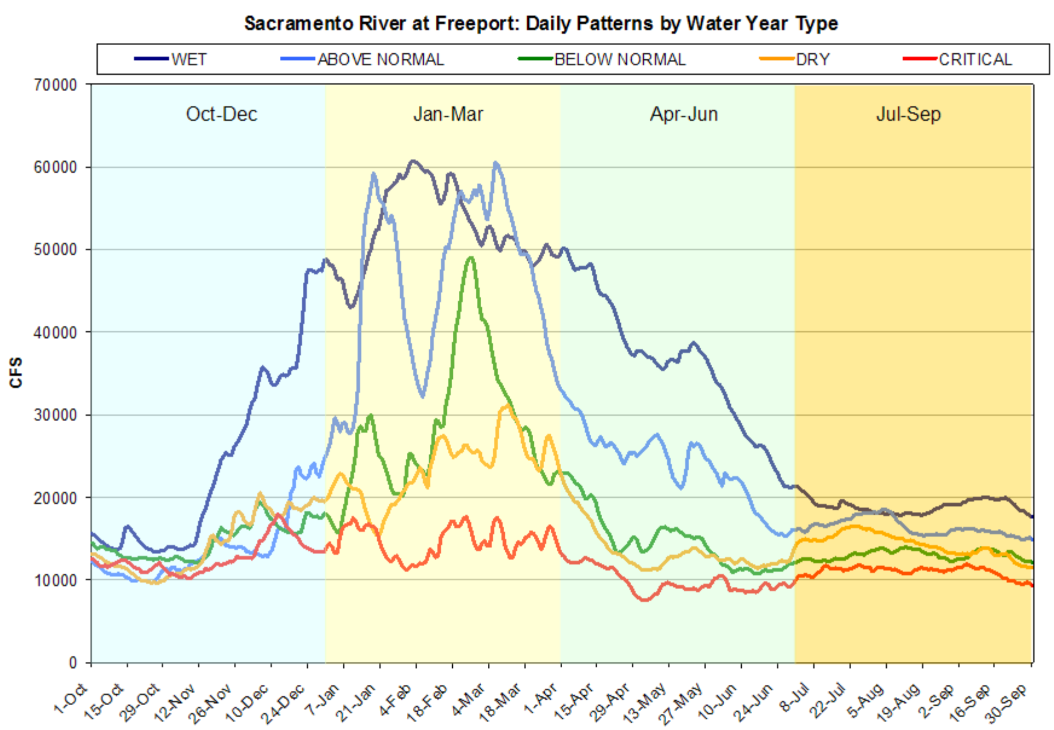


Figure 5.B.2-5: Mean daily flows by Water Year Type for Sacramento River at Freeport

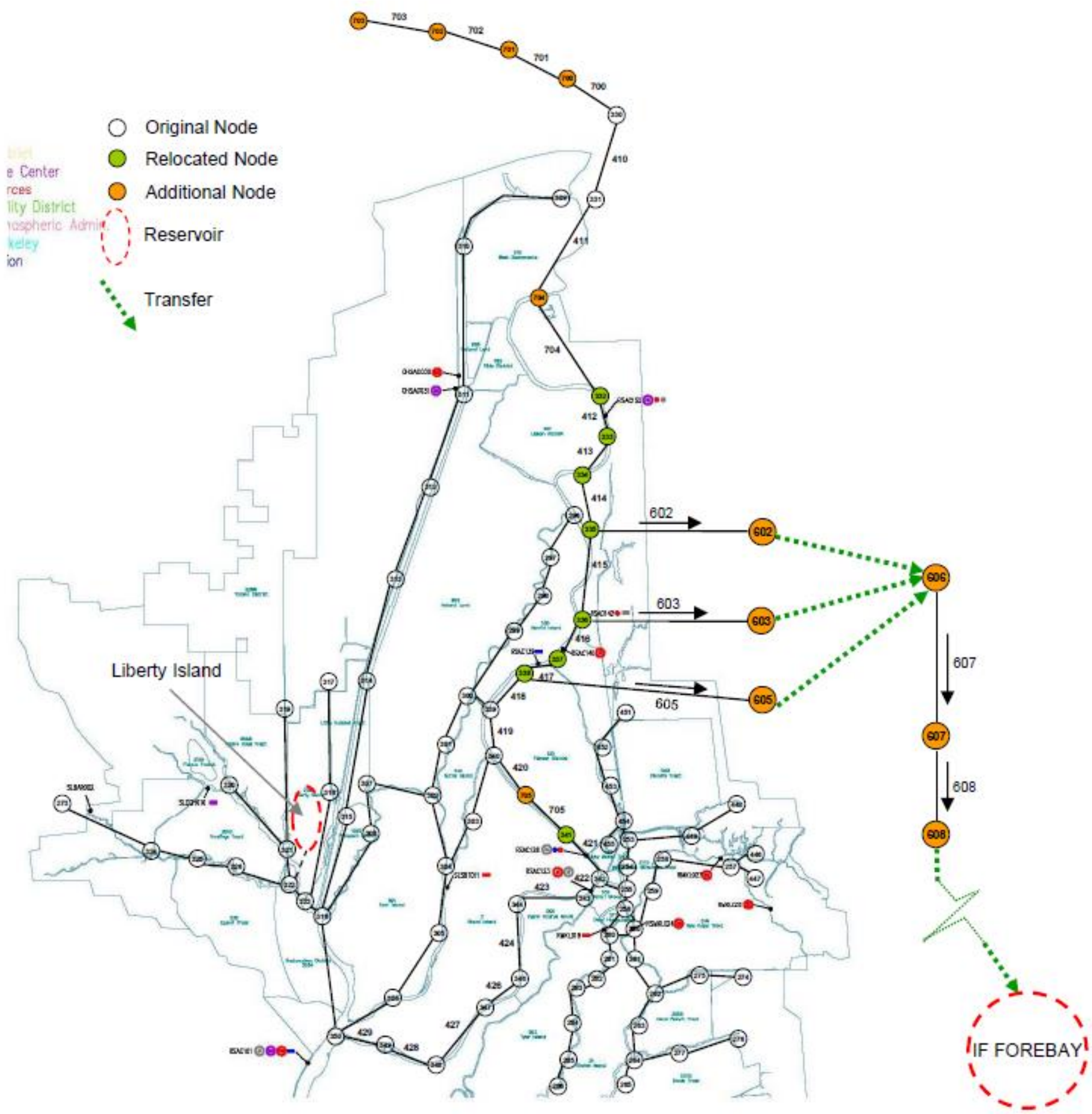


Figure 5.B.2-6: North Delta DSM2 Grid Modifications for Simulating North Delta Diversions

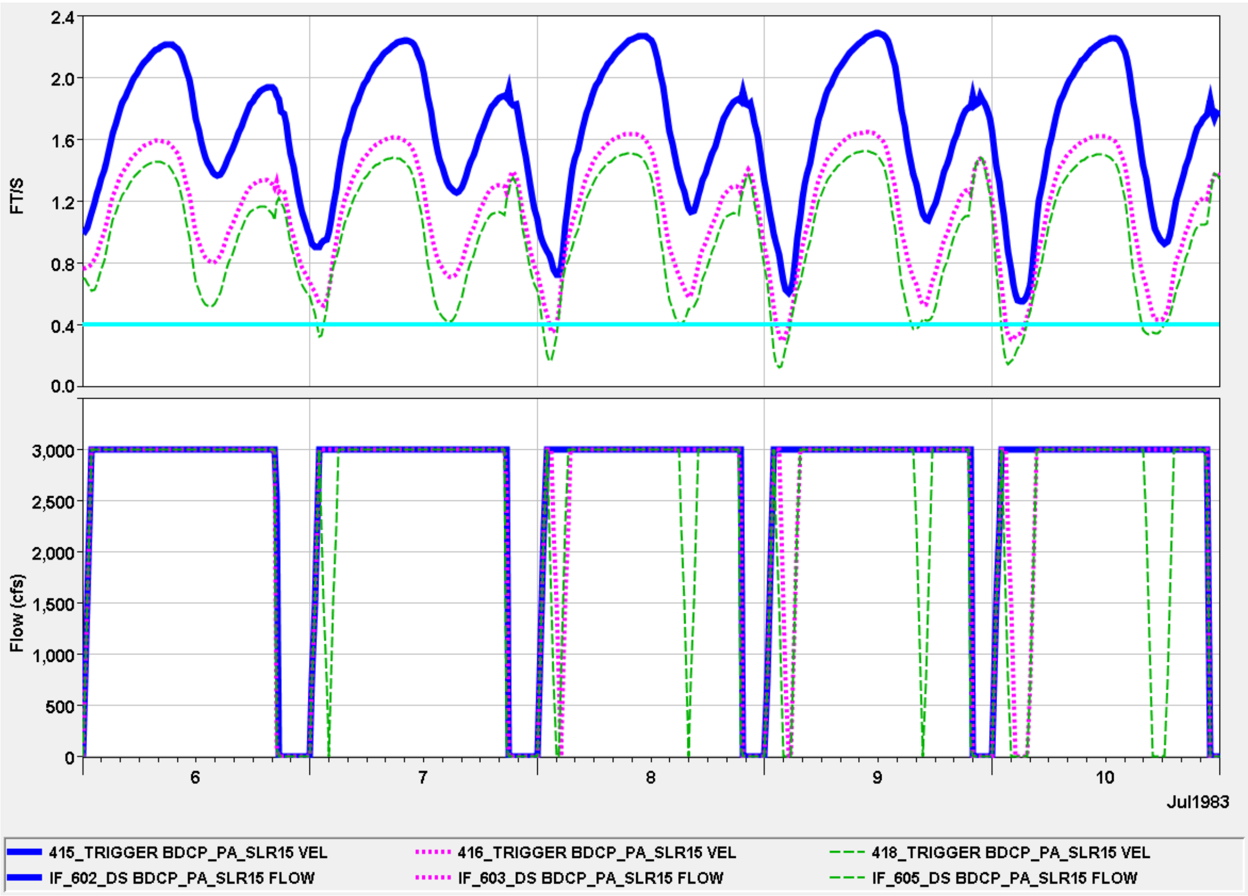


Figure 5.B.2-7: An Example of Sweeping Velocity and the Diversion at the Three Intakes Simulated in DSM2

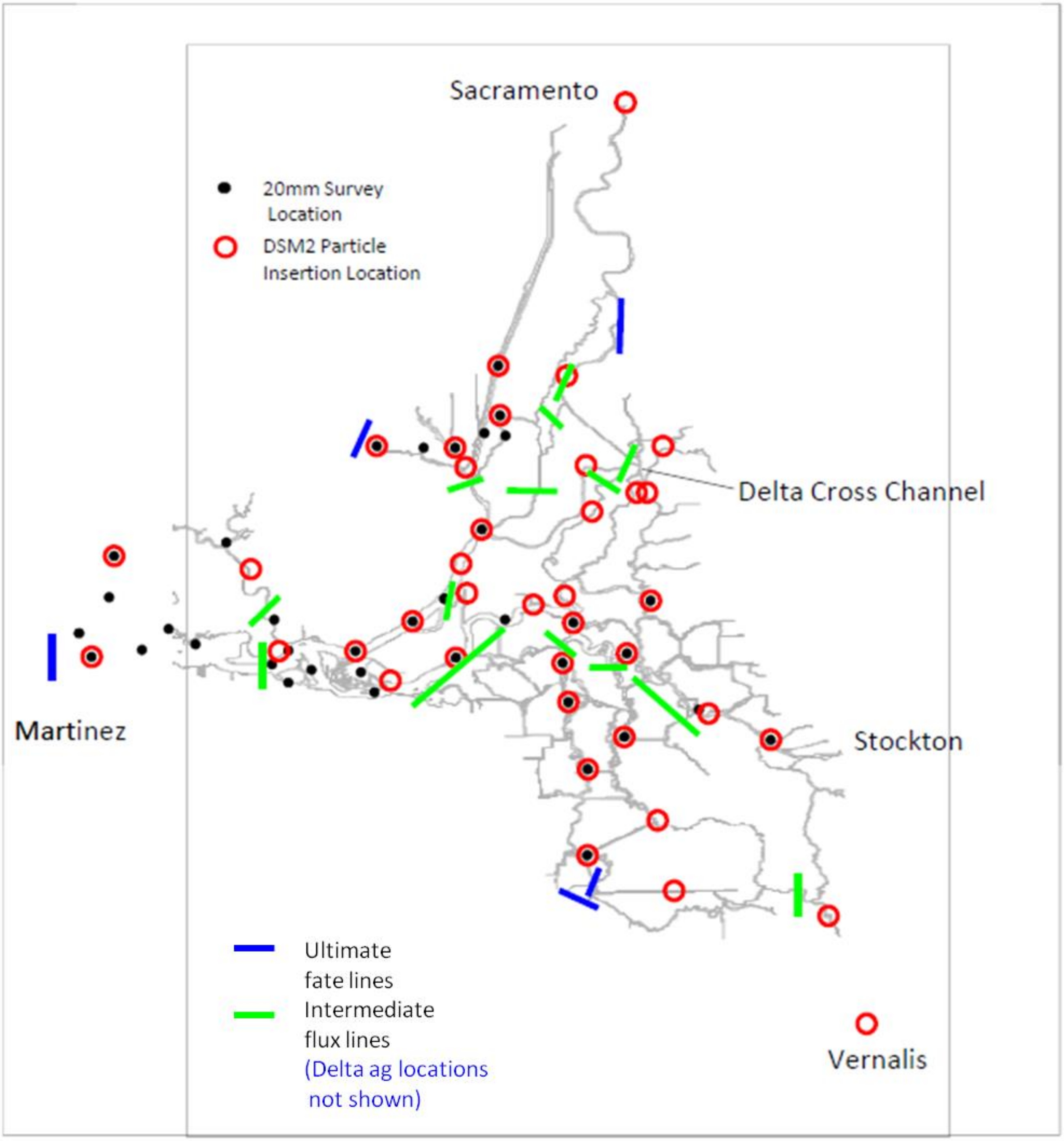


Figure 5.B.3-1: Particle release and tracking locations for larval delta smelt and longfin smelt evaluations

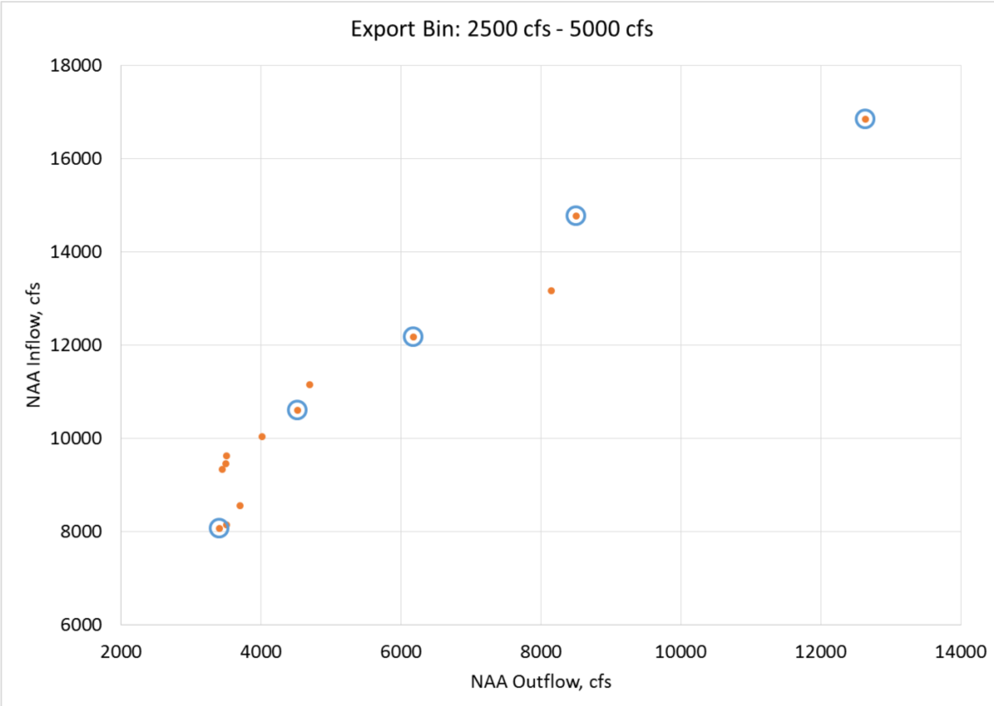


Figure 5.B.3-2: PTM period selection for evaluating residence times for exports between 2,500 and 5,000 cfs.

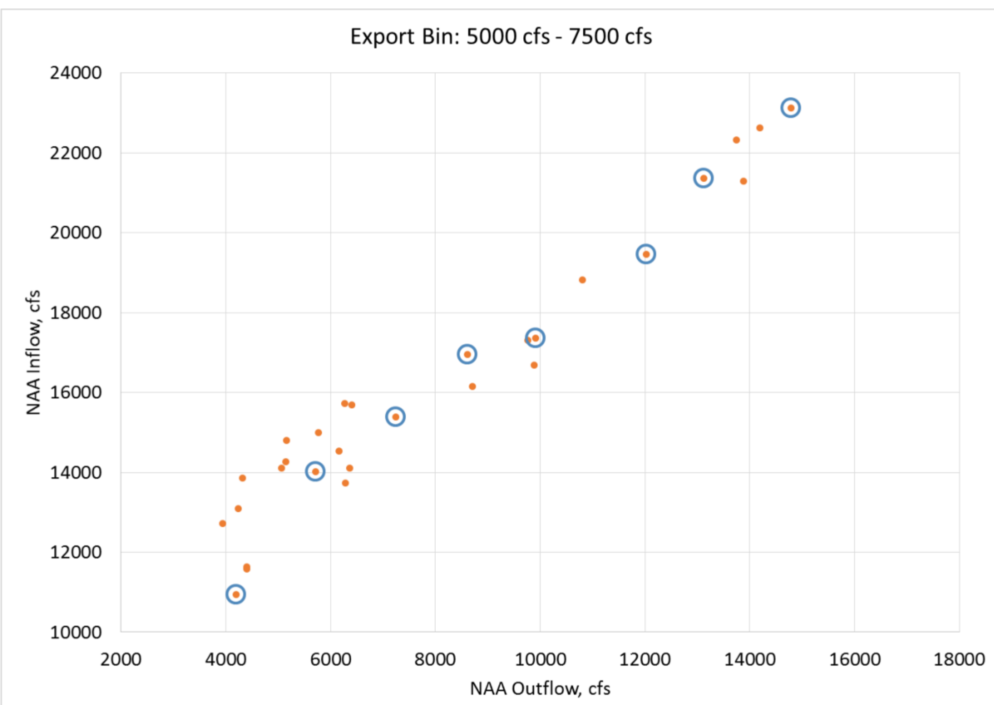


Figure 5.B.3-3: PTM period selection for evaluating residence times for exports between 5,000 and 7,500 cfs.

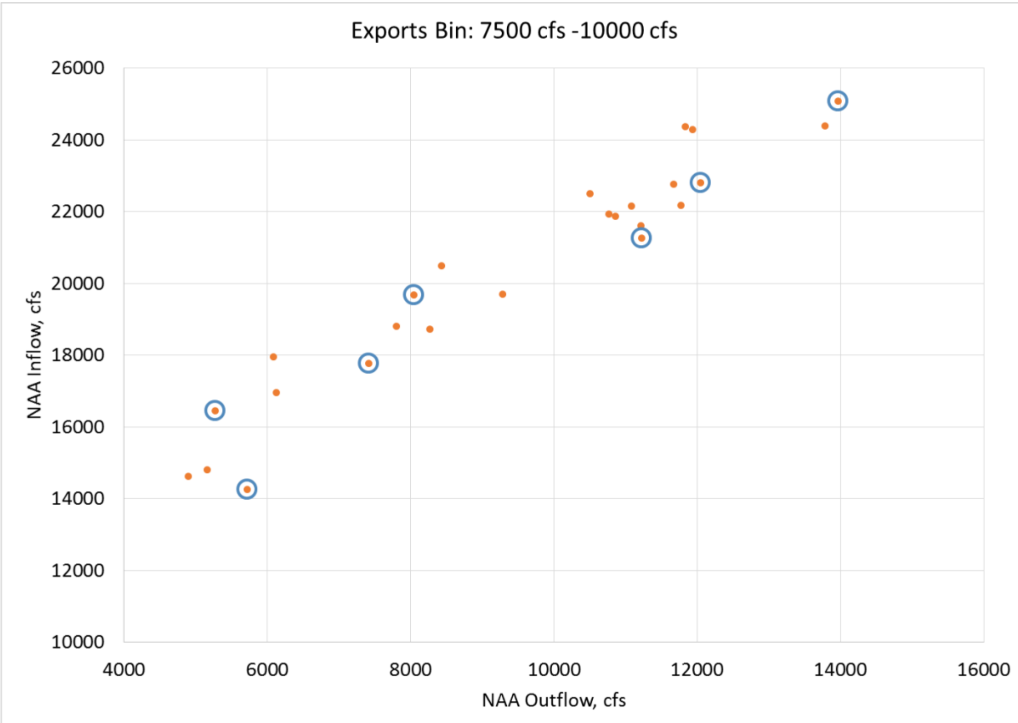


Figure 5.B.3-4: PTM period selection for evaluating residence times for exports between 7,500 and 10,000 cfs.

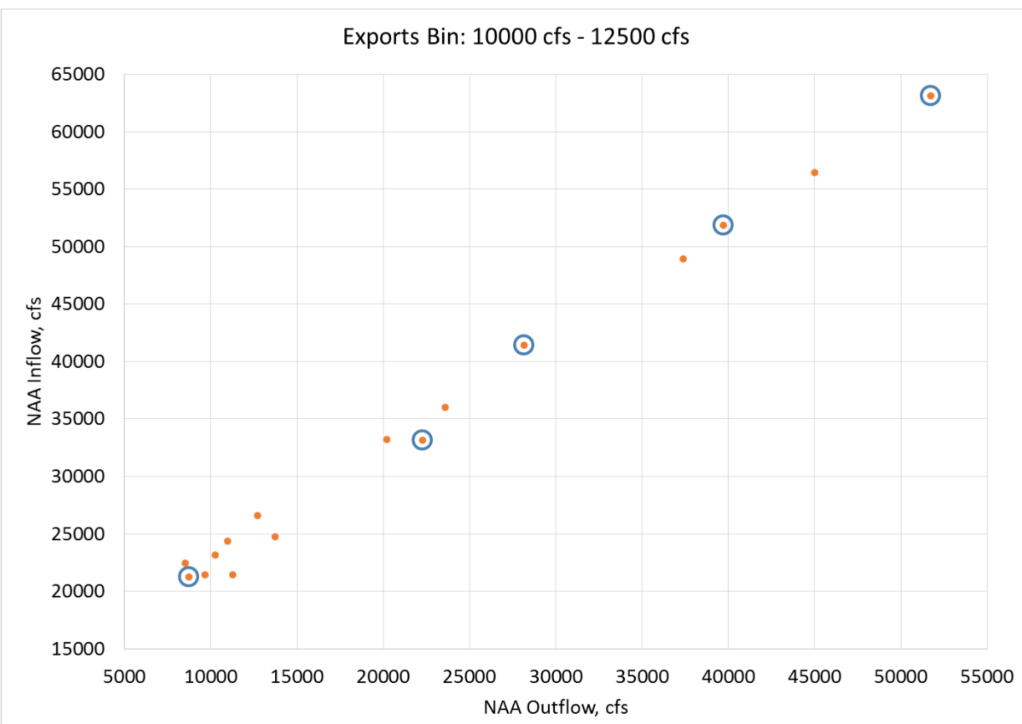


Figure 5.B.3-5: PTM period selection for evaluating residence times for exports between 7,500 and 12,500 cfs.

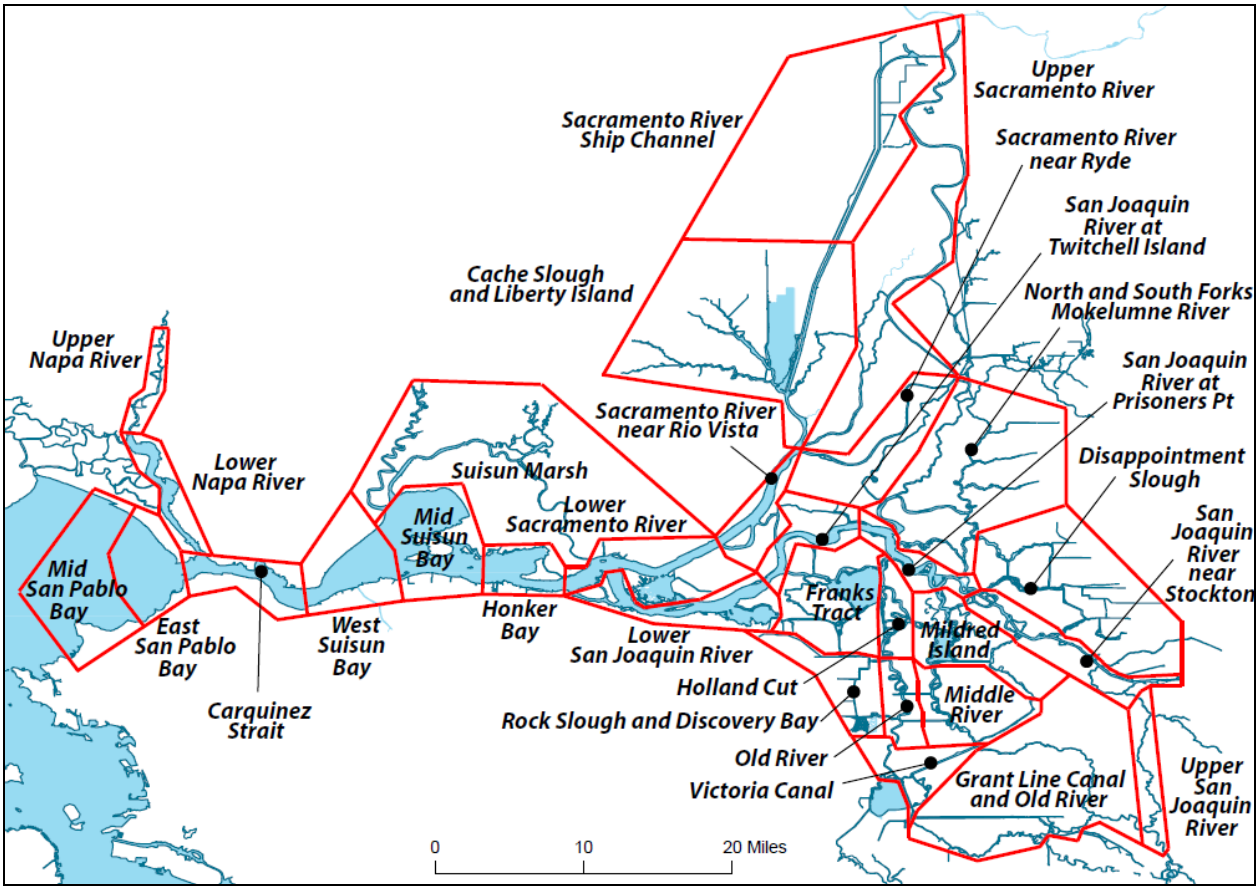


Figure 5.B.3-6. Subregions Used in the Analysis of Residence Time Based on DSM2-PTM.

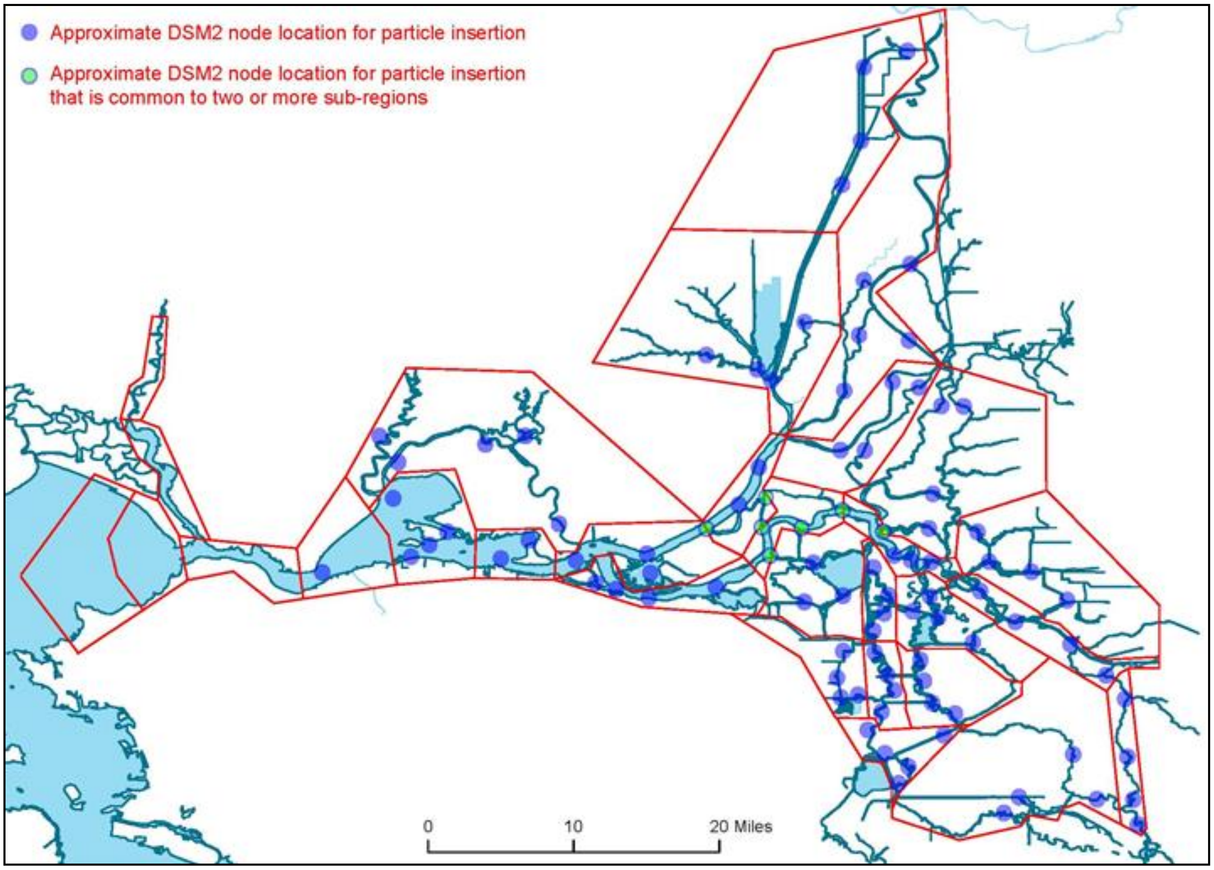


Figure 5.B.3-7. Particle Release Locations Within the Subregions Used in the Analysis of Residence Time Based on DSM2-PTM.

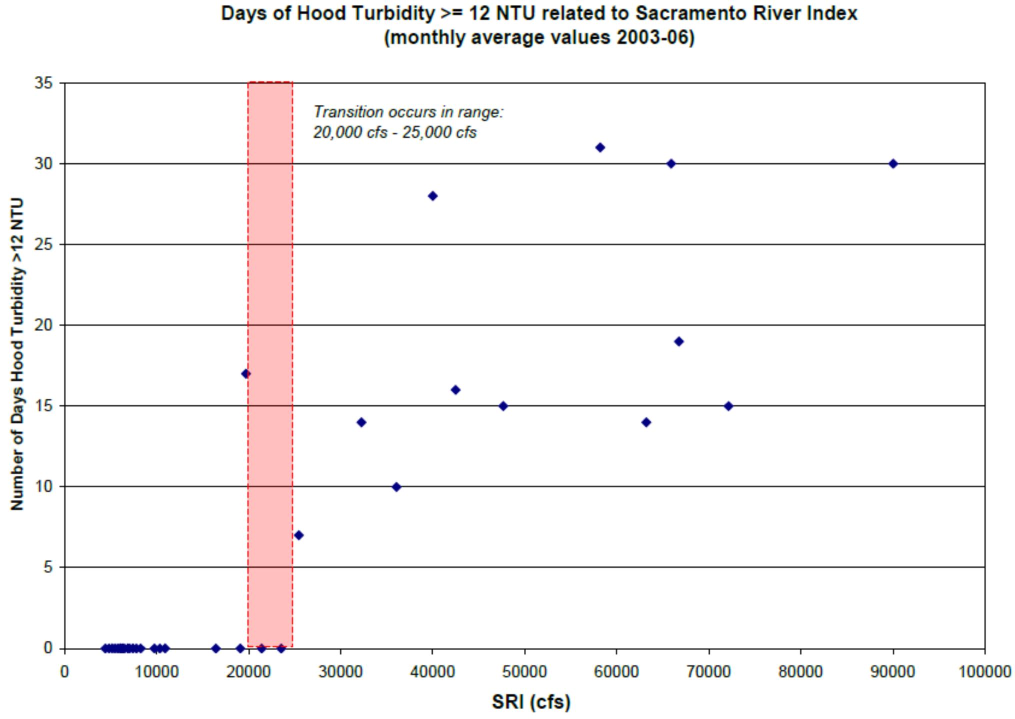


Figure 5.B.3-8: Relationship between turbidity at Hood and Sacramento River Index

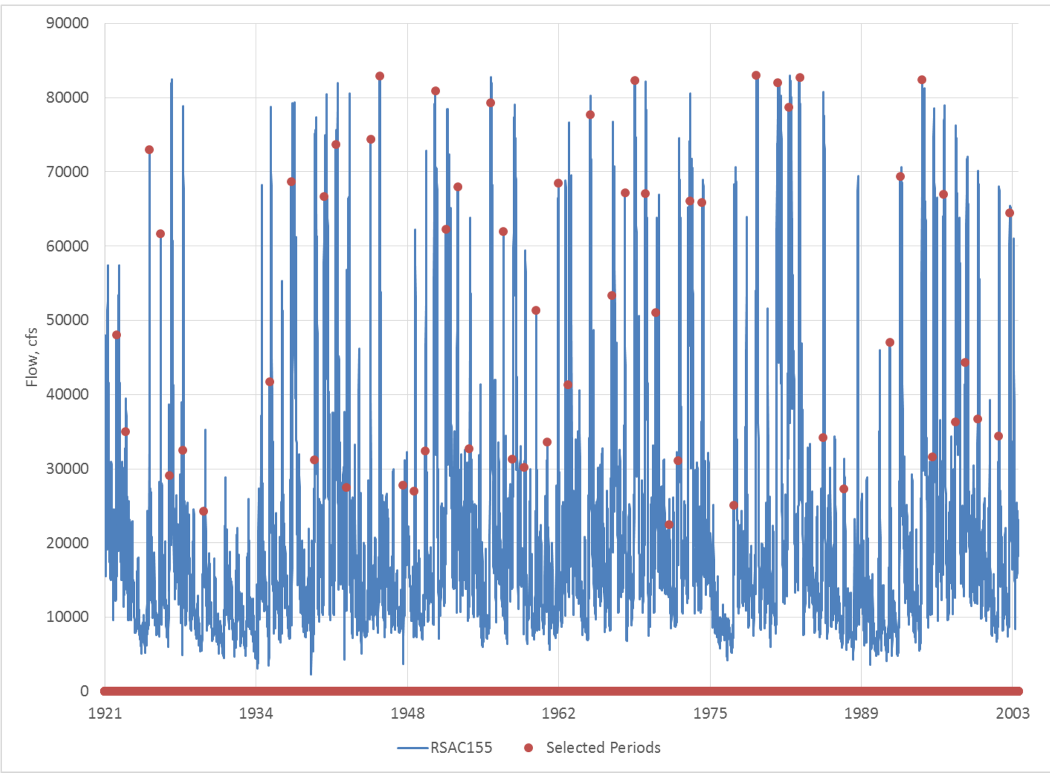


Figure 5.B.3-9: Selected particle release dates for the 82-year simulation period

Table 5.B.2-1. DSM2 HYDRO Boundary Conditions

Boundary Condition	Location/Control Structure	Typical Temporal Resolution
Tide	Martinez	15min
Delta Inflows	Sacramento River at Freeport	1day
CWF BA_ROA0ac_SLR45cm_18Mar2010	San Joaquin River at Vernalis	1day
	Eastside Streams (Mokelumne and Cosumnes Rivers)	1day
	Calaveras River	1day
	Yolo Bypass	1day
Delta Exports/Diversions	Banks Pumping Plant (SWP)	1day
	Jones Pumping Plant (CVP)	1day
	Contra Costa Water District Diversions at Rock Slough, Old River at Highway 4 and Victoria Canal	1day
	North Bay Aqueduct	1day
	City of Vallejo	1day
	Antioch Water Works	1day
	Freeport Regional Water Project	1day
	City of Stockton	1day
	Isolated Facility Diversion	1day
Delta Island Consumptive Use	Diversion	1mon
	Seepage	1mon
	Drainage	1mon
Gate Operations	Delta Cross Channel	Irregular Timeseries
	South Delta Temporary Barriers	dynamically operated on 15min
	Montezuma Salinity Control Gate	dynamically operated on 15min

Table 5.B.2-2. DSM2 QUAL Boundary Conditions Typically used in a Salinity Simulation

Boundary Condition	Location/Control Structure	Typical Temporal Resolution
Ocean Salinity	Martinez	15min
Delta Inflows	Sacramento River at Freeport	Constant
CWF BA_ROA0ac_SLR45cm_18Mar2010	San Joaquin River at Vernalis	1mon
	Eastside Streams (Mokelumne and Cosumnes Rivers)	Constant
	Calaveras River	Constant
	Yolo Bypass	Constant
Delta Island Consumptive Use	Drainage	1mon (repeated each year)
a For other water quality constituents, concentrations are required at the same locations		

Table 5.B.2-3. Correlations to Transform Baseline Martinez Stage and EC for use in DSM2 CWF BA Planning Runs with 15cm Sea Level Rise

Scenario	Martinez Stage (ft NGVD 29)		Martinez EC (µS/cm)	
	Correlation	Lag (min)	Correlation	Lag (min)
15cm SLR	Y = 1.0033*X + .47	-1	Y = 0.9954* X + 556.3	0
a Baseline Martinez stage or EC and Y = Scenario Martinez stage or EC				

Table 5.B.3-1: List of Particle Release Locations for Larval Delta and Longfin Smelt Evaluations

Location	DSM2 Node
San Joaquin River at Vernalis	1
San Joaquin River at Mossdale	7
San Joaquin River D/S of Rough and Ready Island	21
San Joaquin River at Buckley Cove	25
San Joaquin River near Medford Island	34
San Joaquin River at Potato Slough	39
San Joaquin River at Twitchell Island	41
Old River near Victoria Canal	75
Old River at Railroad Cut	86
Old River near Quimby Island	99
Middle River at Victoria Canal	113
Middle River u/s of Mildred Island	145
Grant Line Canal	174
Frank's Tract East	232

Location	DSM2 Node
Threemile Slough	240
Little Potato Slough	249
Mokelumne River d/s of Cosumnes confluence	258
South Fork Mokelumne	261
Mokelumne River d/s of Georgiana confluence	272
North Fork Mokelumne	281
Georgiana Slough	291
Miner Slough	307
Sacramento Deep Water Ship Channel	314
Cache Slough at Shag Slough	321
Cache Slough at Liberty Island	323
Lindsey slough at Barker Slough	324
Sacramento River at Sacramento	330
Sacramento River at Sutter Slough	339
Sacramento River at Ryde	344
Sacramento River near Cache Slough confluence	350
Sacramento River at Rio Vista	351
Sacramento River d/s of Decker Island	353
Sacramento River at Sherman Lake	354
Sacramento River at Port Chicago	359
Montezuma Slough at Head	418
Montezuma Slough at Suisun Slough	428
San Joaquin River d/s of Dutch Slough	461
Sacramento River at Pittsburg	465
San Joaquin River near Jersey Point	469

Table 5.B.3-2. July through November Average Delta Exports, Delta Outflow, and Delta Inflows under NAA for Years Selected for Residence Time PTM Simulations

Year	Exports	Outflow	Inflow
1922	10016	8713	21265
1928	6615	9906	17359
1929	3932	6174	12169
1930	5181	4200	10946
1934	4421	4522	10600
1940	7787	7413	17778
1941	7183	13128	21371
1944	6243	8609	16960
1961	6764	5714	14026
1962	8722	5274	16456
1964	6634	12019	19464
1966	9471	12046	22806
1968	7592	5717	14261
1974	11089	28138	41404
1976	4238	8502	14765
1980	9246	8043	19687
1981	10355	22293	33153
1983	10632	51743	63135
1984	10419	39704	51869
1986	2970	12633	16847
1990	3638	3400	8069
1997	6786	14785	23122
1998	8843	13970	25087
2000	7807	11226	21266
2001	6604	7247	15395

Table 5.B.3-3. DSM2-PTM Release Locations (Nodes) Within the Subregions Used in the Analysis of Residence Time Based on DSM2-PTM.

Subregion	DSM2 Particle Insertion Nodes
Upper Sacramento River	338, 341, 300, 303, 305
Sacramento River Ship channel	309, 310, 311, 312
Cache Slough and Liberty Island	307, 316, 322, 325
Sacramento River near Ryde	344, 288, 348, 293
North and South Forks Mokelumne River *	281, 261, 269, 251, 39
Sacramento River near Rio Vista *	351, 352, 240, 43, 353
Lower Sacramento River *	353, 354, 459, 465
Upper San Joaquin River	7, 9, 11, 13
Grant Line Canal and Old River	50, 106, 171, 60
Victoria Canal	188, 185, 72, 79, 75
Rock Slough and Discovery Bay	197, 198, 200, 202
Old River	81, 84, 86, 92
Middle River	115, 117, 120, 124
Mildred Island	142, 130, 207, 133
San Joaquin River near Stockton	16, 22, 25, 30
Disappointment Slough	241, 242, 243, 248
San Joaquin River at Prisoners Pt*	34, 35, 37, 39, 41
Holland Cut	94, 98, 100, 101
Franks Tract*	225, 216, 222, 42, 44
San Joaquin River at Twitchell Island*	41, 42, 43, 44, 240
Lower San Joaquin River	45, 46, 47, 463
Honker Bay	357, 328
Suisun Marsh	406, 418, 422, 375, 428
Mid Suisun Bay	238, 329, 358, 365
West Suisun Bay	360

Note:
*Subregions that share DSM2 particle insertion nodes with one or more sub-regions

Table 5.B.3-4. Selected particle release dates for the 82-year simulation period

Water Year	First Month with Turbidity Trigger	Date of particle release	NAA RSAC155 (cfs)
1922	Feb	2/16/1922	48019
1923	Dec	12/25/1922	35016
1924	NONE	2/1/1924	
1925	Feb	2/17/1925	72968
1926	Feb	2/21/1926	61669
1927	Dec	12/1/1926	29069
1928	Feb	2/17/1928	32496
1929	NONE	2/1/1929	
1930	Dec	12/29/1929	24325
1931	NONE	2/1/1931	
1932	NONE	2/1/1932	
1933	NONE	2/1/1933	
1934	NONE	2/1/1934	
1935	NONE	2/1/1935	
1936	Jan	1/3/1936	41767
1937	NONE	2/1/1937	
1938	Dec	12/10/1937	68715
1939	NONE	2/1/1939	
1940	Jan	1/31/1940	31182
1941	Dec	12/6/1940	66727
1942	Dec	12/29/1941	73722
1943	Dec	12/21/1942	27509
1944	NONE	2/1/1944	
1945	Feb	2/17/1945	74434
1946	Dec	12/23/1945	82931
1947	NONE	2/1/1947	
1948	Jan	1/18/1948	27782
1949	NONE	2/1/1949	27030
1950	Jan	1/18/1950	32404
1951	Dec	12/29/1950	80941
1952	Dec	12/6/1951	62325

Water Year	First Month with Turbidity Trigger	Date of particle release	NAA RSAC155 (cfs)
1953	Jan	1/3/1953	67969
1954	Jan	1/23/1954	32750
1955	NONE	2/1/1955	
1956	Dec	12/22/1955	79290
1957	Feb	2/28/1957	62023
1958	Dec	12/21/1957	31346
1959	Jan	1/16/1959	30164
1960	Feb	2/12/1960	51379
1961	Feb	2/15/1961	33663
1962	Feb	2/17/1962	68505
1963	Dec	12/21/1962	41328
1964	NONE	2/1/1964	
1965	Dec	12/24/1964	77682
1966	NONE	2/1/1966	
1967	Dec	12/9/1966	53365
1968	Feb	2/28/1968	67184
1969	Jan	1/18/1969	82362
1970	Dec	12/28/1969	67078
1971	Dec	12/6/1970	51009
1972	Feb	2/11/1972	22535
1973	Dec	12/22/1972	31138
1974	Dec	12/31/1973	66061
1975	Feb	2/16/1975	65882
1976	NONE	2/1/1976	
1977	NONE	2/1/1977	
1978	Dec	12/20/1977	25108
1979	NONE	2/1/1979	
1980	Jan	1/16/1980	82985
1981	NONE	2/1/1981	
1982	Dec	12/25/1981	82043
1983	Dec	12/24/1982	78689
1984	Dec	12/20/1983	82747

Water Year	First Month with Turbidity Trigger	Date of particle release	NAA RSAC155 (cfs)
1985	NONE	2/1/1985	
1986	Jan	1/20/1986	34238
1987	NONE	2/1/1987	
1988	Dec	12/13/1987	27316
1989	NONE	2/1/1989	
1990	NONE	2/1/1990	
1991	NONE	2/1/1991	
1992	Feb	2/17/1992	47040
1993	Jan	1/24/1993	69396
1994	NONE	2/1/1994	
1995	Jan	1/13/1995	82395
1996	Dec	12/18/1995	31567
1997	Dec	12/31/1996	67015
1998	Jan	1/15/1998	36299
1999	Dec	12/9/1998	44379
2000	Jan	1/27/2000	36745
2001	NONE	2/1/2001	
2002	Dec	12/25/2001	34382
2003	Dec	12/20/2002	64492

Table 5.B.4-1. DSM2 Assumptions

	No Action Alternative Assumption	Proposed Action Assumption
Period of simulation	82 years (1922-2003)[a,b]	Same
REGIONAL SUPPLIES		
Boundary flows	Monthly timeseries from CalSim II output (alternatives provide different flows and exports)[c]	Same
REGIONAL DEMANDS AND CONTRACTS		
Ag flows (DICU)	2005 Level, DWR Bulletin 160-98[d]	Same
TIDAL BOUNDARY		
Martinez stage	15-minute adjusted astronomical tide modified to account for the 15 cm sea level rise at Year 2030[a]	Same
WATER QUALITY		
Vernalis EC	Monthly time series from CalSim II output[e]	Same
Agricultural Return EC	Municipal Water Quality Investigation Program analysis	Same
Martinez EC	Monthly net Delta Outflow from CalSim output & G-model modified to account for the 15 cm sea level rise at Year 2030[f]	Same
FACILITIES		
Contra Costa Water District Delta Intakes	Rock Slough Pumping Plant, Old River at Highway 4 Intake and Alternate Improvement Project Intake on Victoria Canal	Same
South Delta Barriers	Temporary Barriers Program – agricultural barriers and Head of Old River Barrier	Temporary Agricultural Barriers Same as NAA; Permanent HOR gate
North Delta Diversion Intakes	None	Three 3,000 cfs capacity north Delta diversion intakes (total maximum diversion capacity of 9,000 cfs)

SPECIFIC PROJECTS		
Water Supply Intake Projects		
Freeport Regional Water Project	Monthly output from CalSim II	Same
Stockton Delta Water Supply Project	Monthly output from CalSim II	Same
Antioch Water Works	Monthly output from CalSim II	Same
Sanitary and Agricultural Discharge Projects		
Veale Tract Drainage Relocation	The Veale Tract Water Quality Improvement Project, funded by CALFED, relocates the agricultural drainage outlet was relocated from Rock Slough channel to the southern end of Veale Tract, on Indian Slough[g]	Same
OPERATIONS CRITERIA		
Delta Cross Channel	Monthly time series of number of days open from CalSim II output	Same
Clifton Court Forebay	Priority 3, gate operations synchronized with incoming tide to minimize impacts to low water levels in nearby channels	Same
South Delta barriers	Temporary Barriers Project operated based on San Joaquin River flow time series from CalSim II output; HORB is assumed only installed[h] Sep 16 – Nov 30; Agricultural barriers on Old and Middle Rivers are assumed to be installed starting from May 16 and on Grant Line Canal from June 1; All three barriers are allowed to be operated until November 30; May 16 to May 31; the tidal gates are assumed to be tied open for the barriers on Old and Middle Rivers[i].	Same for Temporary Agricultural Barriers; HOR gate Operations assumptions (% OPEN) Oct 50%, Nov 100%, Dec 100%, Jan 50%, Feb - Jun 15th 50%, Jun 16-30 100%, Jul - Sep 100% ; HOR gate will be open 100% whenever flows are greater than 10,000 cfs at Vernalis.; Oct-Nov: Before the D-1641 pulse = HOR gate open, During the D-1641 pulse = for 2 weeks HOR gate closed; After D-1641 pulse: HORB open 50% for 2 weeks
North Delta Diversion Intakes	None	Proposed north Delta diversion intakes are operated with priority from north to south. Maximum of 3,000 cfs is withdrawn at each intake while meeting velocity of 0.4 fps downstream. Daily diversion volume equivalent to CALSIM II output

Notes:

a A new adjusted astronomical tide for use in DSM2 planning studies has been developed by DWR's Bay Delta Office Modeling Support Branch Delta Modeling Section in cooperation with the Common Assumptions workgroup. This tide is based on a more extensive observed dataset and covers the entire 82-year period of record.

b The 16-year period of record is the simulation period for which DSM2 has been commonly used for impacts analysis in many previous projects, and includes varied water year types.

c Although monthly CalSim output was used as the DSM2-HYDRO input, the Sacramento and San Joaquin rivers were interpolated to daily values in order to smooth the transition from high to low and low to high flows. DSM2 then uses the daily flow values along with a 15-minute adjusted astronomical tide to simulate effect of the spring and neap tides.

d The Delta Island Consumptive Use (DICU) model is used to calculate diversions and return flows for all Delta islands based on the level of development assumed. The nominal 2005 Delta region hydrology land-use was determined by interpolation between the 1995 and projected 2020 land-use assumptions associated with Bulletin 160-98.

e CalSim II calculates monthly EC for the San Joaquin River, which was then converted to daily EC using the monthly EC and flow for the San Joaquin River. Fixed concentrations of 150, 175, and 125 µmhos/cm were assumed for the Sacramento River, Yolo Bypass, and eastside streams, respectively.

f Net Delta outflow based on the CalSim II flows was used with an updated G-model to calculate Martinez EC. Under changed climate conditions Martinez EC is modified to account for the sea level rise at Year 2030 (15 cm).

g Information was obtained based on the information from the draft final "Delta Region Drinking Water Quality Management Plan" dated June 2005 prepared under the CALFED Water Quality Program and a presentation by David Briggs at SWRCB public workshop for periodic review. The presentation "Compliance location at Contra Costa Canal at Pumping Plant #1 – Addressing Local Degradation" notes that the Veale Tract drainage relocation project will be operational in June 2005. The DICU drainage currently simulated at node 204 is moved to node 202 in DSM2.

h Based on the FWS Delta Smelt BiOp Action 5, Head of Old River Barrier (HORB) is assumed to be not installed in April or May; therefore HORB is only installed in the Fall as shown.

I Based on the FWS Delta Smelt BiOp Action 5 and the project description provided in the page 119.

Table 5.B.4-2 Head of Old River Operable Barrier Operations Criteria if San Joaquin River Flows at Vernalis are Equal To or Less Than 10,000 cfs

Month	Head of Old River Gate Operations/Modeling assumptions Open %[a]
Oct[b]	50% (except during the pulse)
Nov[b]	100% (except during the post-pulse period)
Dec	100%
Jan[c]	50%
Feb	50%
Mar	50%
April	50%
May	50%
Jun 1-15	50%
Jun 16-30	100%
Jul	100%
Aug	100%
Sep	100%

[a] % of time the HOR gate is open. Agricultural barriers are in and operated consistent with current practices. HOR gate will be open 100% whenever flows are greater than 10,000 cfs at Vernalis.

[b] Head of Old River Barrier operation is triggered based upon State Water Board D-1641 pulse trigger. For modeling assumptions only, two weeks before the D-1641 pulse, it is assumed that the Head of Old River Barrier will be open 50%.
During the D-1641 pulse (assumed to occur October 16-31 in the modeling), it is assumed the HOR gate will be closed.
For two weeks following the D-1641 pulse, it was assumed that the HOR gate will be open 50%. Exact timing of the action will be based on hydrologic conditions.

[c] The HOR gate becomes operational at 50% when salmon fry are migrating (based on real time monitoring). This generally occurs when flood flow releases are being made. For the purposes of modeling, it was assumed that salmon fry are migrating starting on January 1.

Table 5.B.5-1. Sacramento River downstream of North Delta Intakes, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	15,264	9,031	-6,232	-41%	21,939	14,789	-7,151	-33%	47,659	41,440	-6,219	-13%	63,571	54,532	-9,040	-14%	69,664	60,643	-9,021	-13%	62,797	54,849	-7,948	-13%
20%	13,924	8,220	-5,704	-41%	18,798	12,335	-6,463	-34%	32,942	29,630	-3,312	-10%	53,862	45,425	-8,437	-16%	61,808	53,237	-8,572	-14%	50,029	41,403	-8,626	-17%
30%	13,389	7,946	-5,443	-41%	17,962	11,011	-6,952	-39%	20,838	20,063	-774	-4%	37,452	33,456	-3,996	-11%	48,985	43,634	-5,351	-11%	37,698	30,110	-7,588	-20%
40%	12,006	7,848	-4,157	-35%	16,696	10,176	-6,519	-39%	18,034	17,054	-979	-5%	24,862	20,742	-4,120	-17%	42,074	36,110	-5,963	-14%	30,099	22,460	-7,639	-25%
50%	11,005	7,789	-3,215	-29%	15,049	8,333	-6,716	-45%	15,709	14,234	-1,475	-9%	20,733	19,440	-1,293	-6%	32,257	24,807	-7,451	-23%	24,265	18,646	-5,620	-23%
60%	9,291	7,731	-1,560	-17%	13,041	7,798	-5,243	-40%	15,071	12,995	-2,076	-14%	18,094	16,326	-1,769	-10%	25,236	19,695	-5,542	-22%	21,035	16,434	-4,602	-22%
70%	8,316	7,683	-632	-8%	10,023	7,745	-2,279	-23%	13,526	12,686	-839	-6%	14,878	13,953	-925	-6%	19,487	16,809	-2,678	-14%	18,520	14,490	-4,031	-22%
80%	7,826	7,544	-282	-4%	8,537	7,657	-880	-10%	10,616	10,171	-445	-4%	13,472	12,620	-852	-6%	16,171	14,486	-1,685	-10%	15,115	12,987	-2,128	-14%
90%	6,347	6,285	-62	-1%	7,336	7,351	15	0%	9,306	9,012	-294	-3%	11,724	10,981	-742	-6%	13,989	12,932	-1,057	-8%	11,480	10,714	-766	-7%
Long Term Full Simulation Period[b]	11,059	8,014	-3,046	-28%	15,422	11,197	-4,225	-27%	22,393	20,419	-1,975	-9%	30,274	26,575	-3,699	-12%	37,384	32,218	-5,166	-14%	31,391	26,261	-5,130	-16%
Water Year Types[c]																								
Wet (32%)	14,279	8,401	-5,878	-41%	20,276	14,007	-6,269	-31%	25,167	22,865	-2,302	-9%	31,735	28,094	-3,641	-11%	56,785	48,947	-7,838	-14%	48,095	40,255	-7,841	-16%
Above Normal (16%)	12,728	8,507	-4,221	-33%	17,901	10,436	-7,465	-42%	22,338	20,156	-2,181	-10%	28,716	25,318	-3,399	-12%	46,296	39,626	-6,670	-14%	41,195	34,485	-6,710	-16%
Below Normal (13%)	11,316	9,359	-1,958	-17%	12,090	8,745	-3,345	-28%	20,224	18,638	-1,586	-8%	28,488	24,964	-3,523	-12%	29,910	25,860	-4,050	-14%	18,973	15,469	-3,504	-18%
Dry (24%)	8,583	7,682	-901	-10%	14,271	11,839	-2,432	-17%	26,058	23,672	-2,386	-9%	33,686	28,998	-4,688	-14%	23,340	19,996	-3,343	-14%	21,415	17,381	-4,034	-19%
Critical (15%)	6,167	5,959	-208	-3%	7,192	7,113	-79	-1%	12,326	11,614	-712	-6%	24,750	22,084	-2,665	-11%	15,949	14,142	-1,807	-11%	12,591	11,728	-863	-7%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	46,702	43,606	-3,096	-7%	38,278	33,100	-5,178	-14%	20,117	13,880	-6,237	-31%	24,035	15,804	-8,231	-34%	17,199	10,643	-6,556	-38%	28,766	21,447	-7,319	-25%
20%	32,263	29,088	-3,175	-10%	25,716	24,519	-1,197	-5%	15,986	12,854	-3,132	-20%	23,530	14,277	-9,253	-39%	16,842	10,486	-6,356	-38%	28,044	20,913	-7,131	-25%
30%	23,260	21,909	-1,351	-6%	16,390	15,395	-996	-6%	13,757	12,349	-1,407	-10%	22,439	13,715	-8,725	-39%	16,281	10,324	-5,957	-37%	22,138	17,184	-4,954	-22%
40%	20,285	18,749	-1,537	-8%	13,472	12,260	-1,212	-9%	13,091	12,000	-1,091	-8%	20,407	13,112	-7,296	-36%	15,755	9,986	-5,769	-37%	21,295	13,987	-7,309	-34%
50%	15,961	15,351	-610	-4%	12,387	11,544	-843	-7%	12,855	11,485	-1,370	-11%	18,594	12,562	-6,032	-32%	14,870	9,504	-5,366	-36%	14,424	6,789	-7,634	-53%
60%	13,113	12,587	-526	-4%	11,415	10,934	-481	-4%	12,281	11,106	-1,175	-10%	17,779	11,918	-5,861	-33%	13,812	9,032	-4,781	-35%	11,826	6,665	-5,162	-44%
70%	11,569	11,306	-263	-2%	10,809	10,398	-411	-4%	11,828	10,643	-1,184	-10%	16,682	11,111	-5,571	-33%	11,473	8,605	-2,868	-25%	9,939	6,607	-3,332	-34%
80%	10,855	10,802	-53	0%	9,947	9,846	-100	-1%	10,885	10,196	-690	-6%	14,982	10,504	-4,478	-30%	9,670	8,343	-1,327	-14%	8,396	6,522	-1,874	-22%
90%	9,926	9,795	-131	-1%	8,874	8,677	-196	-2%	9,924	8,365	-1,559	-16%	11,593	8,998	-2,595	-22%	8,111	7,872	-240	-3%	6,932	6,398	-534	-8%
Long Term Full Simulation Period[b]	22,169	20,937	-1,233	-6%	17,865	16,531	-1,333	-7%	14,670	12,383	-2,287	-16%	18,592	12,474	-6,118	-33%	13,679	9,395	-4,284	-31%	17,195	12,212	-4,983	-29%
Water Year Types[c]																								
Wet (32%)	35,456	32,835	-2,621	-7%	29,825	26,743	-3,082	-10%	20,247	15,361	-4,886	-24%	20,212	13,589	-6,623	-33%	16,017	9,292	-6,724	-42%	27,616	20,684	-6,932	-25%
Above Normal (16%)	24,362	23,222	-1,140	-5%	16,872	15,600	-1,272	-8%	13,470	11,449	-2,022	-15%	22,560	13,816	-8,744	-39%	16,836	9,944	-6,892	-41%	21,059	14,072	-6,987	-33%
Below Normal (13%)	14,100	13,626	-473	-3%	12,511	12,067	-443	-4%	12,695	11,880	-815	-6%	21,747	13,644	-8,103	-37%	15,593	9,008	-6,585	-42%	12,036	6,535	-5,501	-46%
Dry (24%)	15,004	14,451	-553	-4%	11,702	11,430	-272	-2%	12,534	11,432	-1,101	-9%	16,739	11,481	-5,257	-31%	10,620	9,806	-814	-8%	9,999	6,582	-3,418	-34%
Critical (15%)	10,344	10,191	-152	-1%	8,206	8,011	-194	-2%	9,259	8,989	-270	-3%	10,982	9,189	-1,794	-16%	8,541	8,694	153	2%	7,156	6,433	-723	-10%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-1. Monthly Flow Ranges For Sacramento River downstream of North Delta Intakes, All Years

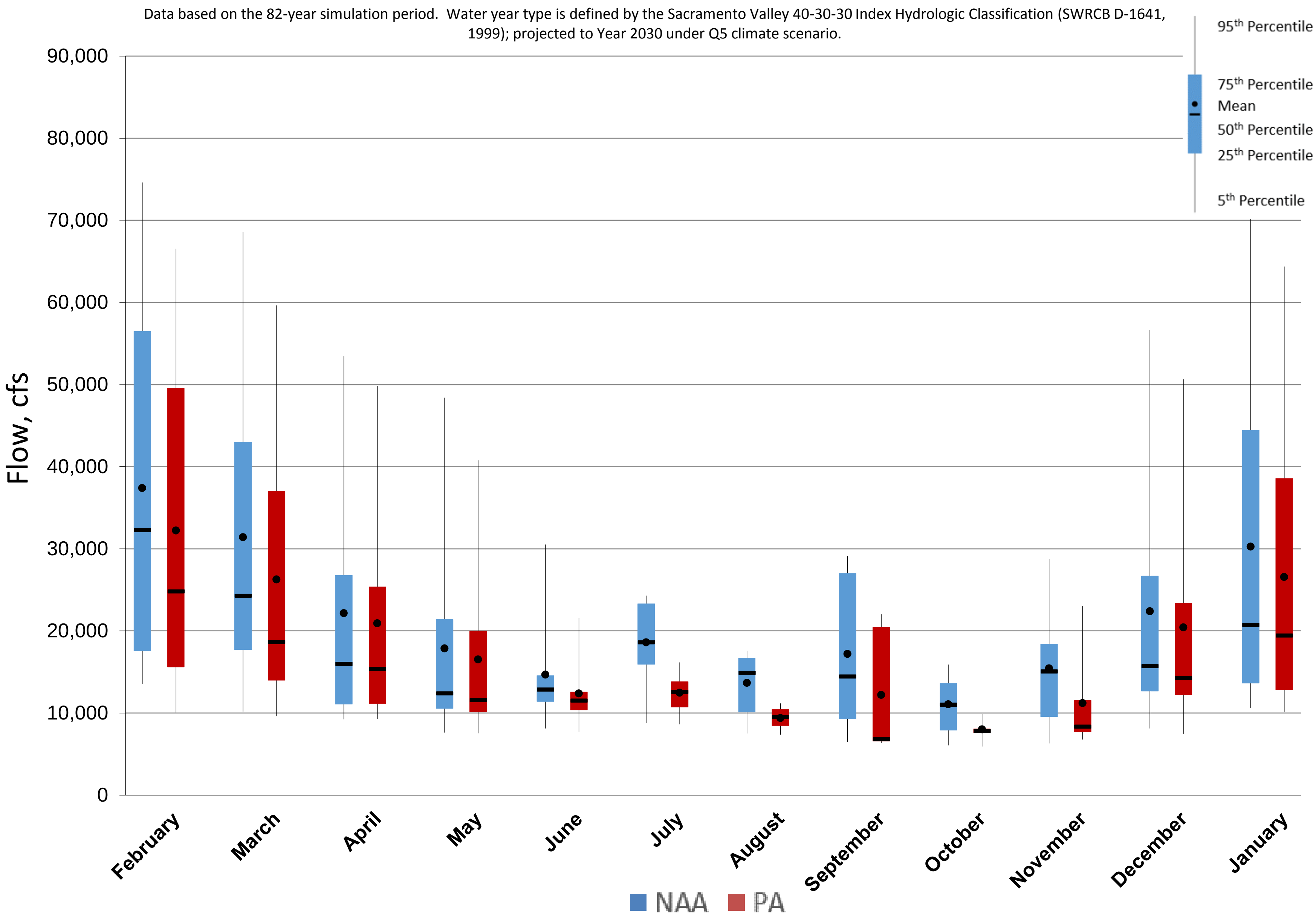


Figure 5.B.5-1-2. Monthly Flow Ranges For Sacramento River downstream of North Delta Intakes, Wet Years

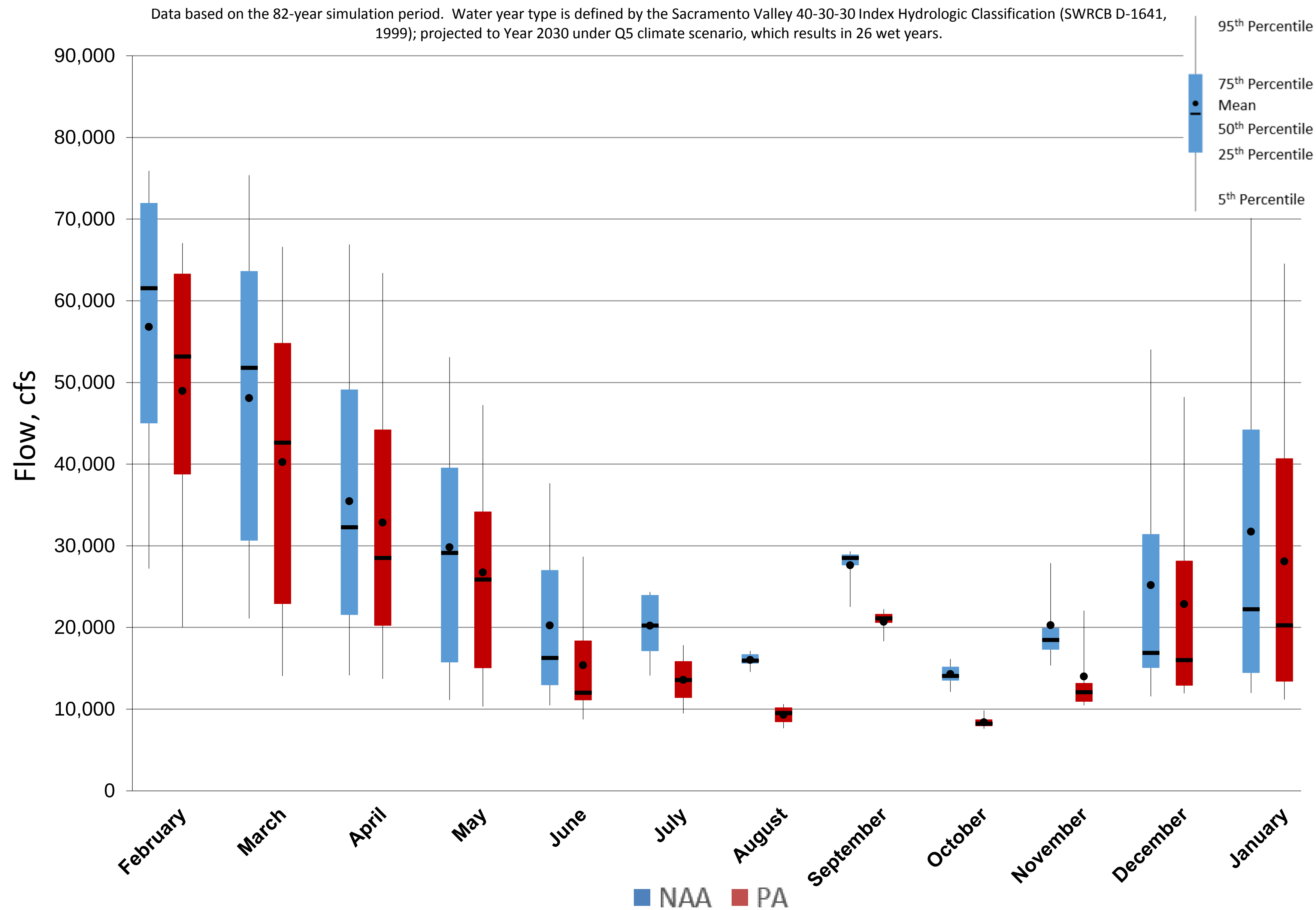


Figure 5.B.5-1-3. Monthly Flow Ranges For Sacramento River downstream of North Delta Intakes, Above Normal Years

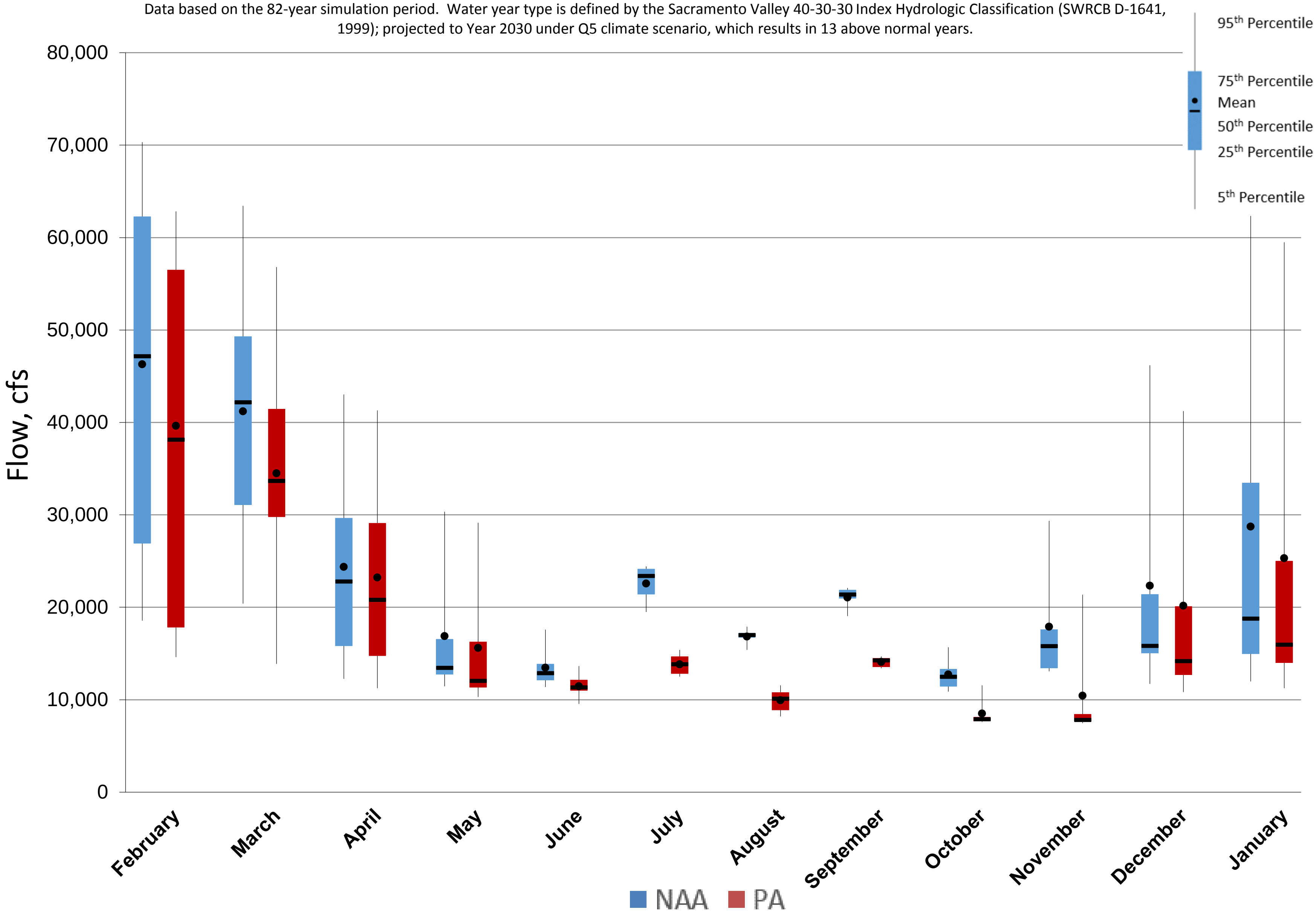


Figure 5.B.5-1-4. Monthly Flow Ranges For Sacramento River downstream of North Delta Intakes, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

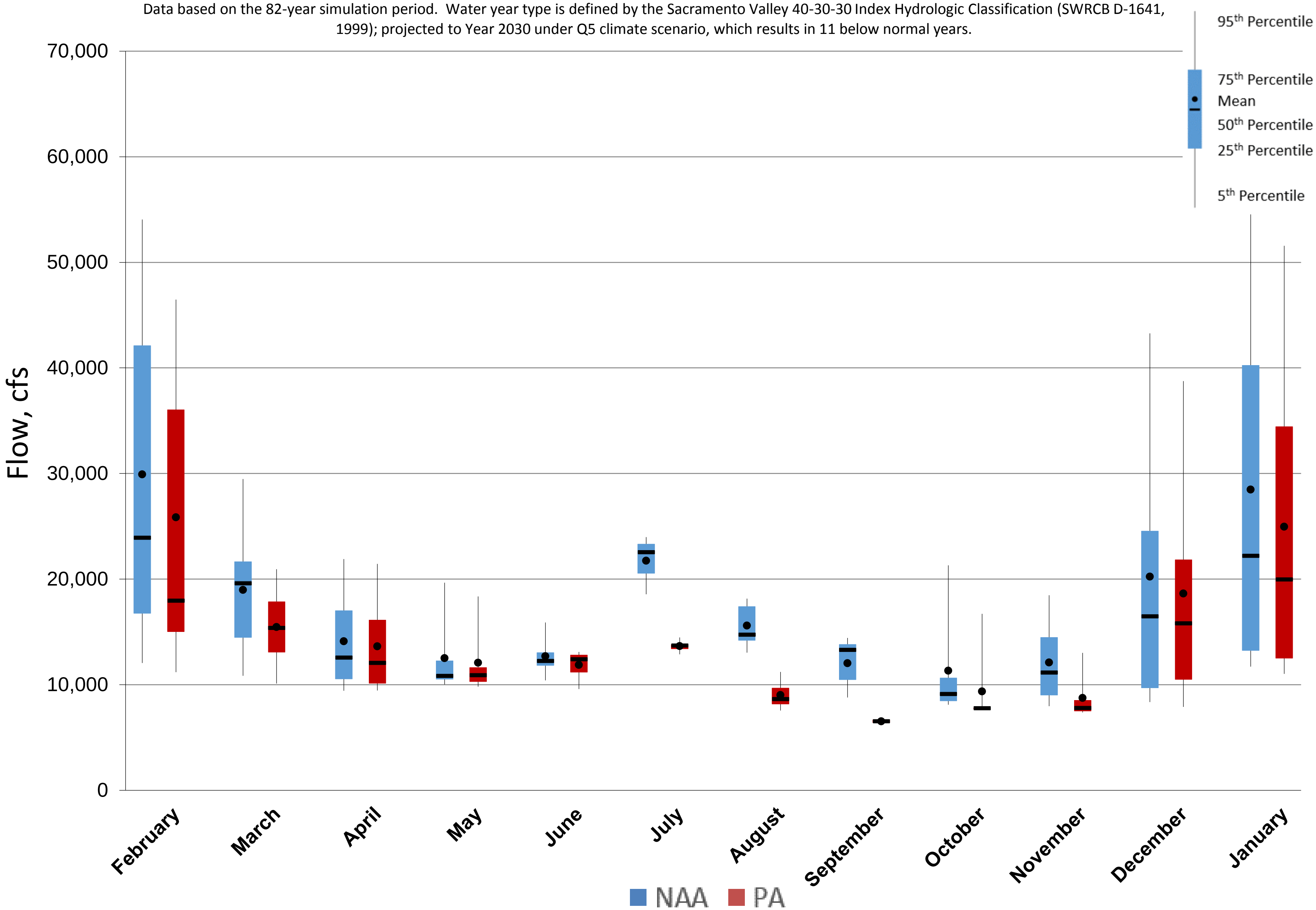


Figure 5.B.5-1-5. Monthly Flow Ranges For Sacramento River downstream of North Delta Intakes, Dry Years

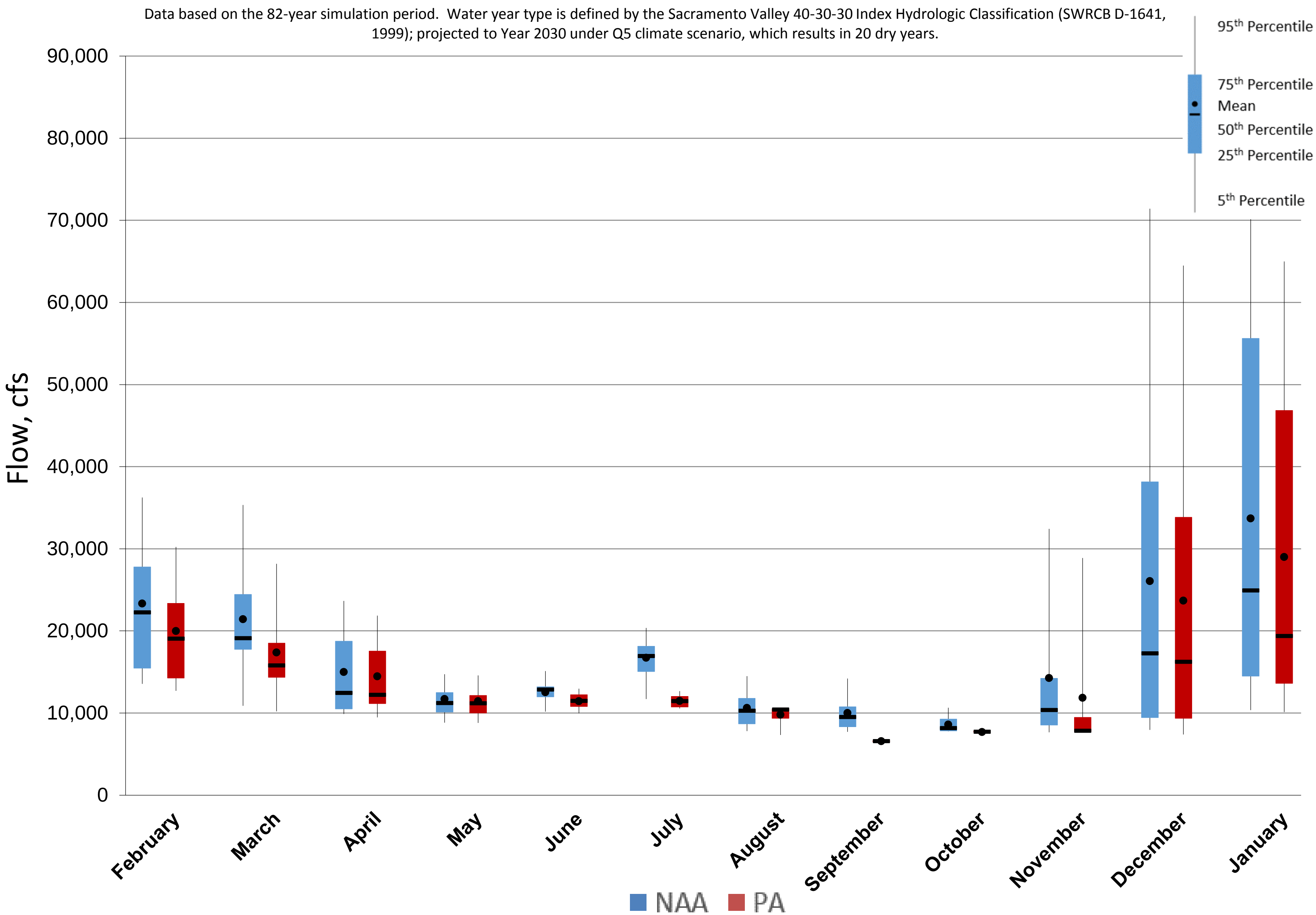


Figure 5.B.5-1-6. Monthly Flow Ranges For Sacramento River downstream of North Delta Intakes, Critical Years

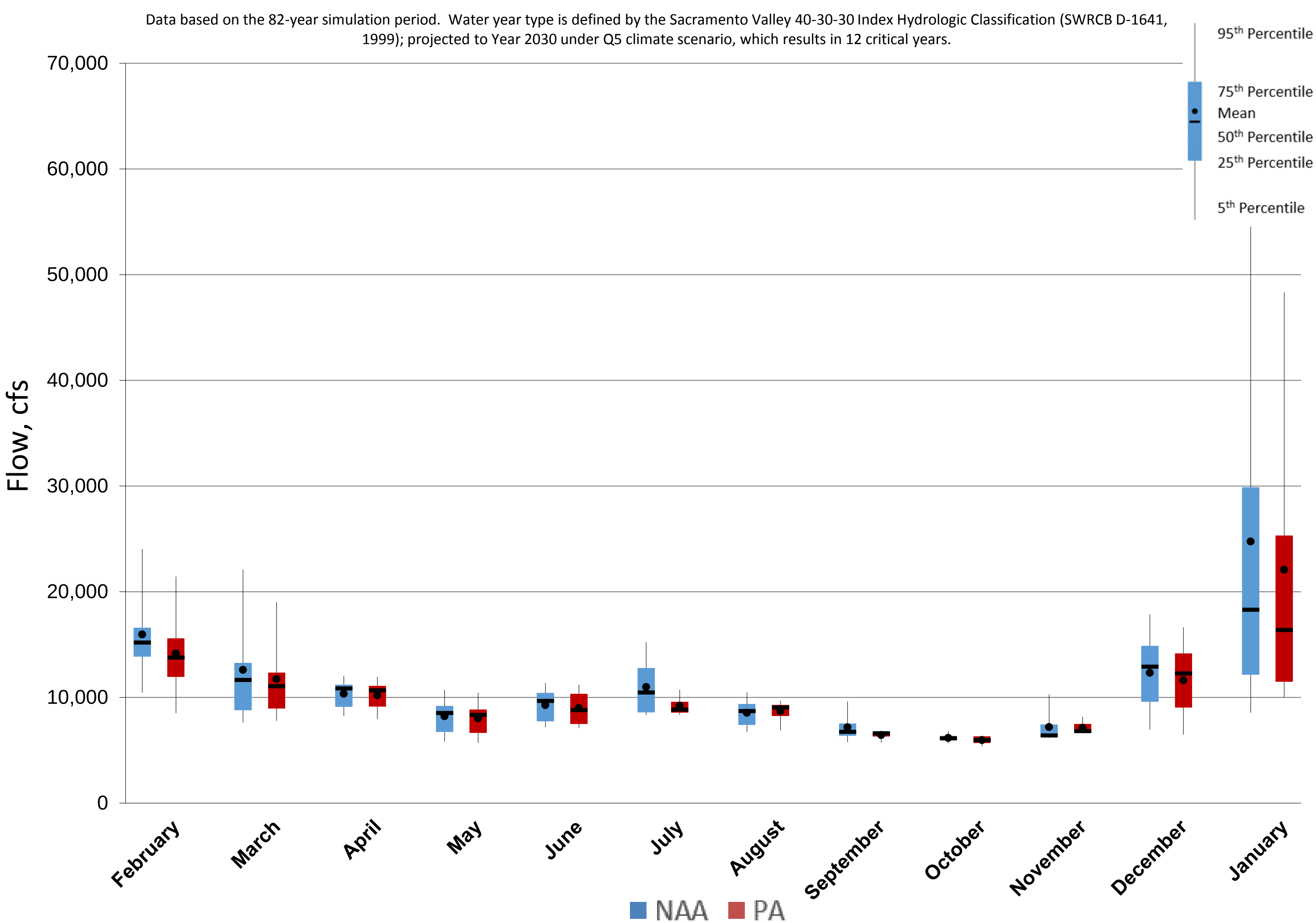
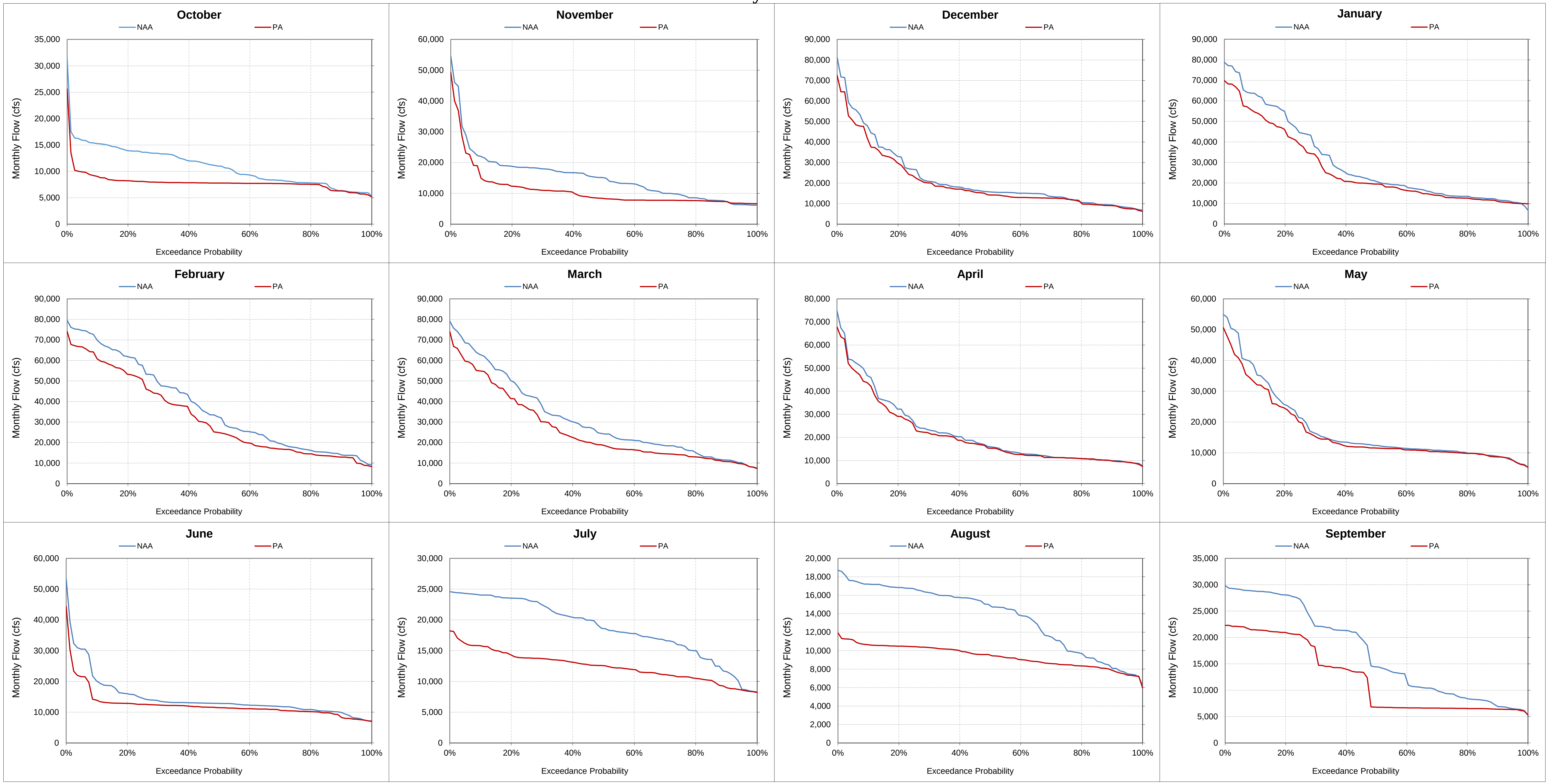
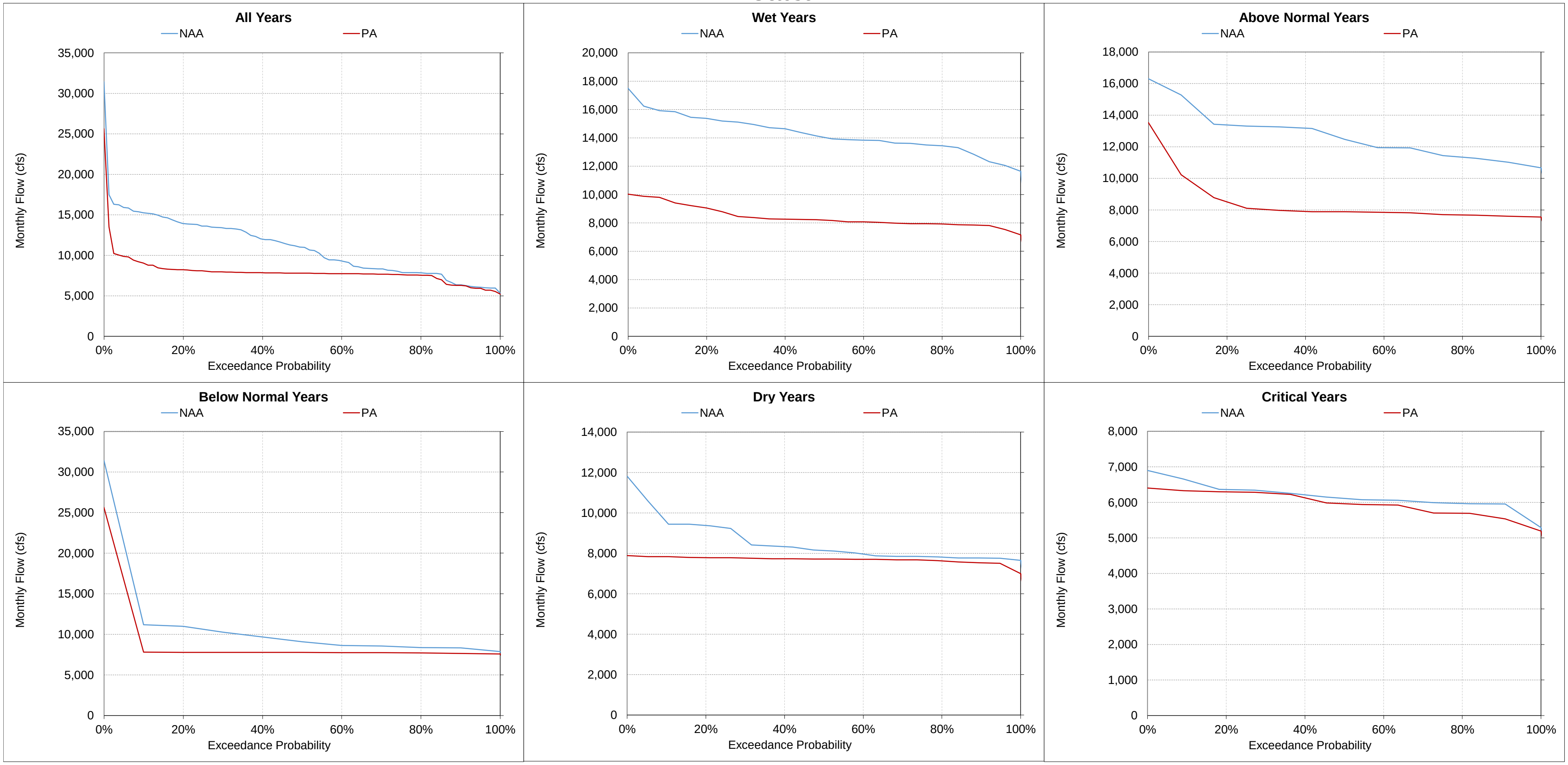


Figure 5.B.5-1-7. Sacramento River downstream of North Delta Intakes, Monthly Flow Probability of Exceedance



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-8. Sacramento River downstream of North Delta Intakes, Monthly Flow October



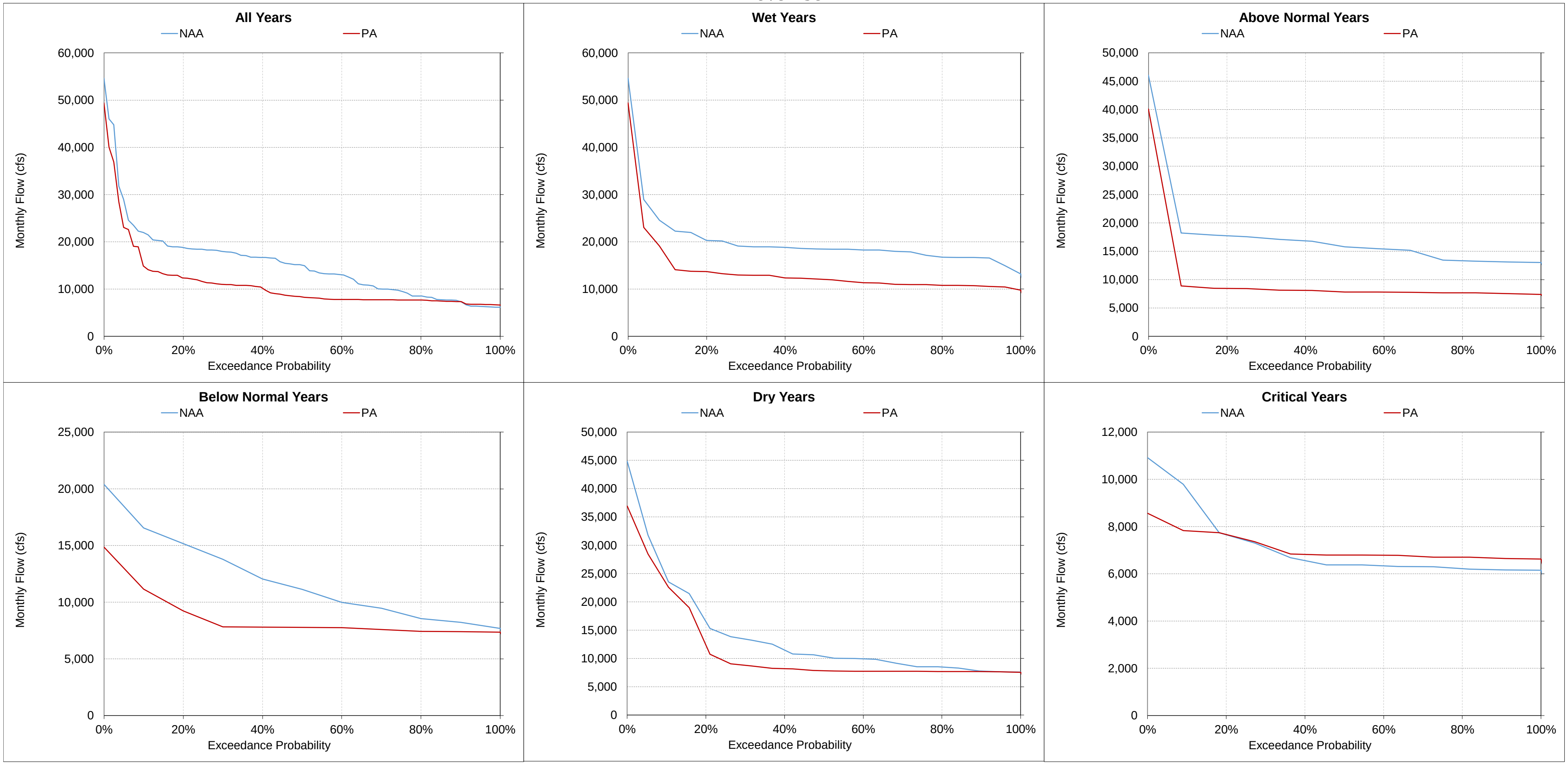
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

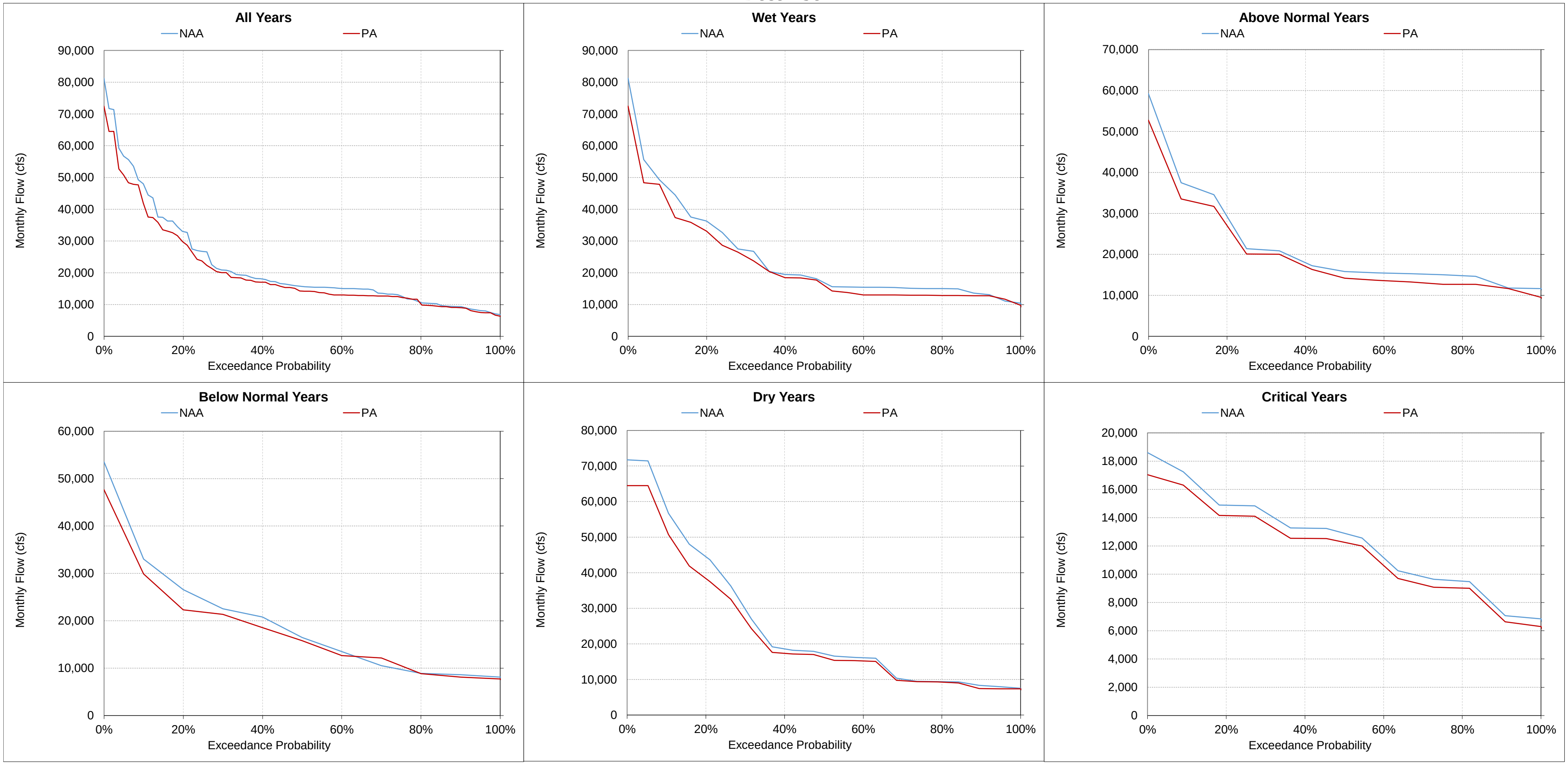
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-9. Sacramento River downstream of North Delta Intakes, Monthly Flow November



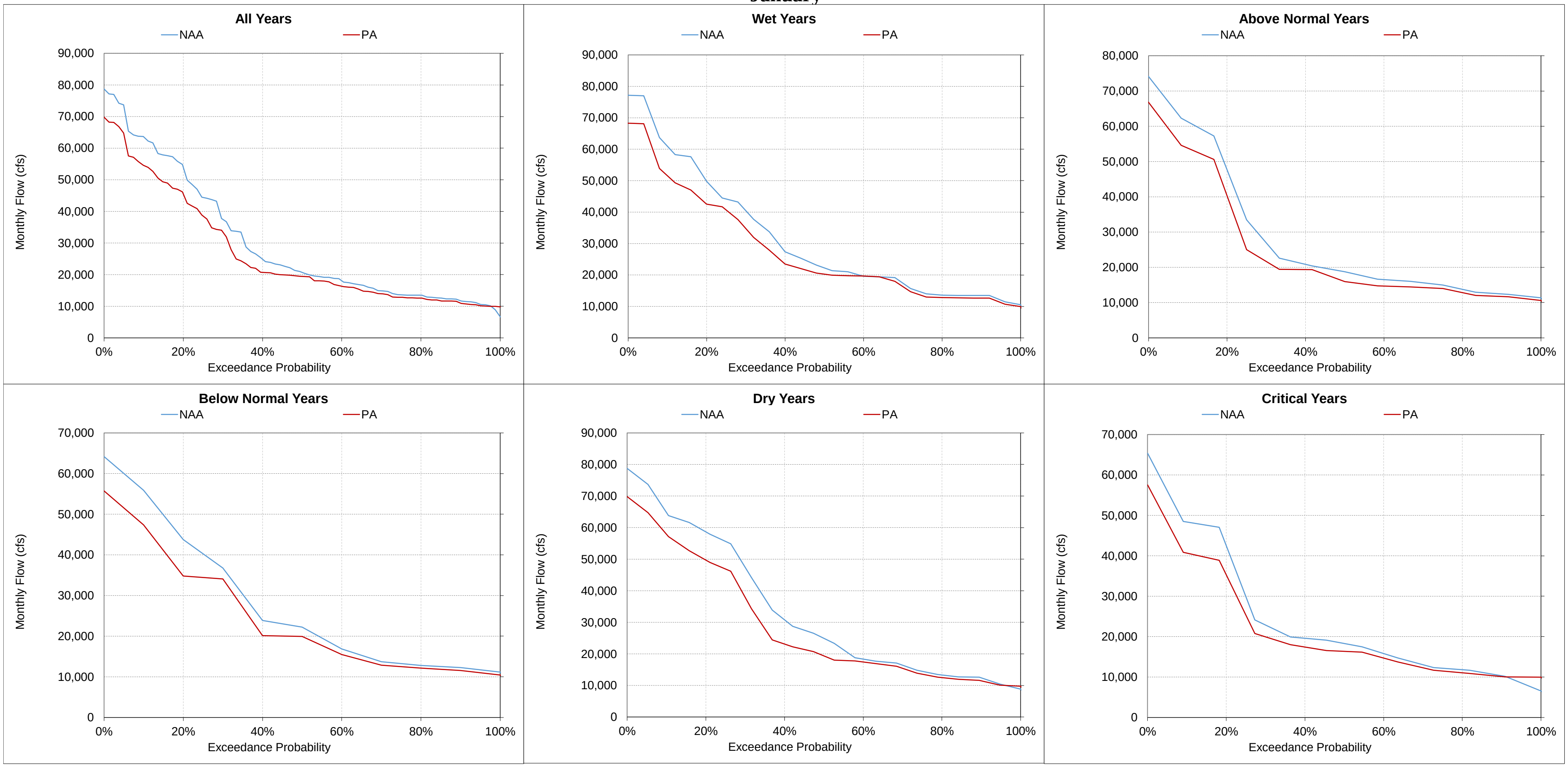
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-10. Sacramento River downstream of North Delta Intakes, Monthly Flow
December



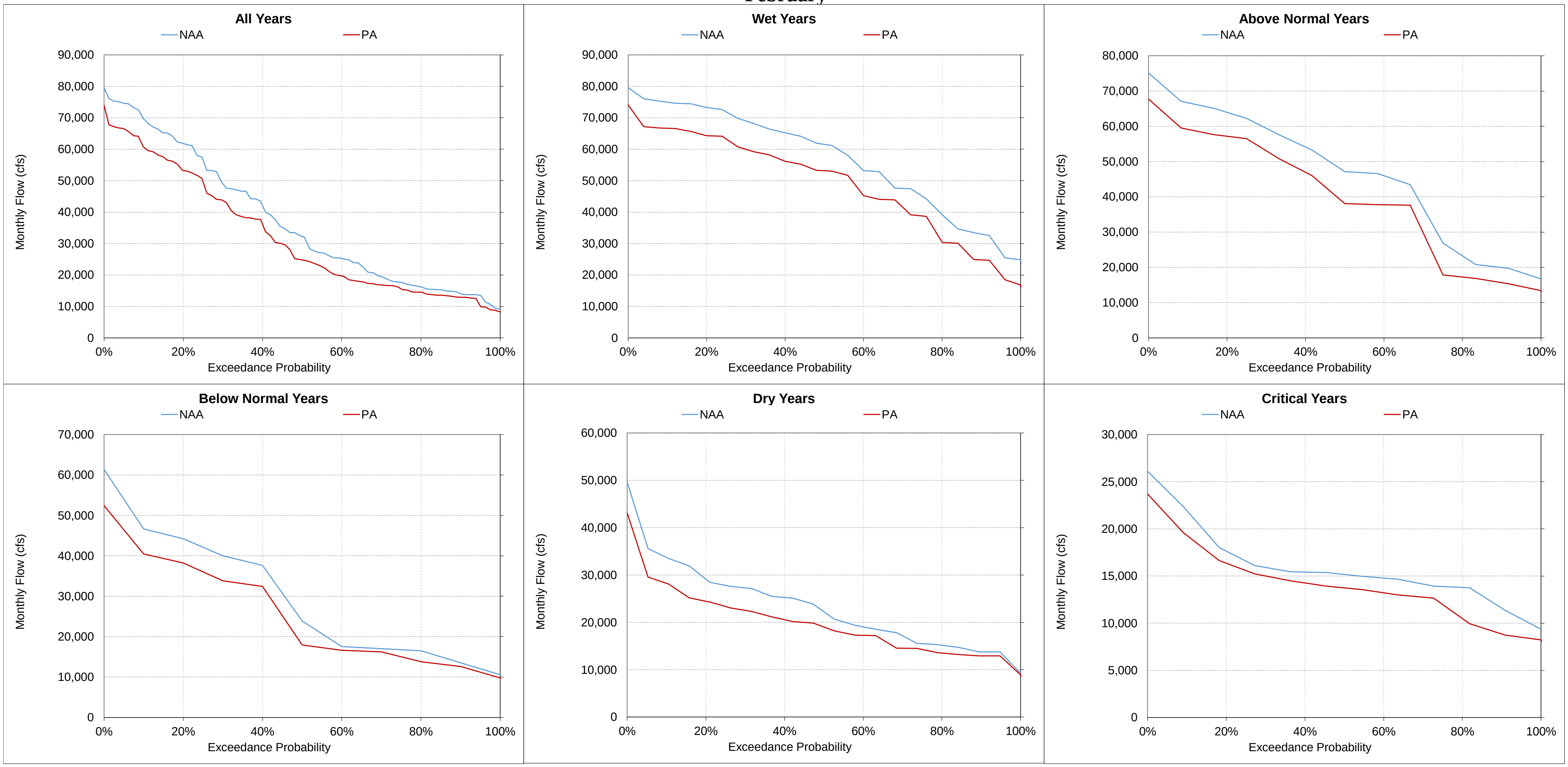
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-11. Sacramento River downstream of North Delta Intakes, Monthly Flow
January



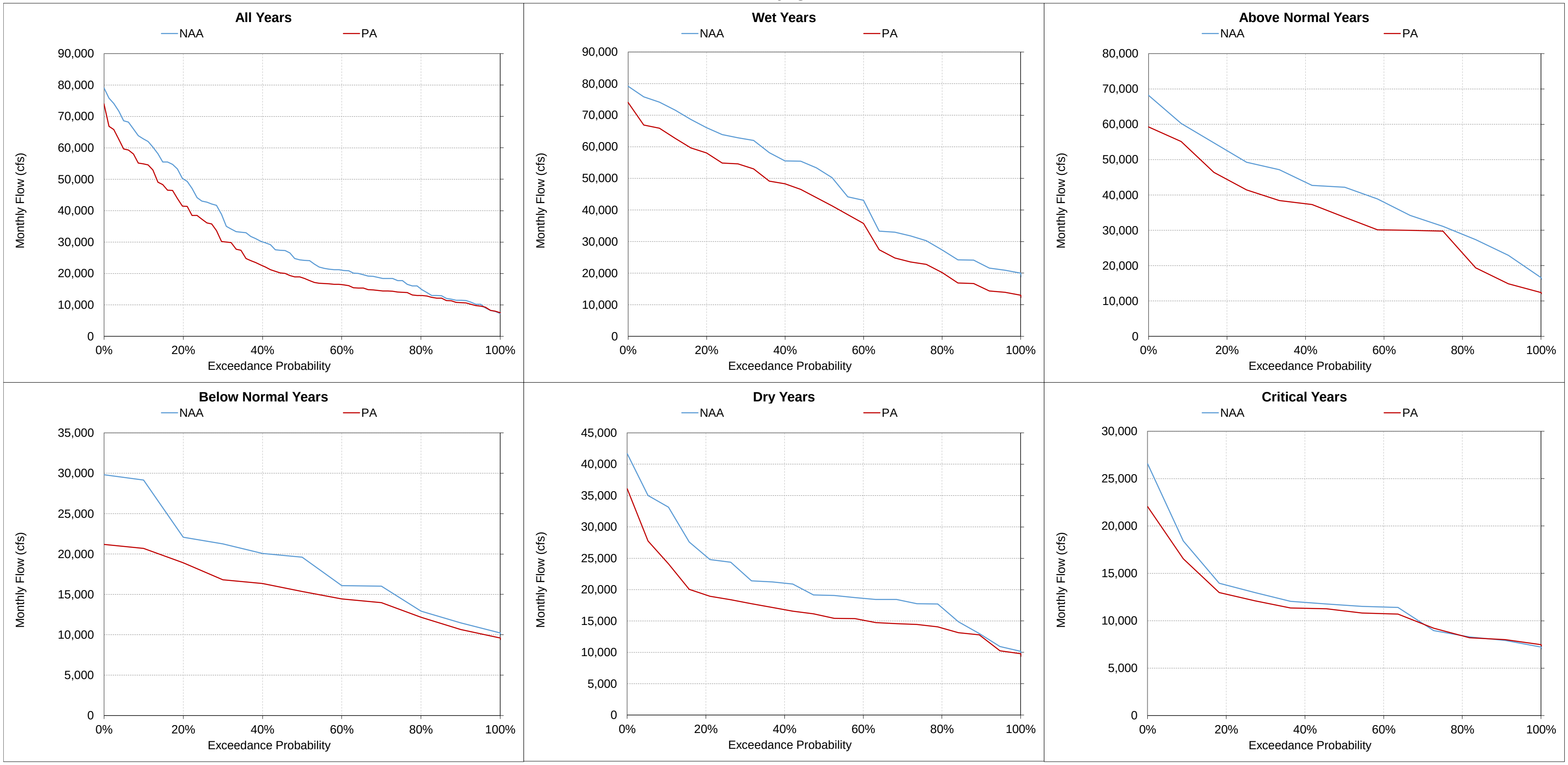
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-12. Sacramento River downstream of North Delta Intakes, Monthly Flow February



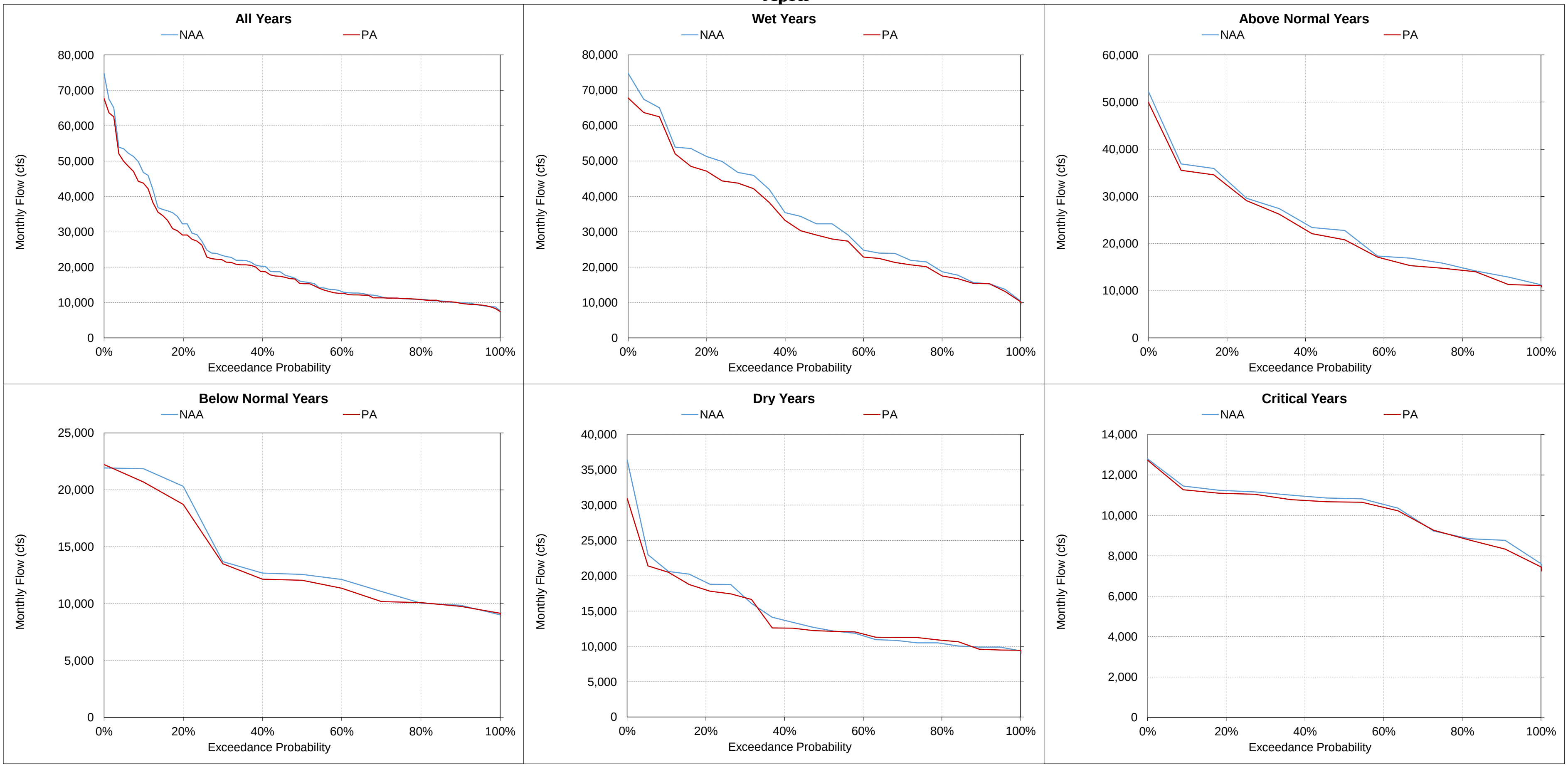
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-13. Sacramento River downstream of North Delta Intakes, Monthly Flow
March



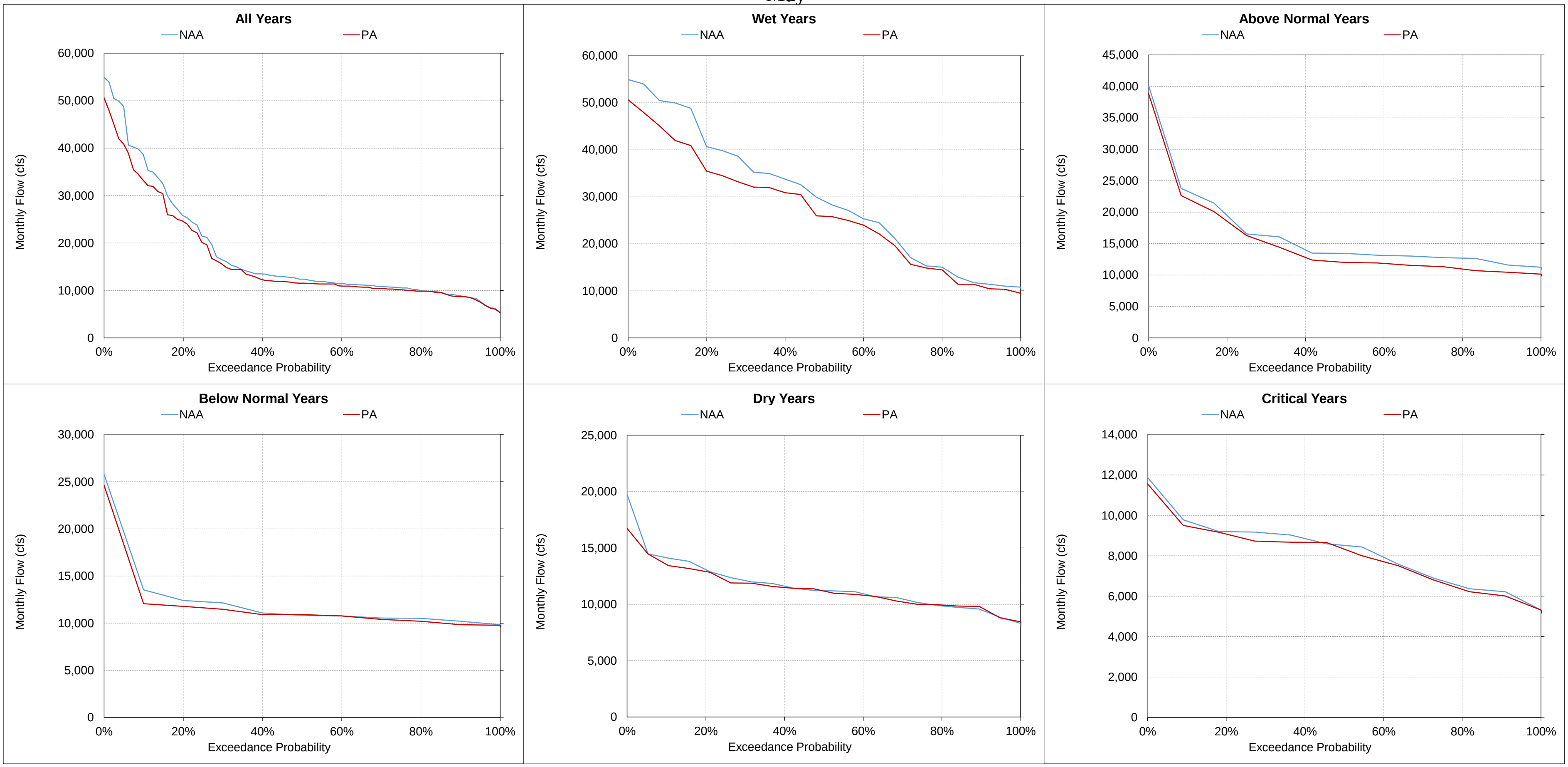
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-14. Sacramento River downstream of North Delta Intakes, Monthly Flow April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-15. Sacramento River downstream of North Delta Intakes, Monthly Flow May



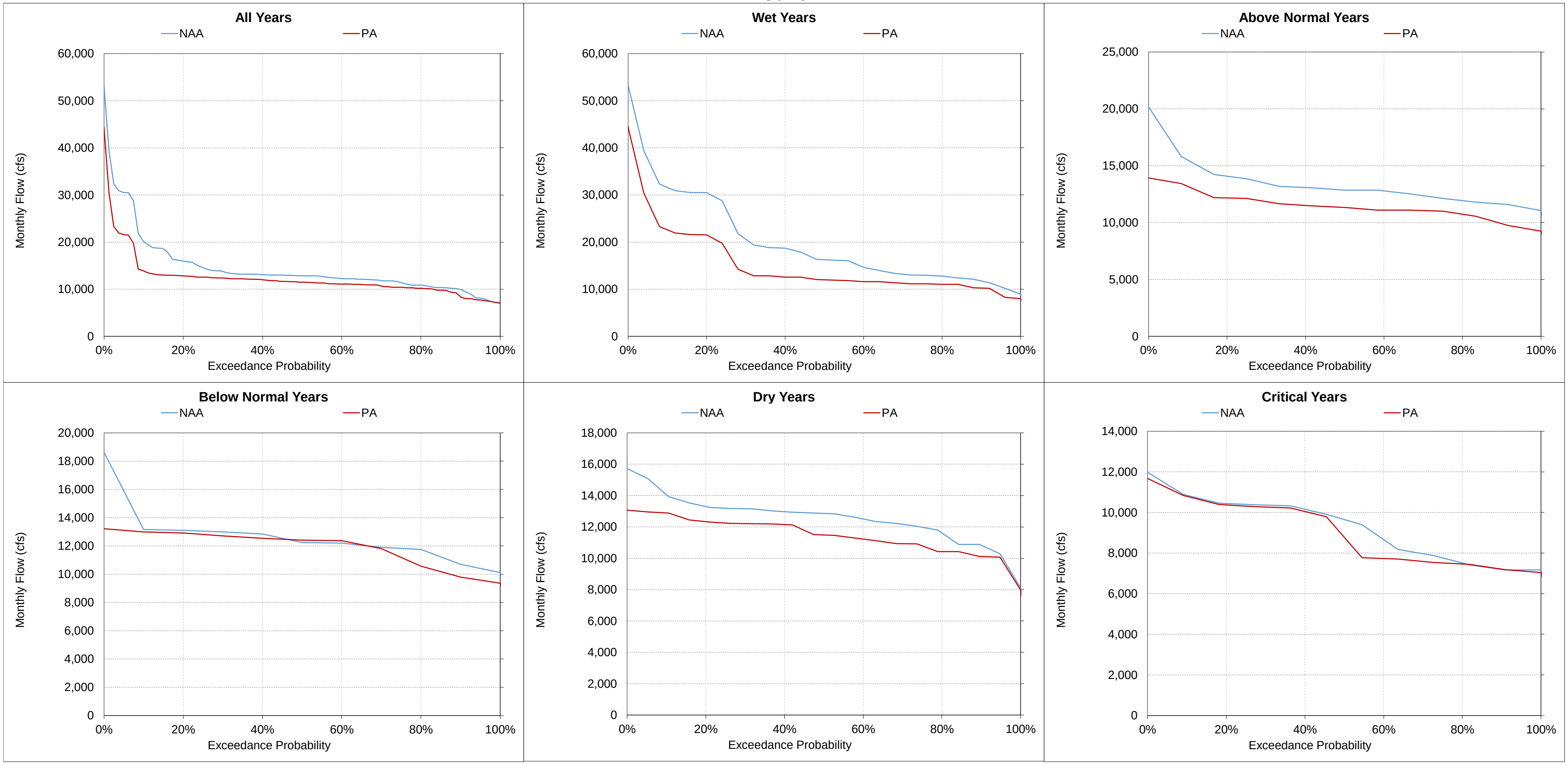
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

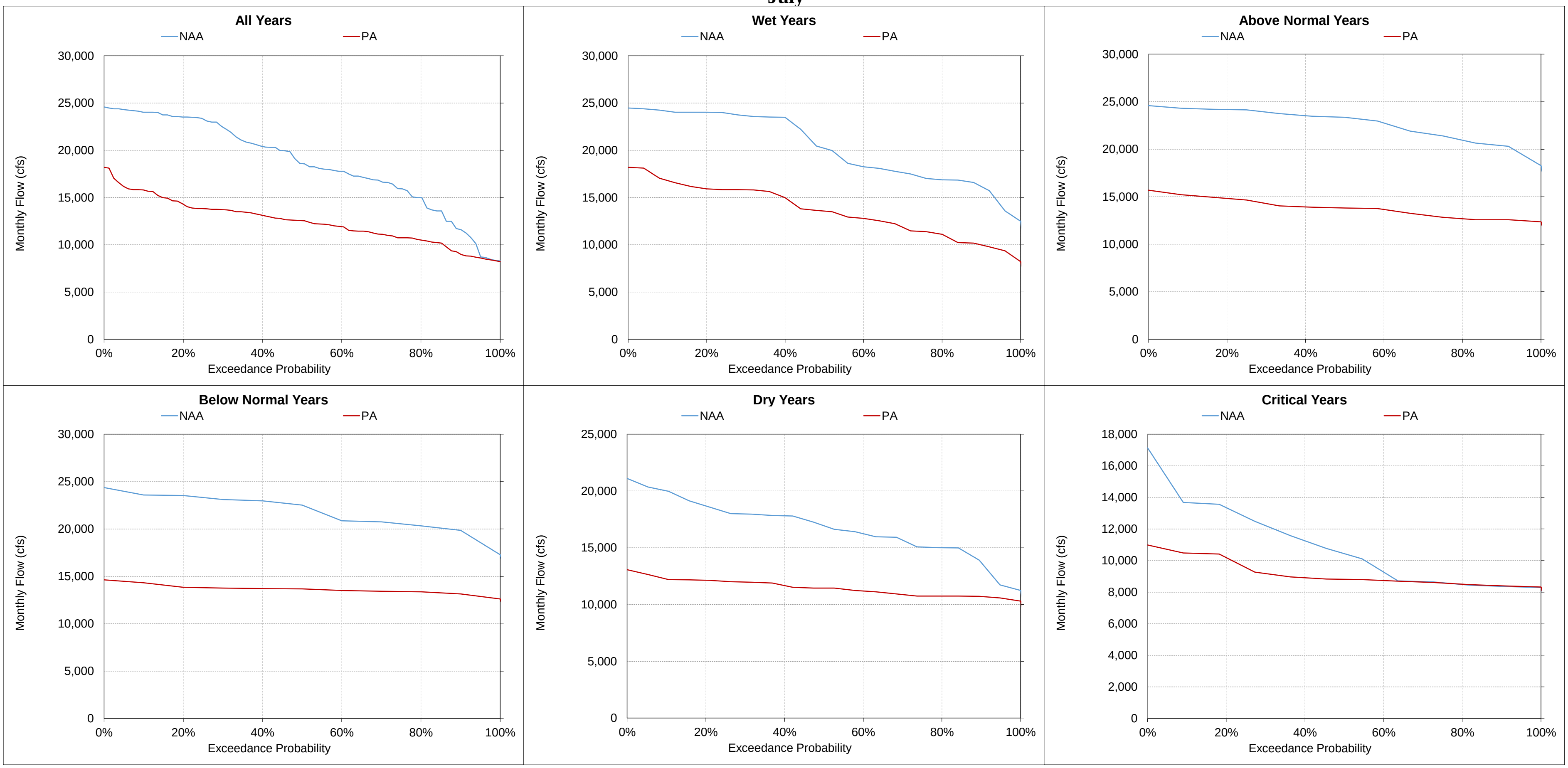
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-16. Sacramento River downstream of North Delta Intakes, Monthly Flow
June



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-17. Sacramento River downstream of North Delta Intakes, Monthly Flow July



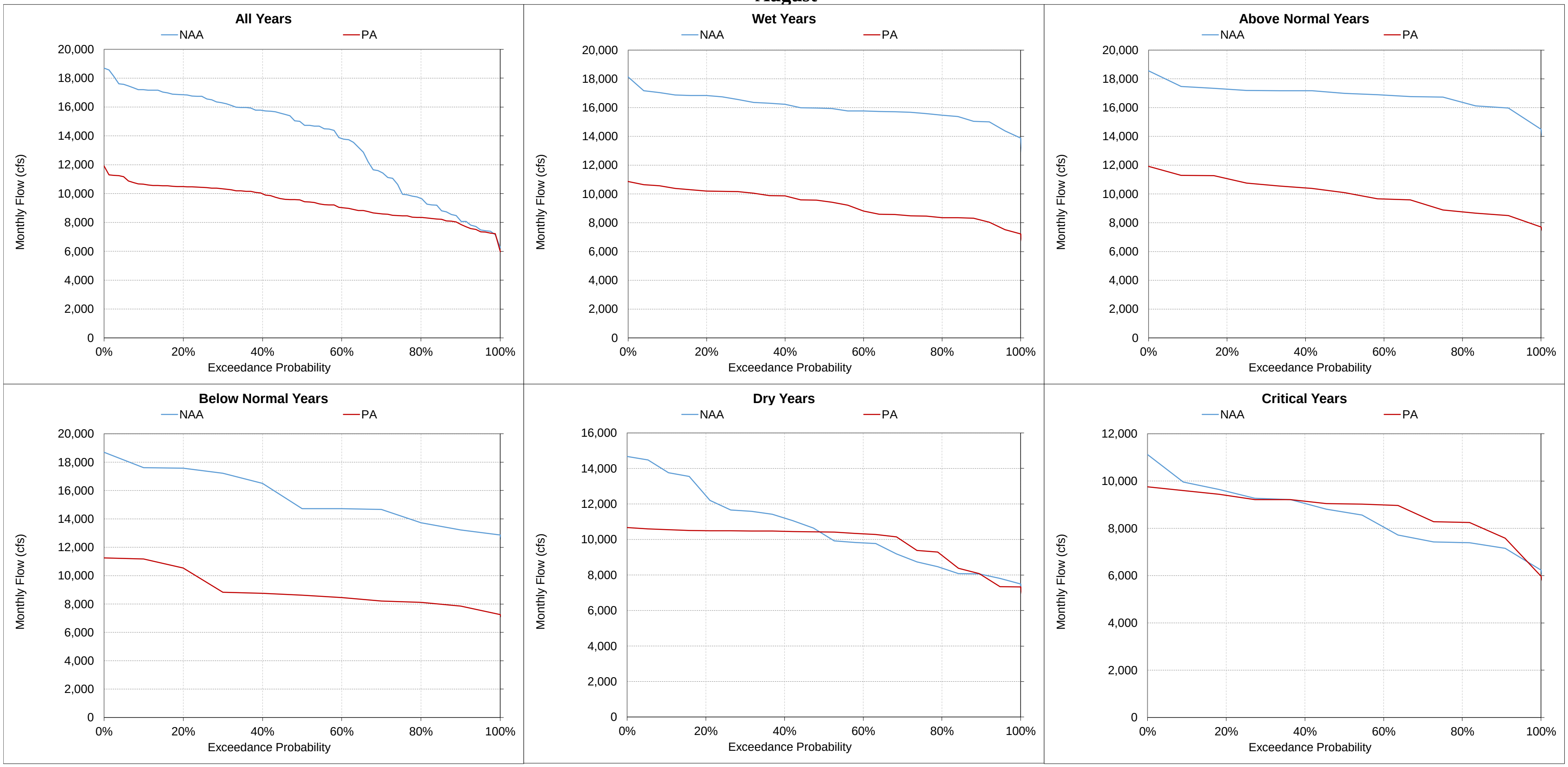
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

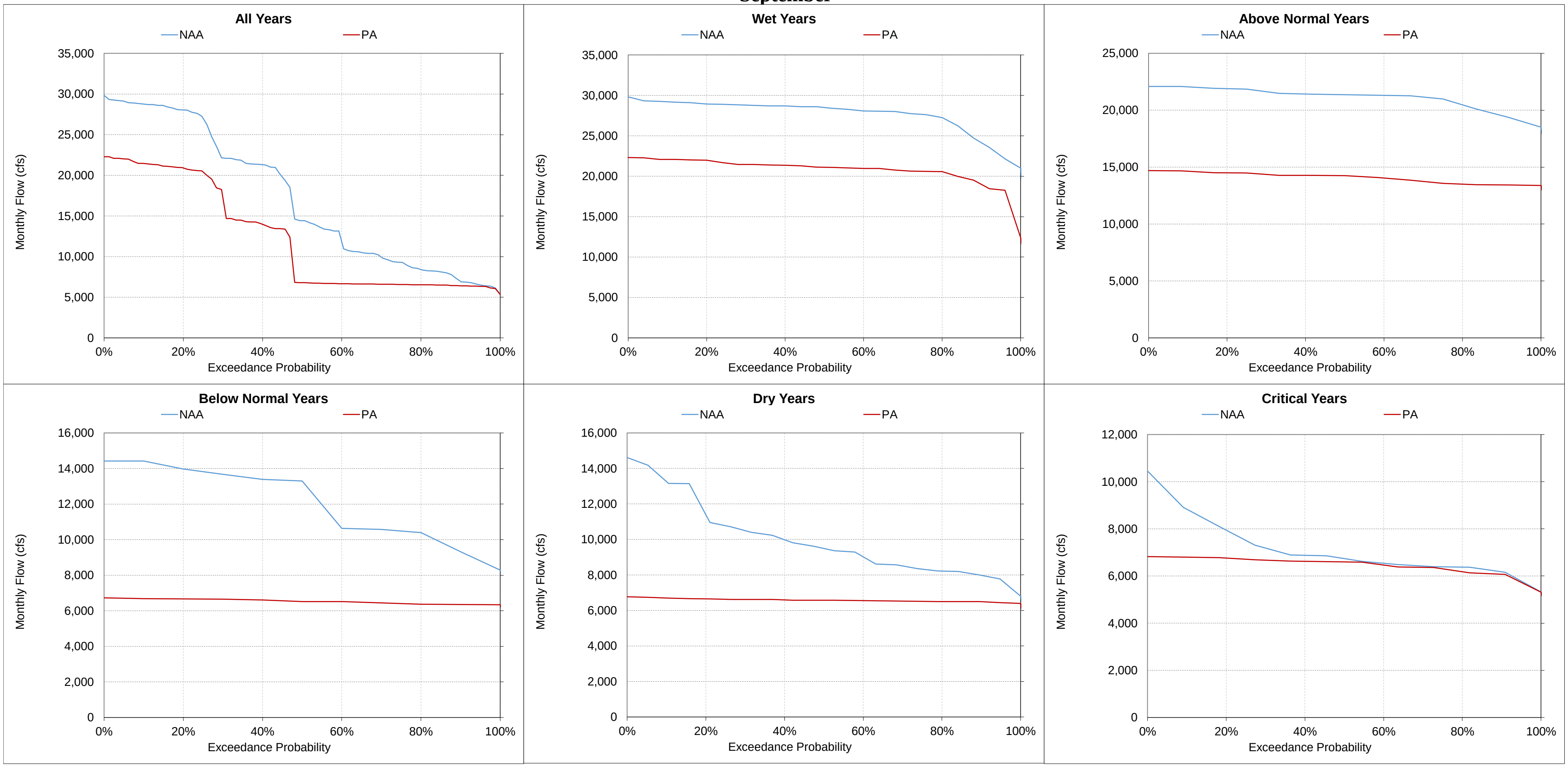
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-18. Sacramento River downstream of North Delta Intakes, Monthly Flow August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-1-19. Sacramento River downstream of North Delta Intakes, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-2. Sutter Slough, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	3,620	1,743	-1,877	-52%	5,666	3,718	-1,948	-34%	12,540	10,835	-1,705	-14%	16,946	14,402	-2,544	-15%	18,671	16,127	-2,544	-14%	16,715	14,601	-2,114	-13%
20%	3,102	1,610	-1,492	-48%	4,827	3,049	-1,778	-37%	8,571	7,693	-878	-10%	14,313	11,981	-2,332	-16%	16,439	14,157	-2,282	-14%	13,299	10,938	-2,362	-18%
30%	2,778	1,522	-1,256	-45%	4,617	2,568	-2,049	-44%	5,393	5,193	-200	-4%	9,819	8,713	-1,106	-11%	13,006	11,539	-1,468	-11%	9,866	7,866	-2,000	-20%
40%	2,445	1,450	-995	-41%	4,144	2,265	-1,880	-45%	4,583	4,351	-232	-5%	6,385	5,304	-1,080	-17%	11,113	9,466	-1,647	-15%	7,849	5,774	-2,075	-26%
50%	2,091	1,423	-668	-32%	3,543	1,855	-1,688	-48%	3,824	3,517	-307	-8%	5,284	5,002	-282	-5%	8,391	6,377	-2,014	-24%	6,283	4,807	-1,476	-23%
60%	1,693	1,410	-283	-17%	2,911	1,579	-1,332	-46%	3,640	3,038	-602	-17%	4,604	4,146	-458	-10%	6,497	5,010	-1,488	-23%	5,435	4,200	-1,236	-23%
70%	1,509	1,402	-108	-7%	2,174	1,551	-623	-29%	3,258	2,927	-332	-10%	3,748	3,492	-256	-7%	5,036	4,308	-728	-14%	4,771	3,699	-1,072	-22%
80%	1,417	1,392	-25	-2%	1,698	1,538	-160	-9%	2,440	2,406	-34	-1%	3,365	3,149	-216	-6%	4,171	3,641	-530	-13%	3,846	3,281	-565	-15%
90%	1,141	1,153	12	1%	1,478	1,454	-24	-2%	1,997	1,945	-52	-3%	2,890	2,683	-207	-7%	3,573	3,252	-321	-9%	2,863	2,634	-229	-8%
Long Term Full Simulation Period[b]	2,292	1,550	-743	-32%	3,764	2,600	-1,164	-31%	5,692	5,152	-540	-9%	7,900	6,885	-1,015	-13%	9,848	8,428	-1,420	-14%	8,236	6,845	-1,391	-17%
Water Year Types[c]																								
Wet (32%)	3,200	1,674	-1,525	-48%	5,207	3,425	-1,782	-34%	6,422	5,785	-637	-10%	8,304	7,308	-996	-12%	15,108	12,947	-2,161	-14%	12,771	10,635	-2,137	-17%
Above Normal (16%)	2,651	1,640	-1,011	-38%	4,453	2,409	-2,044	-46%	5,670	5,079	-591	-10%	7,481	6,548	-933	-12%	12,254	10,426	-1,828	-15%	10,875	9,066	-1,808	-17%
Below Normal (13%)	2,311	1,900	-410	-18%	2,729	1,864	-865	-32%	5,090	4,664	-426	-8%	7,399	6,435	-965	-13%	7,829	6,717	-1,112	-14%	4,877	3,934	-942	-19%
Dry (24%)	1,581	1,411	-170	-11%	3,389	2,755	-635	-19%	6,718	6,065	-654	-10%	8,831	7,541	-1,290	-15%	6,034	5,122	-912	-15%	5,528	4,444	-1,084	-20%
Critical (15%)	1,108	1,093	-15	-1%	1,465	1,435	-30	-2%	2,972	2,782	-189	-6%	6,385	5,651	-733	-11%	4,052	3,553	-499	-12%	3,142	2,898	-244	-8%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	12,350	11,552	-798	-6%	10,089	8,735	-1,354	-13%	4,717	3,013	-1,704	-36%	5,716	3,302	-2,413	-42%	3,645	1,977	-1,668	-46%	7,474	4,907	-2,567	-34%
20%	8,443	7,604	-839	-10%	6,699	6,382	-317	-5%	3,462	2,670	-792	-23%	5,550	2,889	-2,662	-48%	3,539	1,941	-1,598	-45%	7,288	4,718	-2,570	-35%
30%	6,041	5,683	-358	-6%	4,202	3,967	-235	-6%	2,855	2,535	-320	-11%	5,068	2,735	-2,333	-46%	3,372	1,904	-1,467	-44%	5,066	3,733	-1,333	-26%
40%	5,275	4,849	-426	-8%	3,437	3,099	-338	-10%	2,686	2,465	-221	-8%	4,494	2,590	-1,904	-42%	3,261	1,826	-1,435	-44%	4,757	2,861	-1,896	-40%
50%	4,113	3,952	-160	-4%	3,136	2,894	-242	-8%	2,636	2,323	-313	-12%	4,001	2,464	-1,537	-38%	3,023	1,730	-1,293	-43%	2,883	1,218	-1,666	-58%
60%	3,321	3,168	-153	-5%	2,858	2,741	-116	-4%	2,525	2,230	-295	-12%	3,823	2,278	-1,545	-40%	2,747	1,645	-1,102	-40%	2,227	1,179	-1,048	-47%
70%	2,890	2,815	-75	-3%	2,694	2,576	-119	-4%	2,393	2,147	-245	-10%	3,570	2,128	-1,442	-40%	2,142	1,565	-577	-27%	1,790	1,157	-633	-35%
80%	2,686	2,673	-13	0%	2,428	2,415	-13	-1%	2,145	2,037	-109	-5%	3,055	2,014	-1,042	-34%	1,760	1,493	-267	-15%	1,502	1,143	-358	-24%
90%	2,437	2,406	-32	-1%	2,140	2,088	-52	-2%	1,947	1,719	-228	-12%	2,207	1,667	-540	-24%	1,478	1,380	-97	-7%	1,234	1,124	-110	-9%
Long Term Full Simulation Period[b]	5,755	5,420	-336	-6%	4,597	4,241	-357	-8%	3,220	2,627	-593	-18%	4,118	2,484	-1,634	-40%	2,760	1,717	-1,043	-38%	3,942	2,550	-1,392	-35%
Water Year Types[c]																								
Wet (32%)	9,352	8,637	-715	-8%	7,835	7,006	-829	-11%	4,831	3,496	-1,336	-28%	4,593	2,803	-1,790	-39%	3,325	1,703	-1,622	-49%	7,093	4,698	-2,395	-34%
Above Normal (16%)	6,349	6,040	-308	-5%	4,343	4,004	-340	-8%	2,833	2,332	-501	-18%	5,220	2,785	-2,434	-47%	3,531	1,829	-1,702	-48%	4,689	2,882	-1,807	-39%
Below Normal (13%)	3,590	3,456	-134	-4%	3,144	3,028	-116	-4%	2,607	2,434	-173	-7%	4,950	2,733	-2,217	-45%	3,206	1,631	-1,575	-49%	2,311	1,143	-1,168	-51%
Dry (24%)	3,814	3,666	-148	-4%	2,929	2,860	-70	-2%	2,559	2,313	-245	-10%	3,529	2,201	-1,329	-38%	2,004	1,797	-207	-10%	1,850	1,154	-697	-38%
Critical (15%)	2,539	2,498	-42	-2%	1,970	1,921	-48	-2%	1,810	1,763	-48	-3%	2,112	1,706	-406	-19%	1,552	1,572	20	1%	1,283	1,151	-132	-10%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

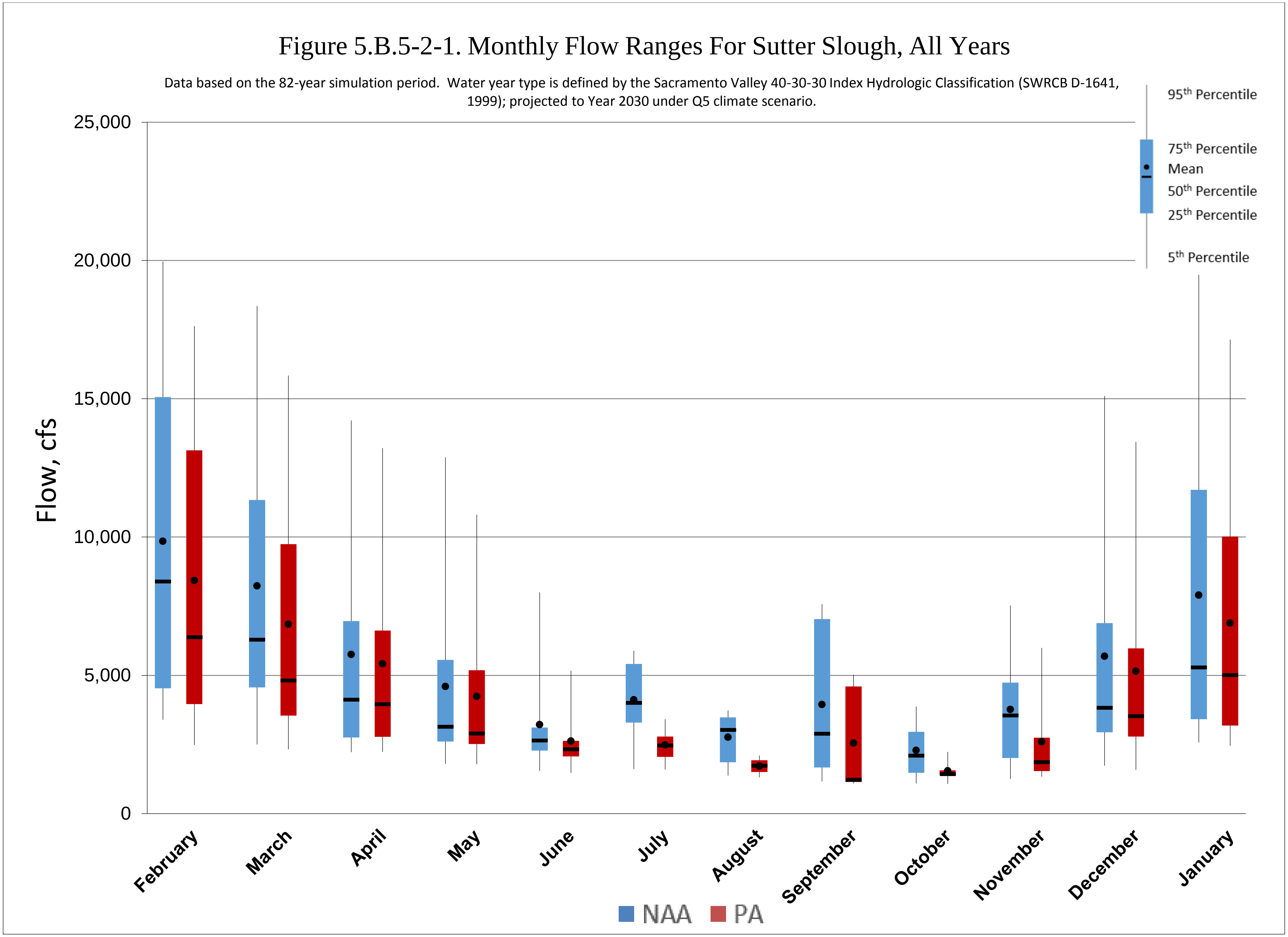
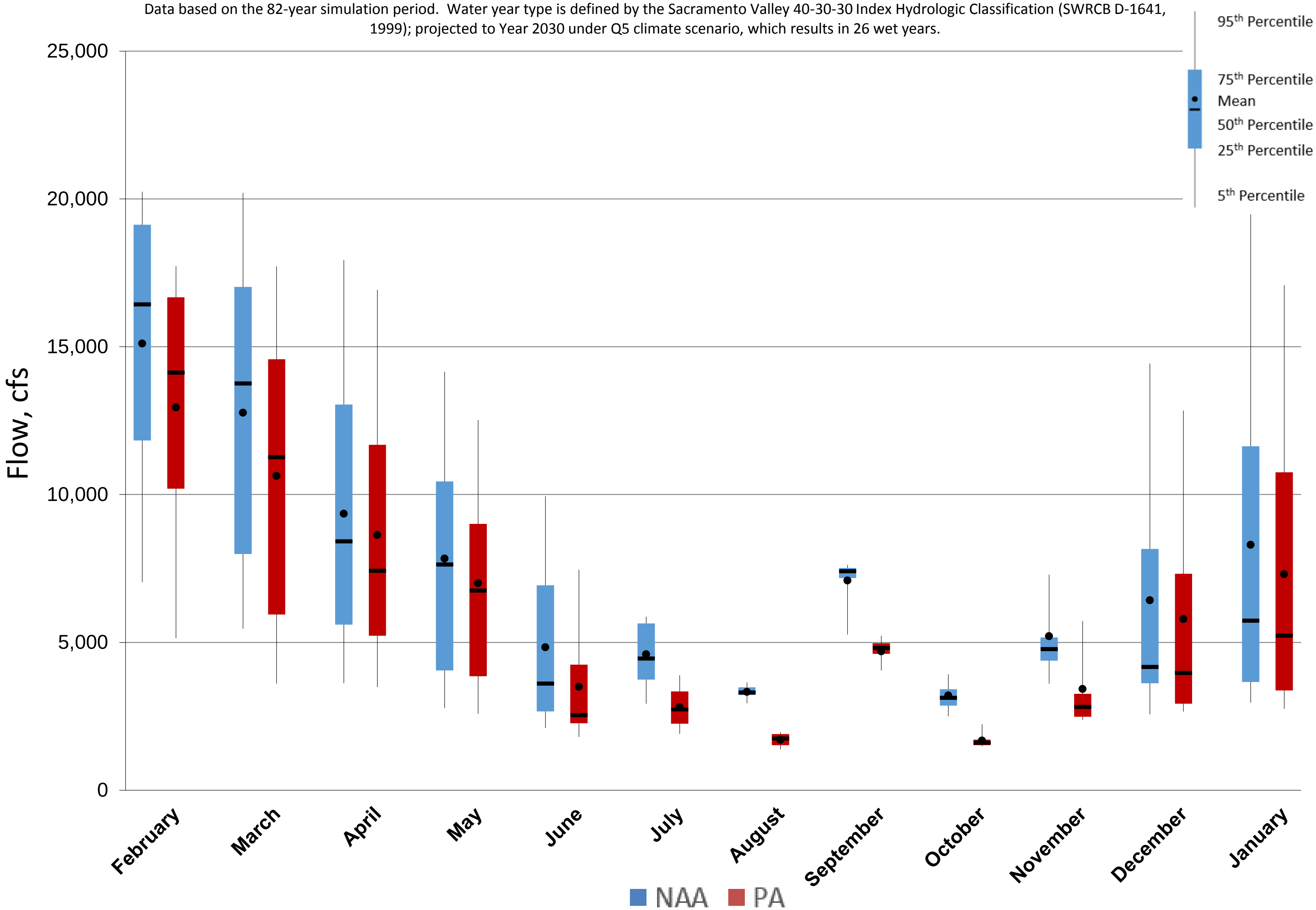


Figure 5.B.5-2-1. Monthly Flow Ranges For Sutter Slough, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
Flow, cfs
25,000
20,000
15,000
10,000
5,000
0
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-2-2. Monthly Flow Ranges For Sutter Slough, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.



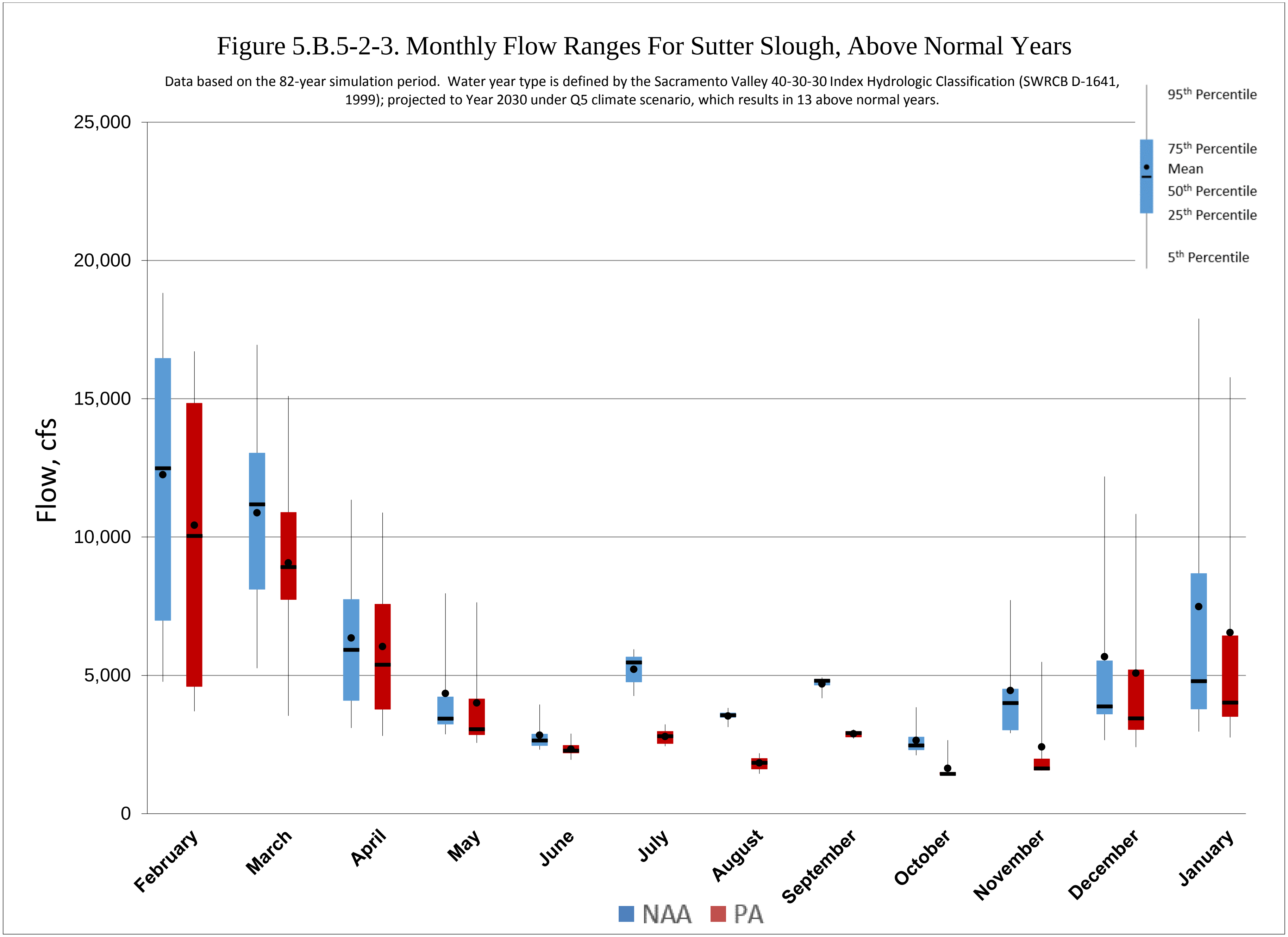


Figure 5.B.5-2-3. Monthly Flow Ranges For Sutter Slough, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
25,000
20,000
15,000
10,000
5,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

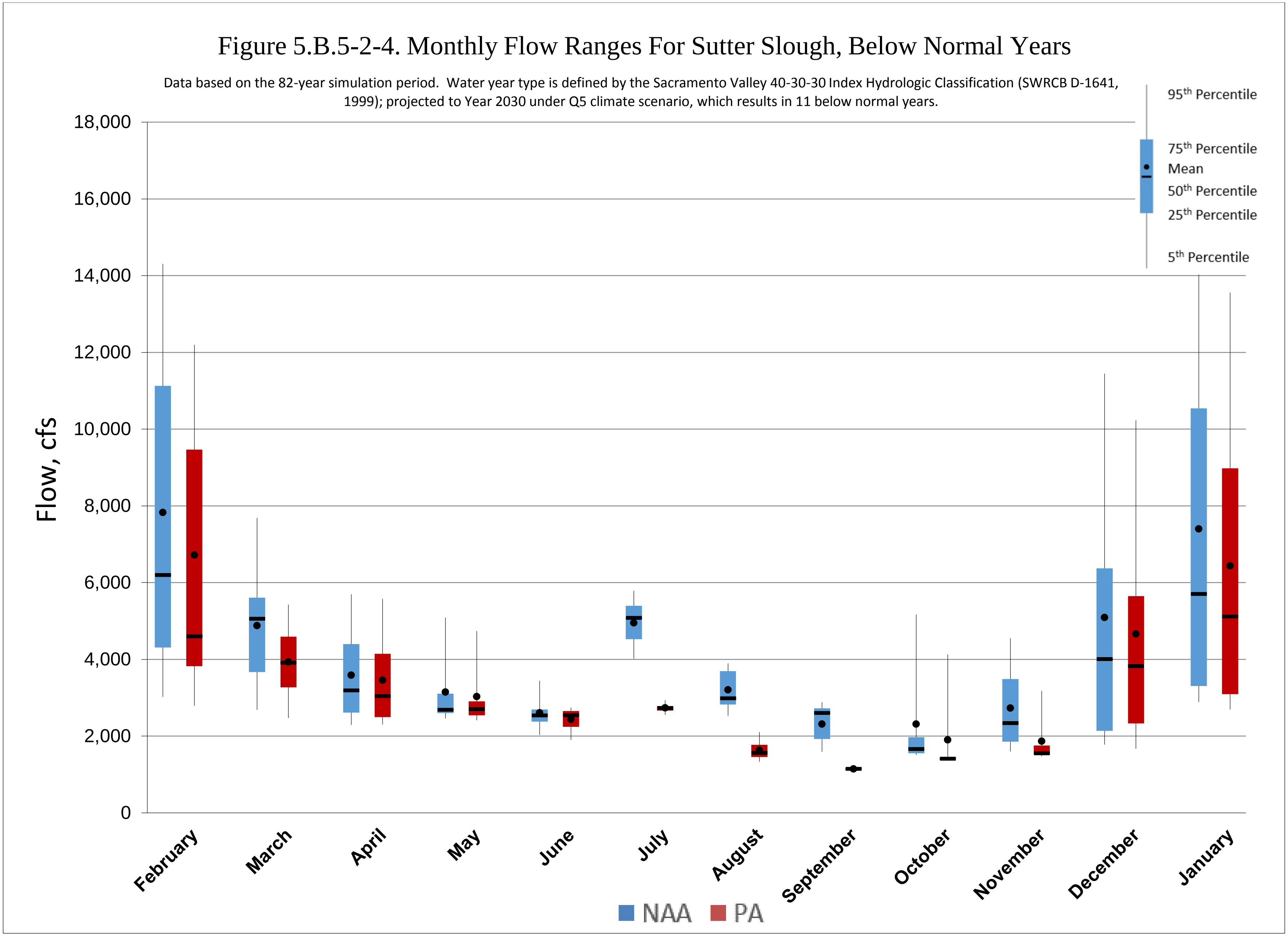
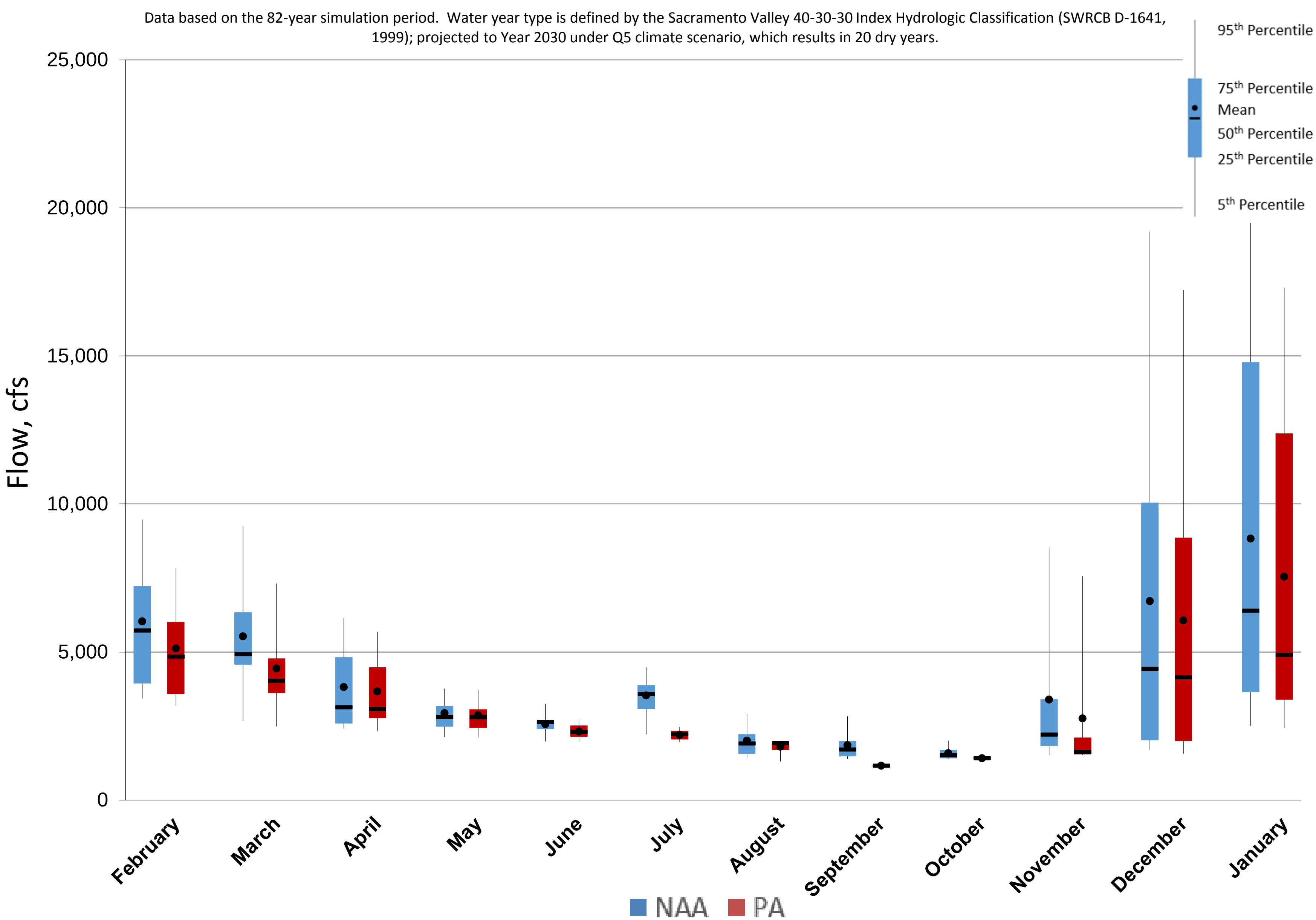


Figure 5.B.5-2-4. Monthly Flow Ranges For Sutter Slough, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-2-5. Monthly Flow Ranges For Sutter Slough, Dry Years



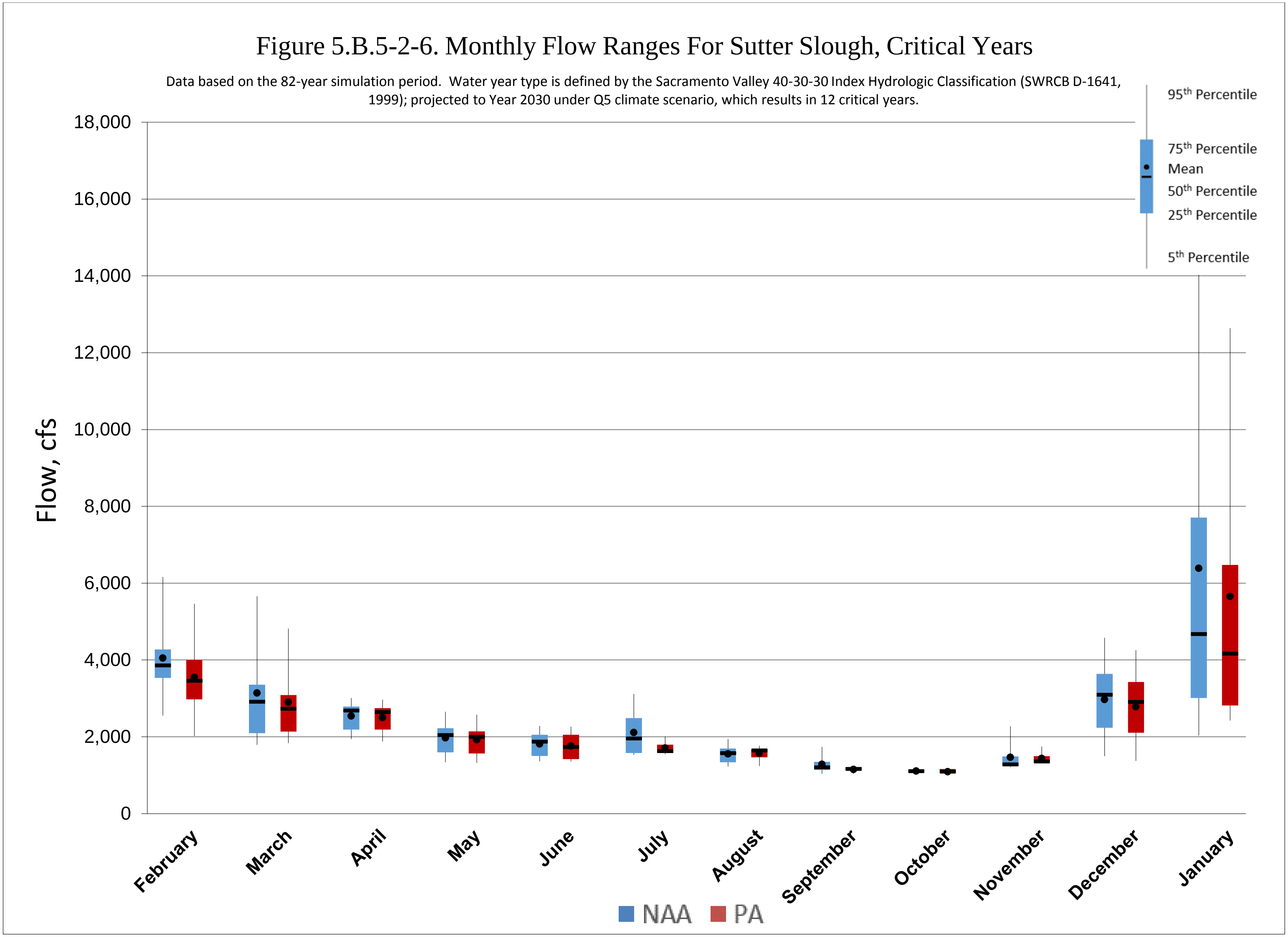
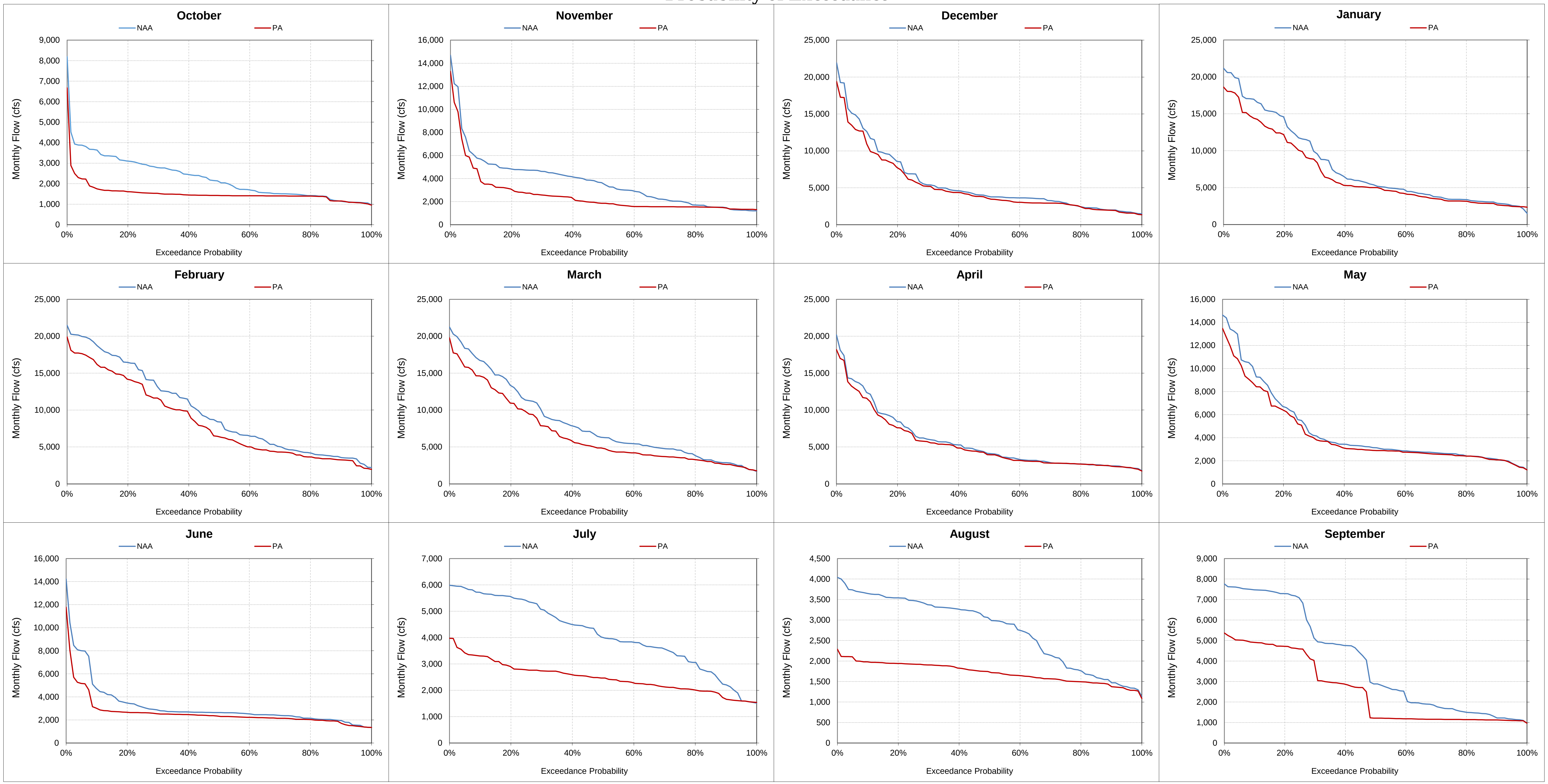


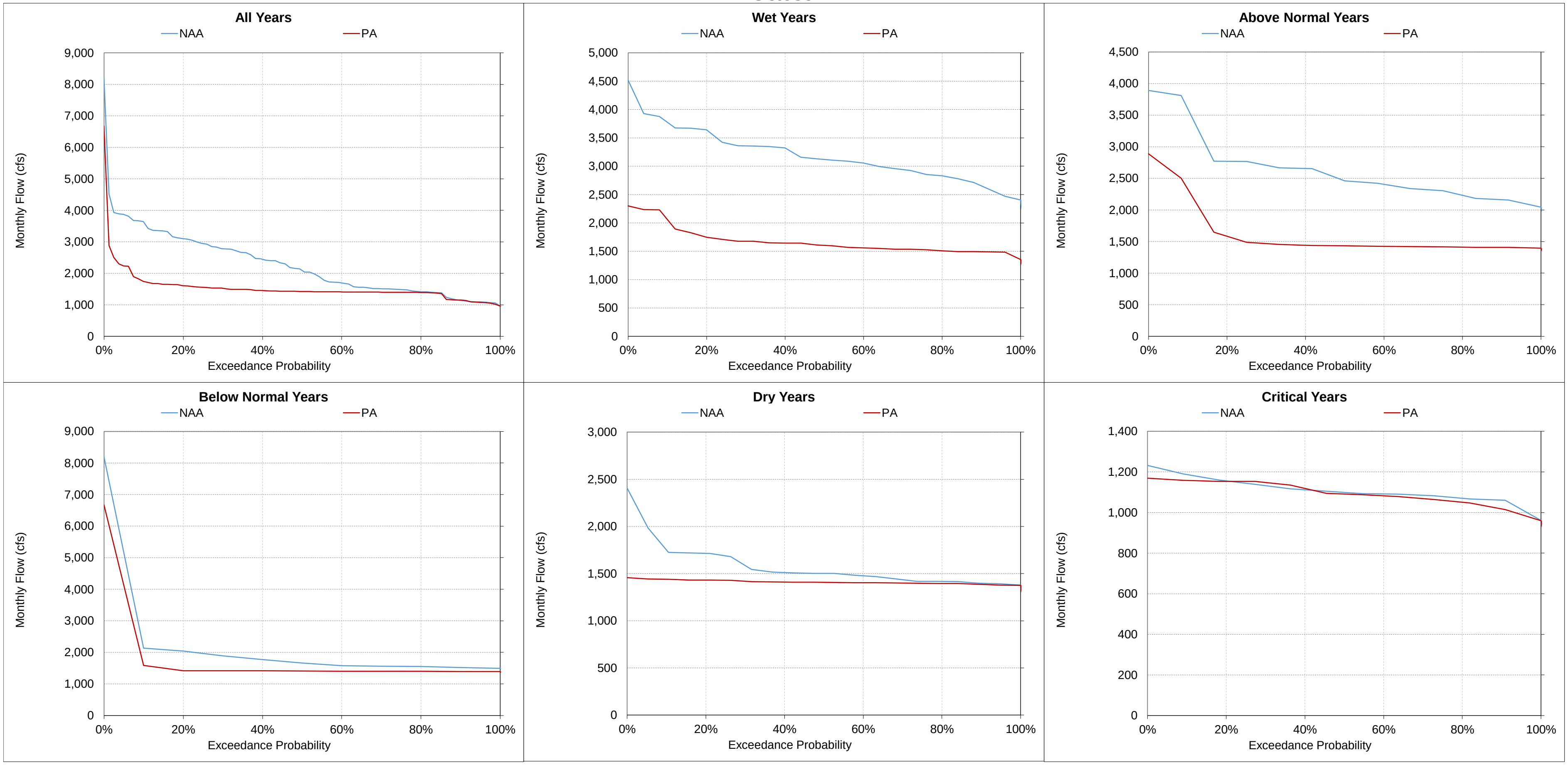
Figure 5.B.5-2-6. Monthly Flow Ranges For Sutter Slough, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-2-7. Sutter Slough, Monthly Flow Probability of Exceedance



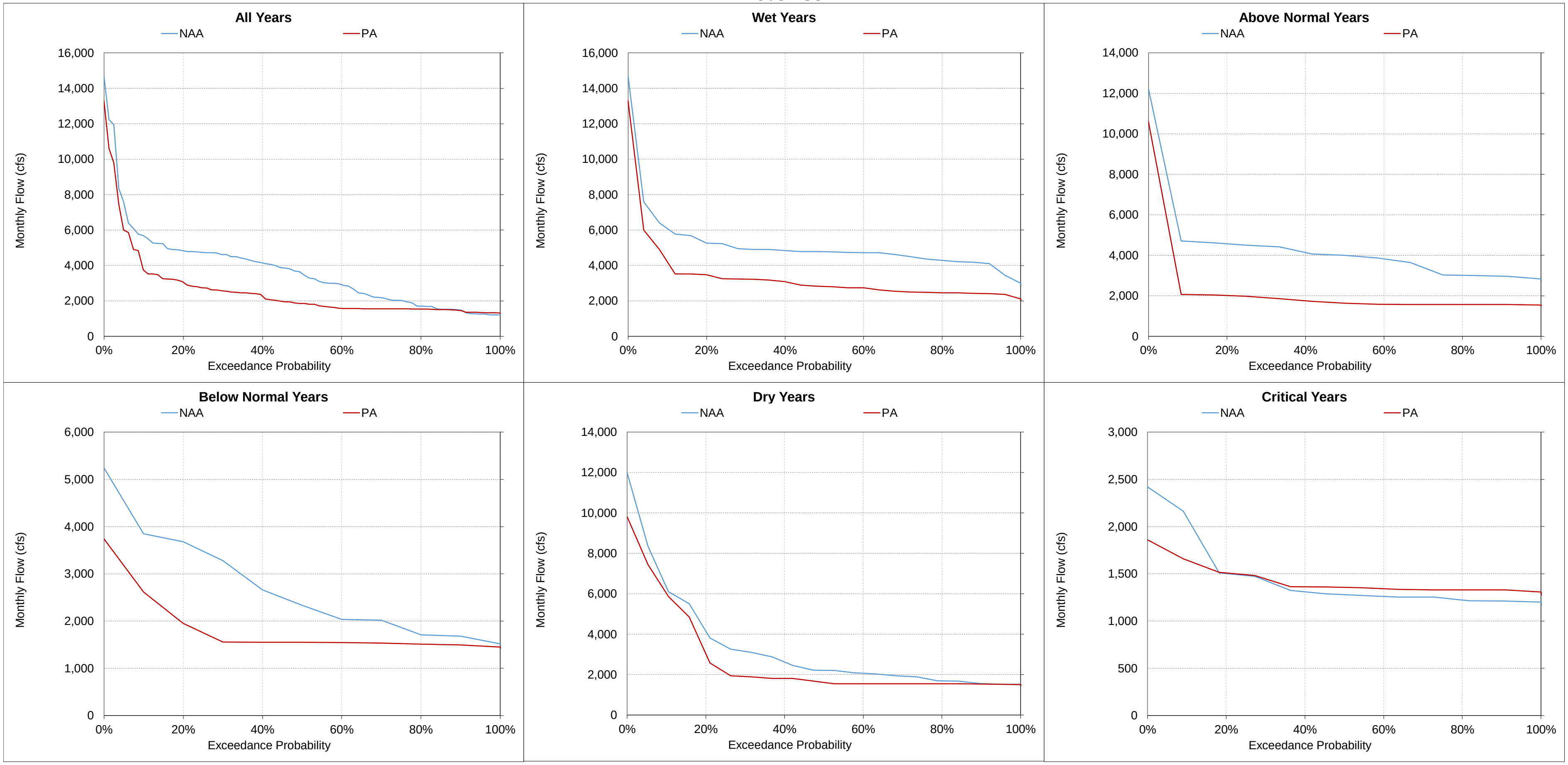
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-8. Sutter Slough, Monthly Flow
October



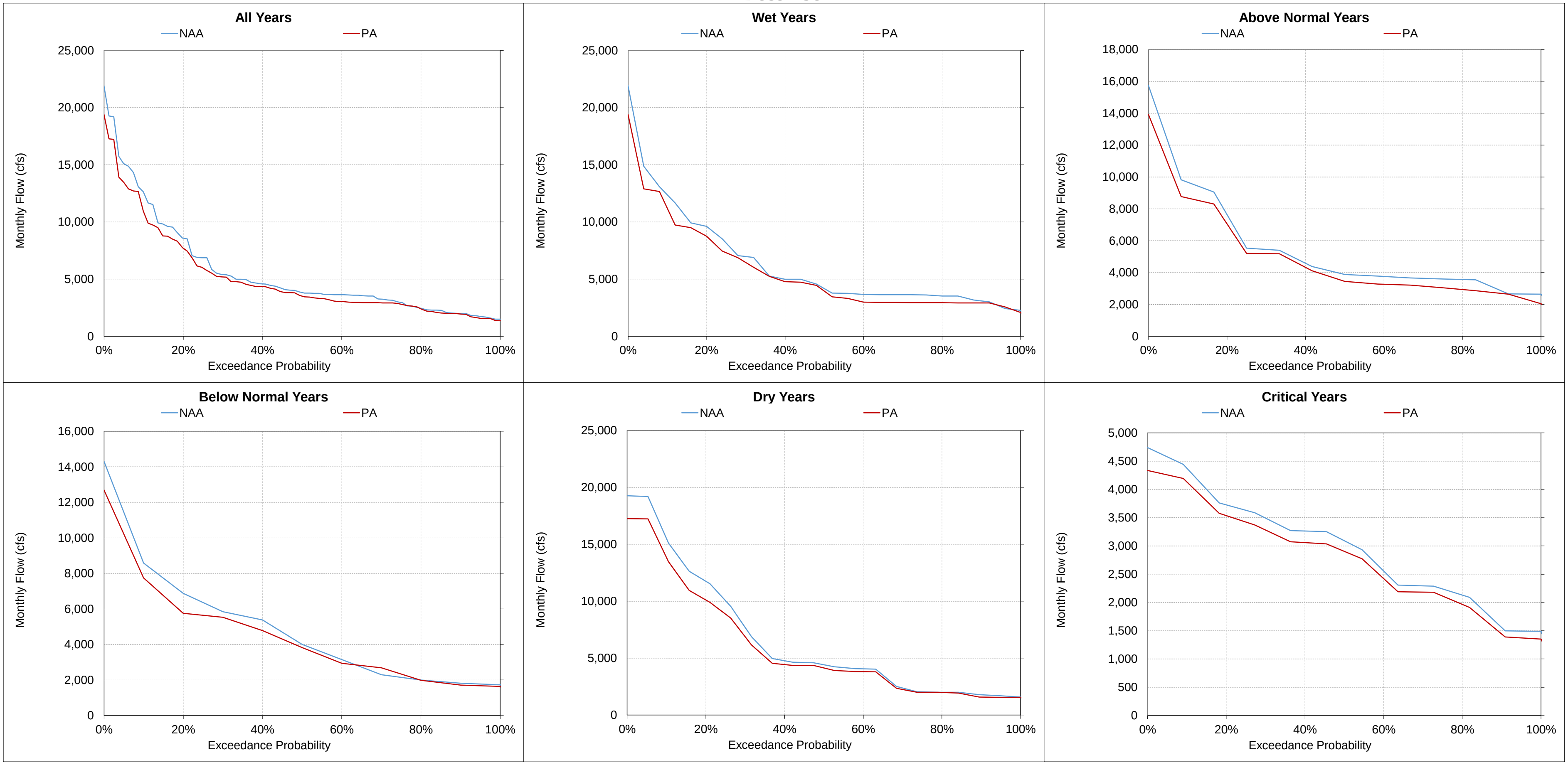
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-9. Sutter Slough, Monthly Flow
November



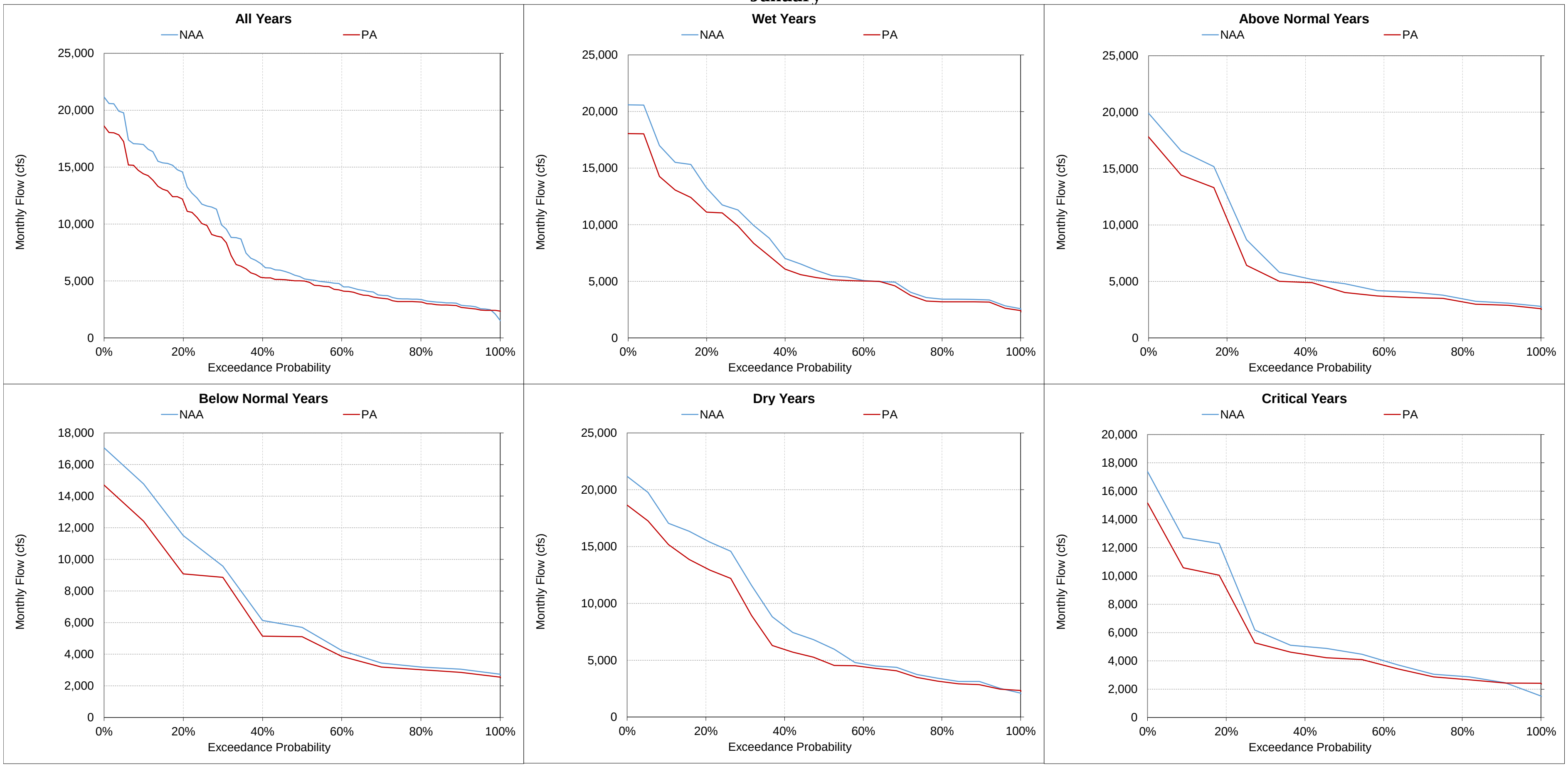
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-10. Sutter Slough, Monthly Flow December



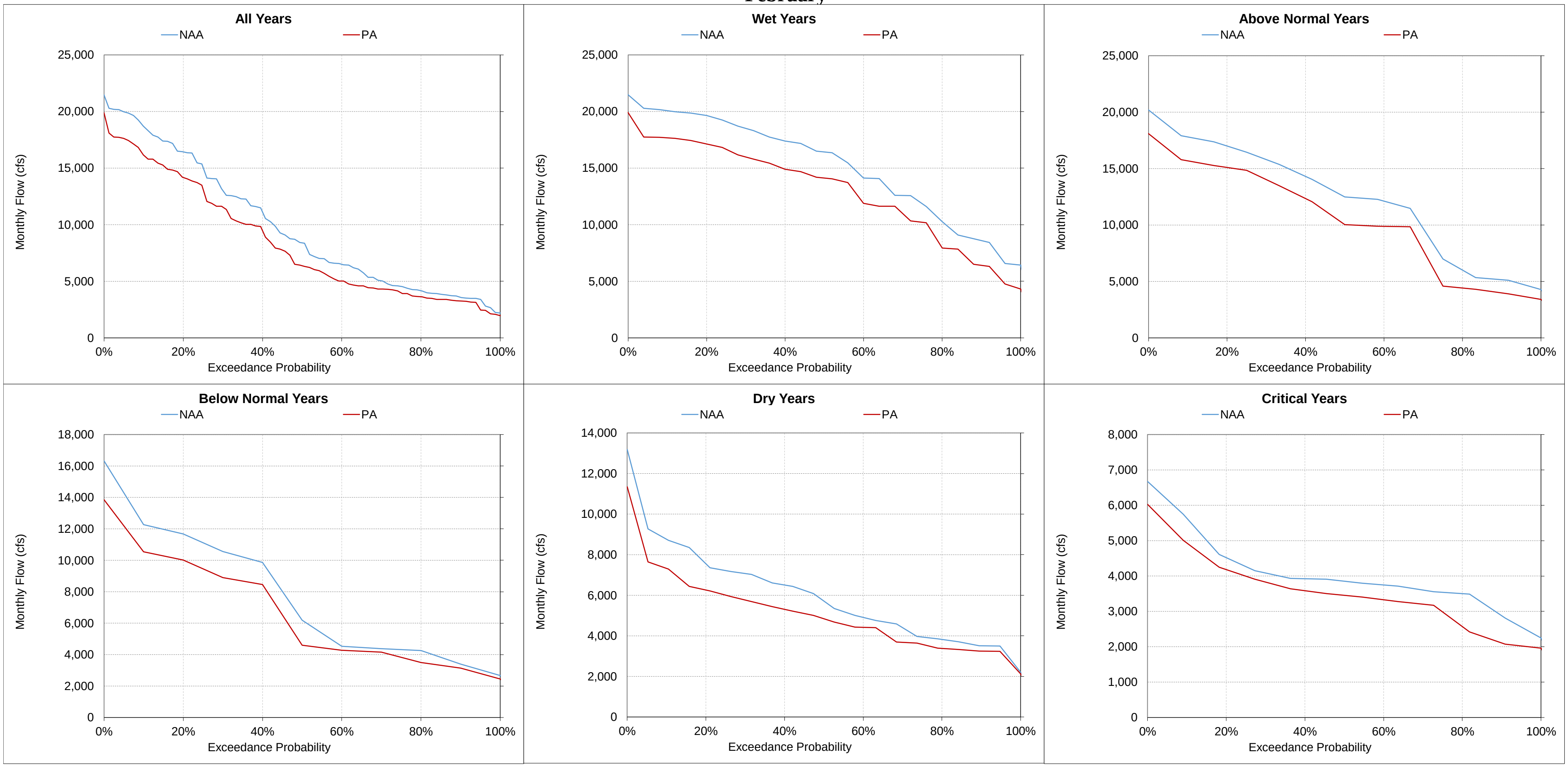
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-11. Sutter Slough, Monthly Flow
January



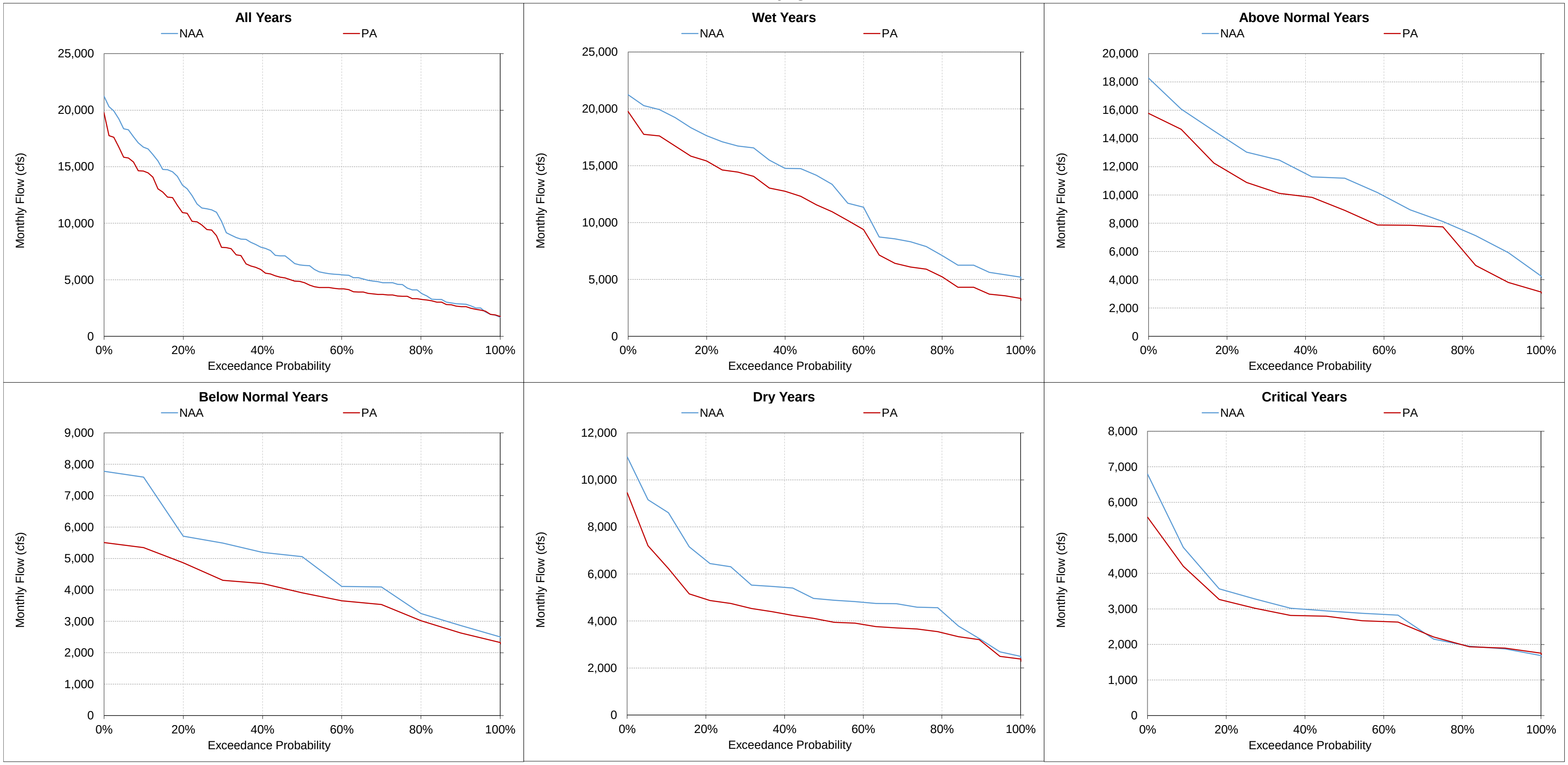
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-12. Sutter Slough, Monthly Flow
February



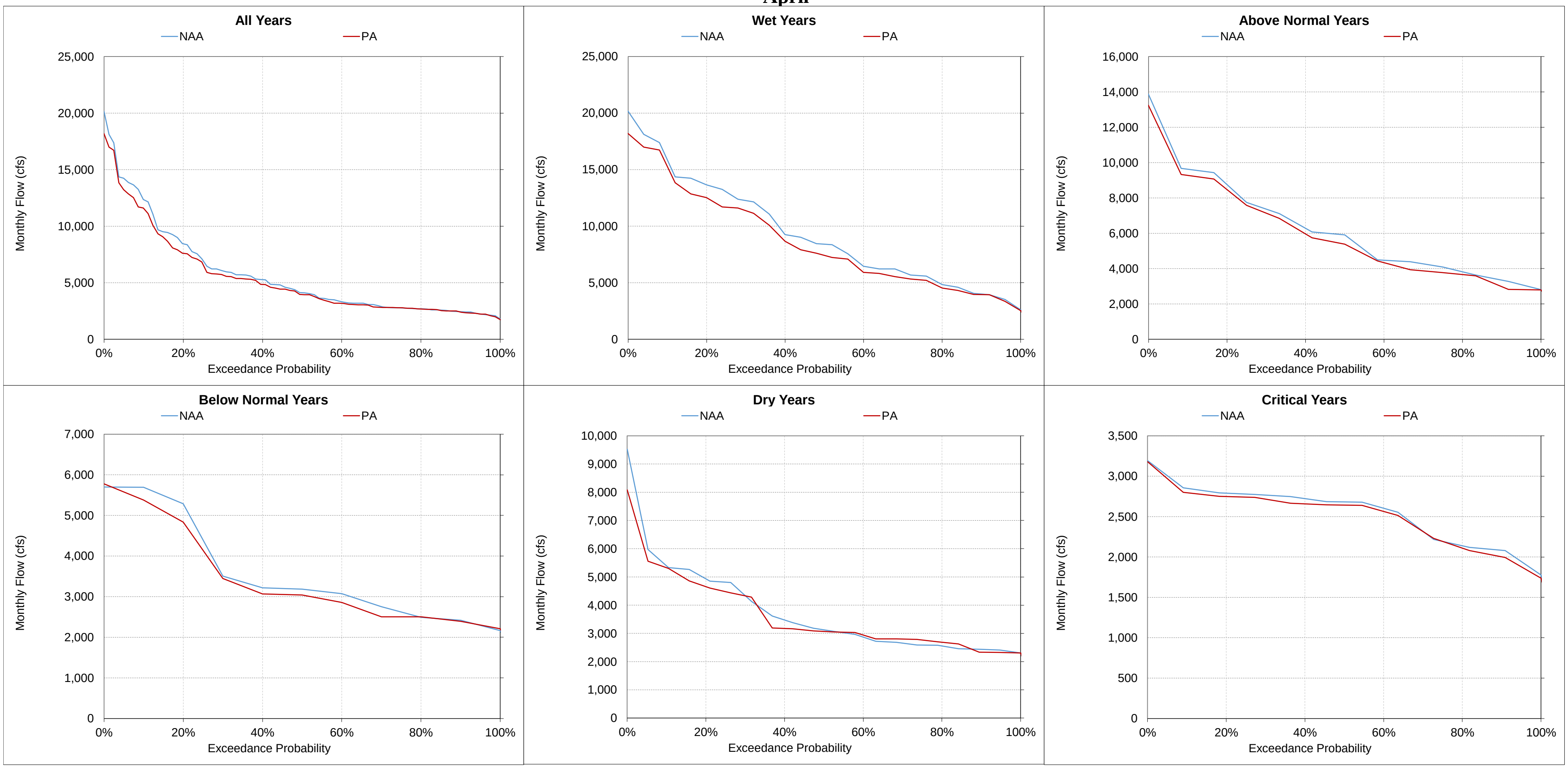
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-13. Sutter Slough, Monthly Flow
March



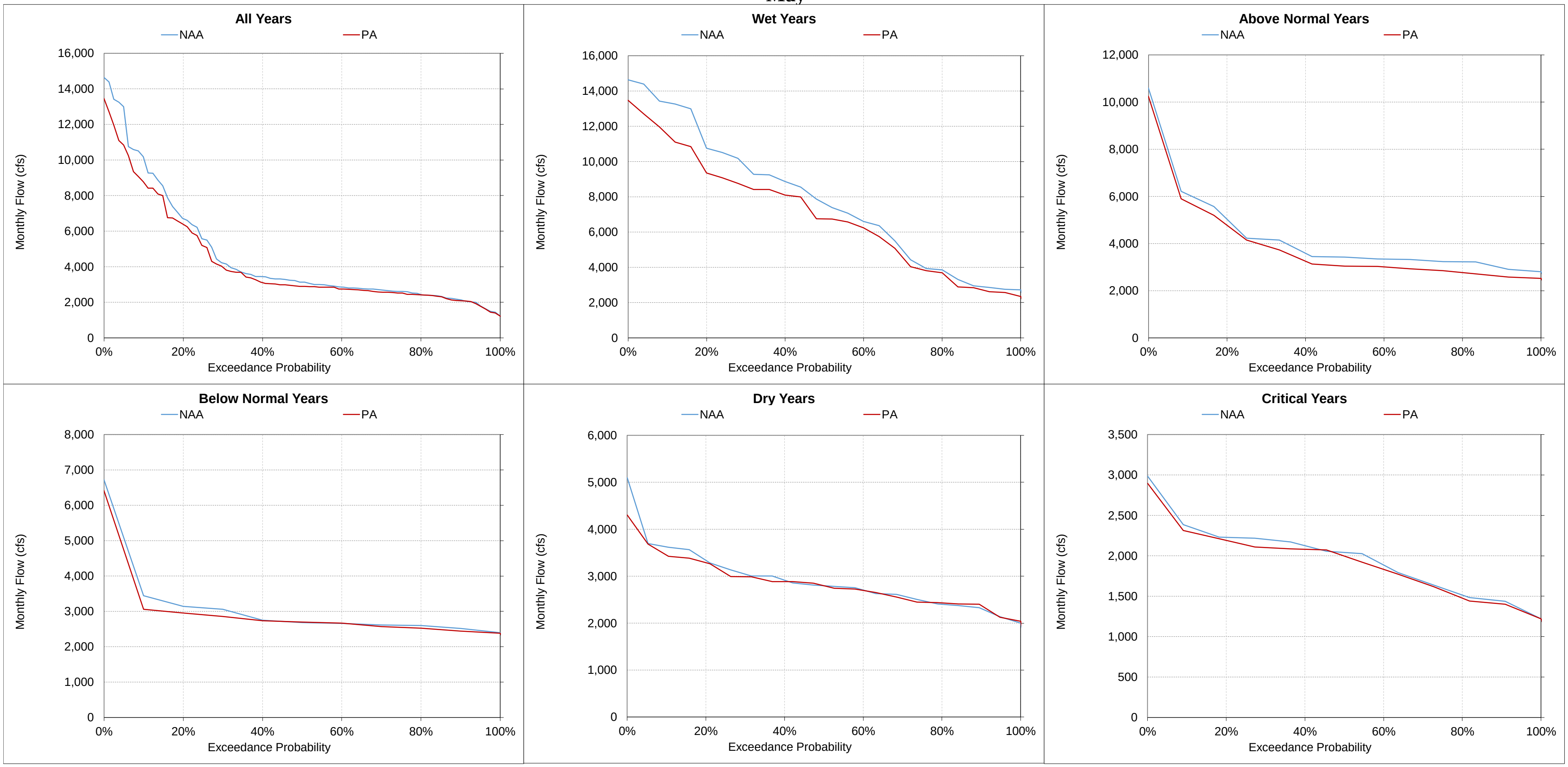
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-14. Sutter Slough, Monthly Flow
April



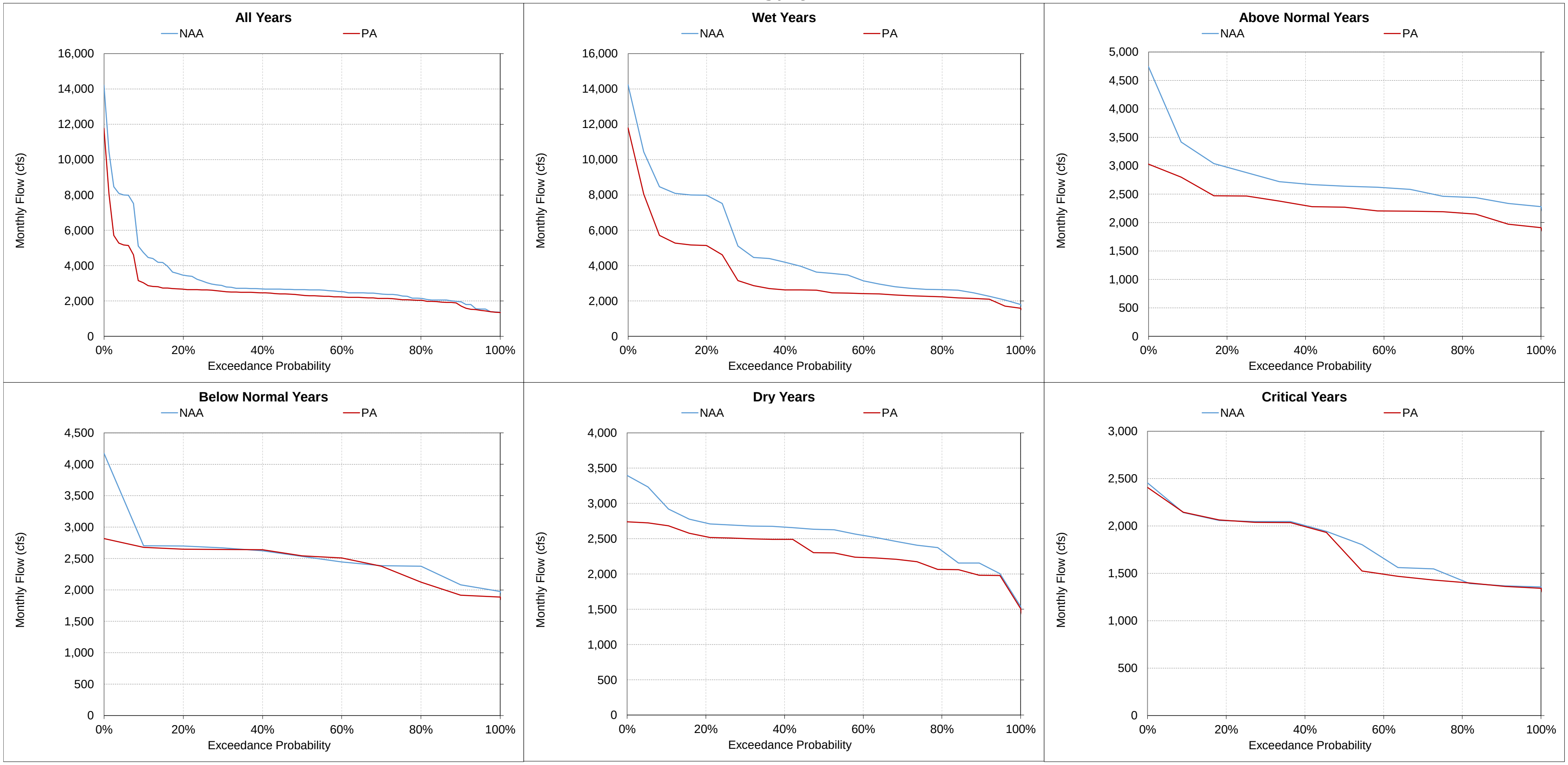
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-15. Sutter Slough, Monthly Flow
May



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-16. Sutter Slough, Monthly Flow June



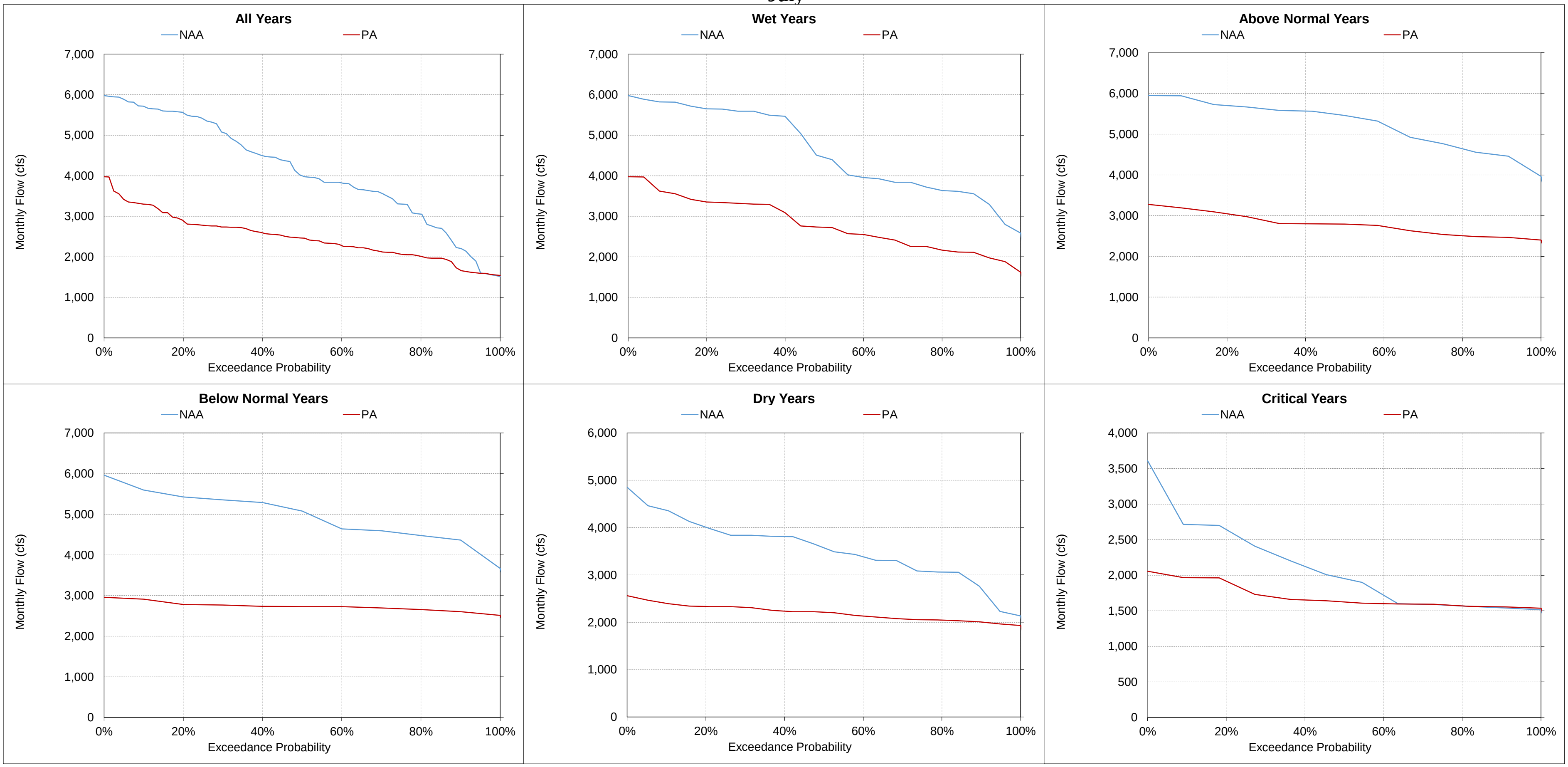
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

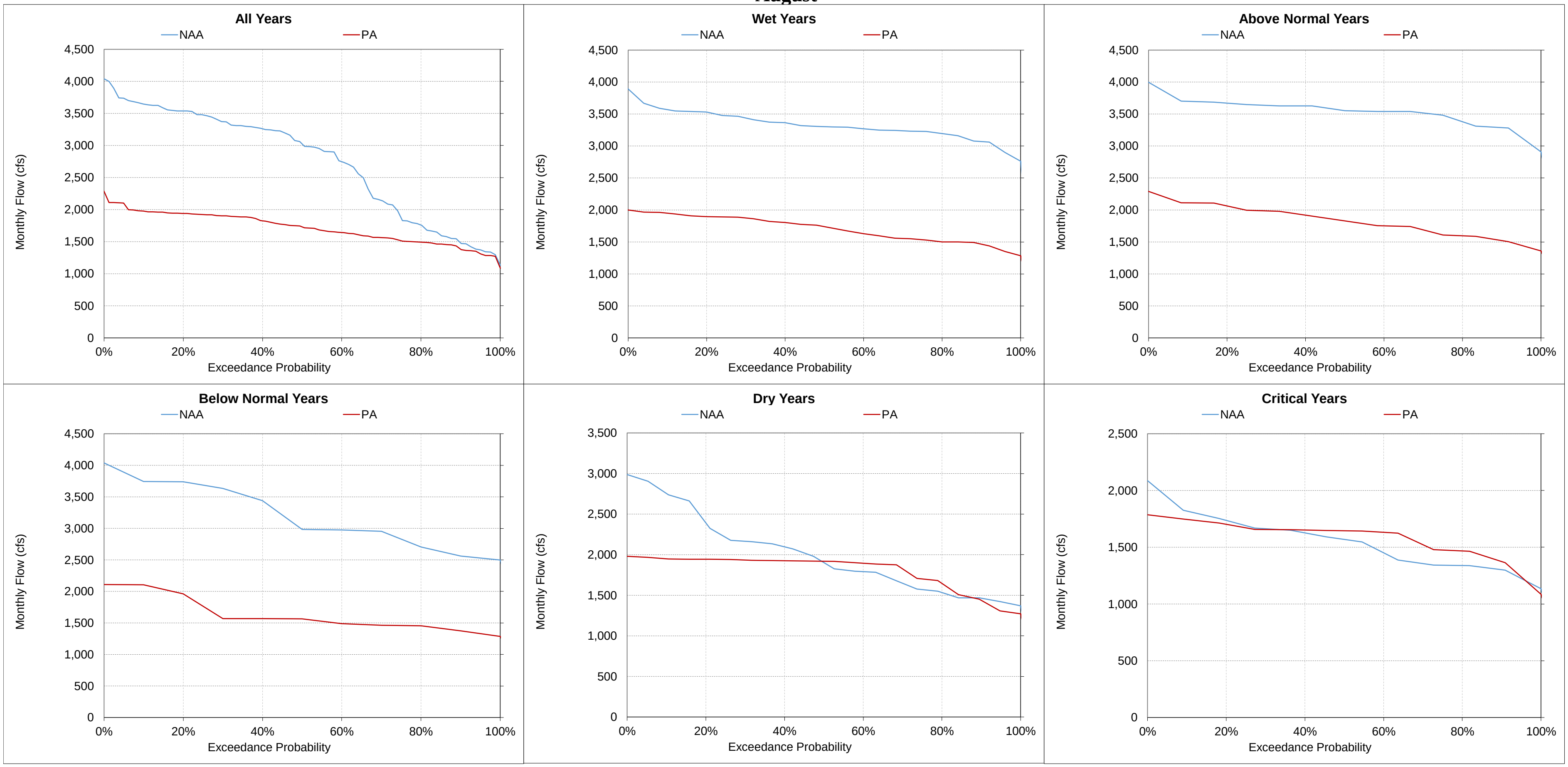
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-17. Sutter Slough, Monthly Flow
July



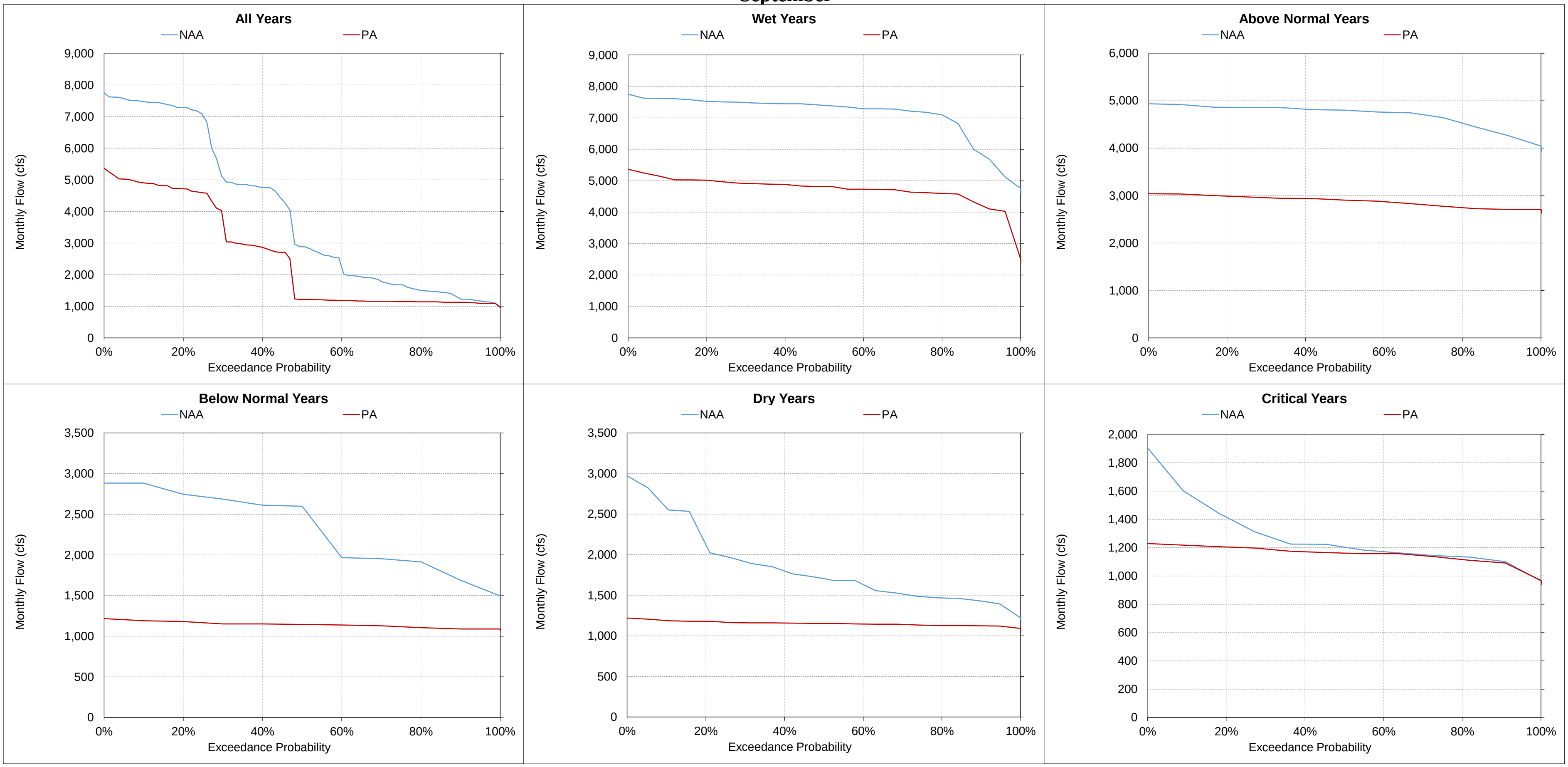
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-18. Sutter Slough, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-2-19. Sutter Slough, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-3. Steamboat Slough, Monthly Flow

Statistic	October				November				December				January				February				March			
	Monthly Flow (cfs)																							
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	2,281	1,072	-1,209	-53%	3,984	2,571	-1,414	-35%	9,975	8,543	-1,433	-14%	13,596	11,478	-2,118	-16%	15,200	12,971	-2,229	-15%	13,477	11,476	-2,001	-15%
20%	1,946	994	-951	-49%	3,237	2,003	-1,234	-38%	6,387	5,715	-672	-11%	11,276	9,294	-1,982	-18%	13,161	11,112	-2,049	-16%	10,325	8,340	-1,985	-19%
30%	1,731	925	-805	-47%	3,080	1,656	-1,424	-46%	3,731	3,576	-155	-4%	7,549	6,615	-934	-12%	10,274	8,935	-1,339	-13%	7,415	5,809	-1,606	-22%
40%	1,499	870	-629	-42%	2,705	1,410	-1,296	-48%	3,098	2,950	-149	-5%	4,638	3,775	-863	-19%	8,569	7,202	-1,367	-16%	5,740	4,111	-1,630	-28%
50%	1,269	856	-413	-33%	2,222	1,148	-1,075	-48%	2,533	2,320	-213	-8%	3,750	3,473	-277	-7%	6,309	4,676	-1,633	-26%	4,510	3,307	-1,202	-27%
60%	1,015	845	-170	-17%	1,831	964	-866	-47%	2,318	1,944	-374	-16%	3,167	2,806	-361	-11%	4,704	3,501	-1,204	-26%	3,772	2,820	-951	-25%
70%	896	840	-55	-6%	1,346	936	-410	-30%	2,121	1,814	-306	-14%	2,504	2,319	-185	-7%	3,466	2,936	-531	-15%	3,287	2,406	-881	-27%
80%	845	826	-20	-2%	1,023	929	-95	-9%	1,520	1,514	-5	0%	2,187	2,034	-153	-7%	2,733	2,400	-333	-12%	2,498	2,108	-390	-16%
90%	657	664	6	1%	867	871	3	0%	1,222	1,182	-40	-3%	1,841	1,702	-139	-8%	2,308	2,097	-211	-9%	1,776	1,647	-128	-7%
Long Term																								
Full Simulation Period[b]	1,423	949	-474	-33%	2,534	1,718	-816	-32%	4,126	3,698	-429	-10%	6,014	5,167	-846	-14%	7,627	6,438	-1,189	-16%	6,208	5,068	-1,140	-18%
Water Year Types[c]																								
Wet (32%)	2,015	1,031	-984	-49%	3,586	2,297	-1,289	-36%	4,688	4,188	-501	-11%	6,333	5,503	-830	-13%	12,117	10,258	-1,859	-15%	10,040	8,235	-1,805	-18%
Above Normal (16%)	1,635	999	-637	-39%	2,998	1,600	-1,397	-47%	4,035	3,580	-455	-11%	5,650	4,882	-768	-14%	9,662	8,110	-1,552	-16%	8,343	6,846	-1,497	-18%
Below Normal (13%)	1,506	1,237	-269	-18%	1,744	1,167	-577	-33%	3,646	3,300	-345	-9%	5,607	4,813	-794	-14%	5,891	4,968	-923	-16%	3,359	2,629	-730	-22%
Dry (24%)	942	843	-99	-11%	2,297	1,862	-435	-19%	5,038	4,498	-540	-11%	6,787	5,705	-1,083	-16%	4,355	3,627	-728	-17%	3,896	3,047	-849	-22%
Critical (15%)	636	631	-5	-1%	871	854	-16	-2%	1,930	1,795	-134	-7%	4,800	4,179	-621	-13%	2,740	2,382	-358	-13%	2,055	1,883	-172	-8%

Statistic	April				May				June				July				August				September			
	Monthly Flow (cfs)																							
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	9,602	8,888	-715	-7%	7,530	6,486	-1,043	-14%	3,189	1,893	-1,296	-41%	3,878	2,004	-1,874	-48%	2,260	1,194	-1,066	-47%	5,390	3,235	-2,155	-40%
20%	6,254	5,522	-732	-12%	4,774	4,518	-256	-5%	2,153	1,619	-533	-25%	3,724	1,763	-1,962	-53%	2,165	1,168	-997	-46%	5,241	3,067	-2,174	-41%
30%	4,254	3,967	-288	-7%	2,857	2,593	-264	-9%	1,736	1,529	-206	-12%	3,313	1,670	-1,643	-50%	2,083	1,153	-929	-45%	3,334	2,312	-1,023	-31%
40%	3,617	3,295	-322	-9%	2,191	1,972	-219	-10%	1,643	1,482	-162	-10%	2,856	1,582	-1,275	-45%	1,994	1,100	-895	-45%	3,084	1,747	-1,337	-43%
50%	2,681	2,575	-106	-4%	2,011	1,832	-178	-9%	1,618	1,404	-214	-13%	2,492	1,493	-999	-40%	1,852	1,046	-806	-44%	1,758	712	-1,045	-59%
60%	2,149	2,043	-106	-5%	1,768	1,714	-53	-3%	1,541	1,346	-195	-13%	2,366	1,382	-984	-42%	1,689	983	-705	-42%	1,358	687	-671	-49%
70%	1,803	1,778	-25	-1%	1,668	1,591	-77	-5%	1,450	1,303	-147	-10%	2,221	1,308	-913	-41%	1,288	937	-351	-27%	1,077	679	-398	-37%
80%	1,664	1,658	-6	0%	1,492	1,493	1	0%	1,298	1,218	-80	-6%	1,867	1,216	-651	-35%	1,056	897	-158	-15%	895	669	-226	-25%
90%	1,513	1,505	-8	-1%	1,303	1,274	-29	-2%	1,171	1,030	-141	-12%	1,319	983	-336	-25%	877	825	-52	-6%	720	656	-64	-9%
Long Term																								
Full Simulation Period[b]	4,133	3,860	-273	-7%	3,186	2,905	-281	-9%	2,087	1,646	-441	-21%	2,652	1,505	-1,147	-43%	1,687	1,033	-654	-39%	2,656	1,608	-1,048	-39%
Water Year Types[c]																								
Wet (32%)	7,081	6,484	-597	-8%	5,750	5,074	-675	-12%	3,335	2,316	-1,018	-31%	3,006	1,717	-1,289	-43%	2,044	1,029	-1,015	-50%	5,073	3,080	-1,993	-39%
Above Normal (16%)	4,545	4,300	-245	-5%	2,937	2,689	-248	-8%	1,757	1,413	-344	-20%	3,457	1,692	-1,765	-51%	2,179	1,106	-1,073	-49%	3,010	1,760	-1,250	-42%
Below Normal (13%)	2,347	2,255	-92	-4%	2,019	1,935	-84	-4%	1,593	1,463	-130	-8%	3,236	1,659	-1,577	-49%	1,972	982	-990	-50%	1,407	672	-735	-52%
Dry (24%)	2,548	2,430	-118	-5%	1,849	1,799	-50	-3%	1,558	1,388	-171	-11%	2,179	1,320	-859	-39%	1,209	1,078	-130	-11%	1,114	674	-440	-39%
Critical (15%)	1,577	1,552	-26	-2%	1,202	1,170	-32	-3%	1,077	1,044	-32	-3%	1,266	1,010	-256	-20%	919	933	14	2%	752	670	-82	-11%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

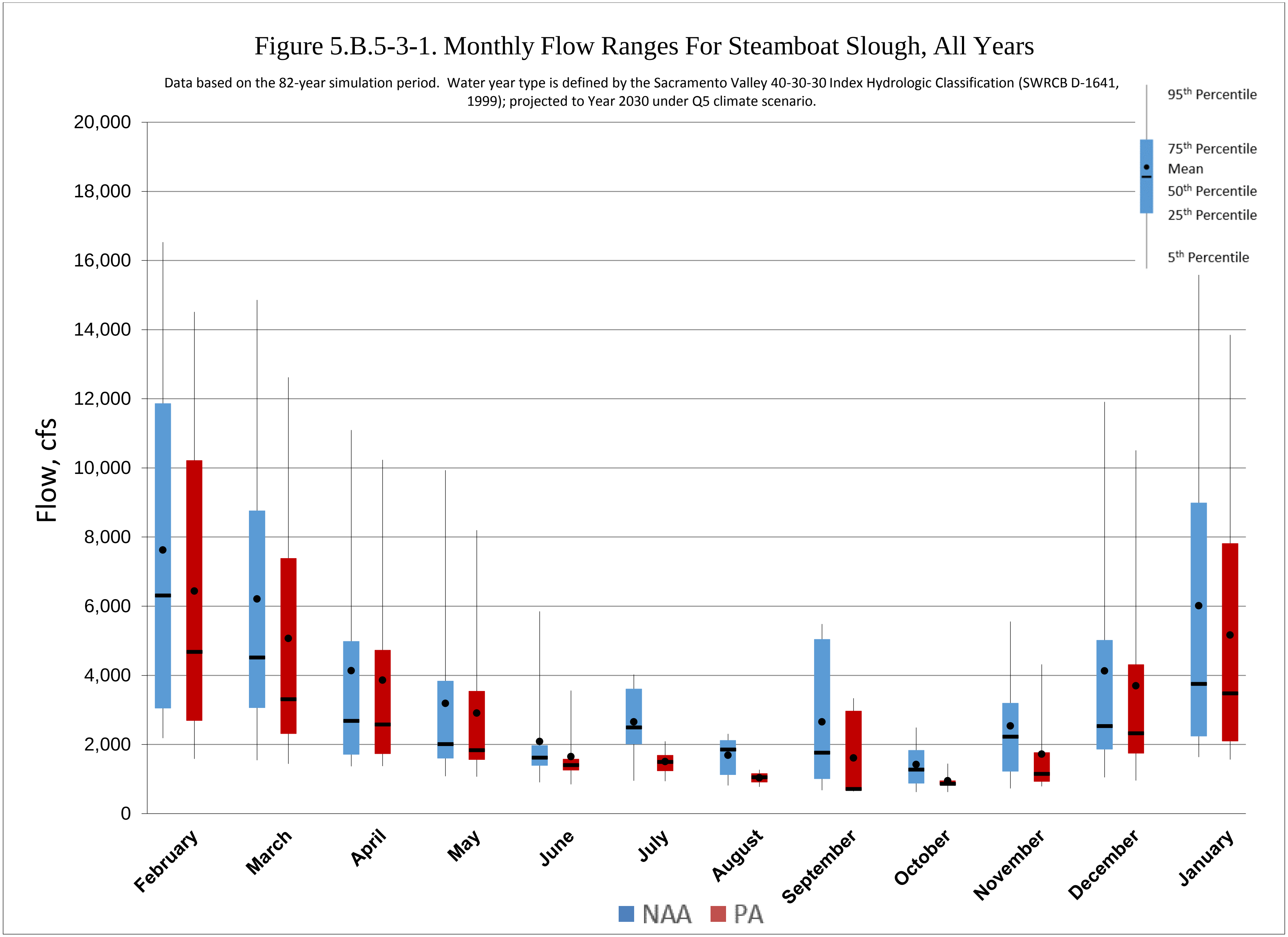
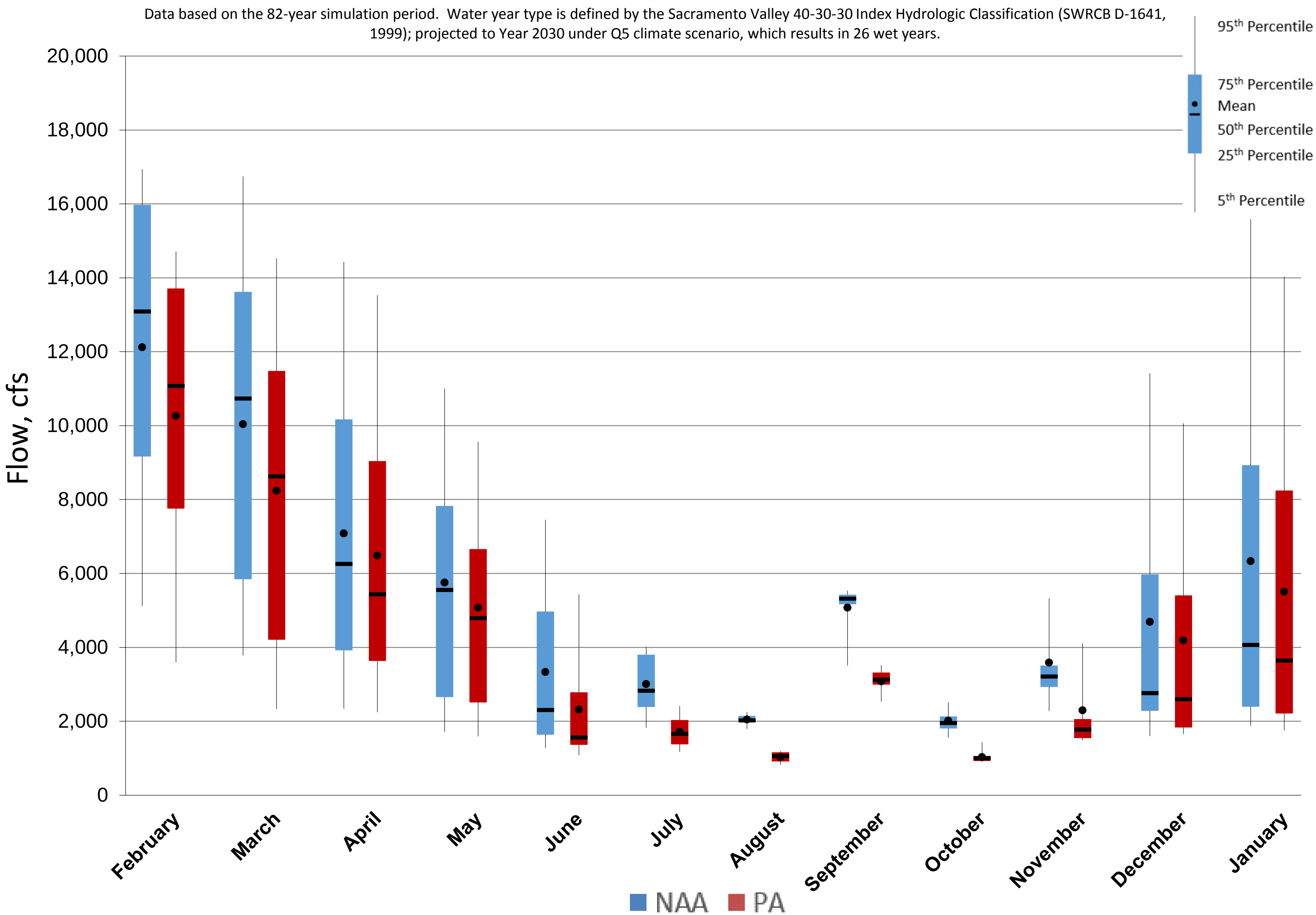


Figure 5.B.5-3-1. Monthly Flow Ranges For Steamboat Slough, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-3-2. Monthly Flow Ranges For Steamboat Slough, Wet Years



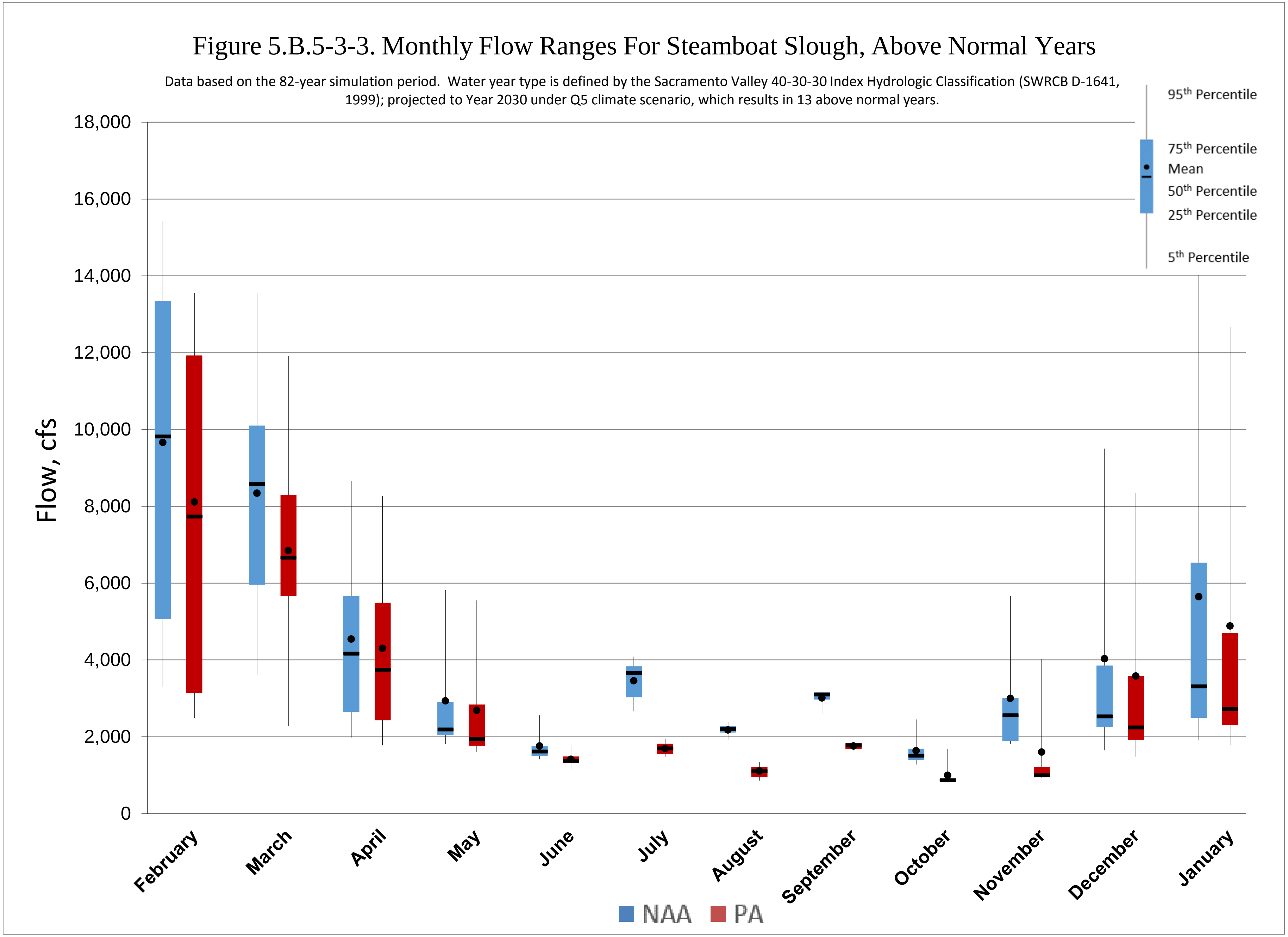


Figure 5.B.5-3-3. Monthly Flow Ranges For Steamboat Slough, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

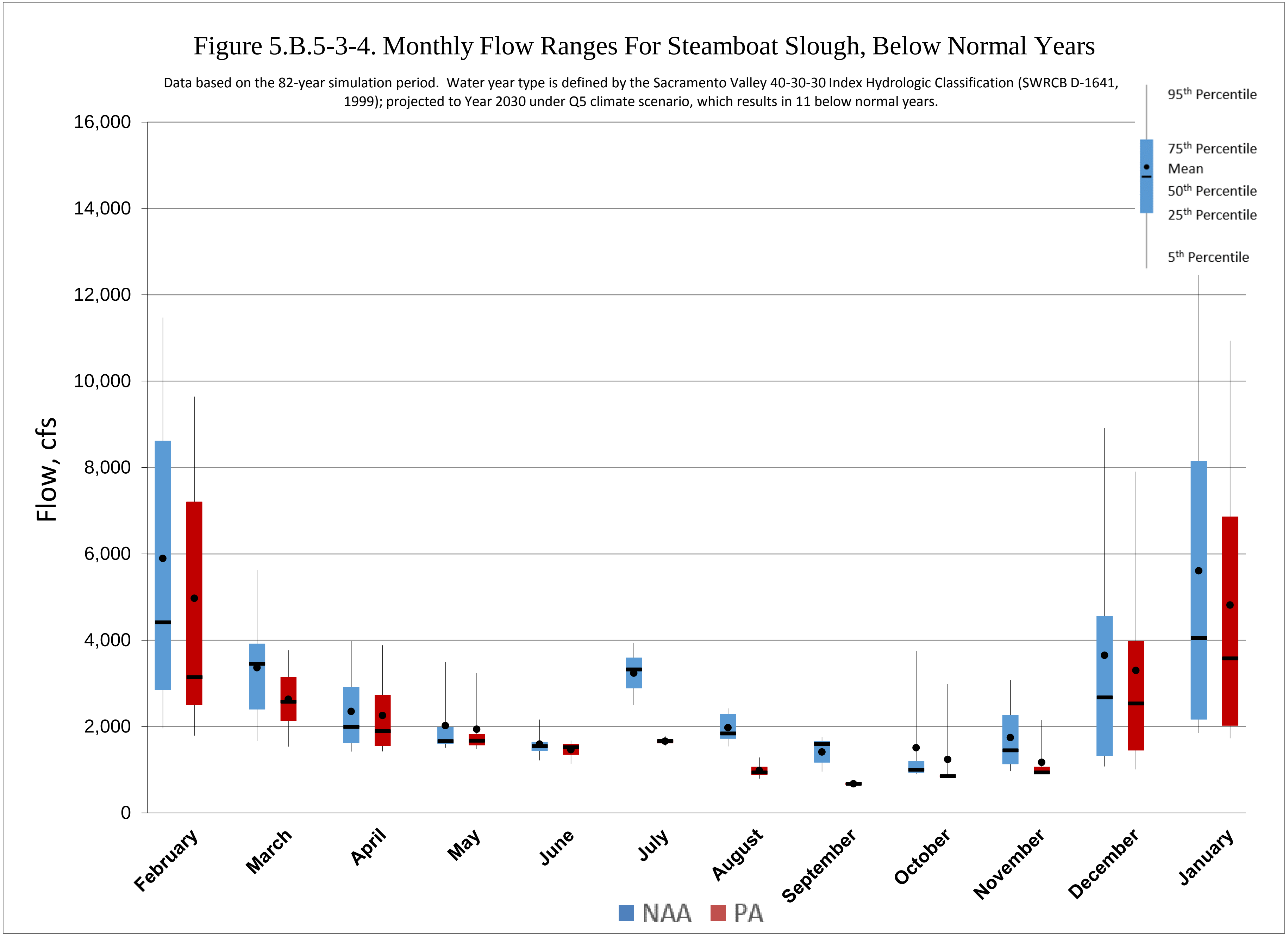


Figure 5.B.5-3-4. Monthly Flow Ranges For Steamboat Slough, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

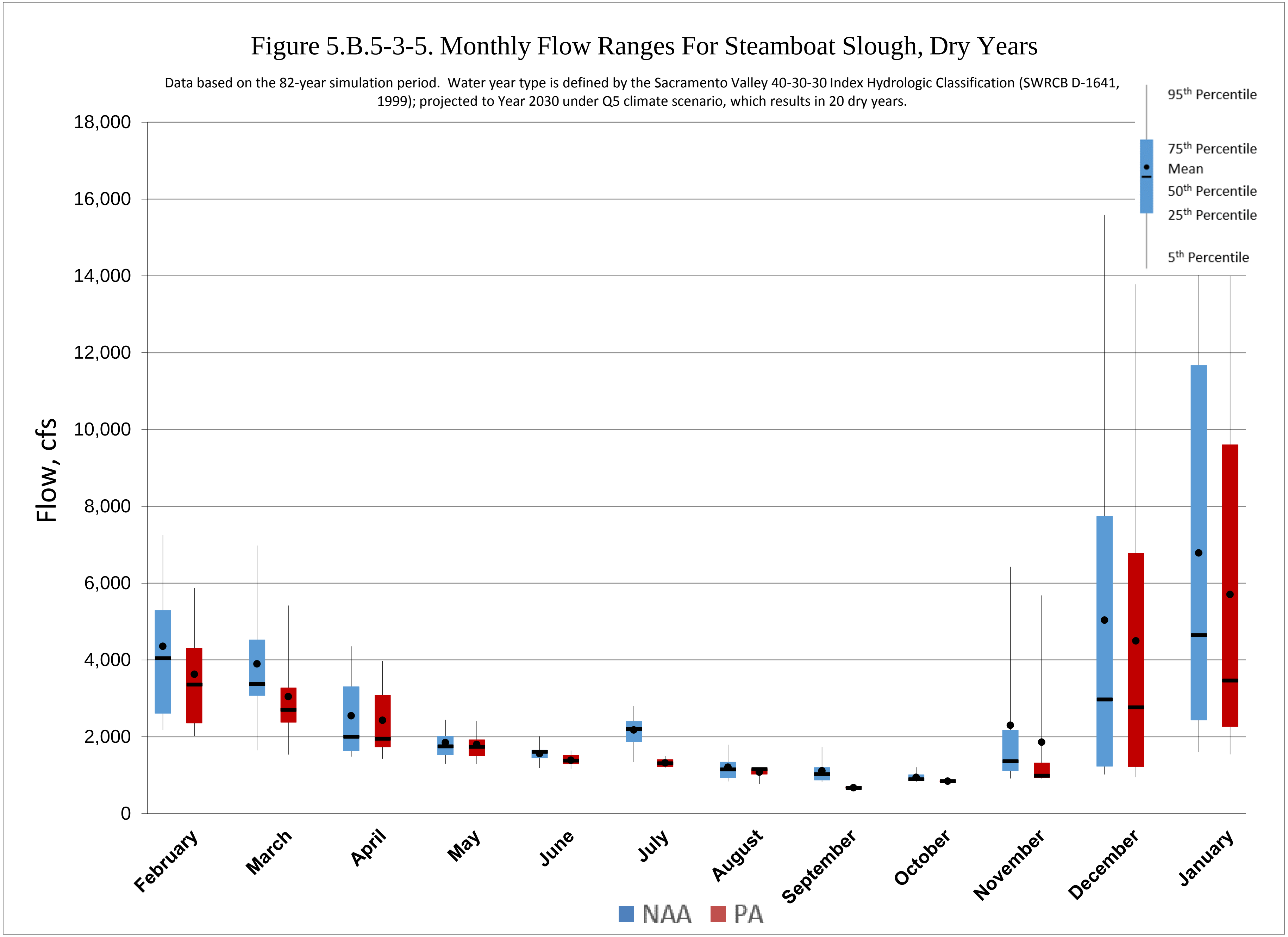


Figure 5.B.5-3-5. Monthly Flow Ranges For Steamboat Slough, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-3-6. Monthly Flow Ranges For Steamboat Slough, Critical Years

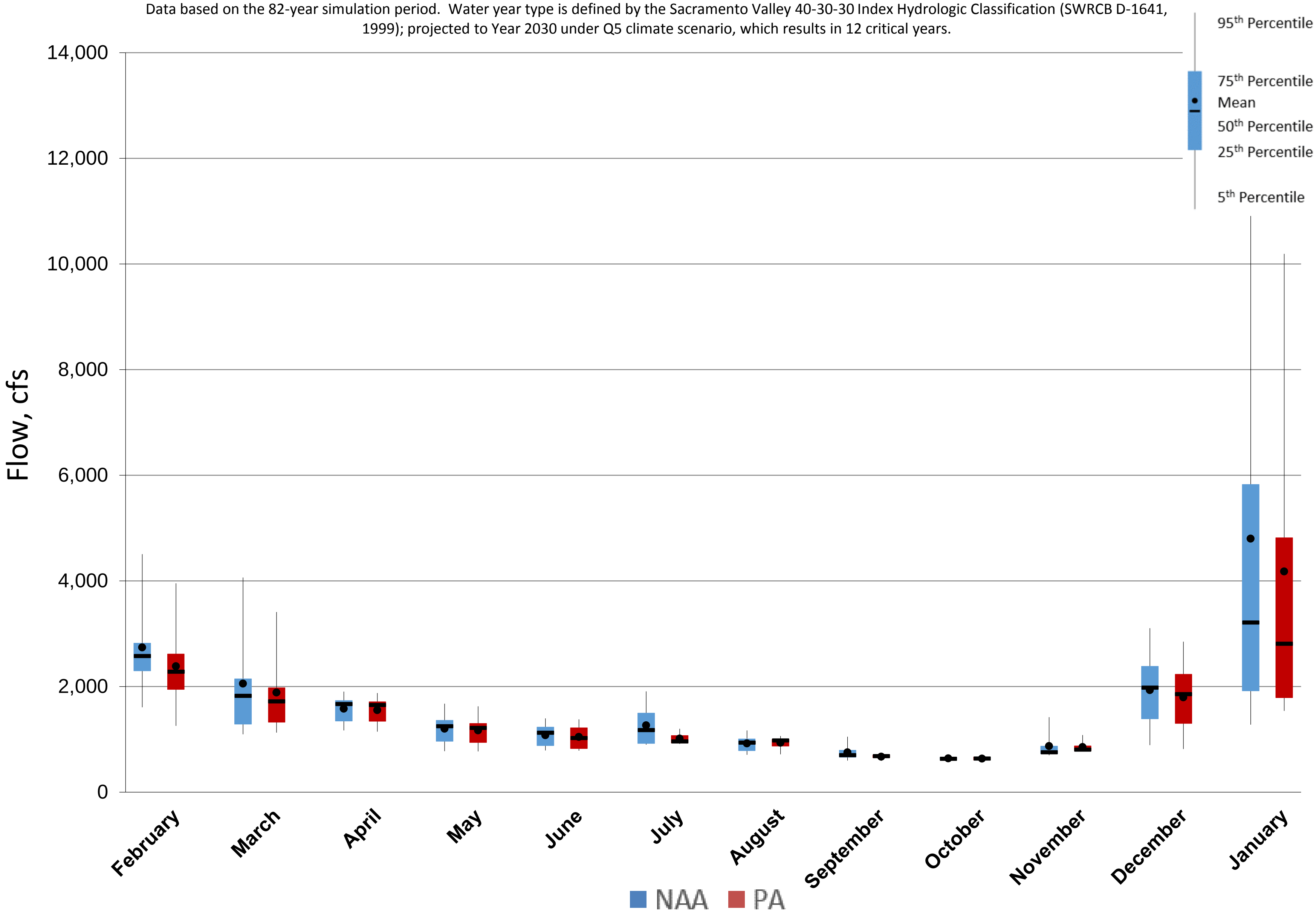
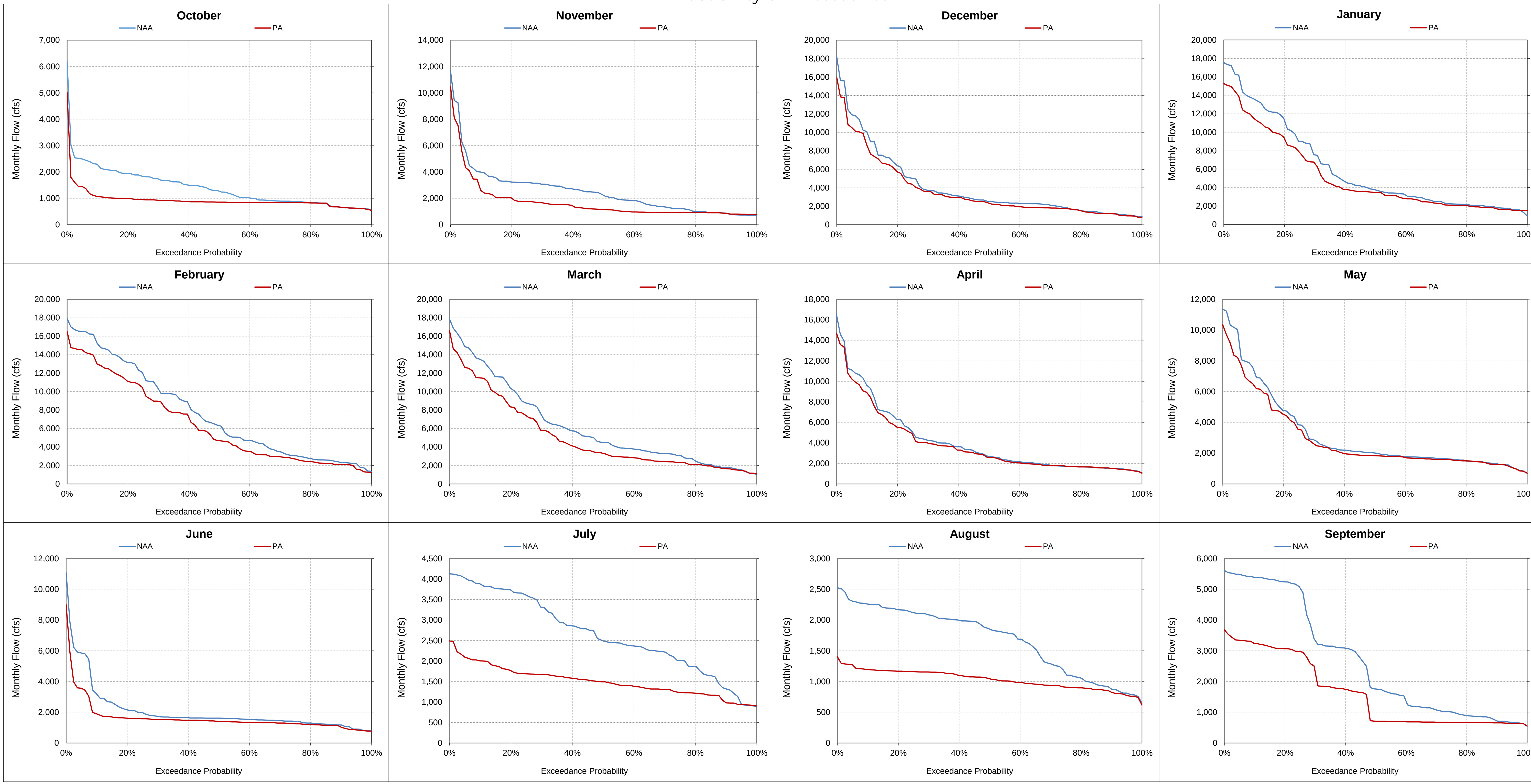
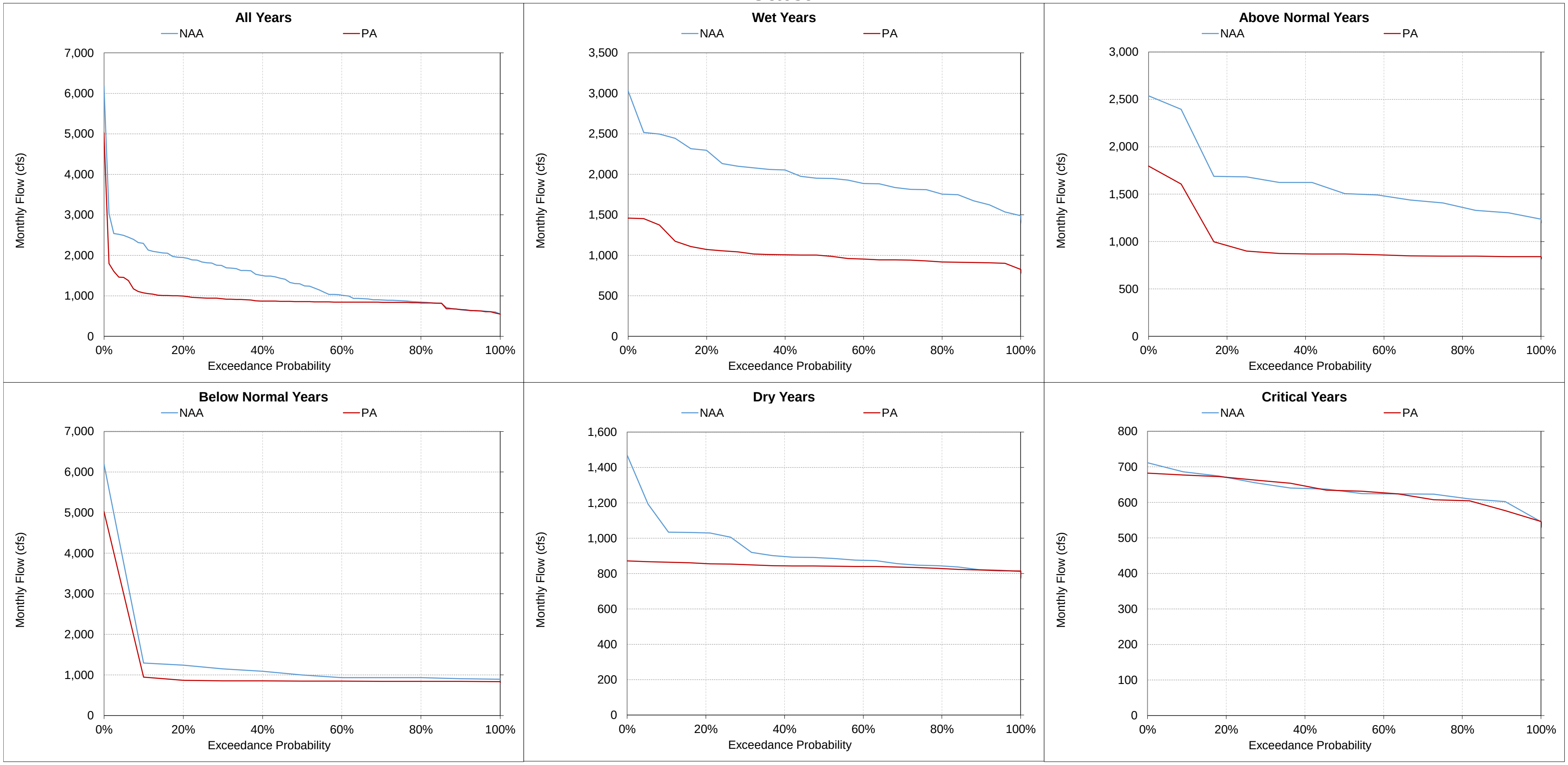


Figure 5.B.5-3-7. Steamboat Slough, Monthly Flow Probability of Exceedance



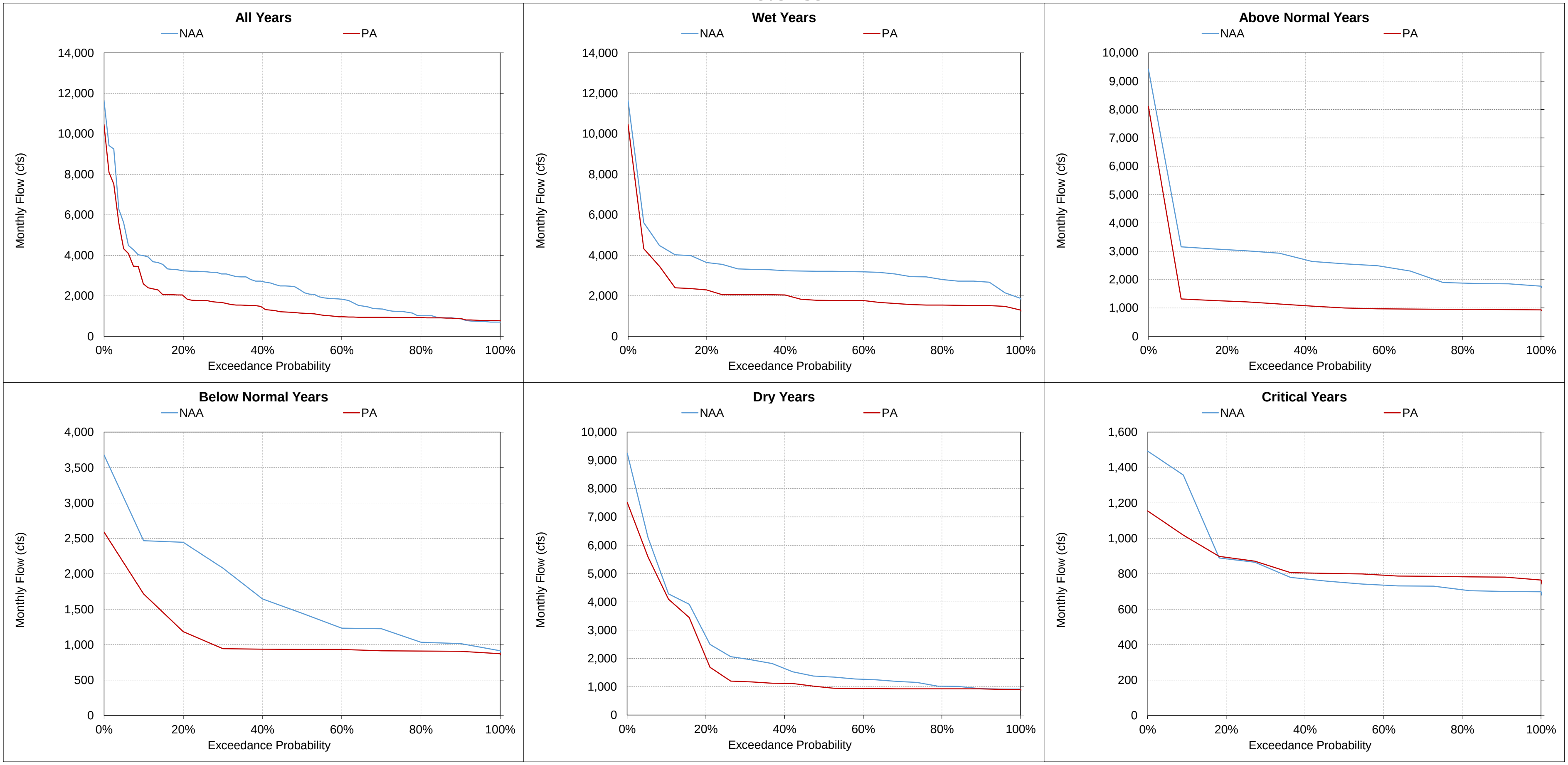
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-8. Steamboat Slough, Monthly Flow
October



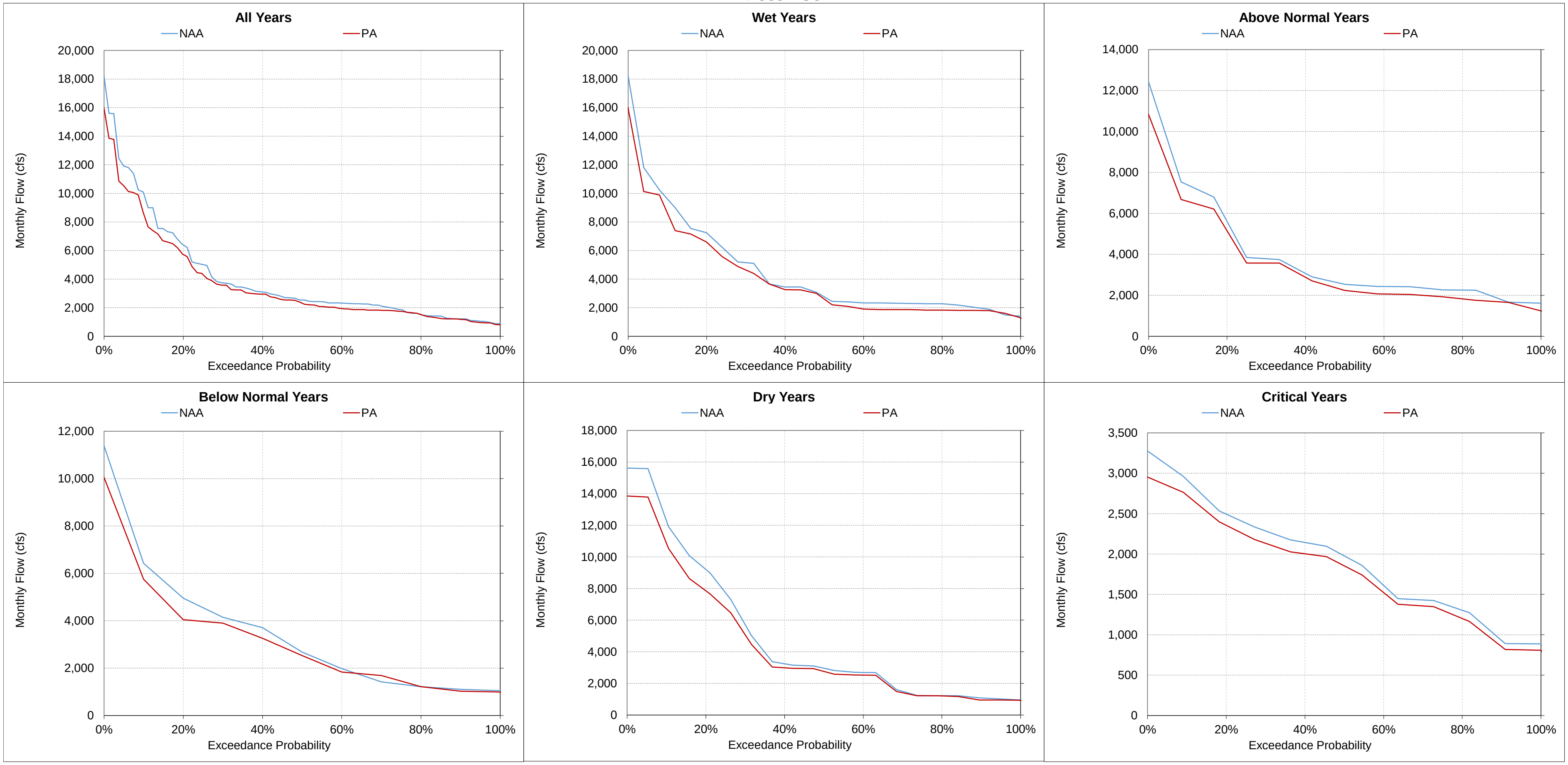
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-9. Steamboat Slough, Monthly Flow November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-10. Steamboat Slough, Monthly Flow December



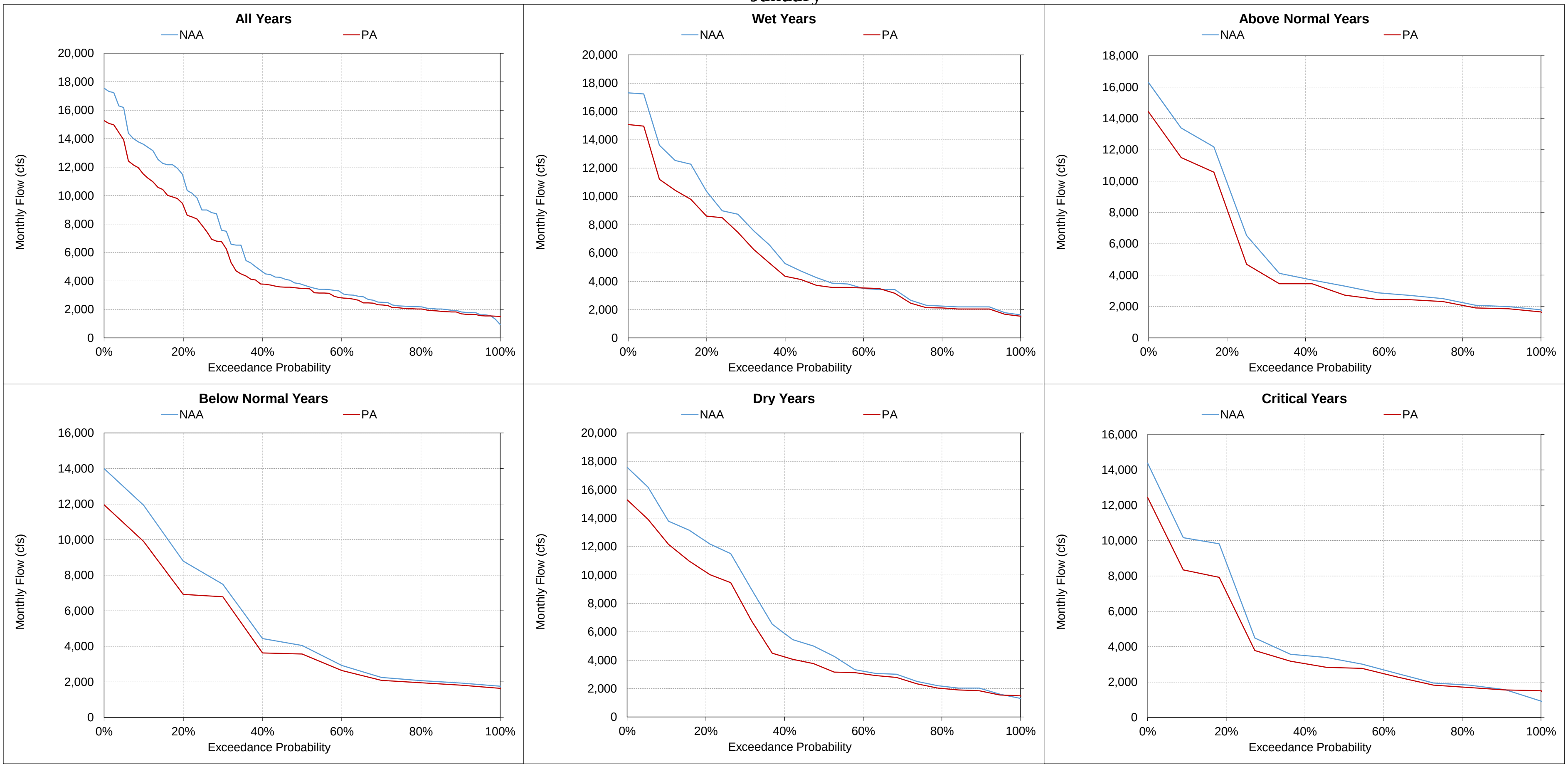
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

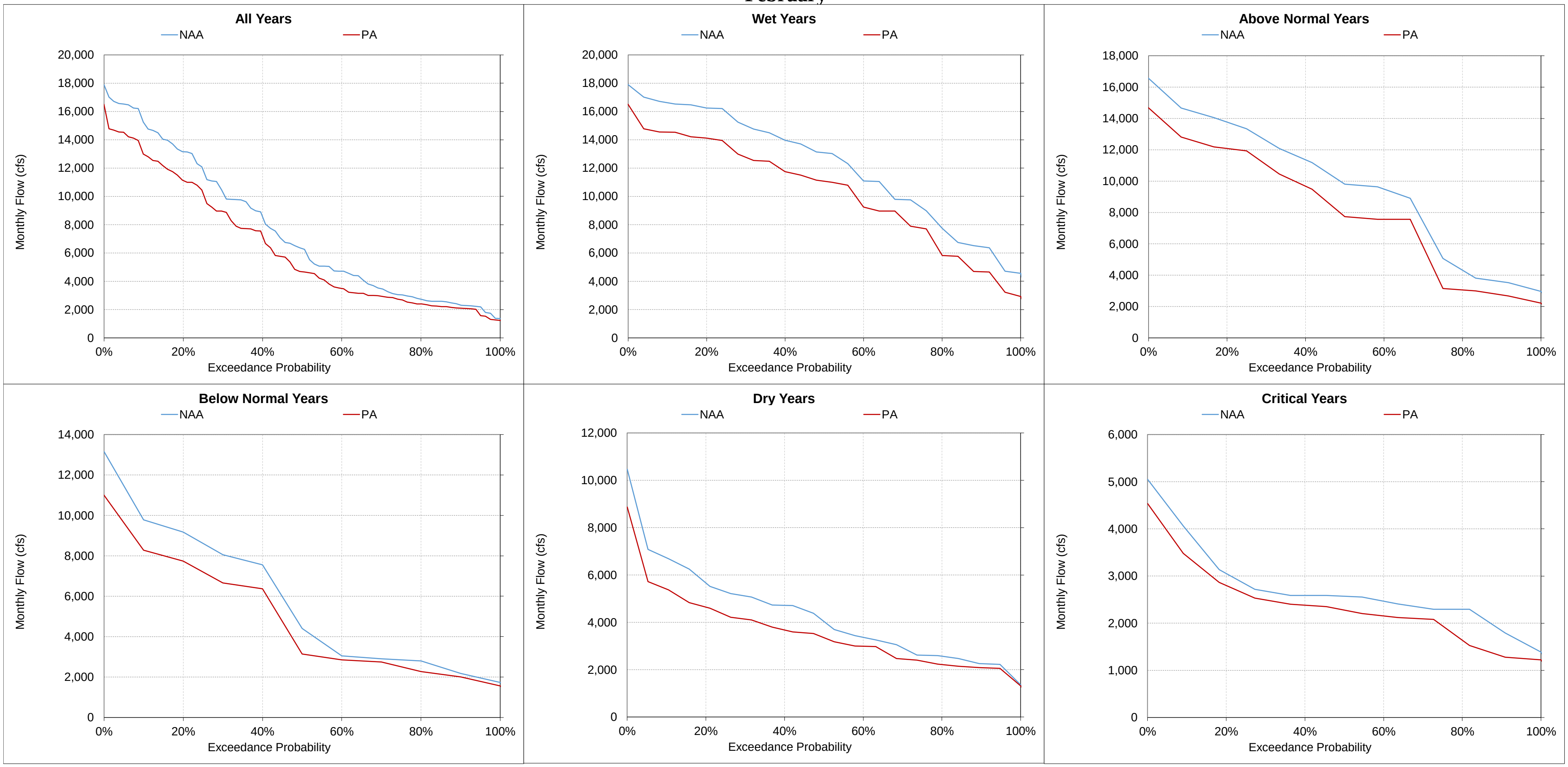
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-11. Steamboat Slough, Monthly Flow
January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-12. Steamboat Slough, Monthly Flow
February



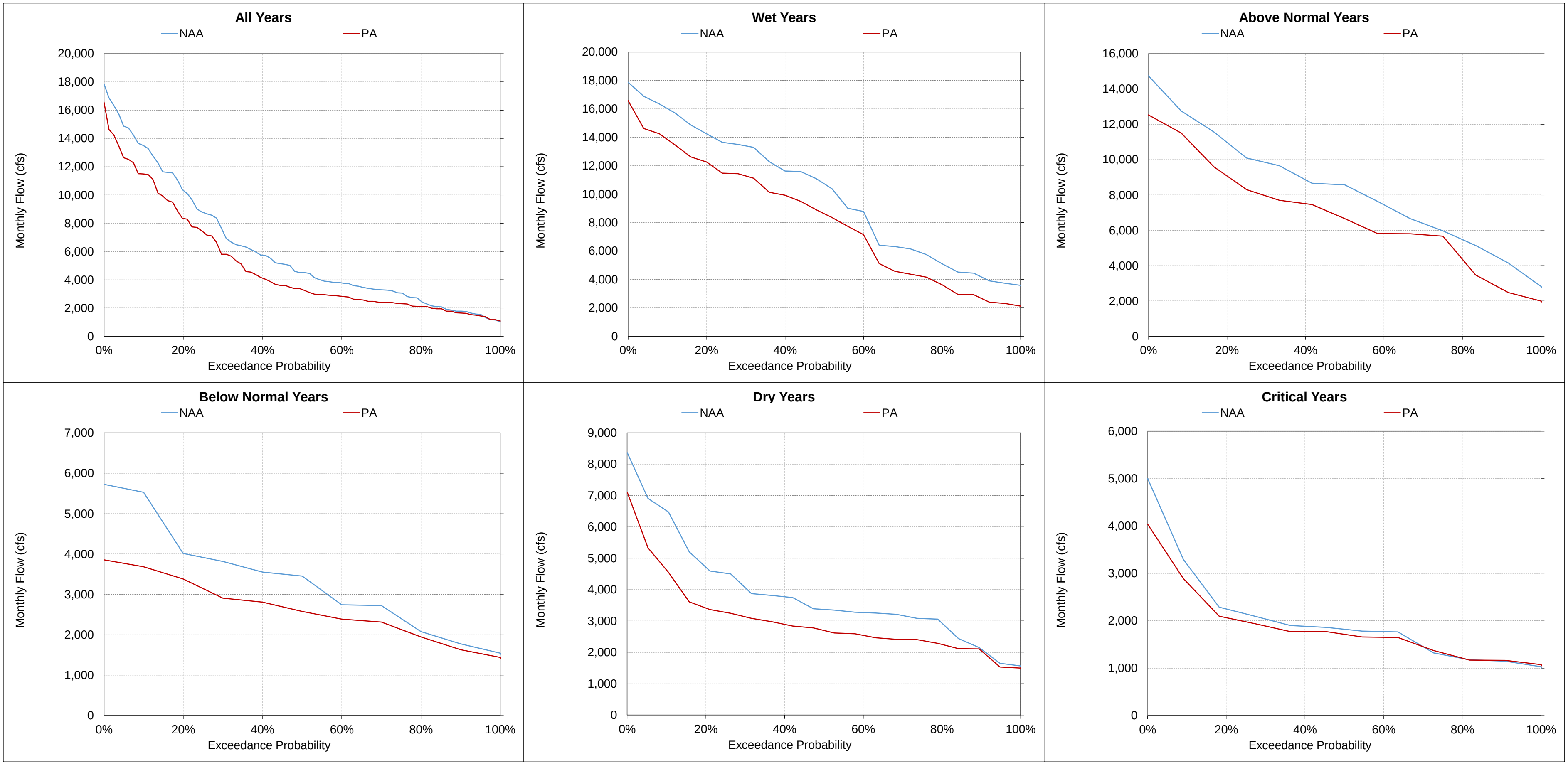
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

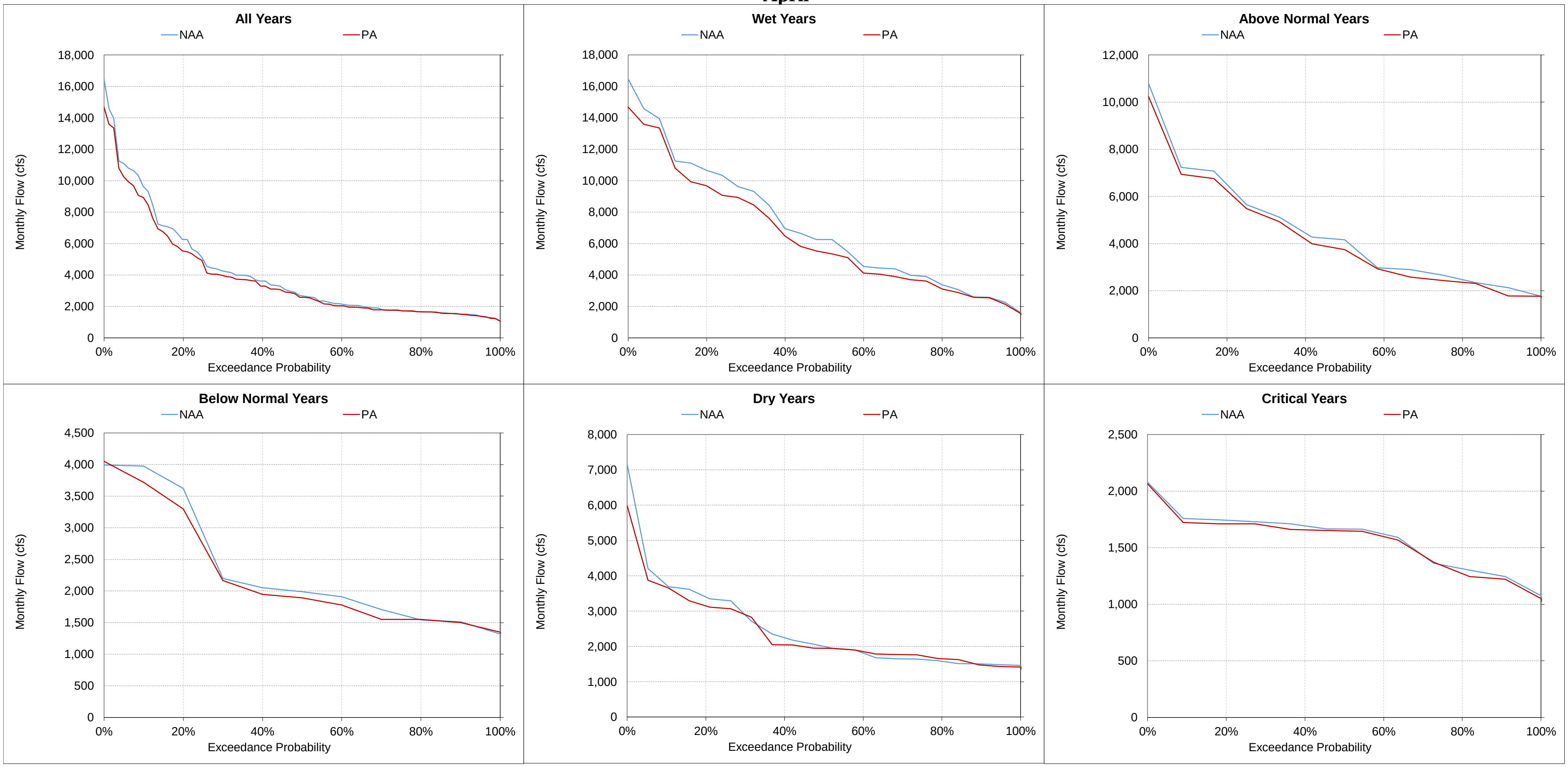
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-13. Steamboat Slough, Monthly Flow
March



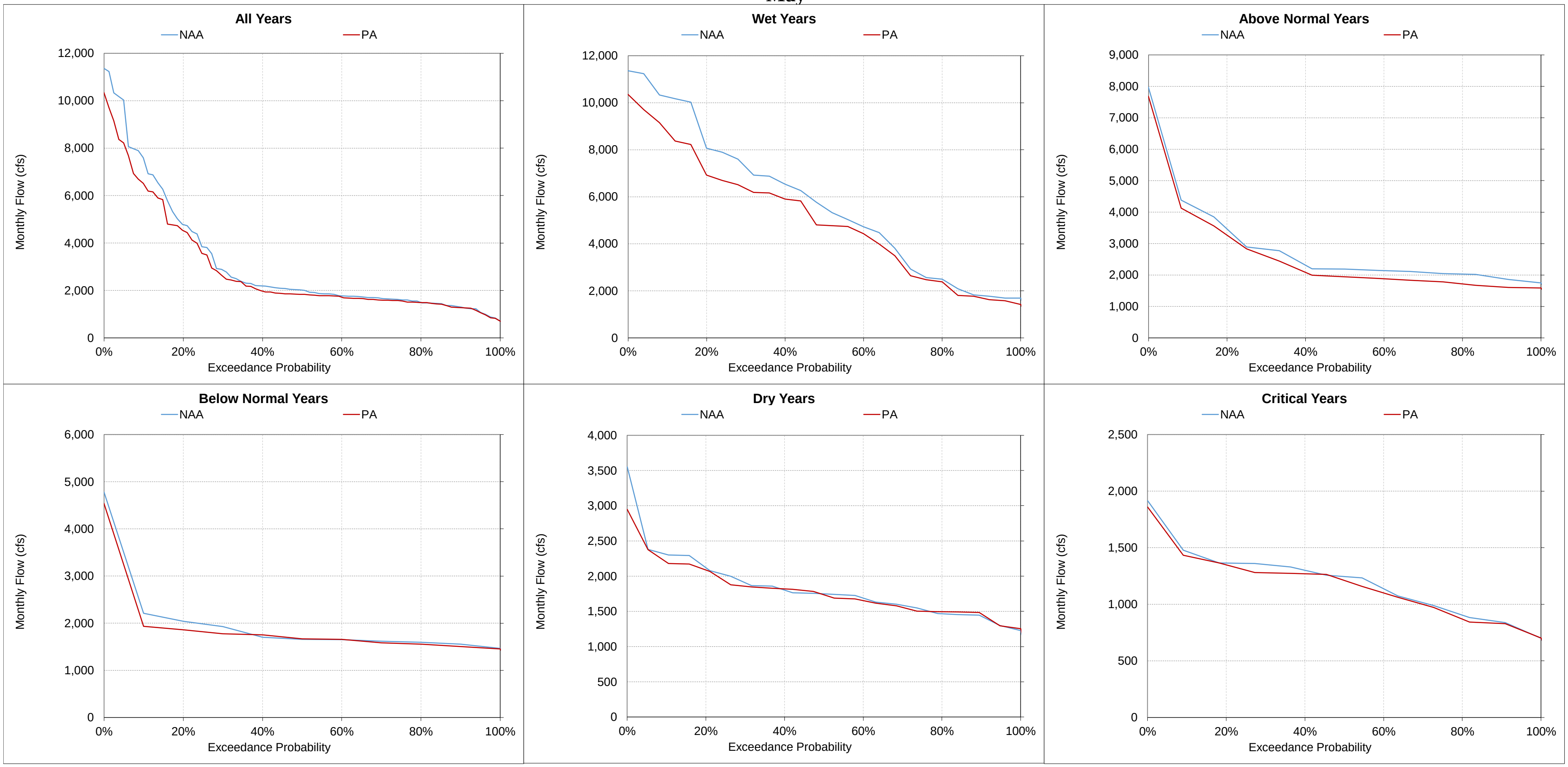
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-14. Steamboat Slough, Monthly Flow
April



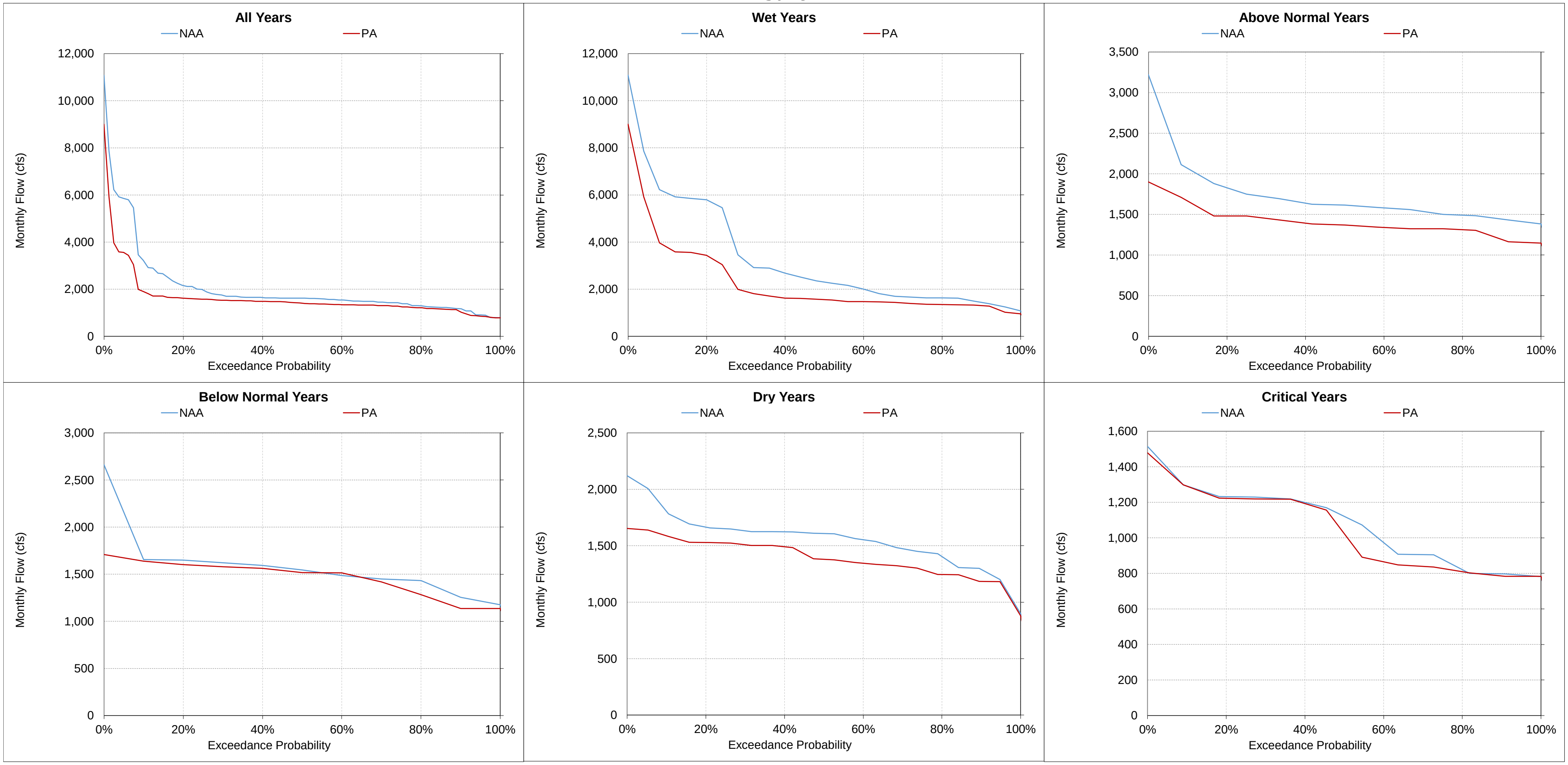
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-15. Steamboat Slough, Monthly Flow
May



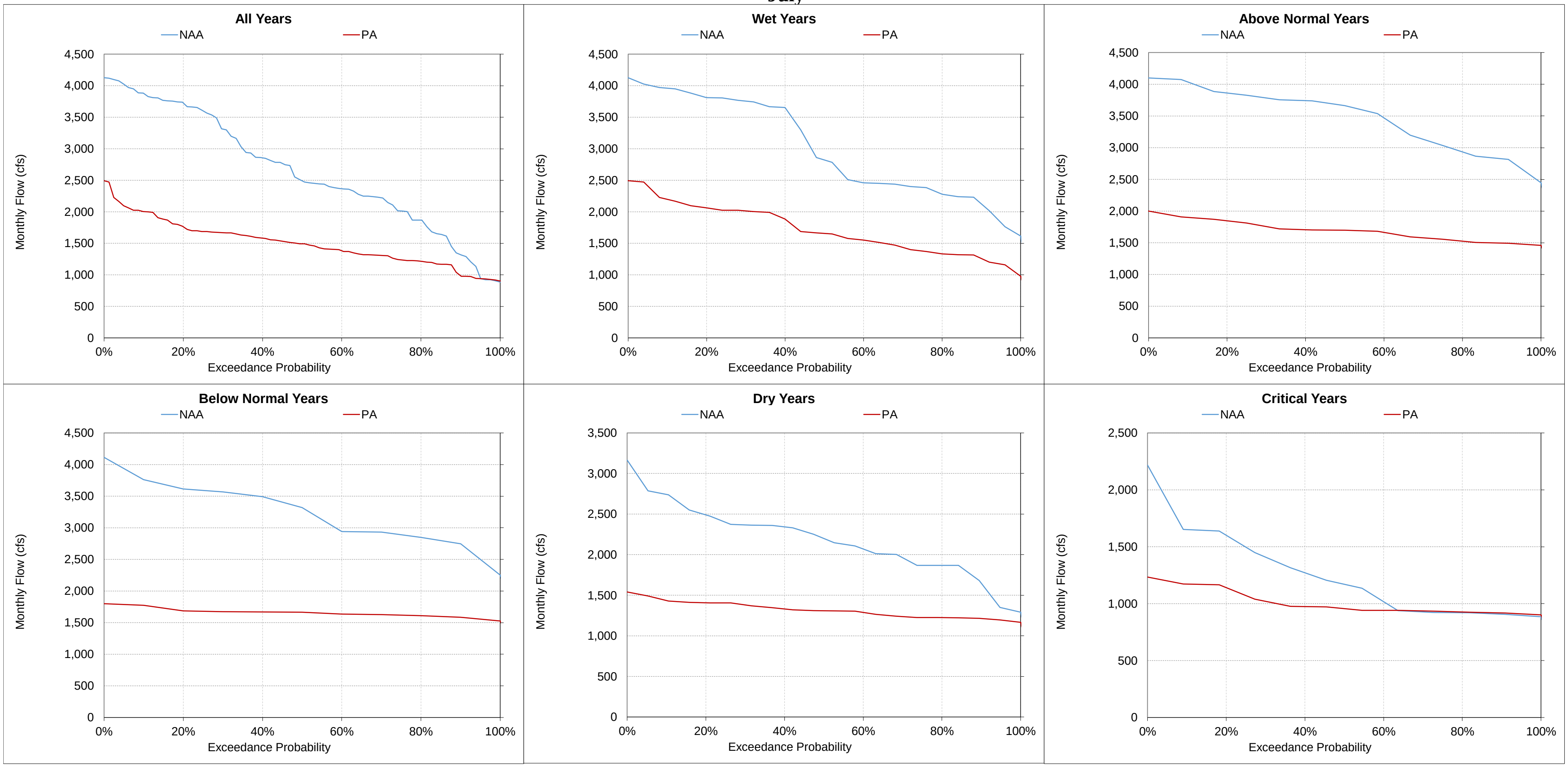
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-16. Steamboat Slough, Monthly Flow
June



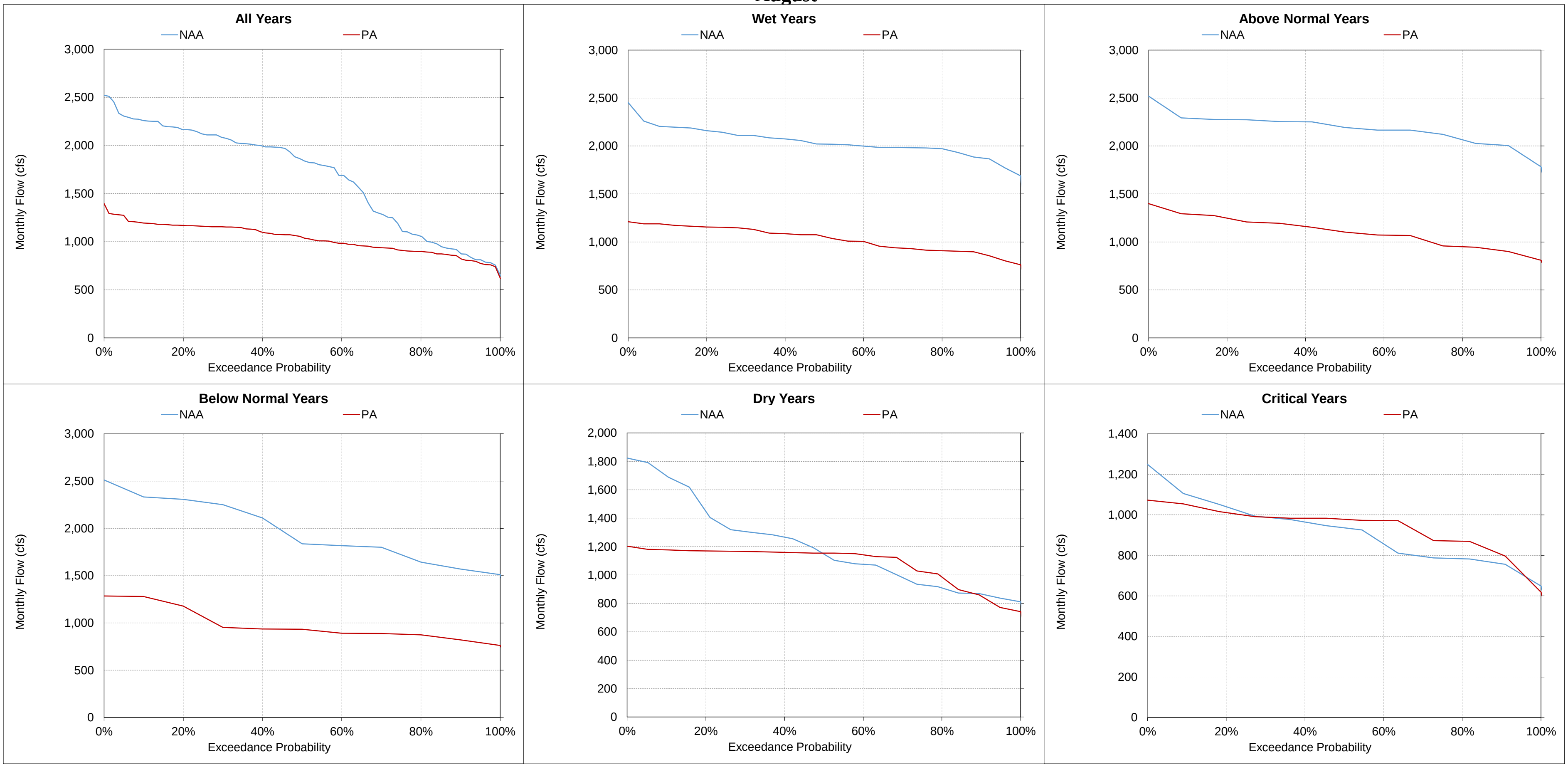
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-17. Steamboat Slough, Monthly Flow
July



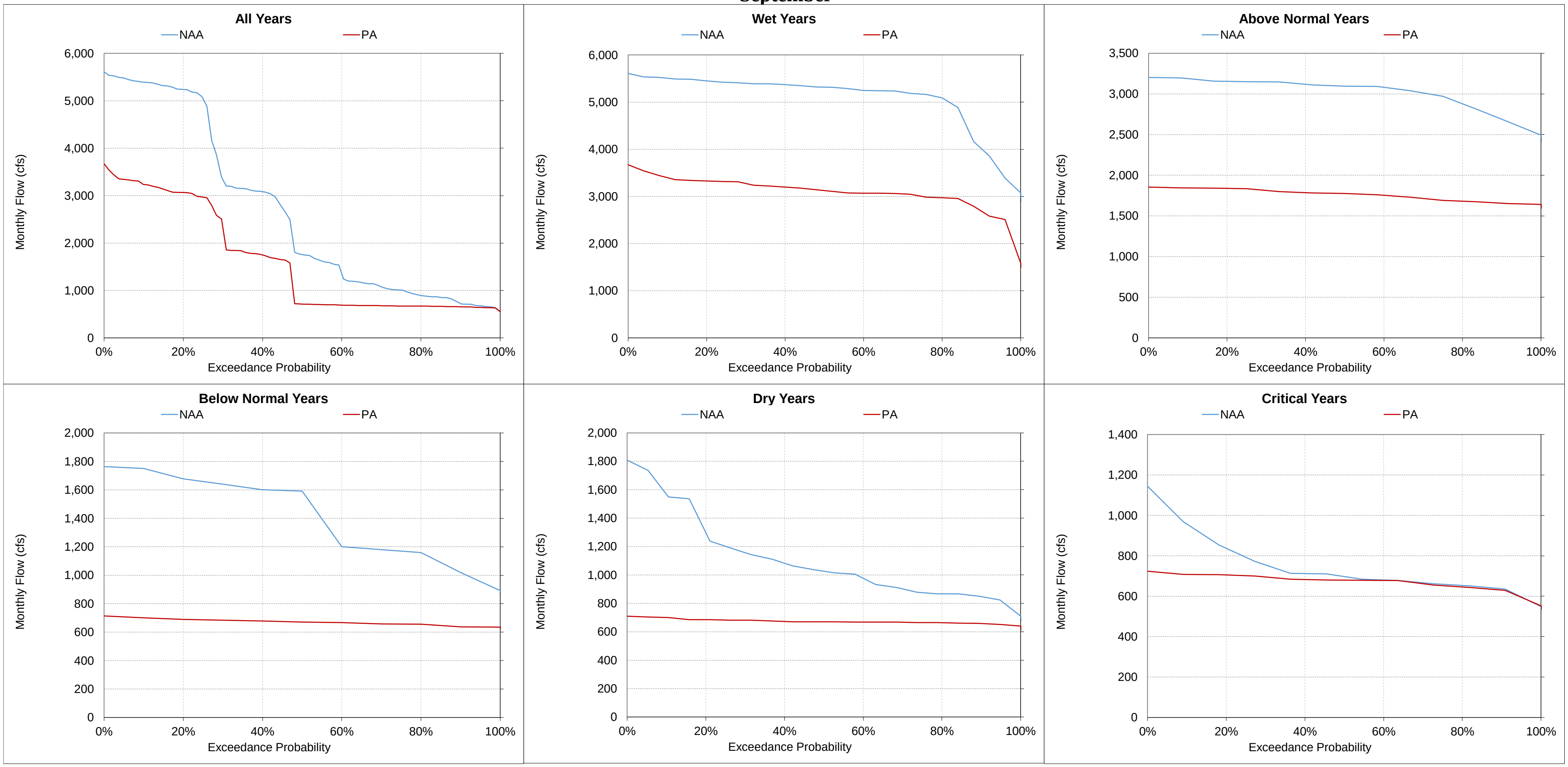
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-18. Steamboat Slough, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-3-19. Steamboat Slough, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-4. Delta Cross Channel, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	3,203	2,226	-977	-30%	1,803	1,456	-348	-19%	1,427	1,491	64	4%	0	0	0	-	0	0	0	-	0	0	0	-
20%	2,941	2,184	-757	-26%	1,533	1,405	-129	-8%	1,177	1,193	17	1%	0	0	0	-	0	0	0	-	0	0	0	-
30%	2,667	2,158	-509	-19%	1,293	1,322	29	2%	1,009	987	-22	-2%	0	0	0	-	0	0	0	-	0	0	0	-
40%	2,450	2,131	-319	-13%	1,186	1,206	20	2%	901	834	-66	-7%	0	0	0	-	0	0	0	-	0	0	0	-
50%	2,293	2,082	-211	-9%	1,081	1,114	33	3%	447	441	-6	-1%	0	0	0	-	0	0	0	-	0	0	0	-
60%	2,142	1,990	-152	-7%	478	962	485	102%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
70%	1,867	1,700	-167	-9%	272	692	419	154%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
80%	1,691	1,598	-93	-5%	1	309	309	49797%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
90%	1,454	1,344	-110	-8%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Long Term																								
Full Simulation Period[b]	2,279	1,877	-402	-18%	877	919	41	5%	581	573	-8	-1%	0	0	0	-	0	0	0	-	0	0	0	-
Water Year Types[c]																								
Wet (32%)	2,274	1,779	-494	-22%	367	662	295	80%	712	716	4	1%	0	0	0	-	0	0	0	-	0	0	0	-
Above Normal (16%)	2,715	2,034	-681	-25%	872	860	-12	-1%	599	563	-36	-6%	0	0	0	-	0	0	0	-	0	0	0	-
Below Normal (13%)	2,354	1,929	-425	-18%	1,403	1,181	-222	-16%	612	608	-4	-1%	0	0	0	-	0	0	0	-	0	0	0	-
Dry (24%)	2,302	2,045	-258	-11%	1,053	963	-90	-9%	375	367	-8	-2%	0	0	0	-	0	0	0	-	0	0	0	-
Critical (15%)	1,708	1,591	-117	-7%	1,215	1,224	9	1%	593	584	-9	-2%	0	0	0	-	0	0	0	-	0	0	0	-

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	0	0	0	-	1	0	-1	-100%	3,320	2,977	-344	-10%	4,964	4,030	-933	-19%	4,490	3,050	-1,440	-32%	4,920	4,906	-15	0%
20%	0	0	0	-	1	0	-1	-100%	3,121	2,902	-219	-7%	4,676	3,795	-881	-19%	4,418	3,015	-1,402	-32%	3,978	4,332	353	9%
30%	0	0	0	-	0	0	0	-100%	3,013	2,833	-181	-6%	4,478	3,606	-872	-19%	4,301	2,950	-1,351	-31%	3,506	3,744	238	7%
40%	0	0	0	-	0	0	0	-100%	2,964	2,718	-246	-8%	4,292	3,518	-775	-18%	4,171	2,804	-1,367	-33%	2,971	3,480	509	17%
50%	0	0	0	-	0	0	0	-100%	2,871	2,623	-248	-9%	4,140	3,337	-803	-19%	3,969	2,684	-1,284	-32%	2,519	1,972	-548	-22%
60%	0	0	0	-	0	0	0	-100%	2,695	2,472	-223	-8%	3,900	3,198	-702	-18%	3,786	2,594	-1,192	-31%	2,245	1,907	-338	-15%
70%	0	0	0	-	0	0	0	-100%	2,575	2,369	-206	-8%	3,543	2,988	-555	-16%	3,306	2,472	-834	-25%	1,795	1,886	91	5%
80%	0	0	0	-	0	0	0	-100%	2,333	2,138	-195	-8%	3,130	2,889	-241	-8%	2,807	2,383	-424	-15%	169	1,877	1,708	1014%
90%	0	0	0	-	0	0	0	-	1,737	1,827	90	5%	2,758	2,403	-355	-13%	2,288	2,216	-73	-3%	161	1,825	1,664	1033%
Long Term																								
Full Simulation Period[b]	0	0	0	-	0	0	0	-100%	2,592	2,480	-112	-4%	3,950	3,283	-667	-17%	3,671	2,682	-990	-27%	2,474	2,939	466	19%
Water Year Types[c]																								
Wet (32%)	0	0	0	-	0	0	0	-100%	2,192	2,272	80	4%	3,858	3,396	-463	-12%	4,187	2,596	-1,591	-38%	728	4,335	3,607	495%
Above Normal (16%)	0	0	0	-	0	0	0	-100%	2,918	2,627	-291	-10%	4,134	3,642	-492	-12%	4,397	2,853	-1,544	-35%	5,026	3,697	-1,329	-26%
Below Normal (13%)	0	0	0	-	0	0	0	-100%	2,936	2,763	-173	-6%	4,422	3,646	-776	-18%	4,172	2,612	-1,560	-37%	3,380	1,881	-1,499	-44%
Dry (24%)	0	0	0	-	0	0	0	-100%	2,942	2,707	-235	-8%	4,261	3,155	-1,106	-26%	2,990	2,825	-165	-6%	2,849	1,889	-959	-34%
Critical (15%)	0	0	0	-	0	0	0	-100%	2,207	2,136	-72	-3%	3,000	2,533	-467	-16%	2,442	2,507	65	3%	2,033	1,814	-219	-11%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

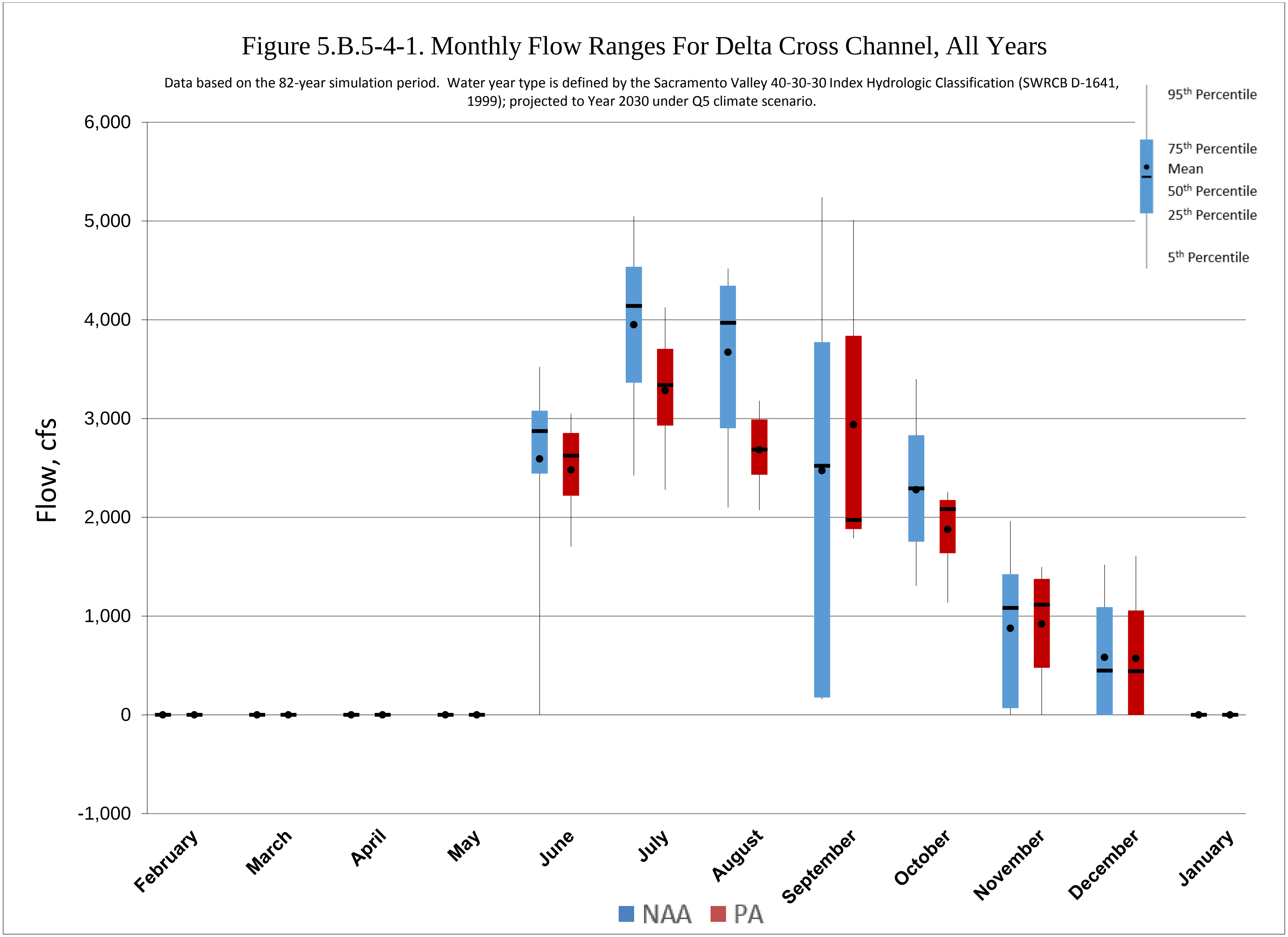


Figure 5.B.5-4-1. Monthly Flow Ranges For Delta Cross Channel, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
Flow, cfs
6,000
5,000
4,000
3,000
2,000
1,000
0
-1,000
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

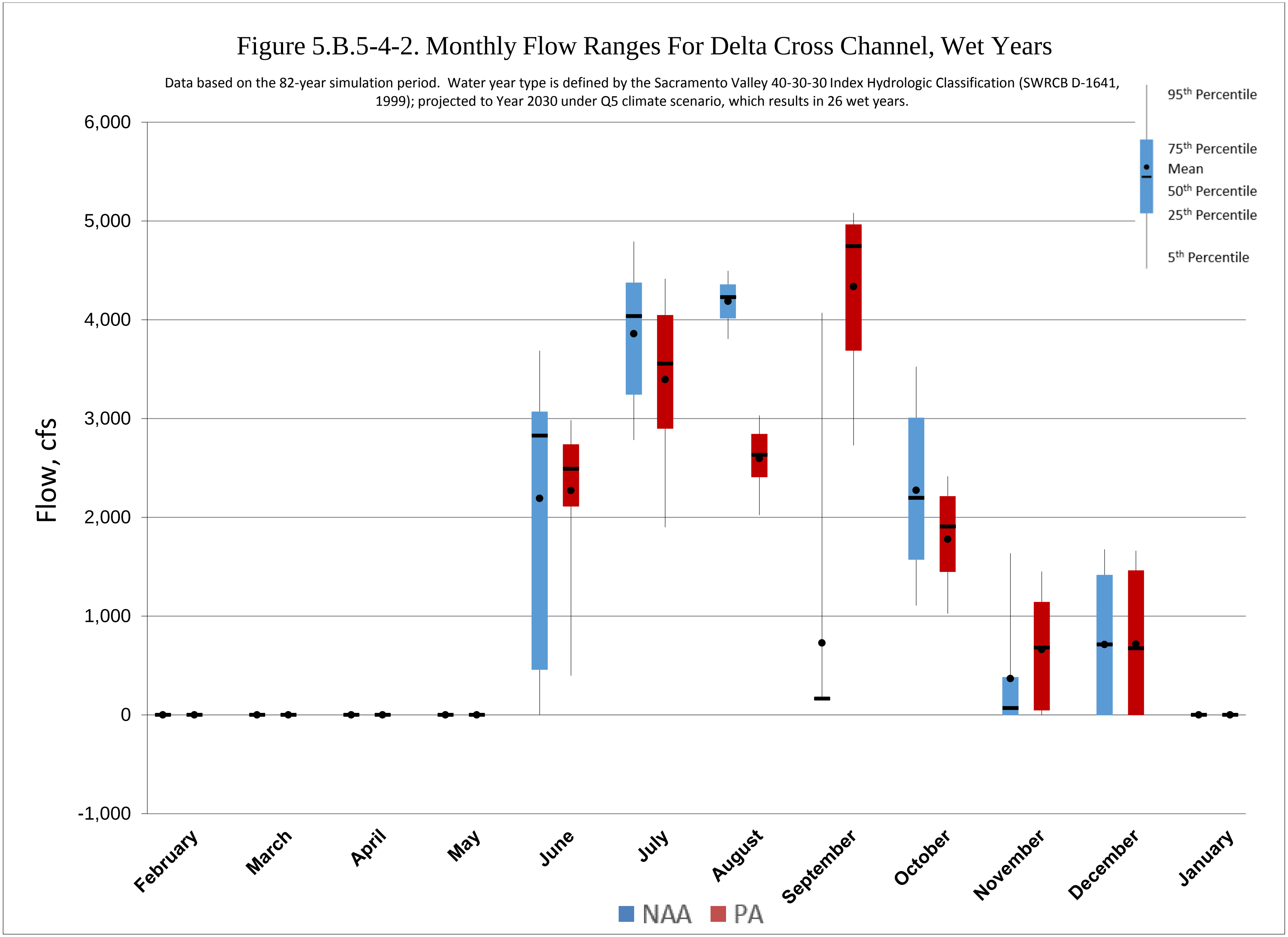


Figure 5.B.5-4-2. Monthly Flow Ranges For Delta Cross Channel, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
6,000
5,000
4,000
3,000
2,000
1,000
0
-1,000
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

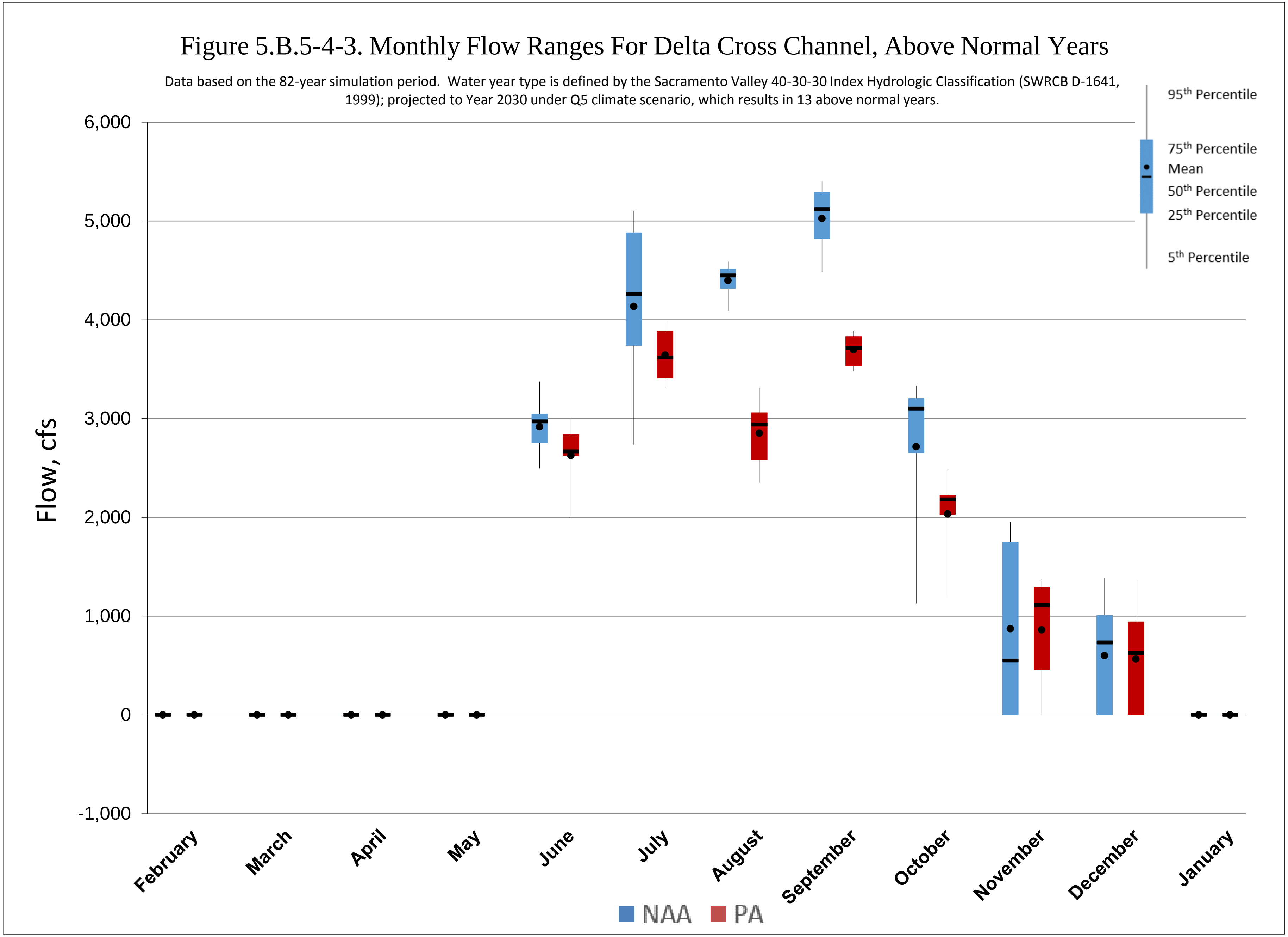


Figure 5.B.5-4-3. Monthly Flow Ranges For Delta Cross Channel, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
6,000
5,000
4,000
3,000
2,000
1,000
0
-1,000
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

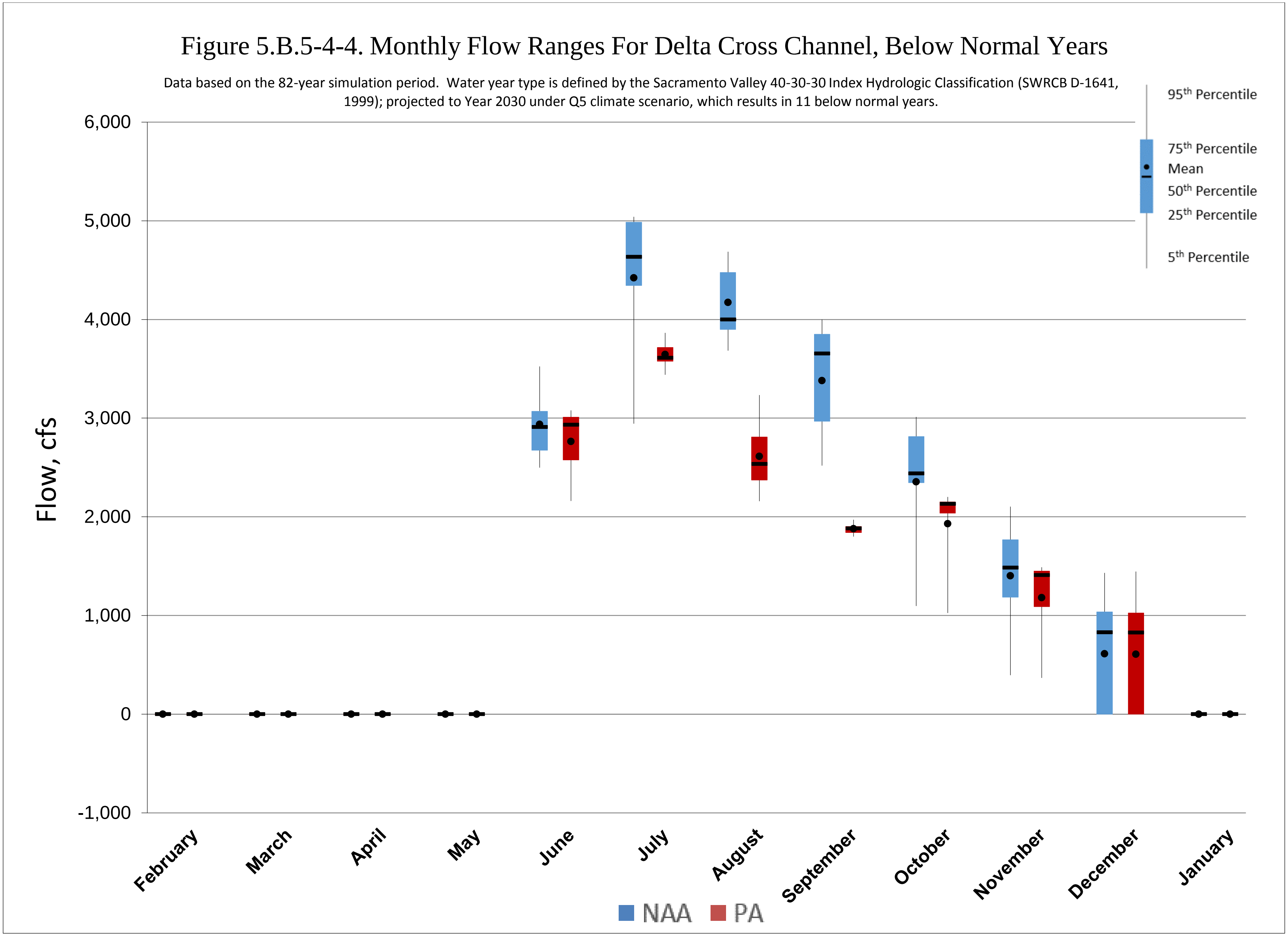


Figure 5.B.5-4-4. Monthly Flow Ranges For Delta Cross Channel, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
6,000
5,000
4,000
3,000
2,000
1,000
0
-1,000
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-4-5. Monthly Flow Ranges For Delta Cross Channel, Dry Years

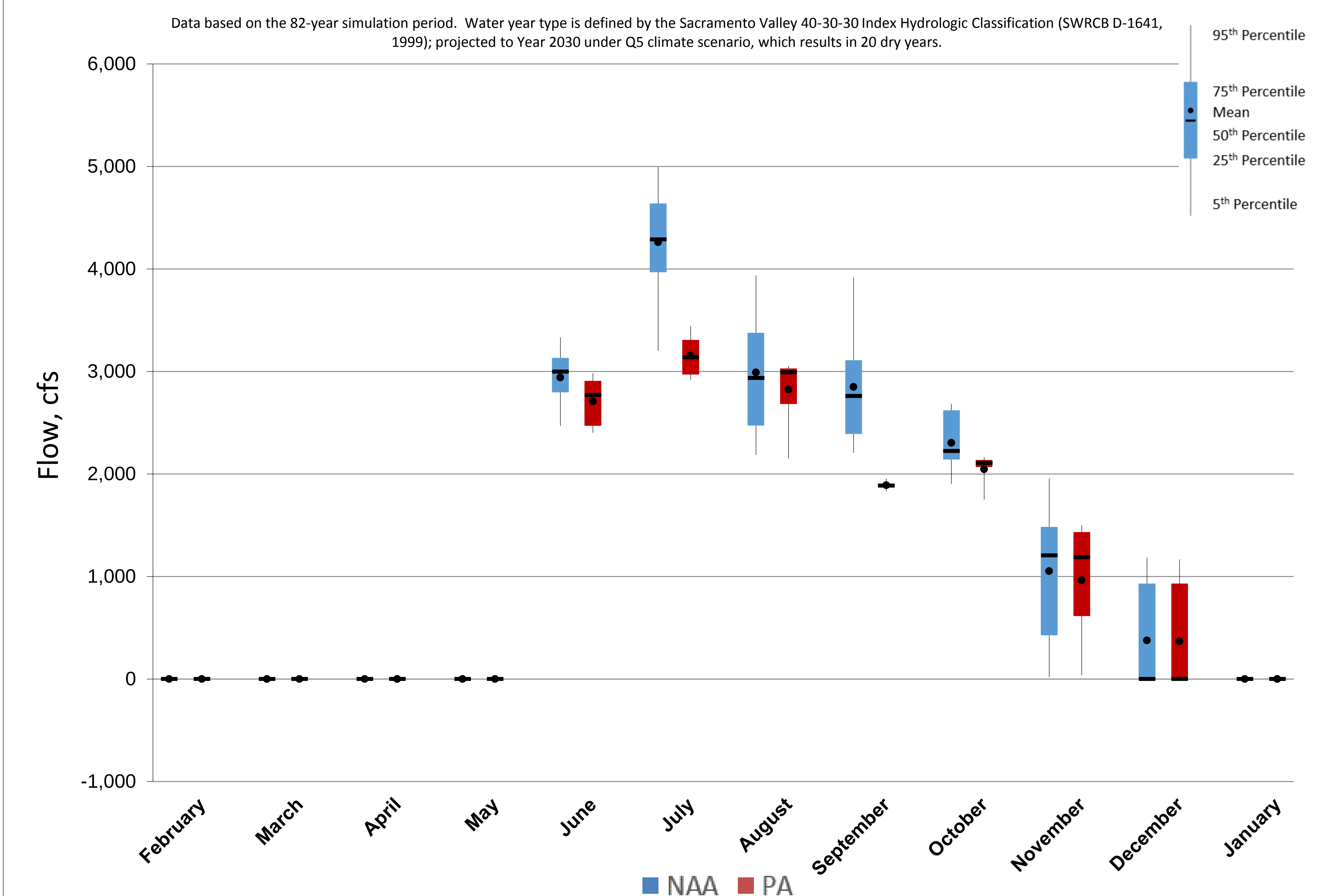


Figure 5.B.5-4-6. Monthly Flow Ranges For Delta Cross Channel, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

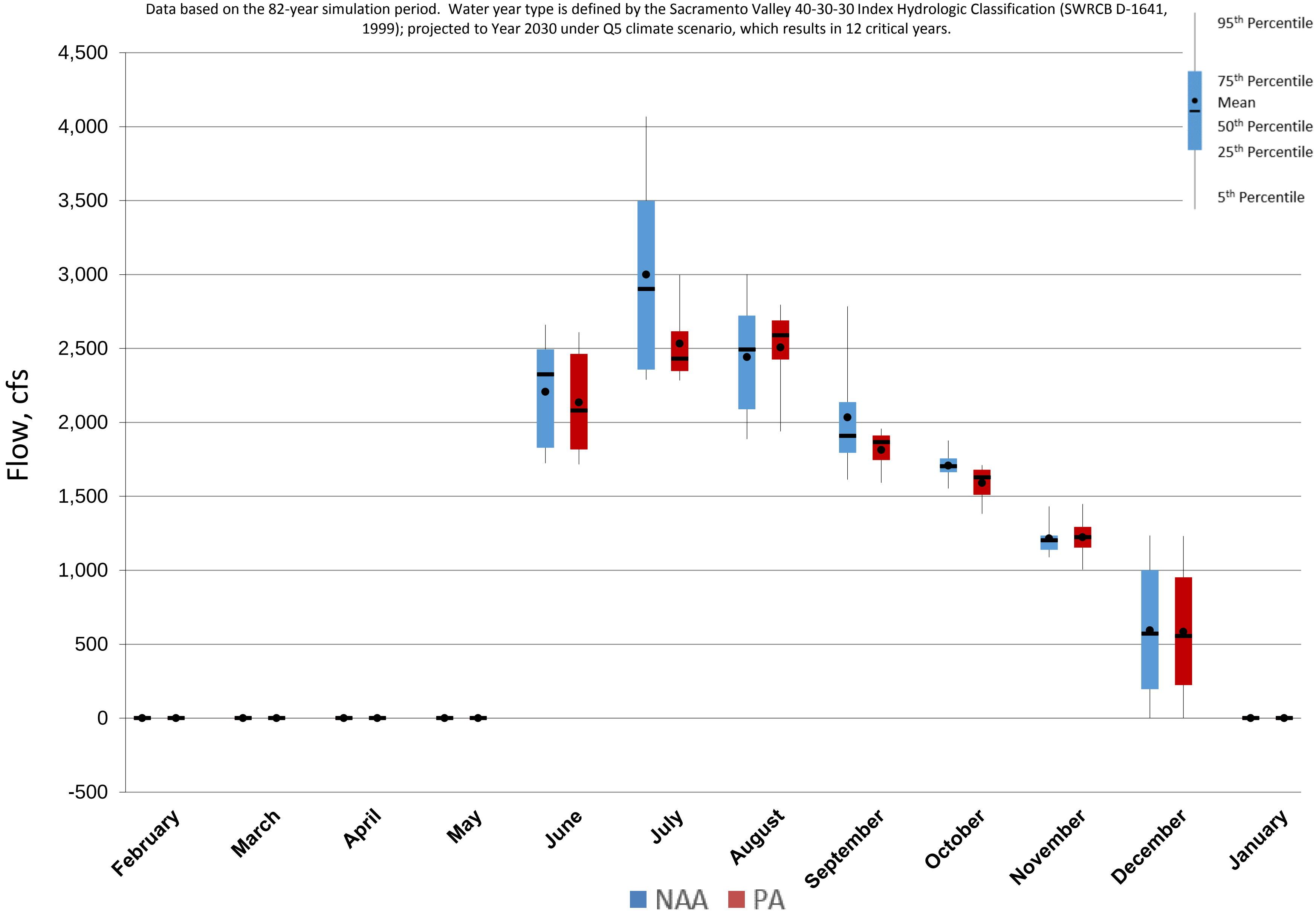
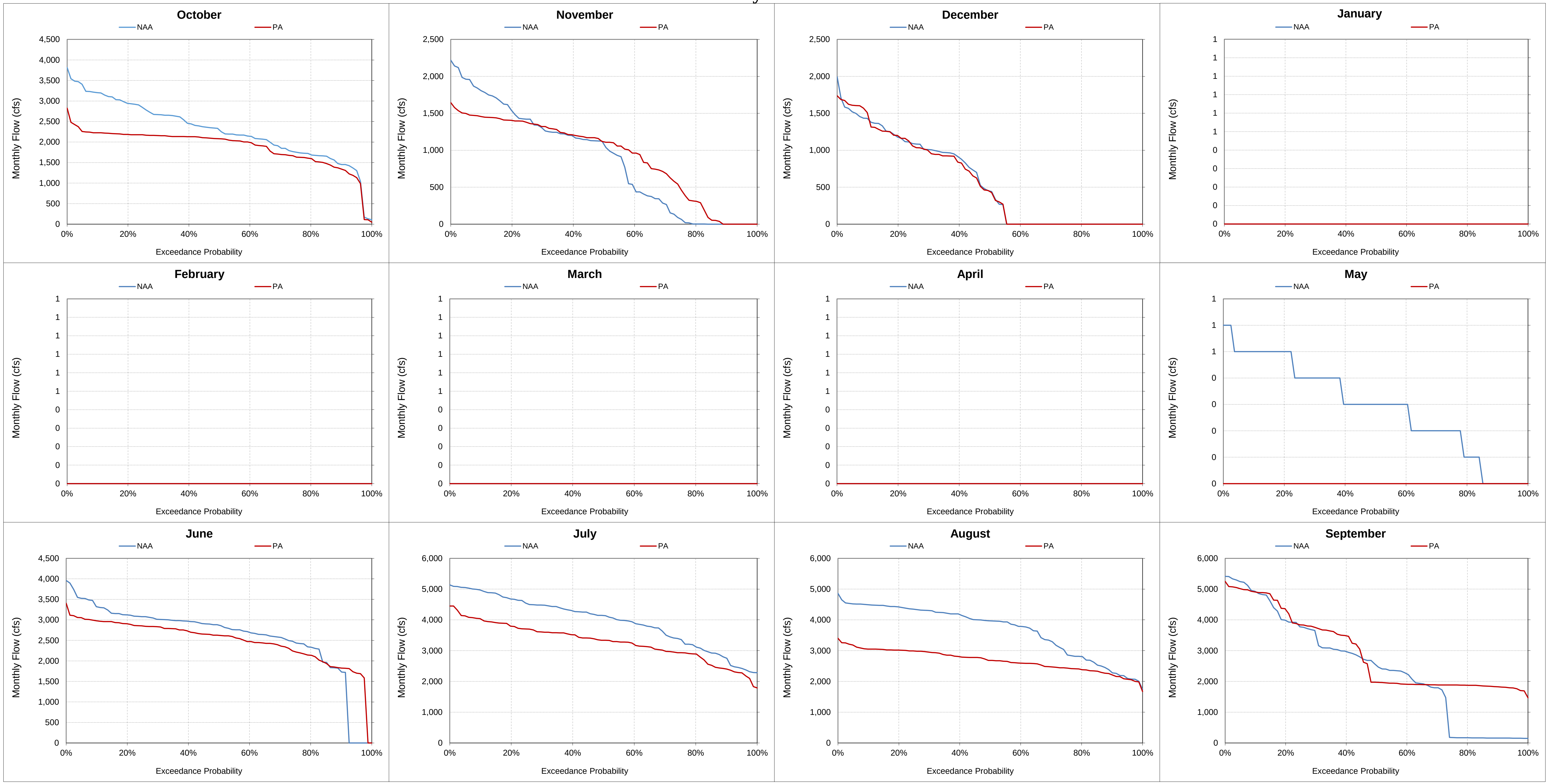
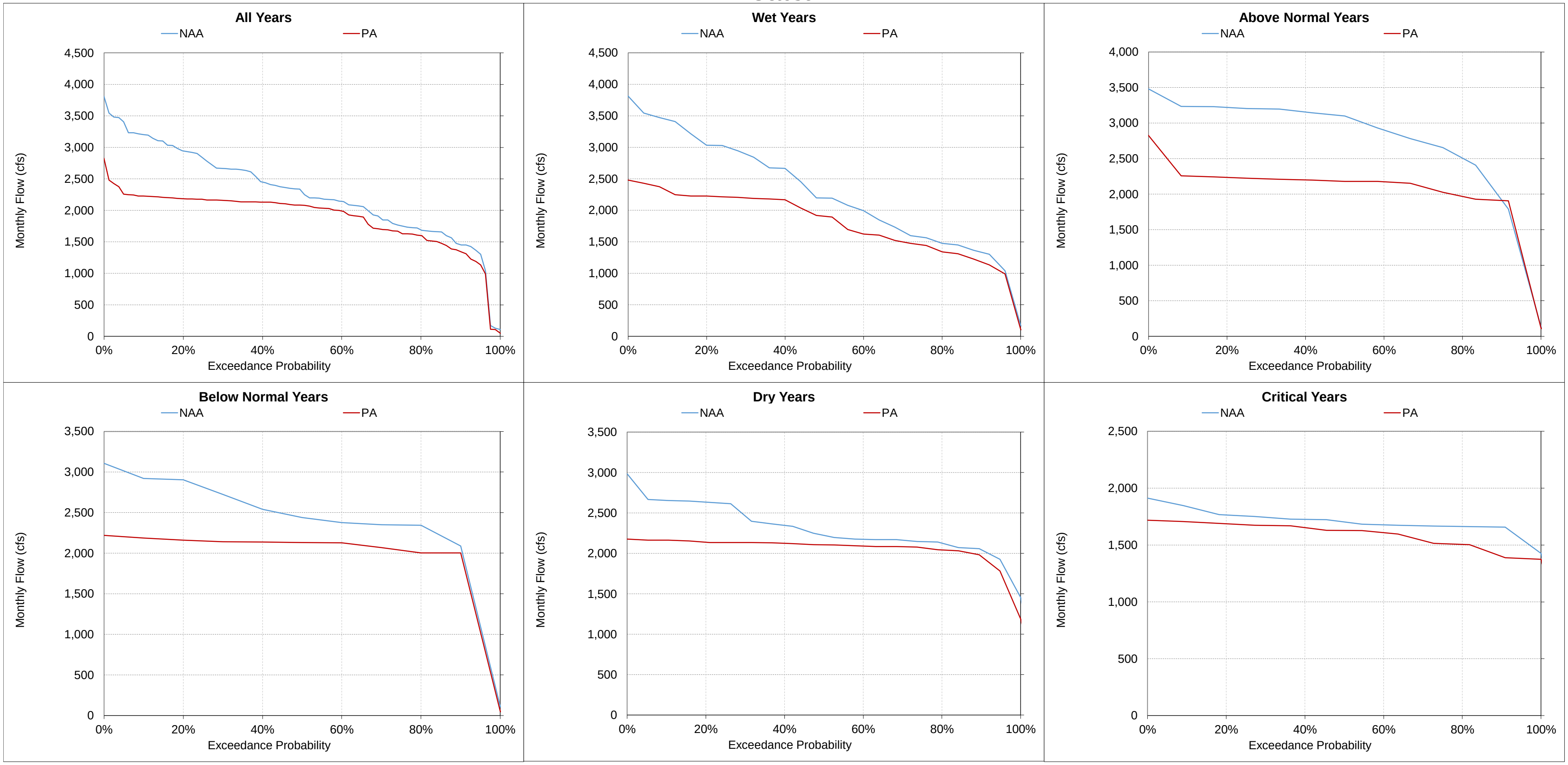


Figure 5.B.5-4-7. Delta Cross Channel, Monthly Flow Probability of Exceedance



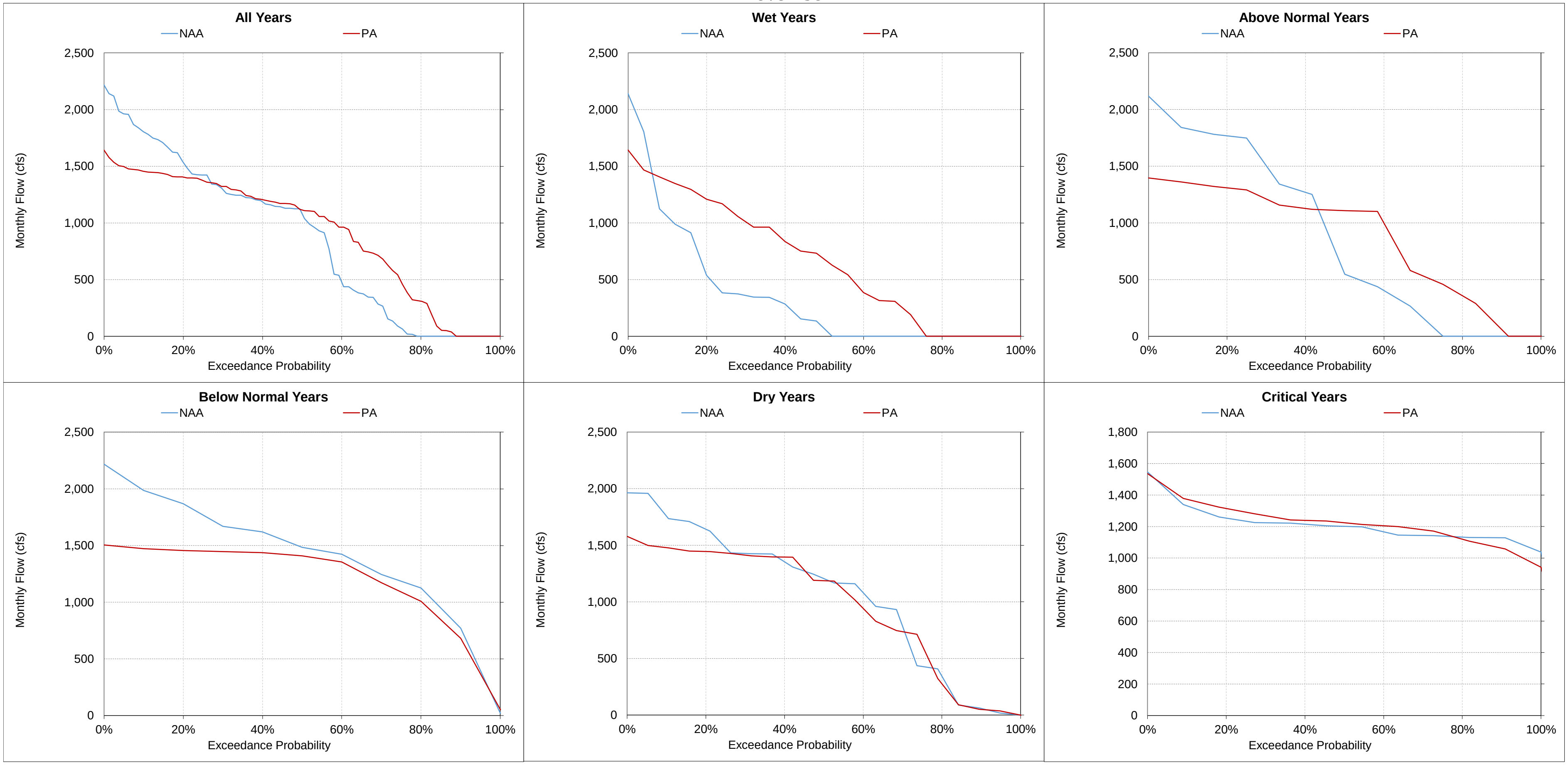
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-8. Delta Cross Channel, Monthly Flow October



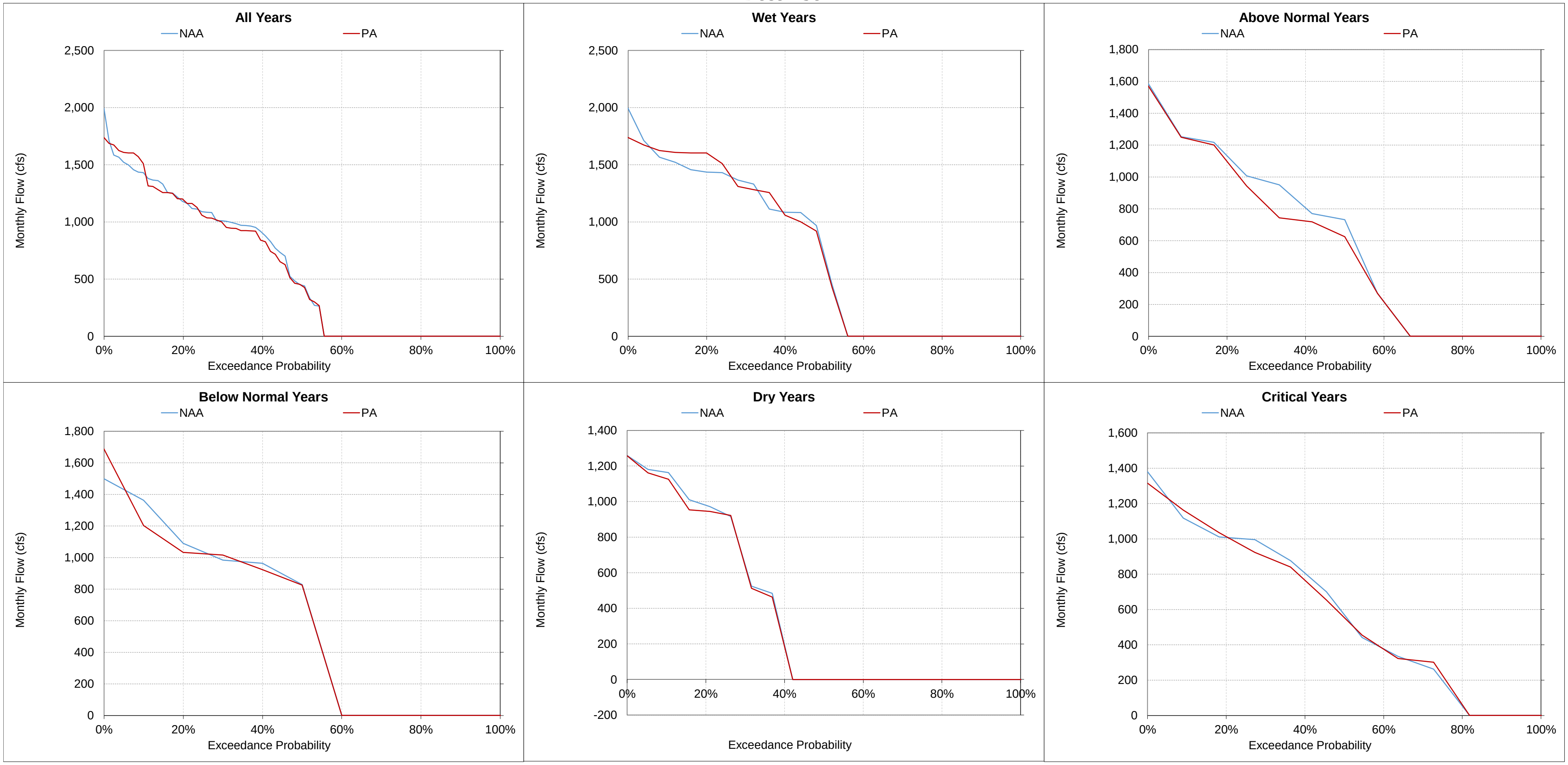
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-9. Delta Cross Channel, Monthly Flow
November



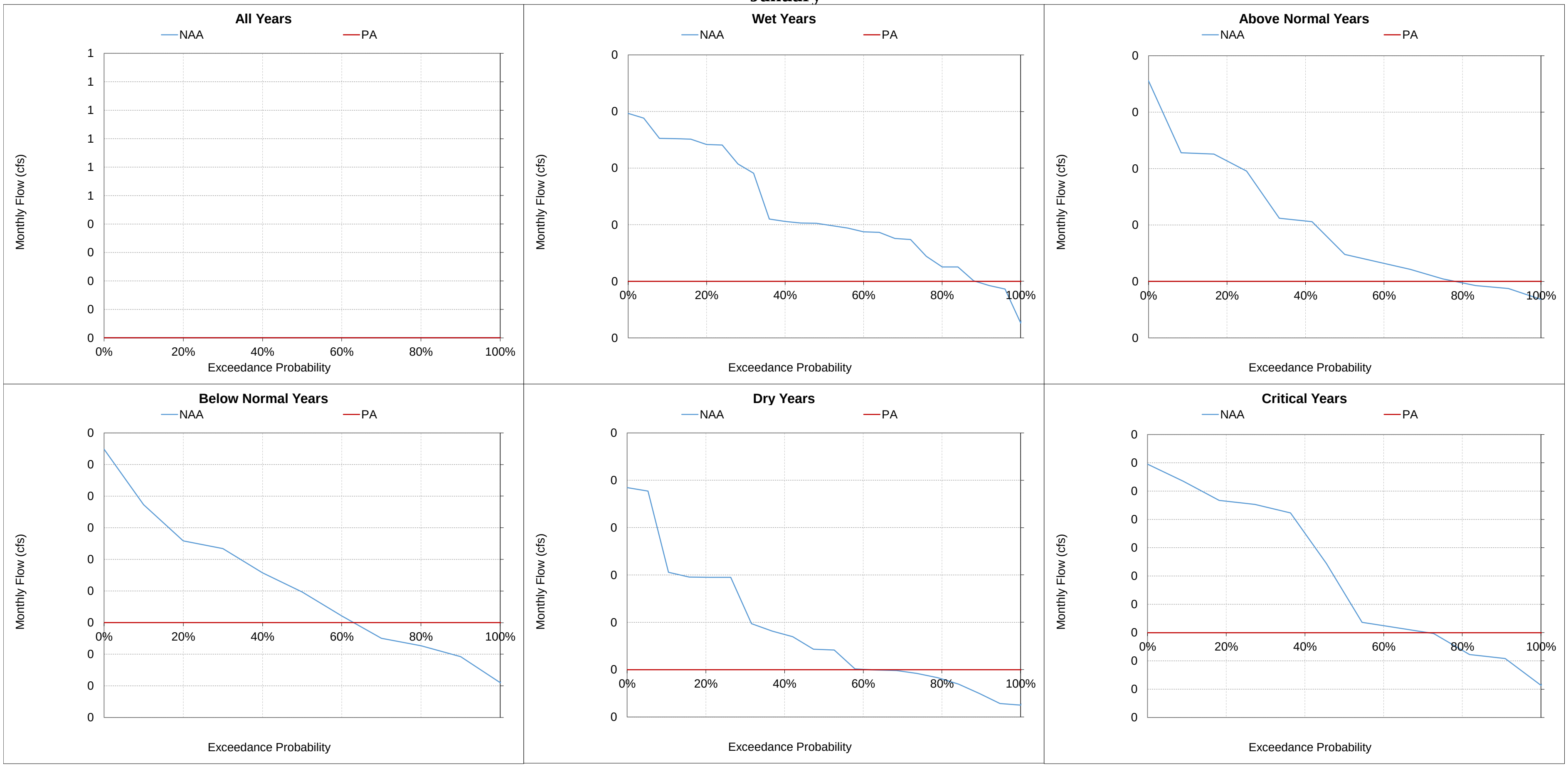
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-10. Delta Cross Channel, Monthly Flow
December



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-11. Delta Cross Channel, Monthly Flow January



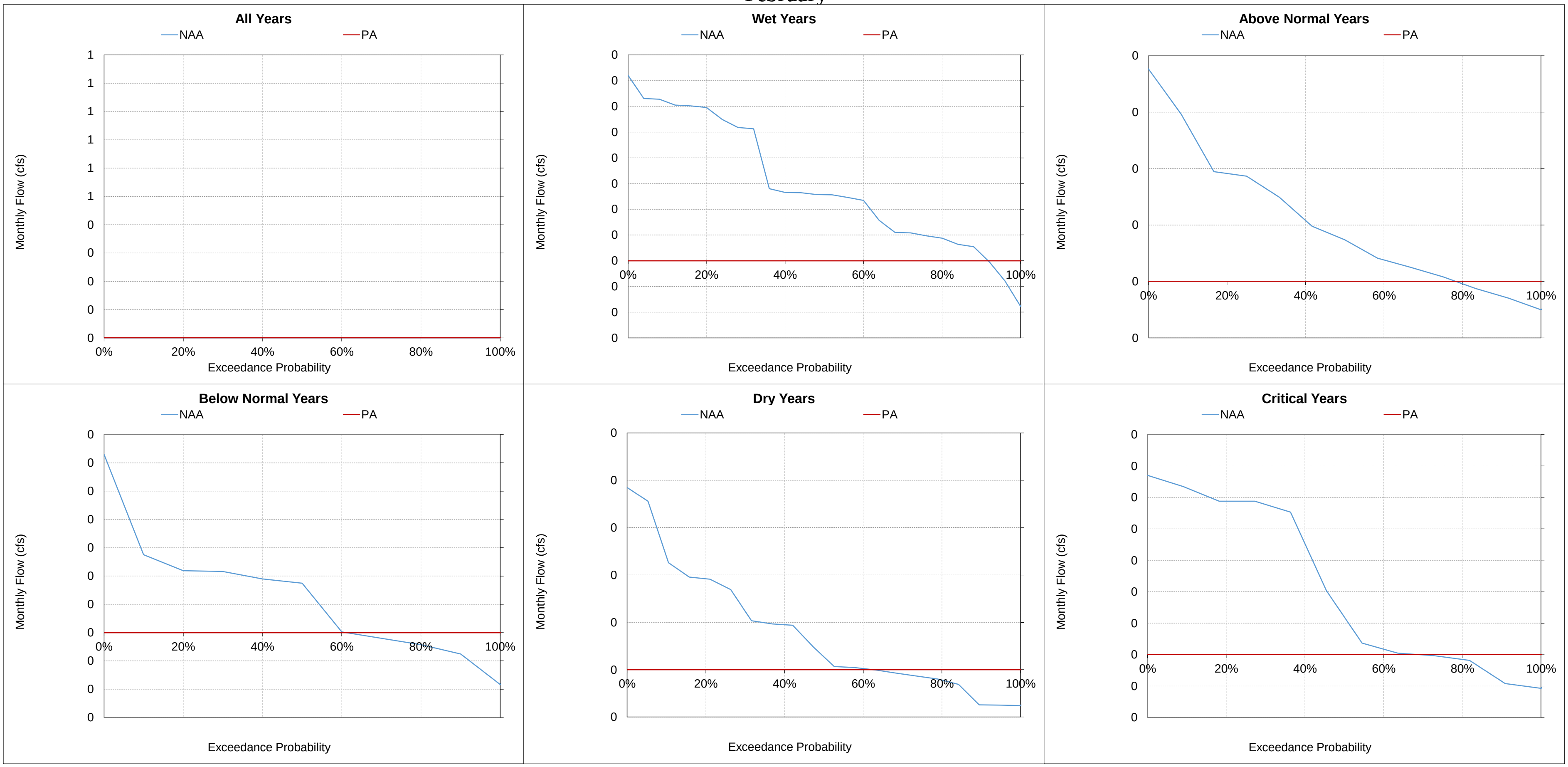
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

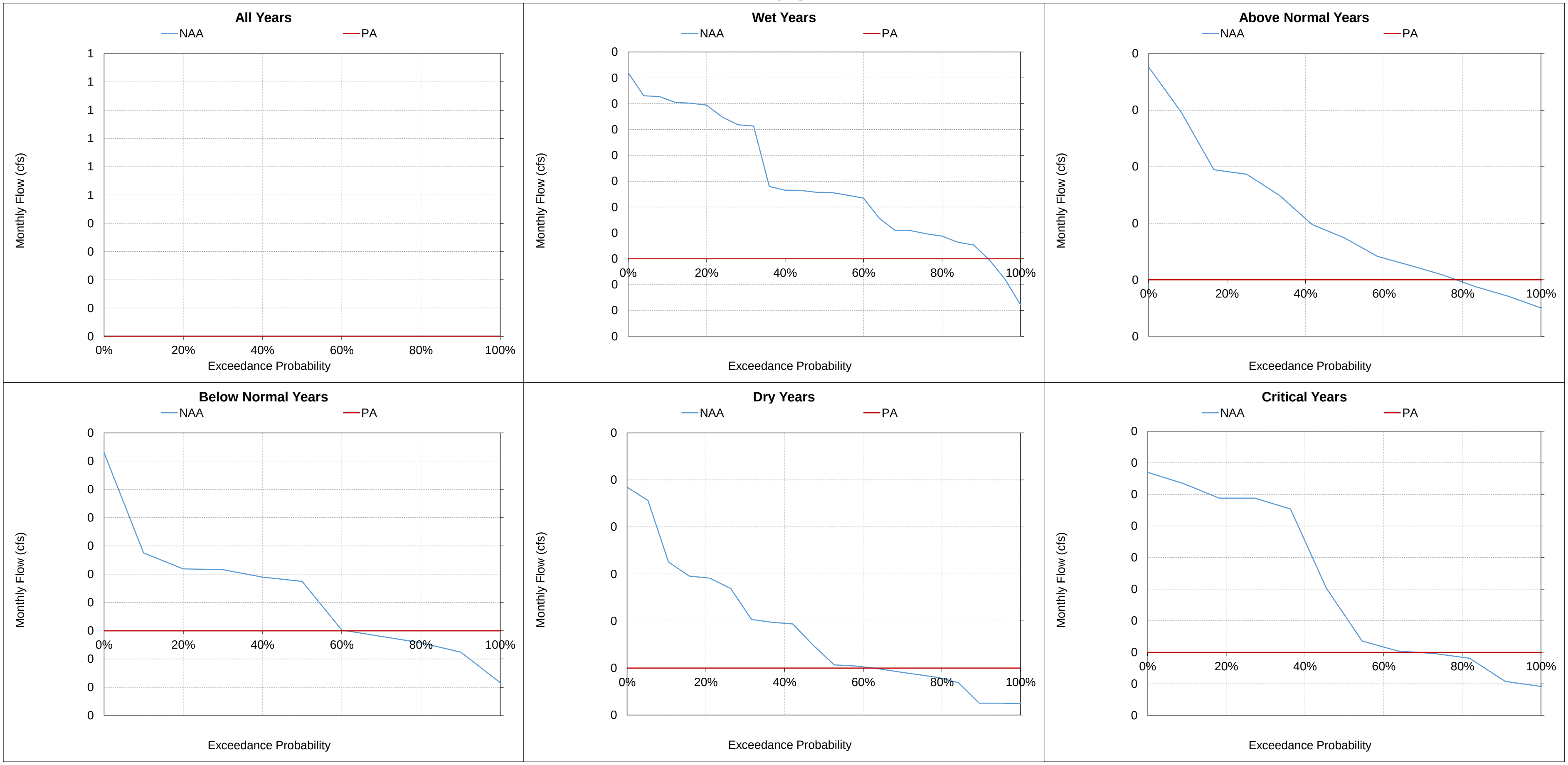
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-12. Delta Cross Channel, Monthly Flow February



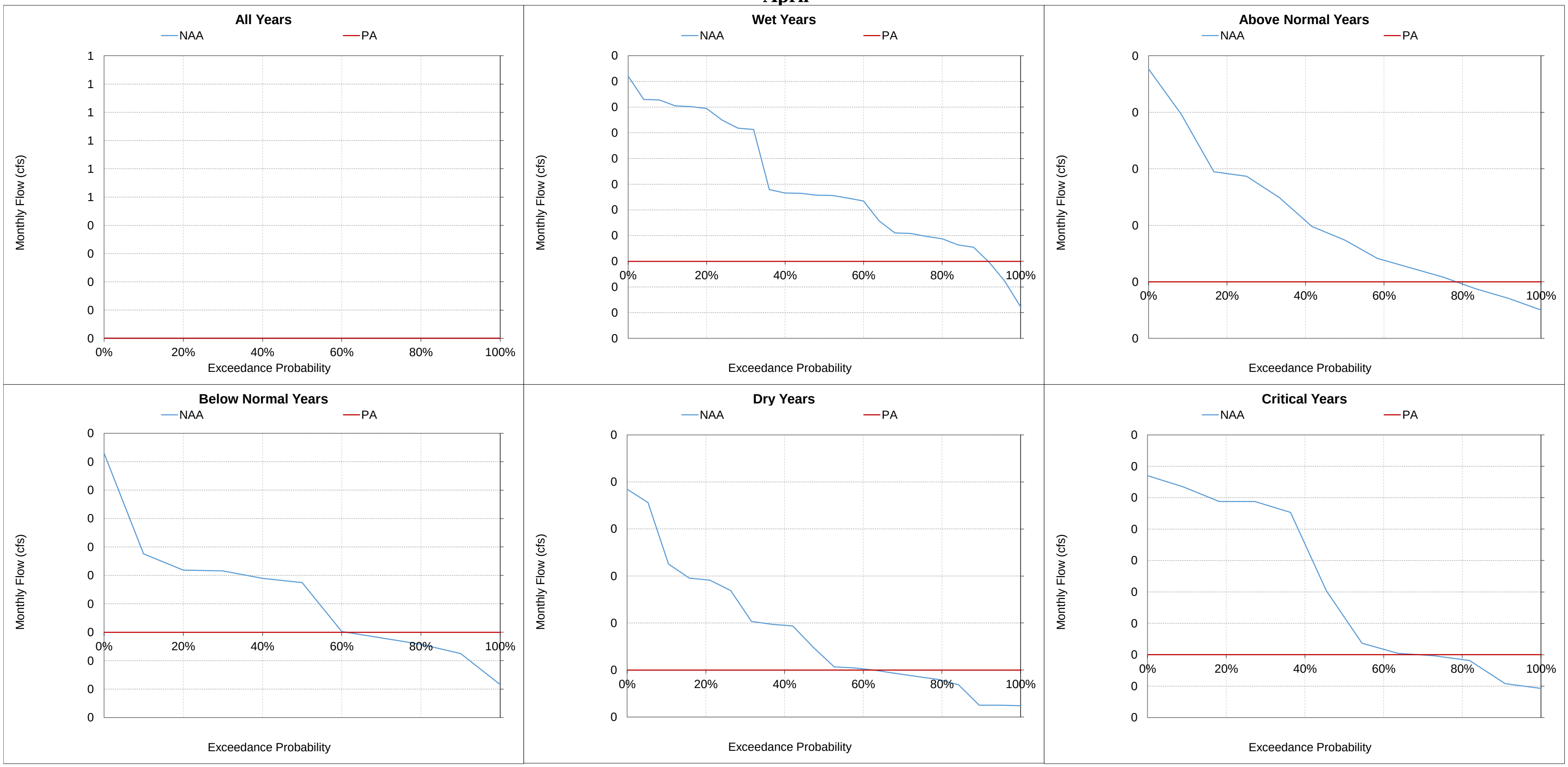
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-13. Delta Cross Channel, Monthly Flow
March



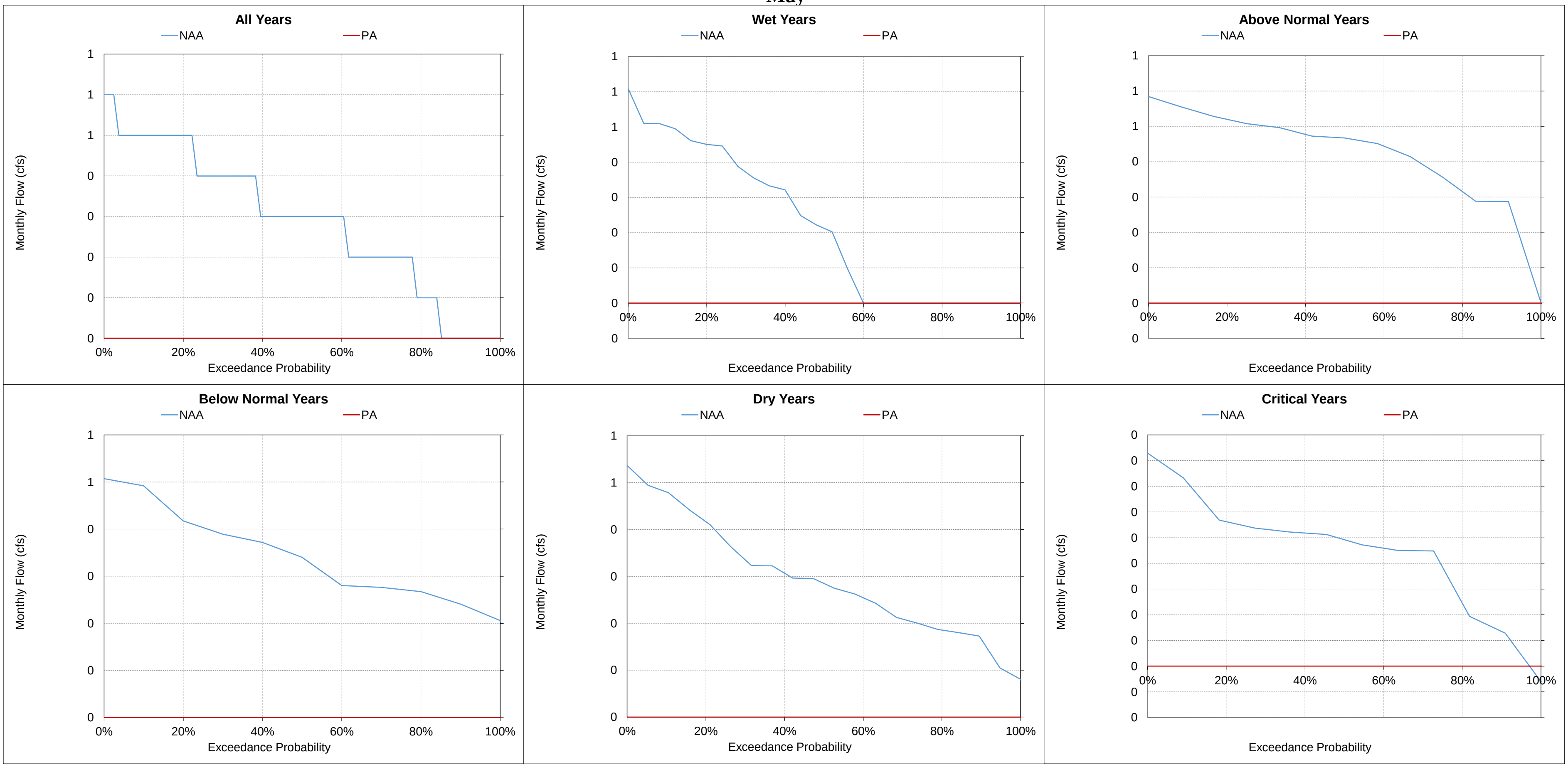
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-14. Delta Cross Channel, Monthly Flow
April



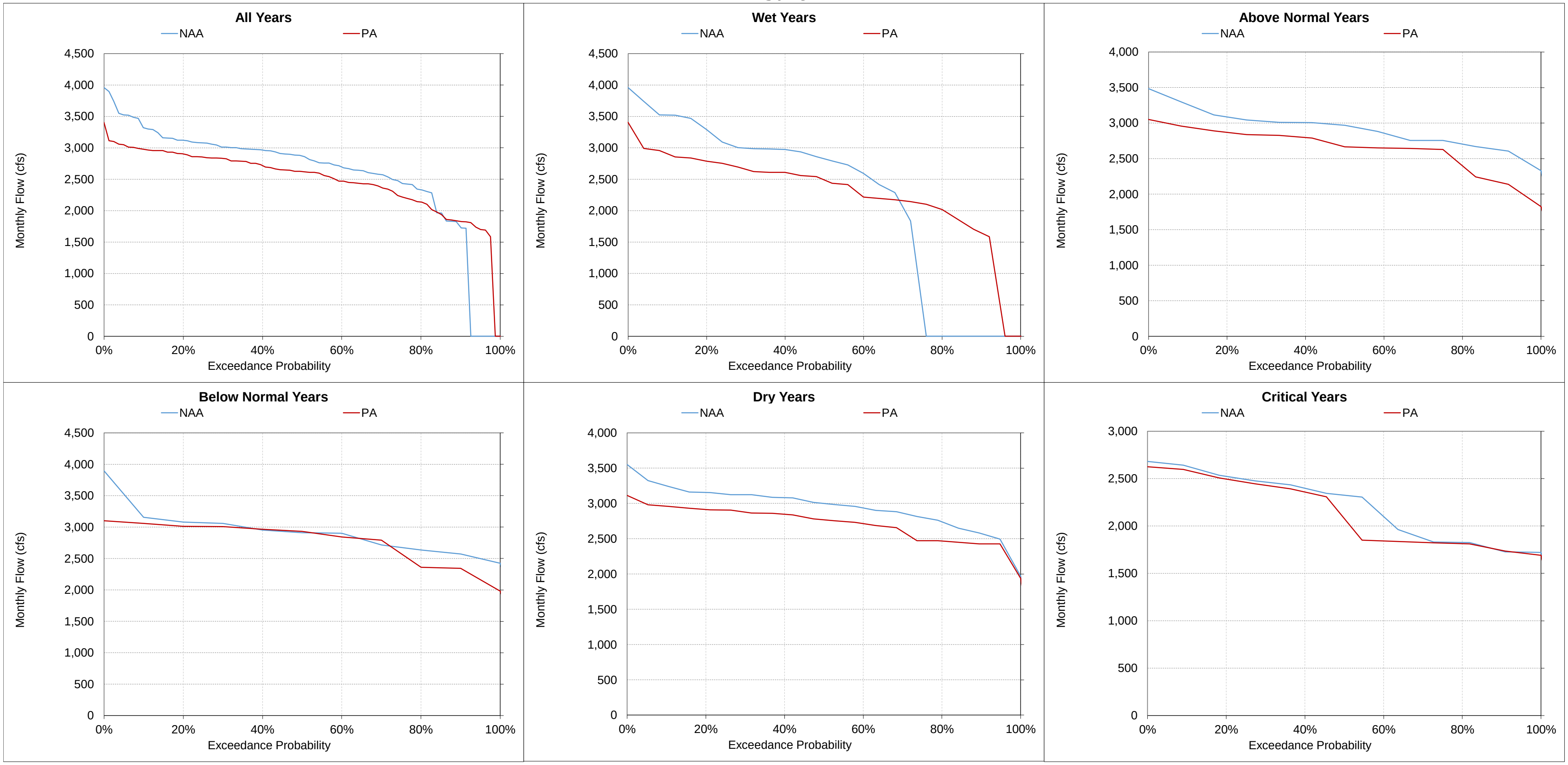
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-15. Delta Cross Channel, Monthly Flow
May



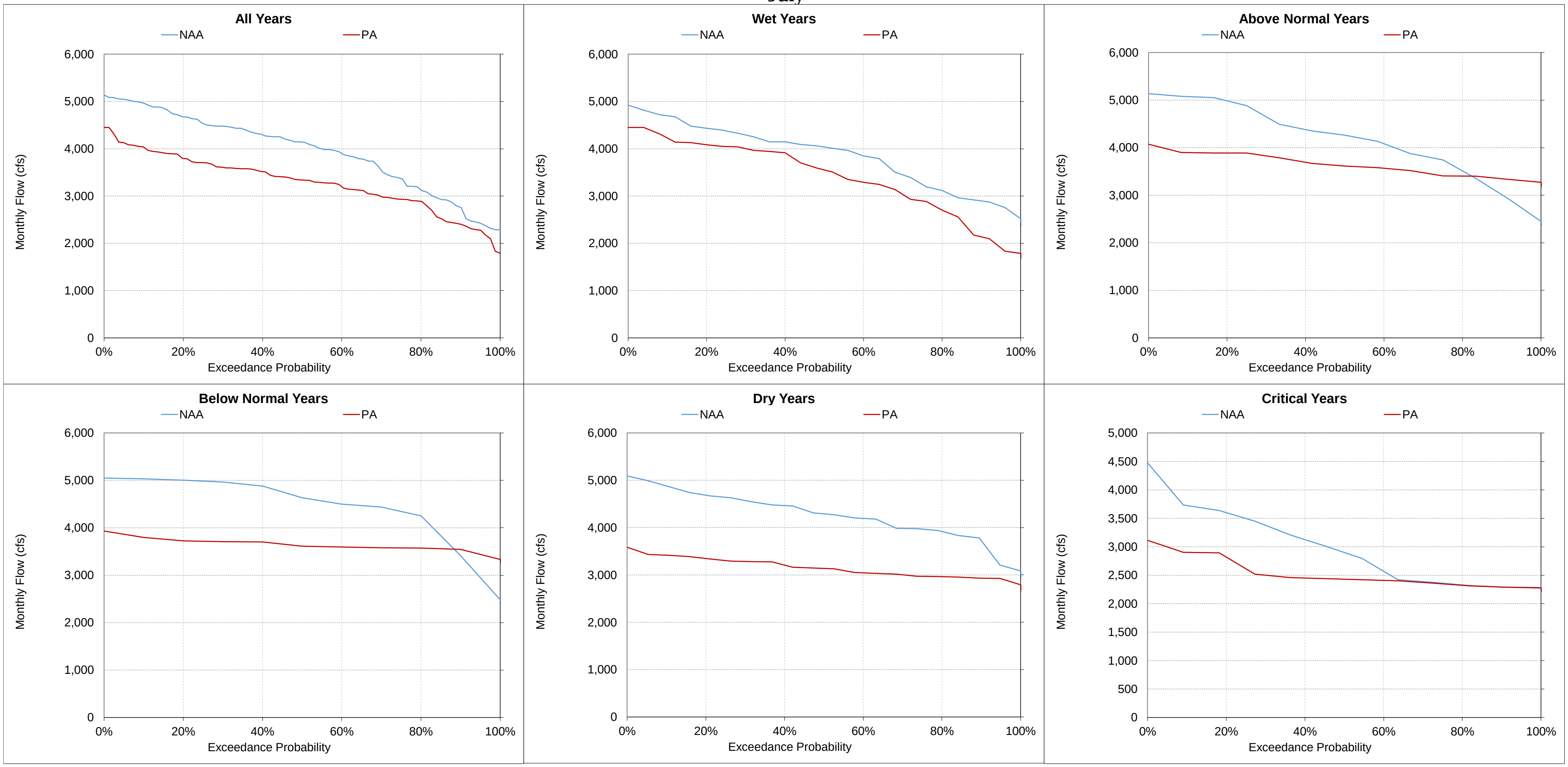
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-16. Delta Cross Channel, Monthly Flow
June



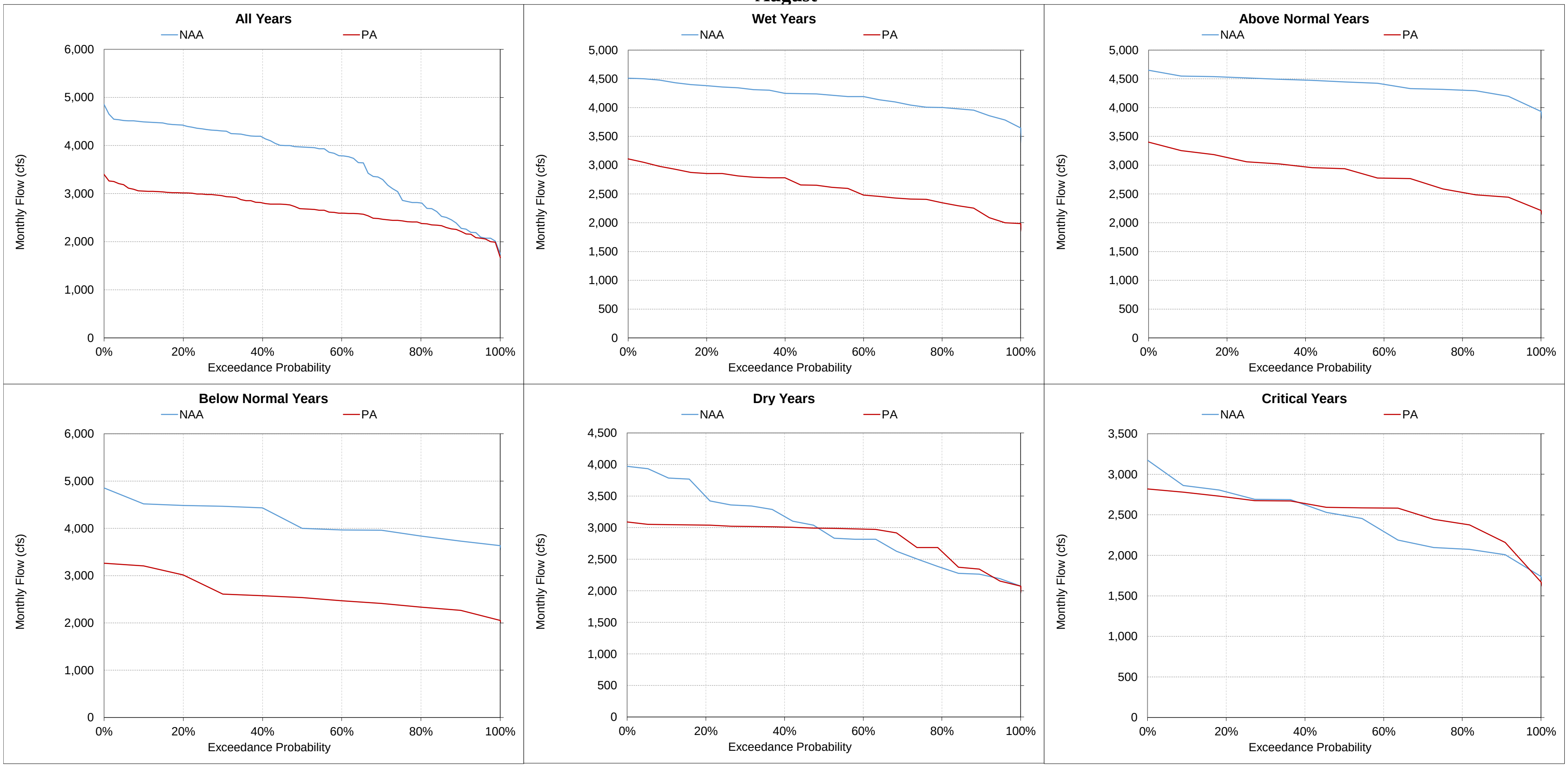
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-17. Delta Cross Channel, Monthly Flow July



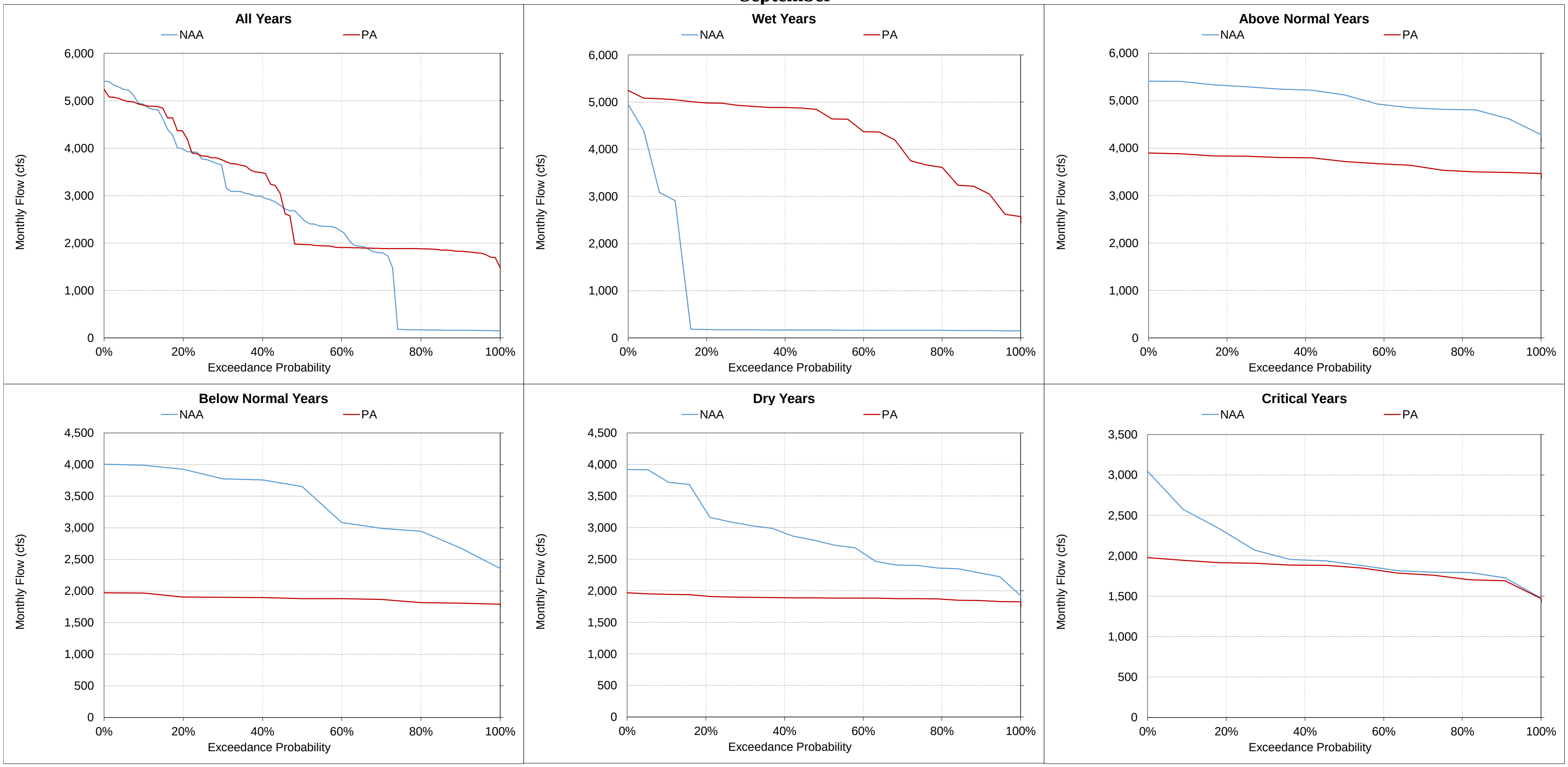
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-18. Delta Cross Channel, Monthly Flow August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-4-19. Delta Cross Channel, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-5. Georgiana Slough, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	2,863	1,811	-1,052	-37%	4,041	3,053	-988	-24%	7,461	6,664	-797	-11%	9,483	8,347	-1,136	-12%	10,427	9,210	-1,217	-12%	9,390	8,309	-1,081	-12%
20%	2,623	1,679	-944	-36%	3,587	2,688	-899	-25%	5,478	5,045	-432	-8%	8,229	7,037	-1,192	-14%	9,347	8,152	-1,195	-13%	7,667	6,504	-1,162	-15%
30%	2,490	1,623	-867	-35%	3,494	2,374	-1,121	-32%	3,914	3,804	-110	-3%	6,046	5,516	-530	-9%	7,607	6,820	-788	-10%	6,108	5,024	-1,085	-18%
40%	2,302	1,607	-694	-30%	3,188	2,200	-988	-31%	3,492	3,388	-103	-3%	4,349	3,827	-522	-12%	6,719	5,869	-851	-13%	5,025	4,001	-1,024	-20%
50%	2,110	1,596	-514	-24%	2,894	1,977	-917	-32%	3,153	2,983	-170	-5%	3,897	3,667	-229	-6%	5,359	4,286	-1,074	-20%	4,253	3,489	-764	-18%
60%	1,884	1,579	-305	-16%	2,563	1,819	-744	-29%	3,012	2,754	-259	-9%	3,512	3,301	-211	-6%	4,399	3,738	-661	-15%	3,826	3,236	-590	-15%
70%	1,767	1,563	-204	-12%	2,228	1,798	-430	-19%	2,845	2,685	-159	-6%	3,108	2,983	-125	-4%	3,636	3,331	-305	-8%	3,569	3,047	-522	-15%
80%	1,668	1,527	-141	-8%	1,952	1,754	-198	-10%	2,355	2,295	-60	-3%	2,943	2,805	-138	-5%	3,249	3,031	-218	-7%	3,159	2,822	-338	-11%
90%	1,391	1,350	-41	-3%	1,749	1,693	-55	-3%	2,099	2,070	-30	-1%	2,739	2,643	-96	-4%	3,035	2,863	-172	-6%	2,679	2,582	-97	-4%
Long Term Full Simulation Period[b]	2,160	1,640	-520	-24%	2,997	2,345	-652	-22%	4,007	3,748	-258	-6%	5,138	4,637	-501	-10%	6,058	5,366	-692	-11%	5,246	4,546	-700	-13%
Water Year Types[c]																								
Wet (32%)	2,668	1,707	-961	-36%	3,734	2,794	-940	-25%	4,376	4,070	-306	-7%	5,329	4,801	-527	-10%	8,629	7,555	-1,074	-12%	7,447	6,360	-1,087	-15%
Above Normal (16%)	2,407	1,721	-687	-29%	3,398	2,207	-1,190	-35%	4,044	3,765	-279	-7%	4,952	4,498	-454	-9%	7,236	6,348	-887	-12%	6,544	5,608	-936	-14%
Below Normal (13%)	2,185	1,820	-365	-17%	2,502	1,991	-510	-20%	3,693	3,502	-191	-5%	4,896	4,435	-461	-9%	5,042	4,514	-529	-10%	3,600	3,134	-466	-13%
Dry (24%)	1,802	1,607	-195	-11%	2,835	2,438	-398	-14%	4,511	4,193	-318	-7%	5,594	4,972	-622	-11%	4,206	3,773	-433	-10%	3,921	3,397	-523	-13%
Critical (15%)	1,370	1,298	-72	-5%	1,693	1,694	1	0%	2,613	2,517	-96	-4%	4,389	4,059	-330	-8%	3,227	2,994	-233	-7%	2,788	2,673	-115	-4%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	7,240	6,641	-599	-8%	5,994	5,348	-646	-11%	3,273	2,391	-882	-27%	3,729	2,590	-1,139	-31%	2,798	2,045	-753	-27%	4,853	3,162	-1,691	-35%
20%	5,266	4,817	-449	-9%	4,360	4,109	-251	-6%	2,675	2,313	-362	-14%	3,596	2,428	-1,168	-32%	2,766	2,019	-747	-27%	4,746	3,027	-1,719	-36%
30%	4,060	3,884	-176	-4%	3,210	3,055	-155	-5%	2,440	2,240	-200	-8%	3,353	2,369	-984	-29%	2,703	1,984	-719	-27%	3,323	2,677	-646	-19%
40%	3,627	3,465	-162	-4%	2,835	2,722	-113	-4%	2,387	2,194	-193	-8%	3,085	2,304	-780	-25%	2,660	1,928	-732	-28%	3,153	2,344	-809	-26%
50%	3,196	3,103	-94	-3%	2,737	2,601	-136	-5%	2,345	2,157	-188	-8%	2,923	2,228	-696	-24%	2,546	1,876	-670	-26%	2,489	1,501	-988	-40%
60%	2,820	2,756	-64	-2%	2,625	2,541	-84	-3%	2,276	2,118	-157	-7%	2,833	2,165	-668	-24%	2,431	1,805	-626	-26%	2,208	1,470	-738	-33%
70%	2,640	2,623	-17	-1%	2,576	2,446	-131	-5%	2,237	2,062	-175	-8%	2,715	2,082	-633	-23%	2,164	1,731	-433	-20%	1,998	1,459	-539	-27%
80%	2,581	2,521	-60	-2%	2,454	2,380	-73	-3%	2,081	1,965	-115	-6%	2,544	1,993	-550	-22%	1,904	1,684	-220	-12%	1,773	1,439	-334	-19%
90%	2,437	2,392	-45	-2%	2,299	2,236	-63	-3%	1,952	1,702	-250	-13%	2,167	1,780	-387	-18%	1,661	1,609	-52	-3%	1,533	1,408	-125	-8%
Long Term Full Simulation Period[b]	3,989	3,811	-178	-4%	3,420	3,208	-212	-6%	2,591	2,247	-343	-13%	2,969	2,213	-757	-25%	2,383	1,848	-534	-22%	2,961	2,104	-857	-29%
Water Year Types[c]																								
Wet (32%)	5,706	5,329	-376	-7%	4,940	4,475	-465	-9%	3,362	2,621	-741	-22%	3,176	2,316	-860	-27%	2,679	1,831	-848	-32%	4,606	3,077	-1,528	-33%
Above Normal (16%)	4,251	4,090	-161	-4%	3,283	3,076	-207	-6%	2,420	2,137	-283	-12%	3,450	2,377	-1,073	-31%	2,763	1,918	-845	-31%	3,130	2,368	-762	-24%
Below Normal (13%)	2,925	2,856	-69	-2%	2,750	2,671	-79	-3%	2,317	2,195	-122	-5%	3,320	2,364	-956	-29%	2,613	1,772	-840	-32%	2,228	1,439	-790	-35%
Dry (24%)	3,059	2,978	-81	-3%	2,663	2,606	-57	-2%	2,295	2,136	-159	-7%	2,741	2,123	-618	-23%	2,015	1,920	-96	-5%	1,972	1,454	-518	-26%
Critical (15%)	2,508	2,479	-29	-1%	2,150	2,102	-47	-2%	1,851	1,792	-59	-3%	2,060	1,822	-238	-12%	1,731	1,761	30	2%	1,537	1,405	-132	-9%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

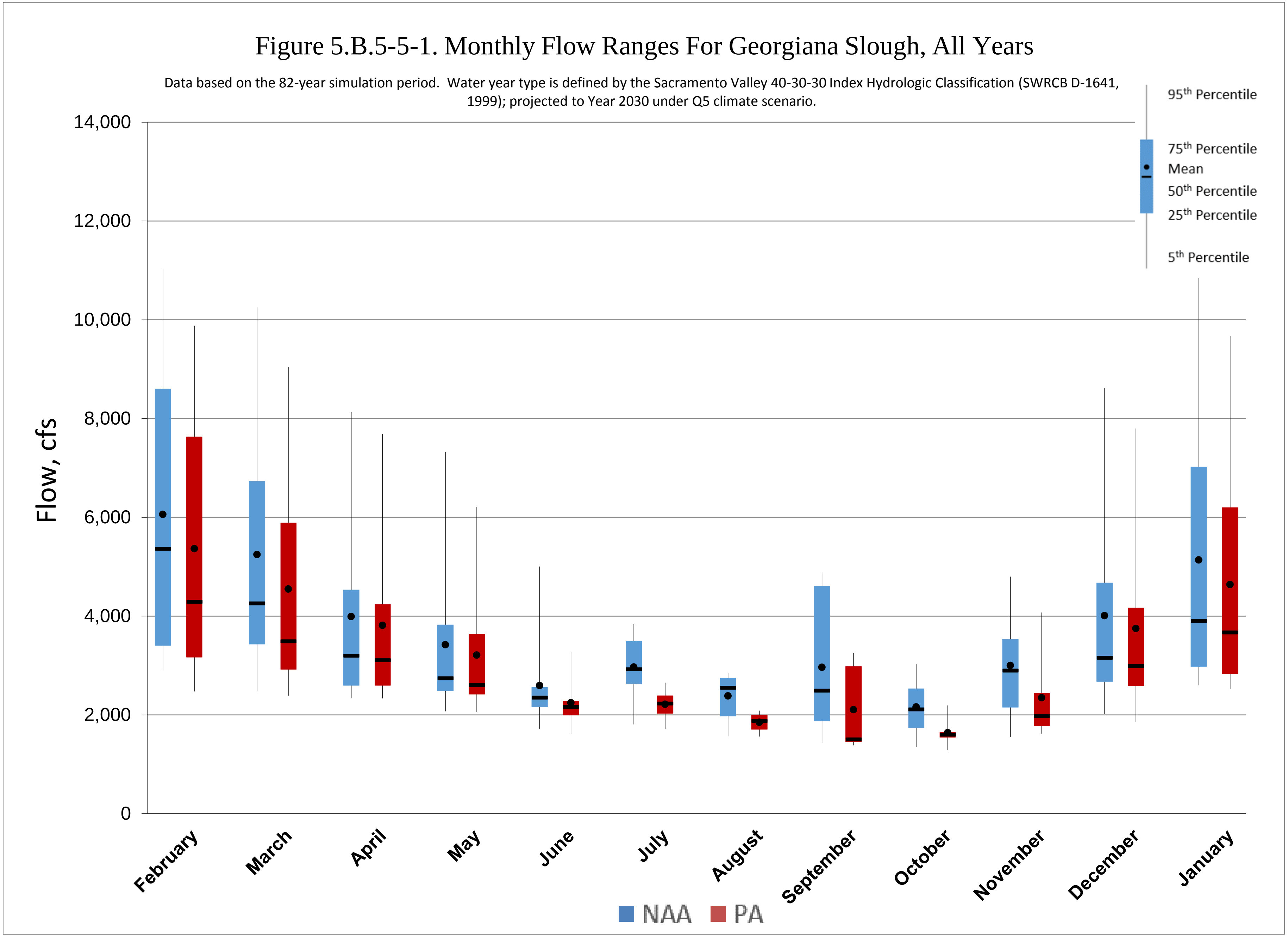


Figure 5.B.5-5-1. Monthly Flow Ranges For Georgiana Slough, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

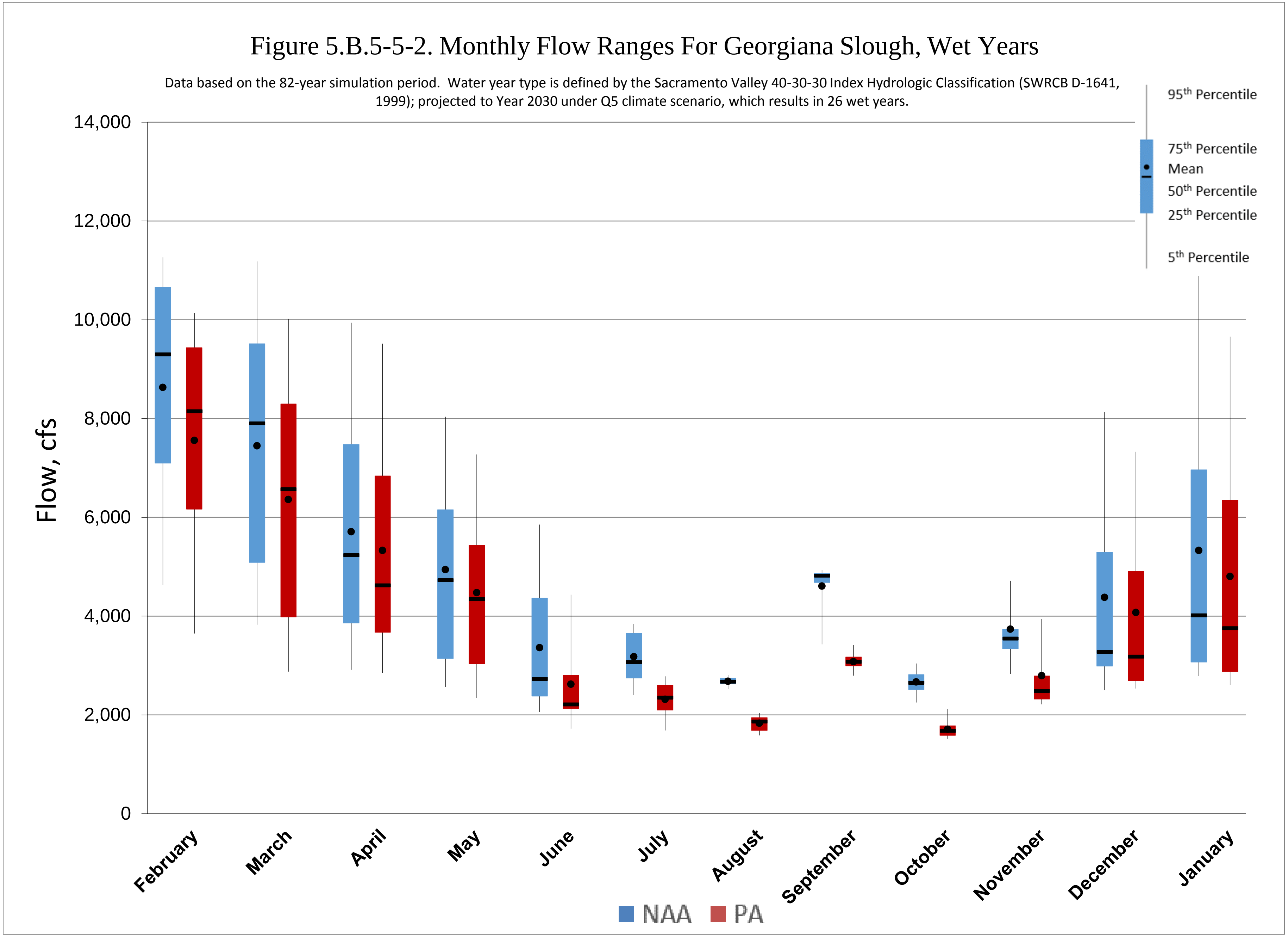


Figure 5.B.5-5-2. Monthly Flow Ranges For Georgiana Slough, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

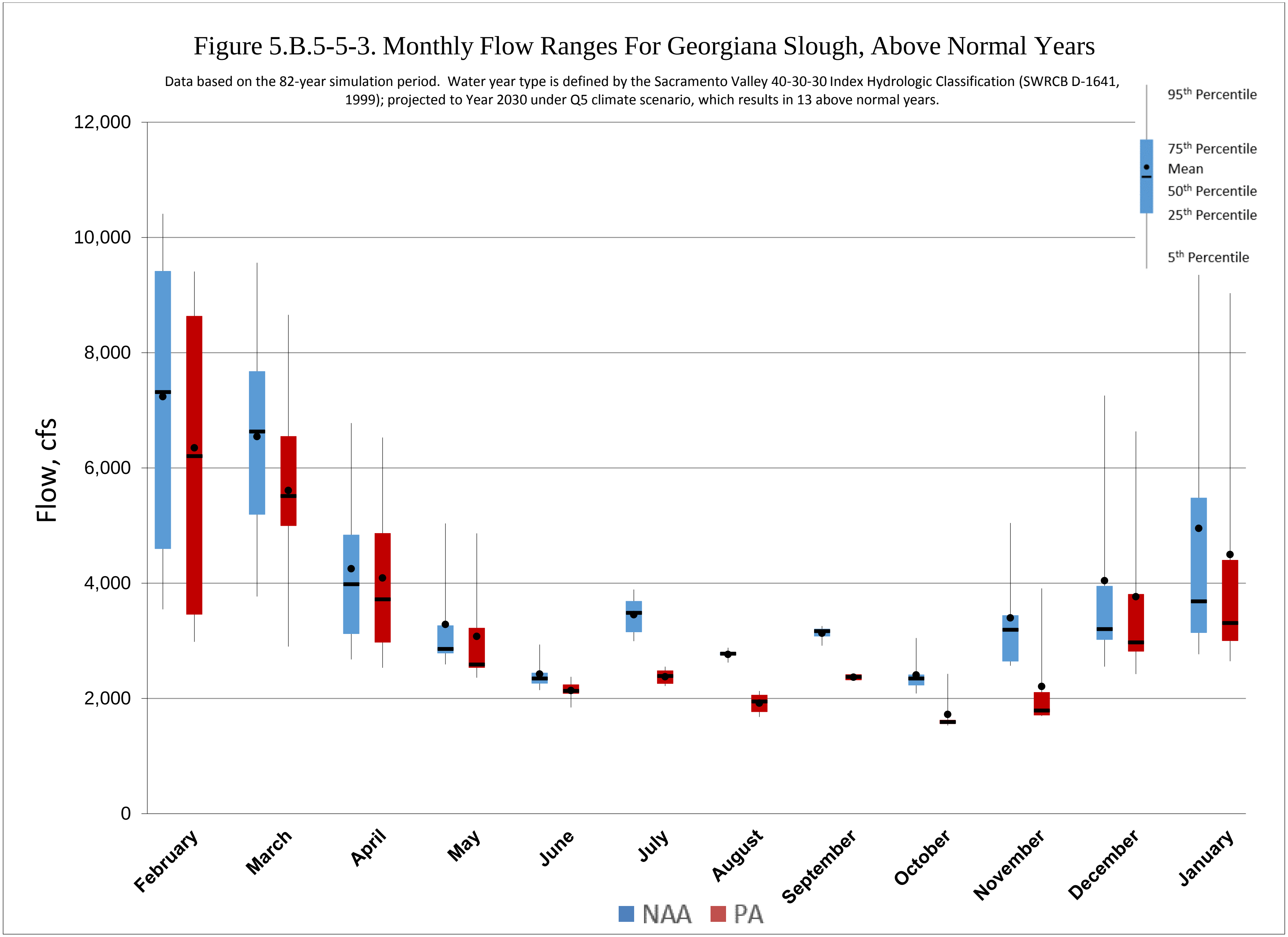


Figure 5.B.5-5-3. Monthly Flow Ranges For Georgiana Slough, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

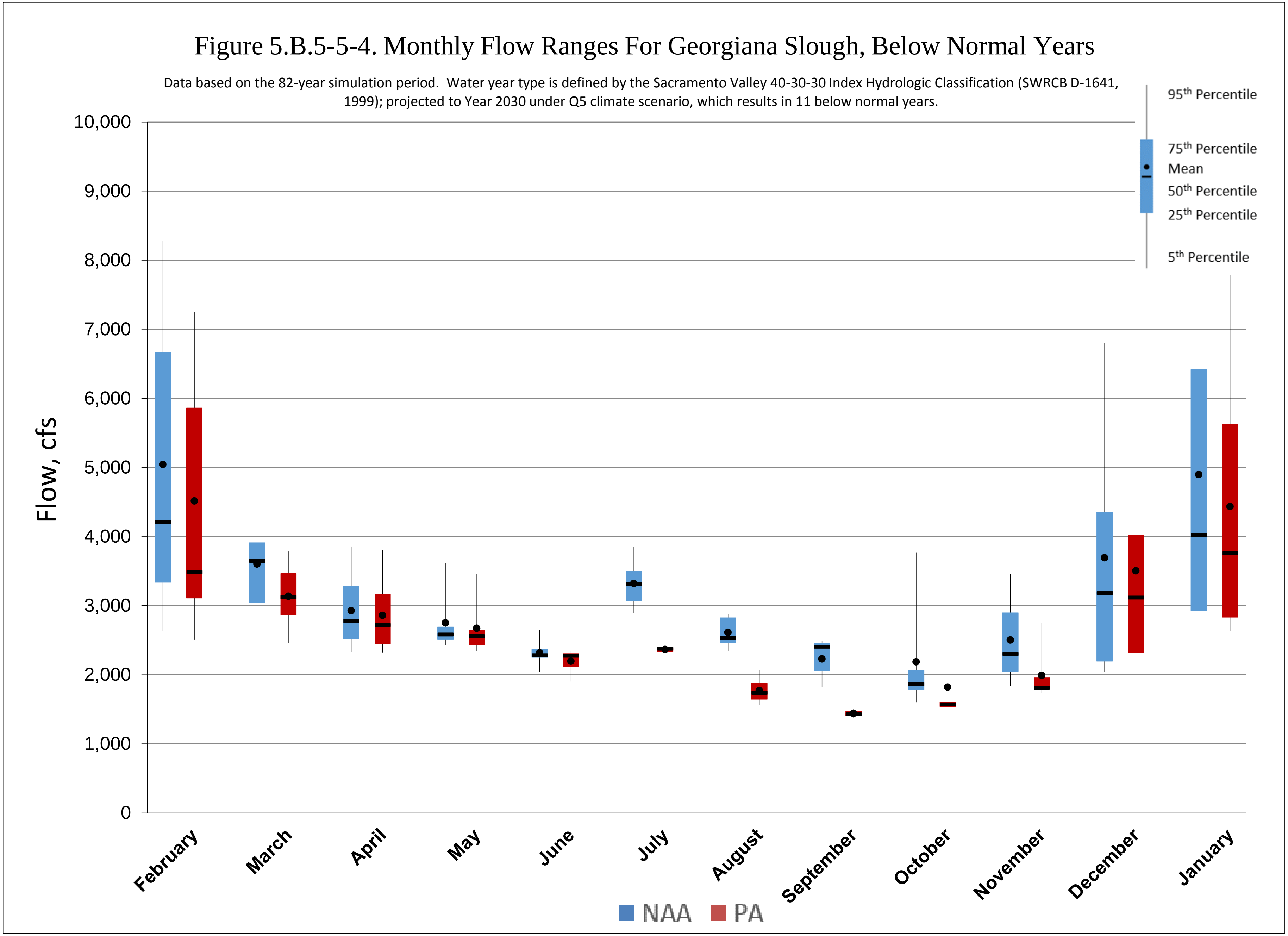


Figure 5.B.5-5-4. Monthly Flow Ranges For Georgiana Slough, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
Flow, cfs
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

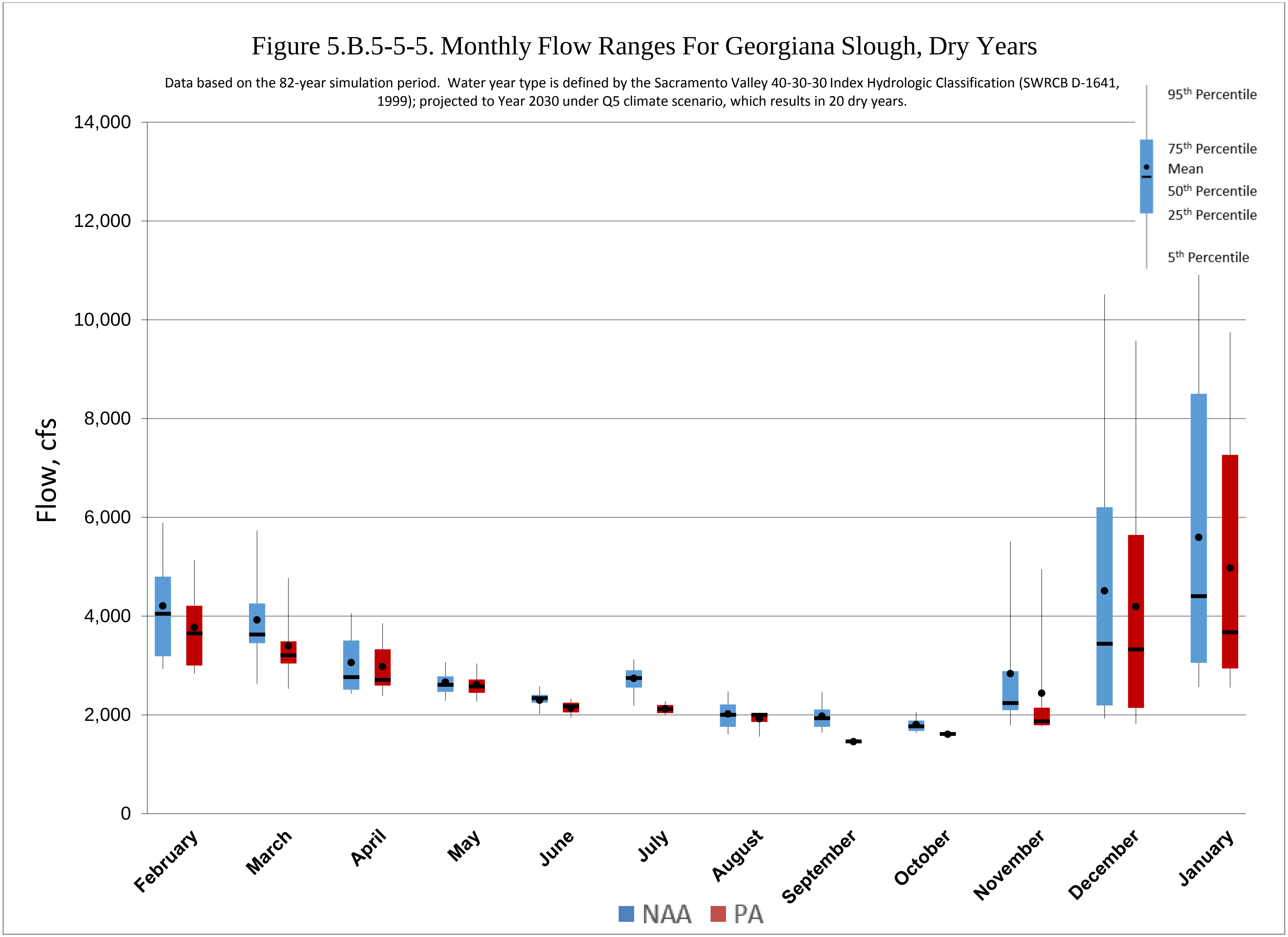


Figure 5.B.5-5-5. Monthly Flow Ranges For Georgiana Slough, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

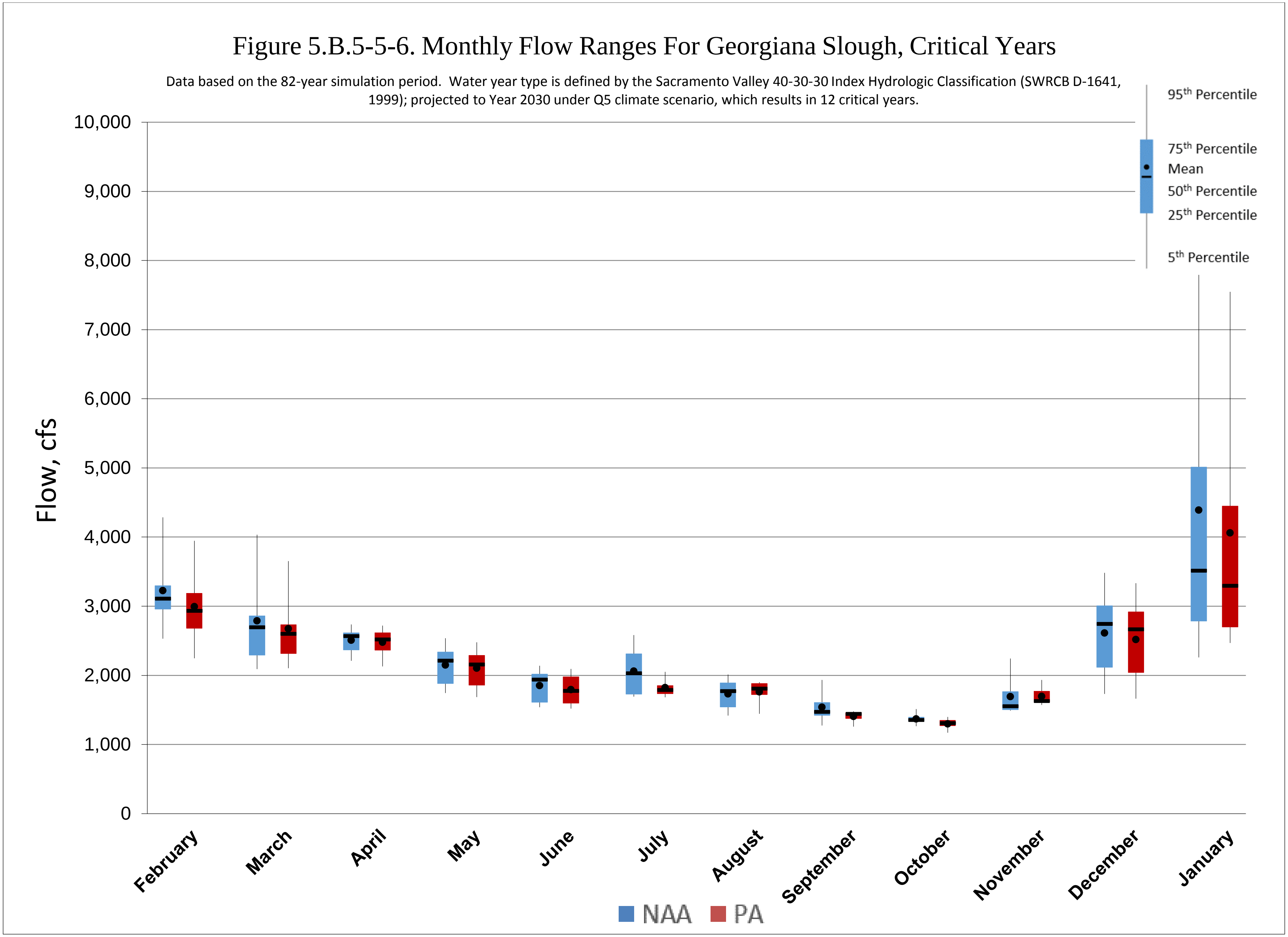
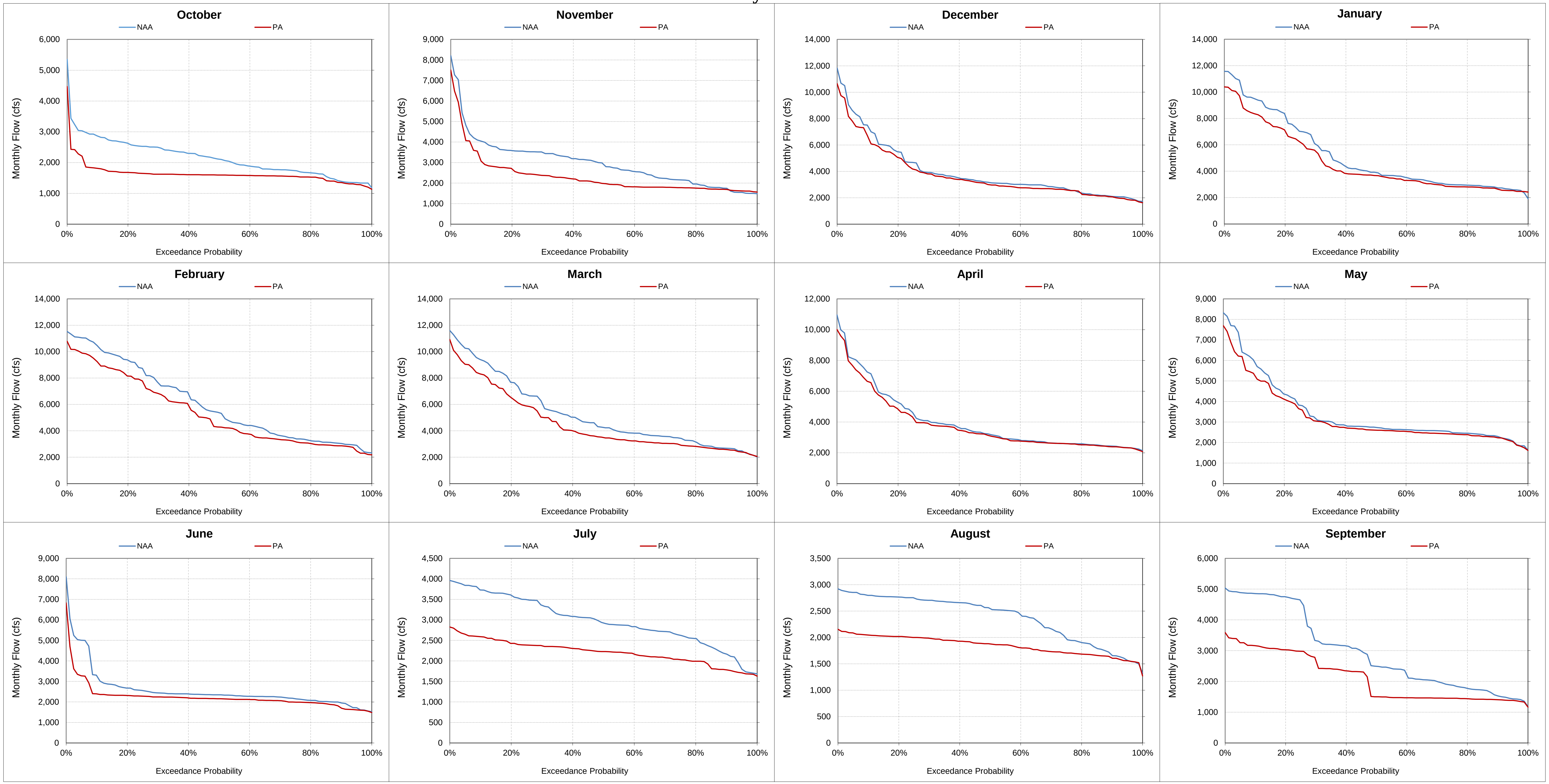


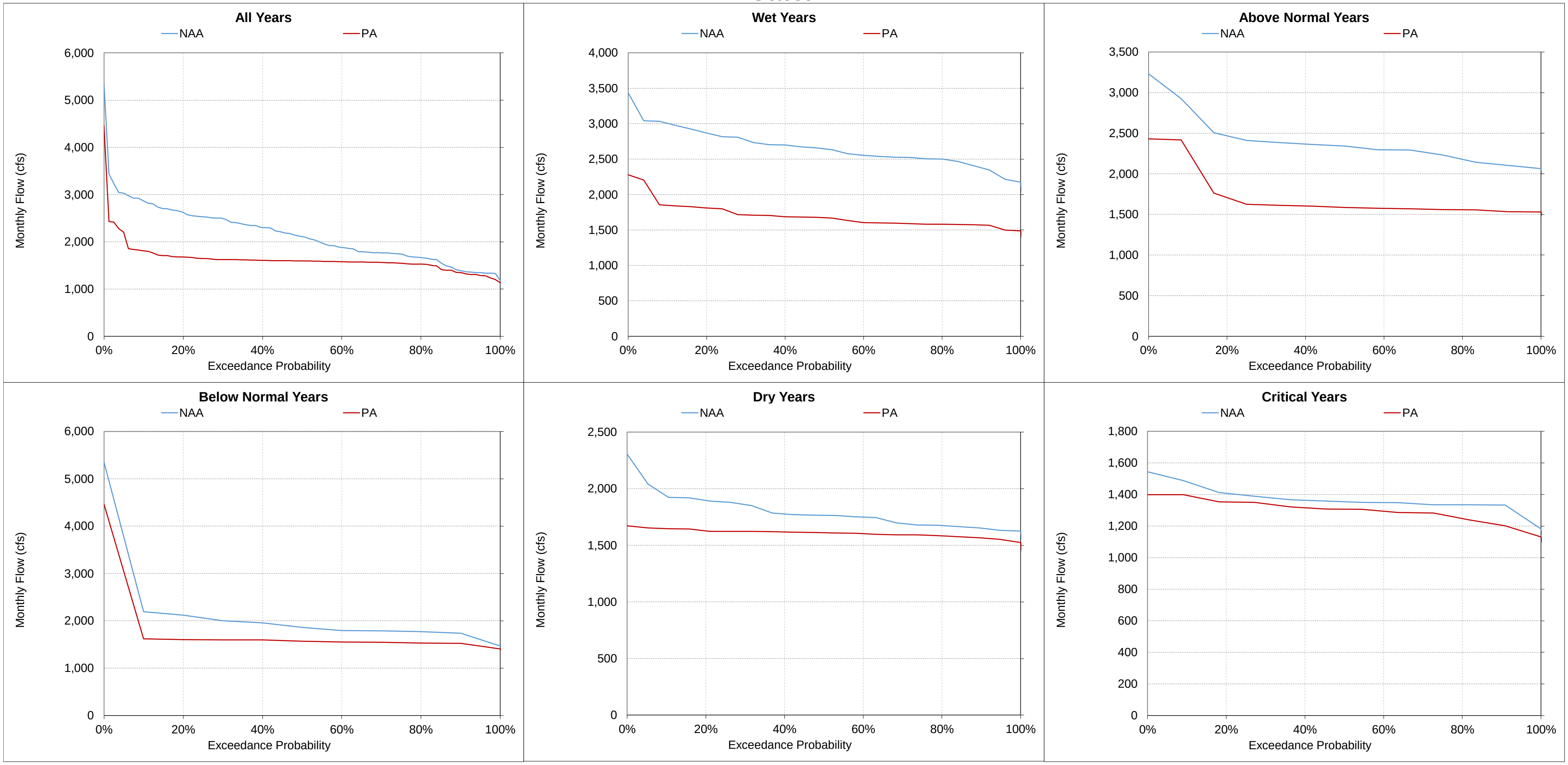
Figure 5.B.5-5-6. Monthly Flow Ranges For Georgiana Slough, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-5-7. Georgiana Slough, Monthly Flow Probability of Exceedance



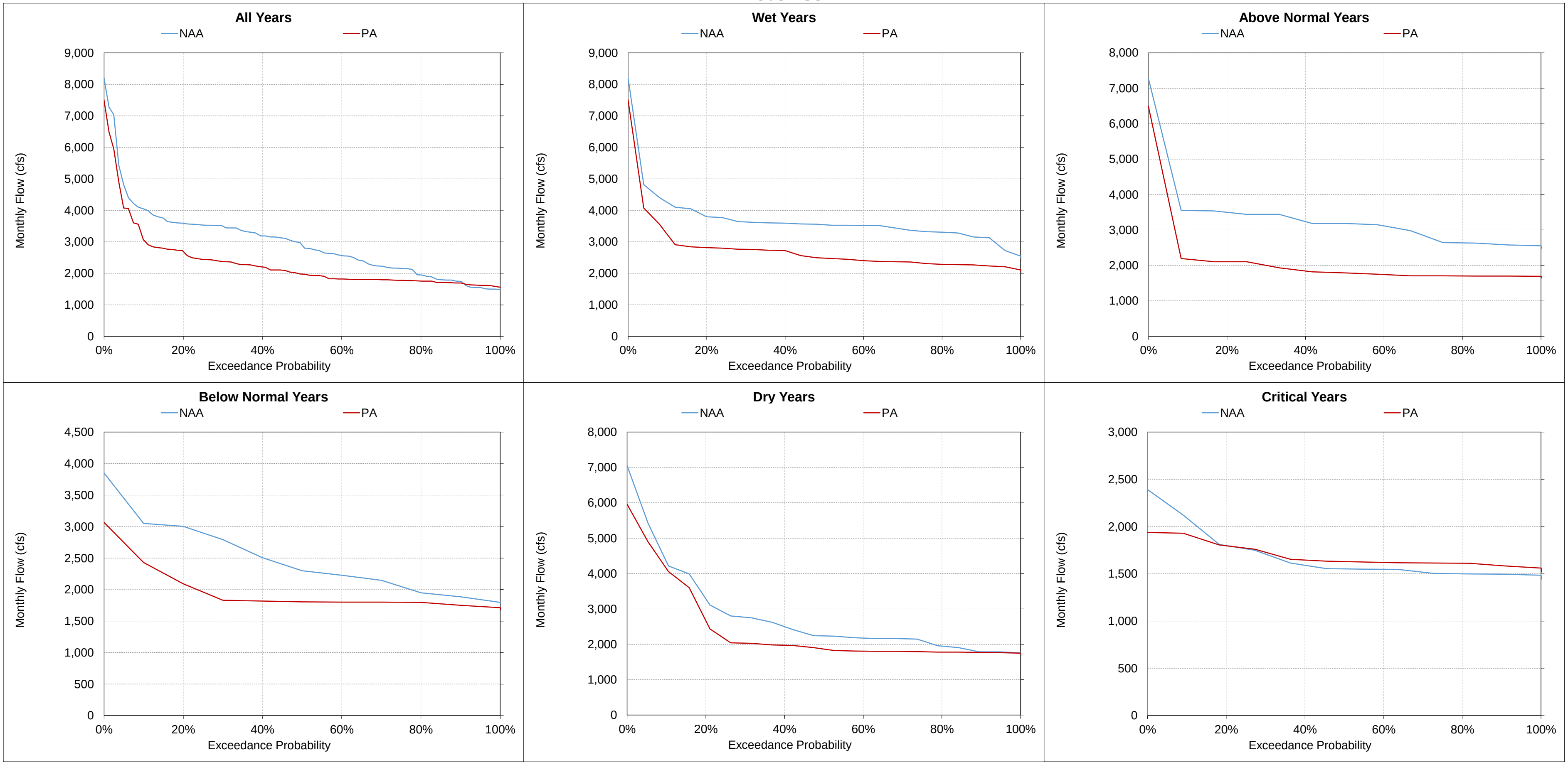
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-8. Georgiana Slough, Monthly Flow
October



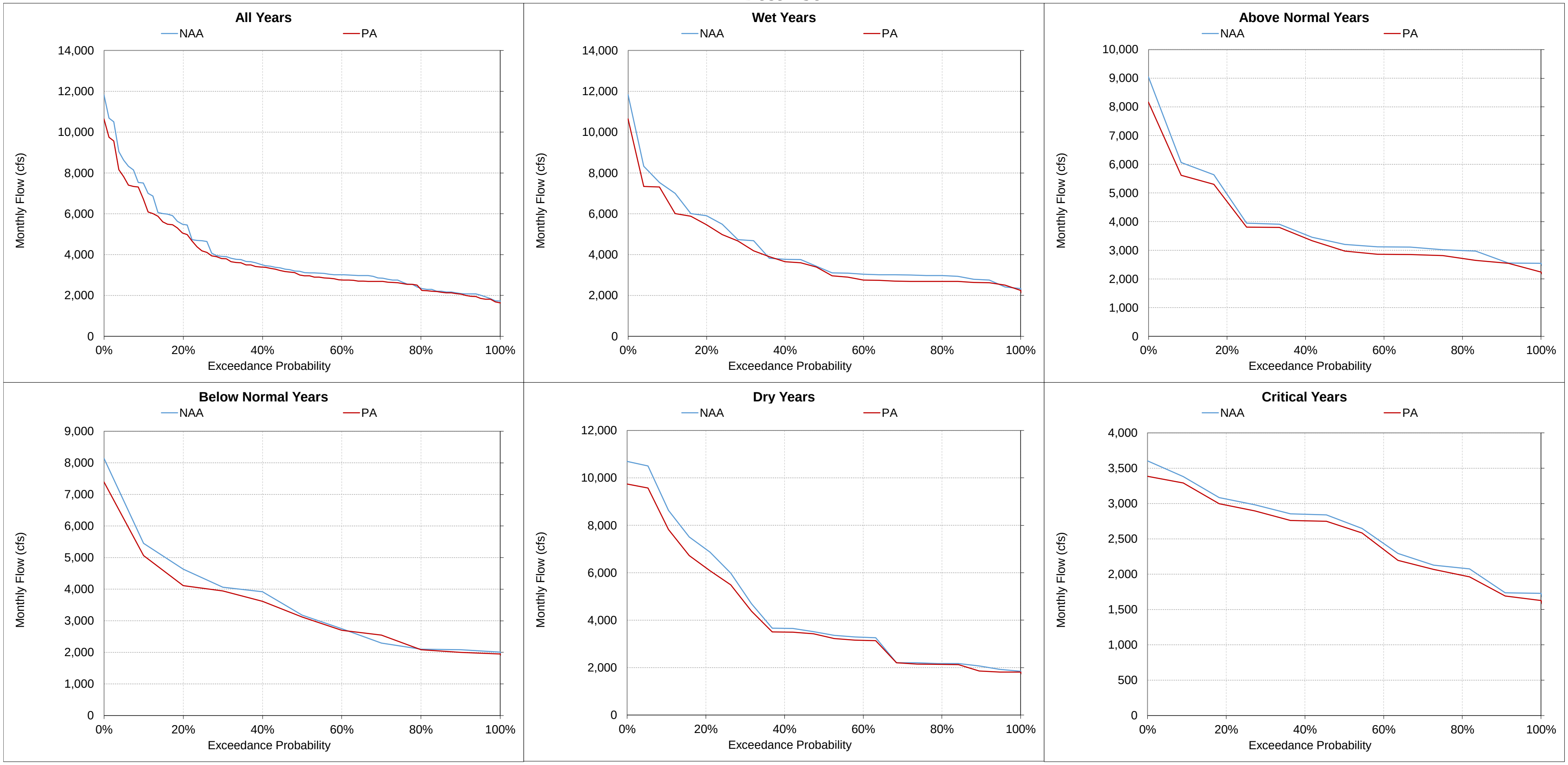
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-9. Georgiana Slough, Monthly Flow
November



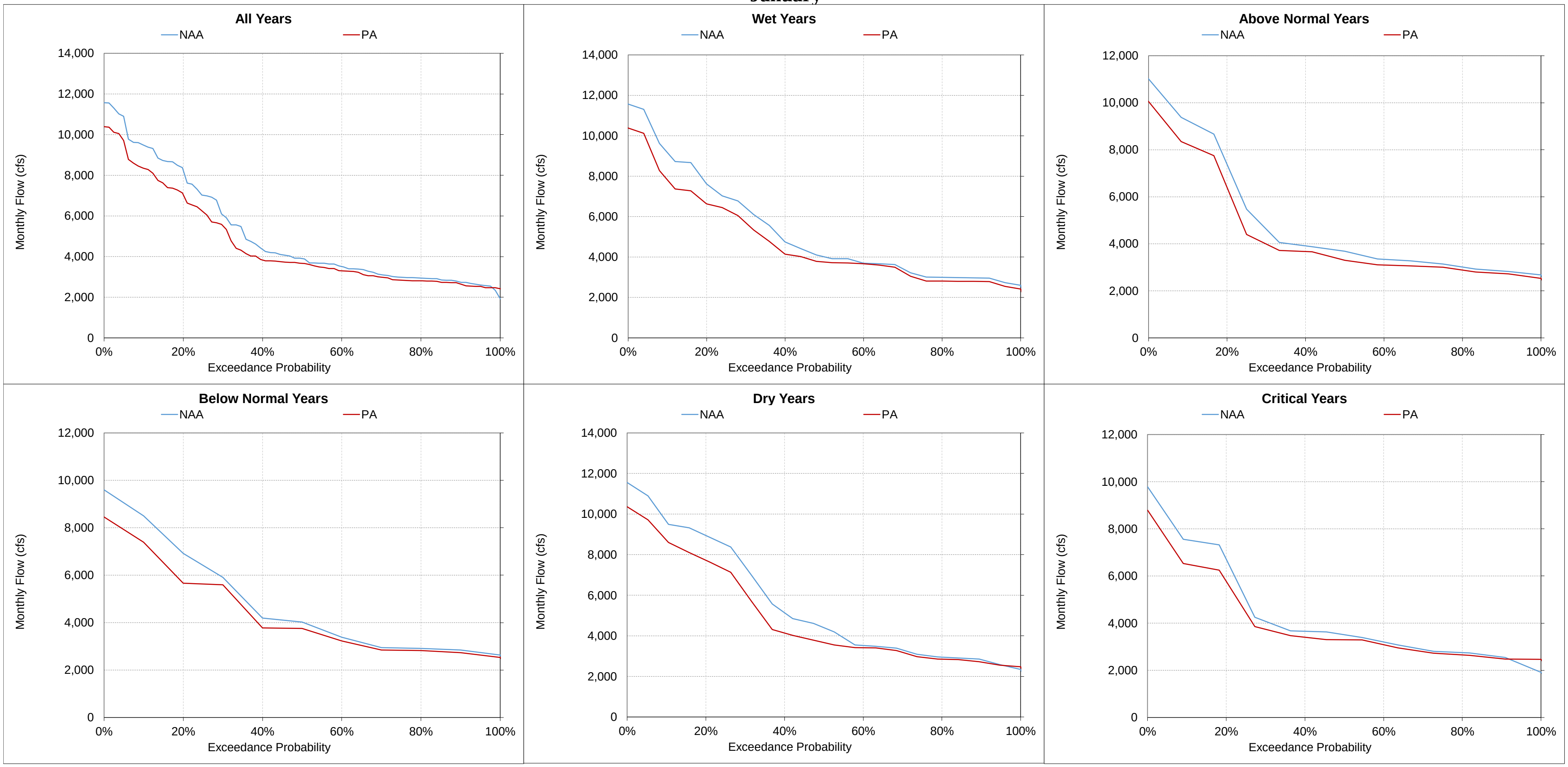
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-10. Georgiana Slough, Monthly Flow December



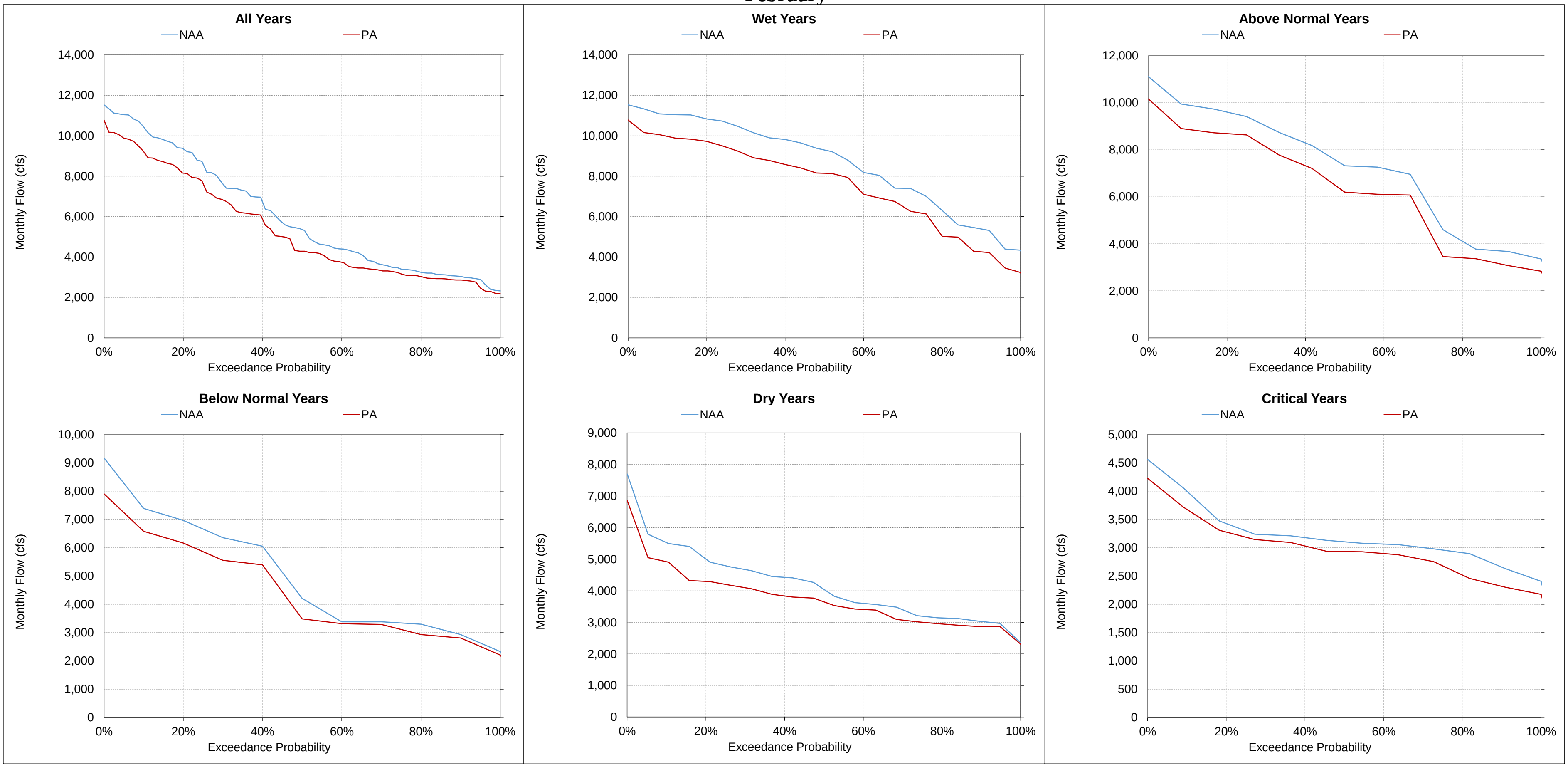
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-11. Georgiana Slough, Monthly Flow
January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-12. Georgiana Slough, Monthly Flow
February



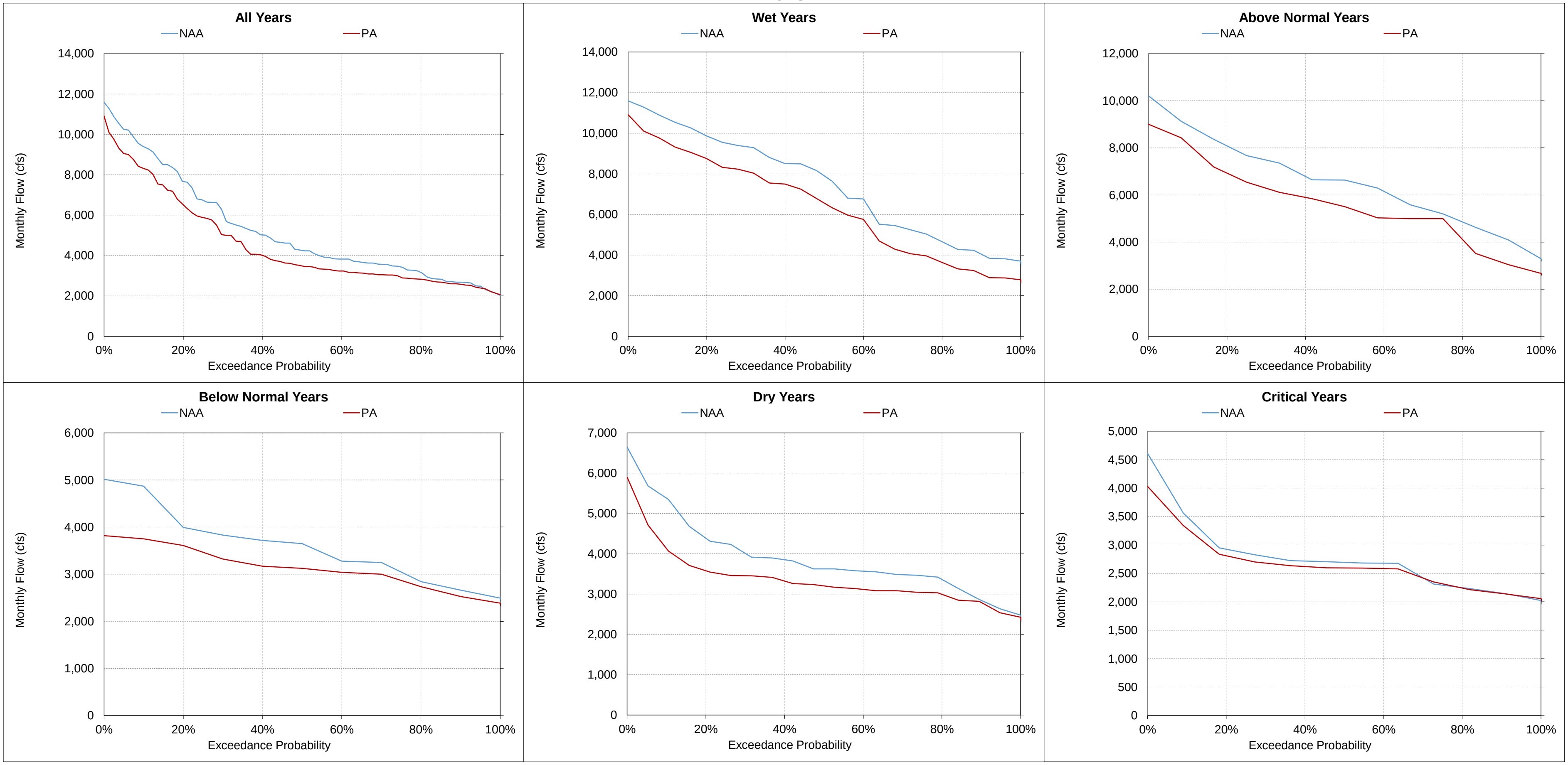
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

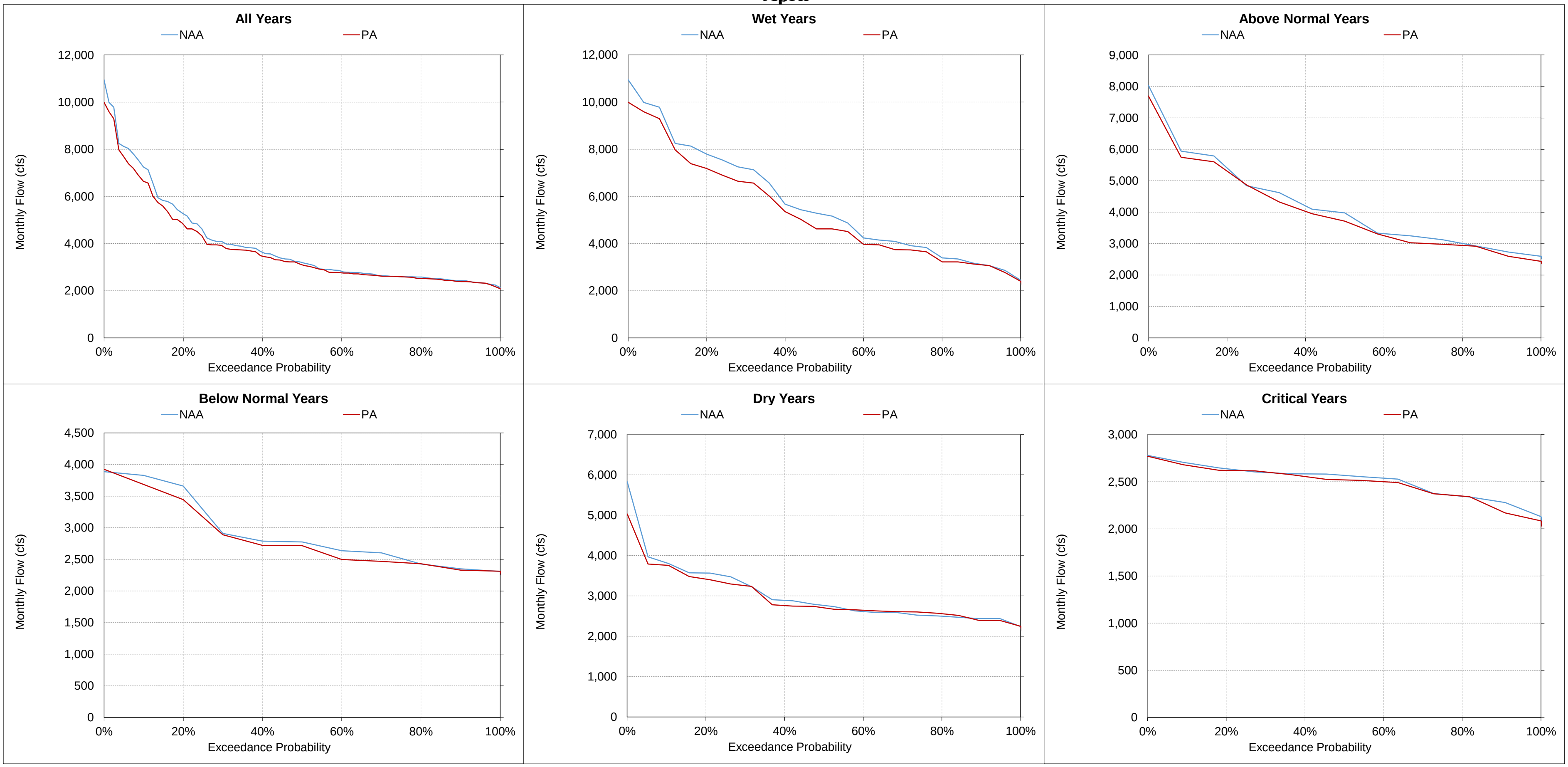
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-13. Georgiana Slough, Monthly Flow
March



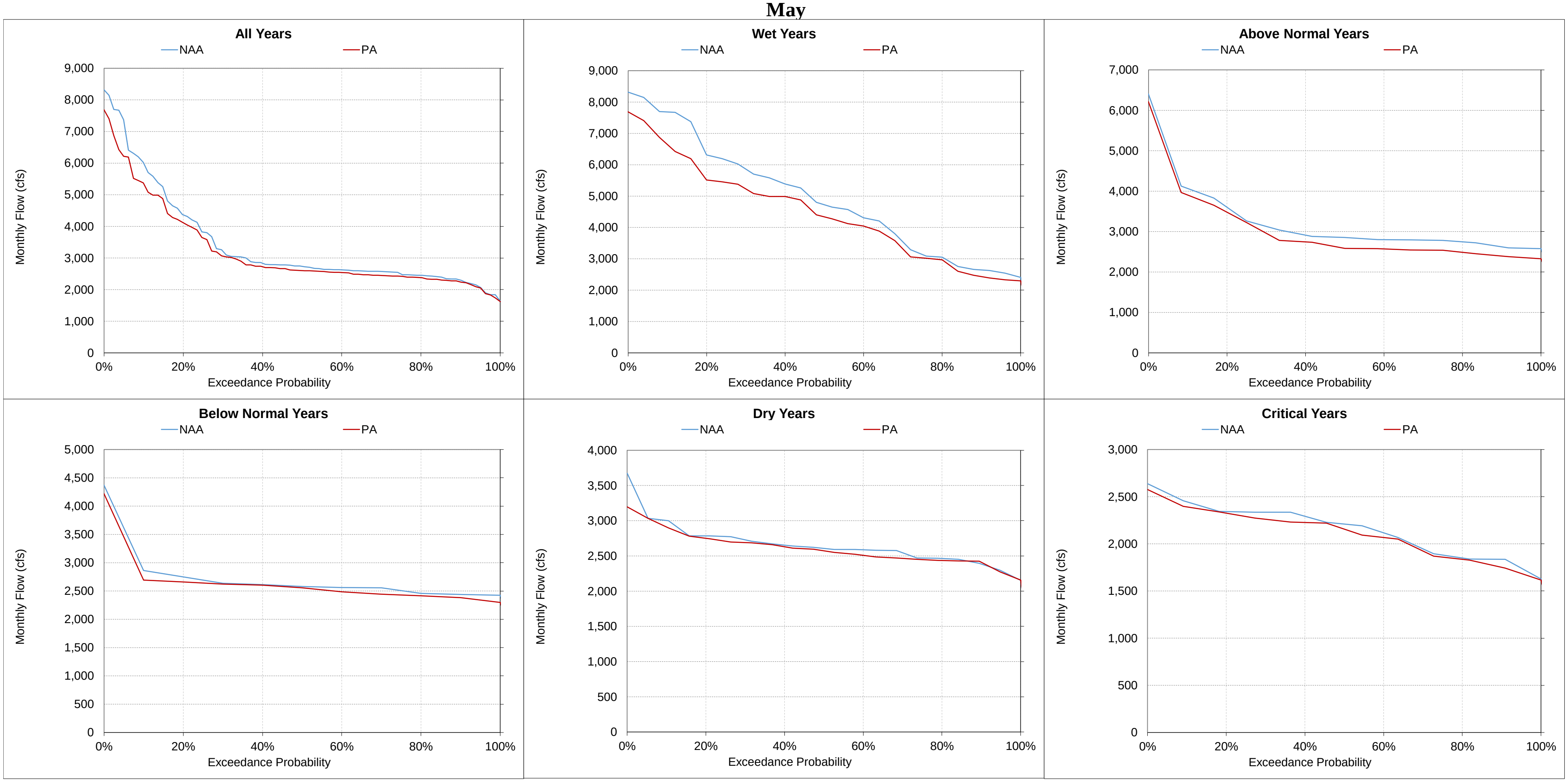
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-14. Georgiana Slough, Monthly Flow April



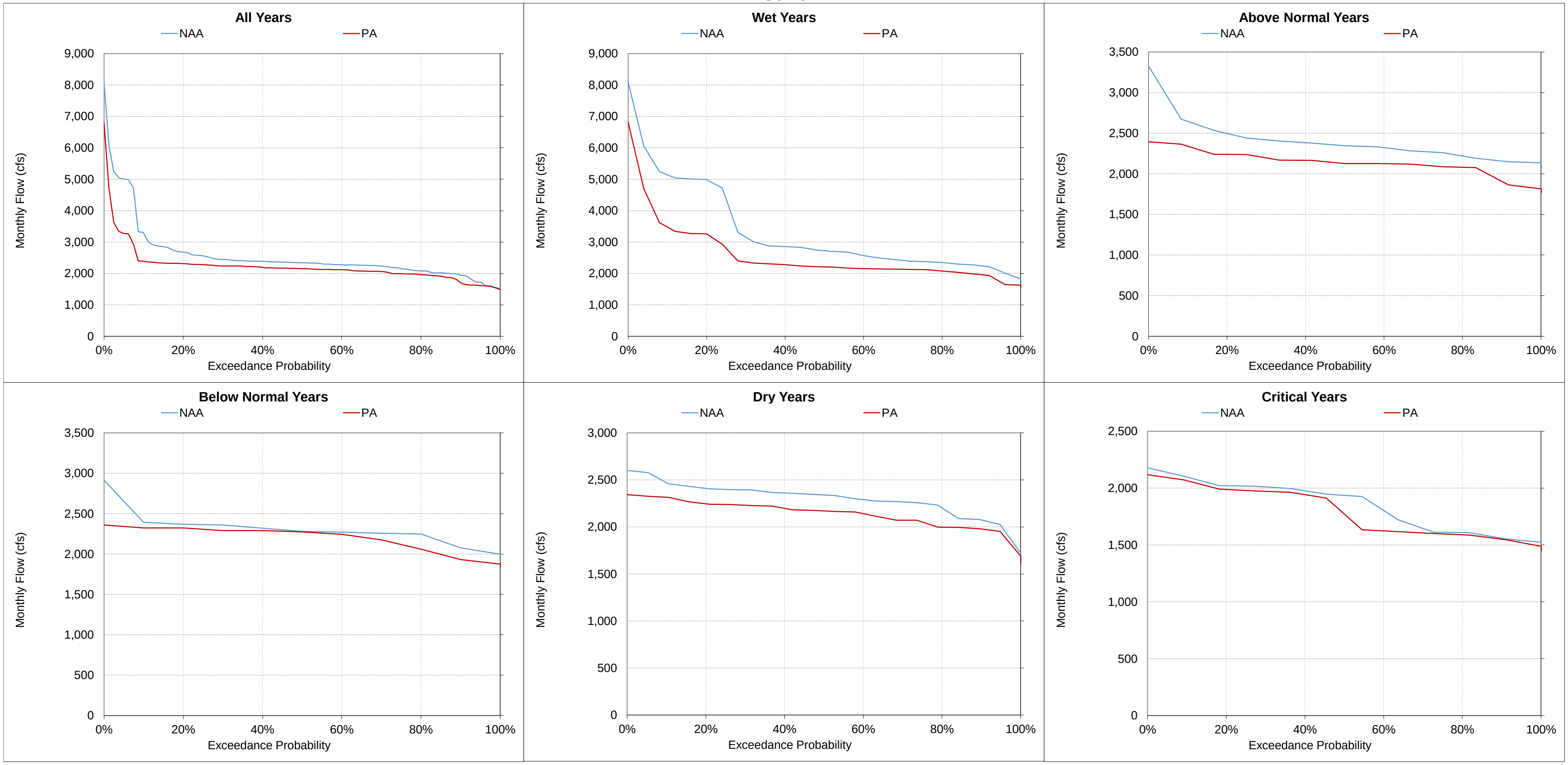
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-15. Georgiana Slough, Monthly Flow
May



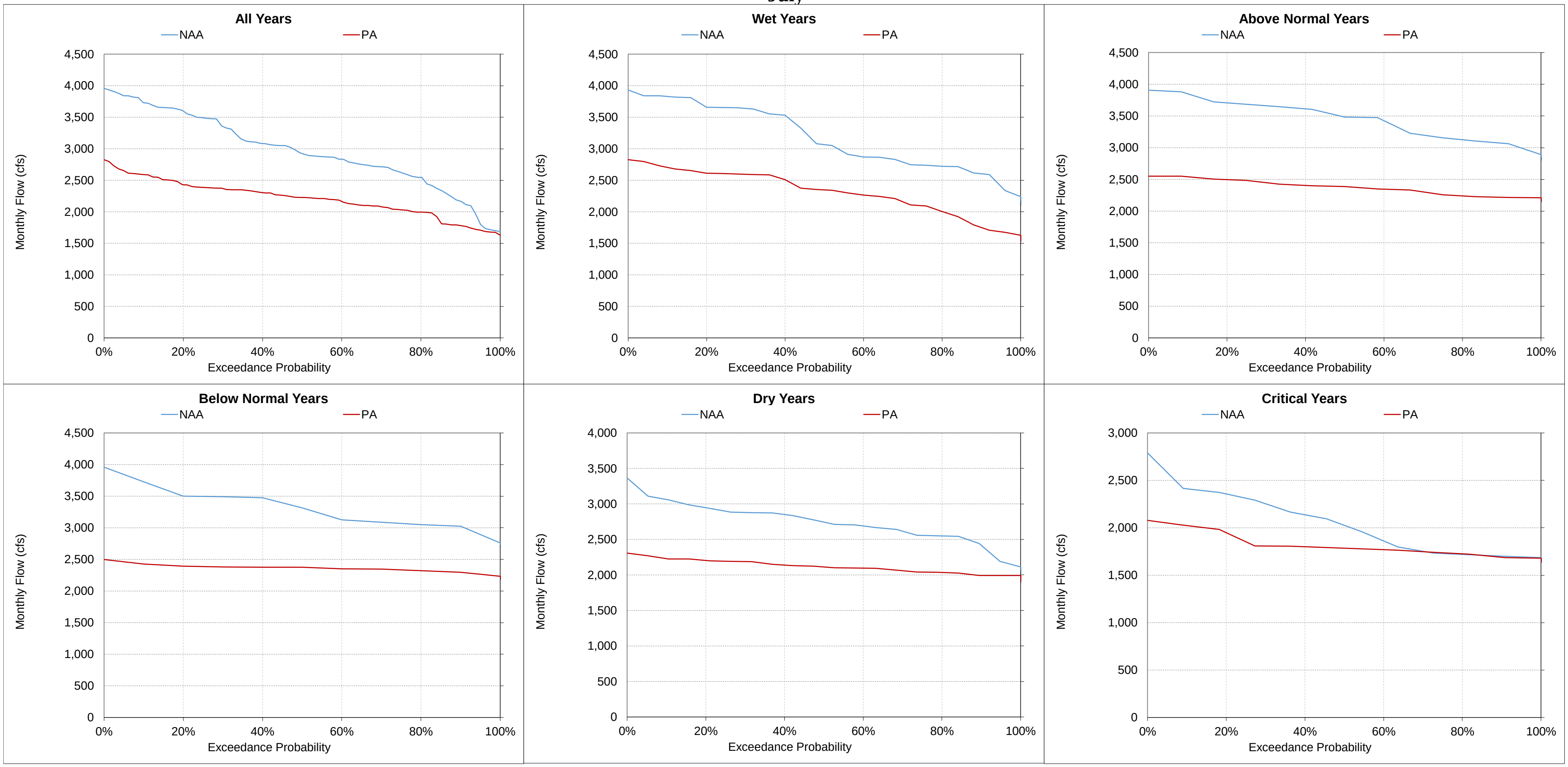
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-16. Georgiana Slough, Monthly Flow
June



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-17. Georgiana Slough, Monthly Flow
July



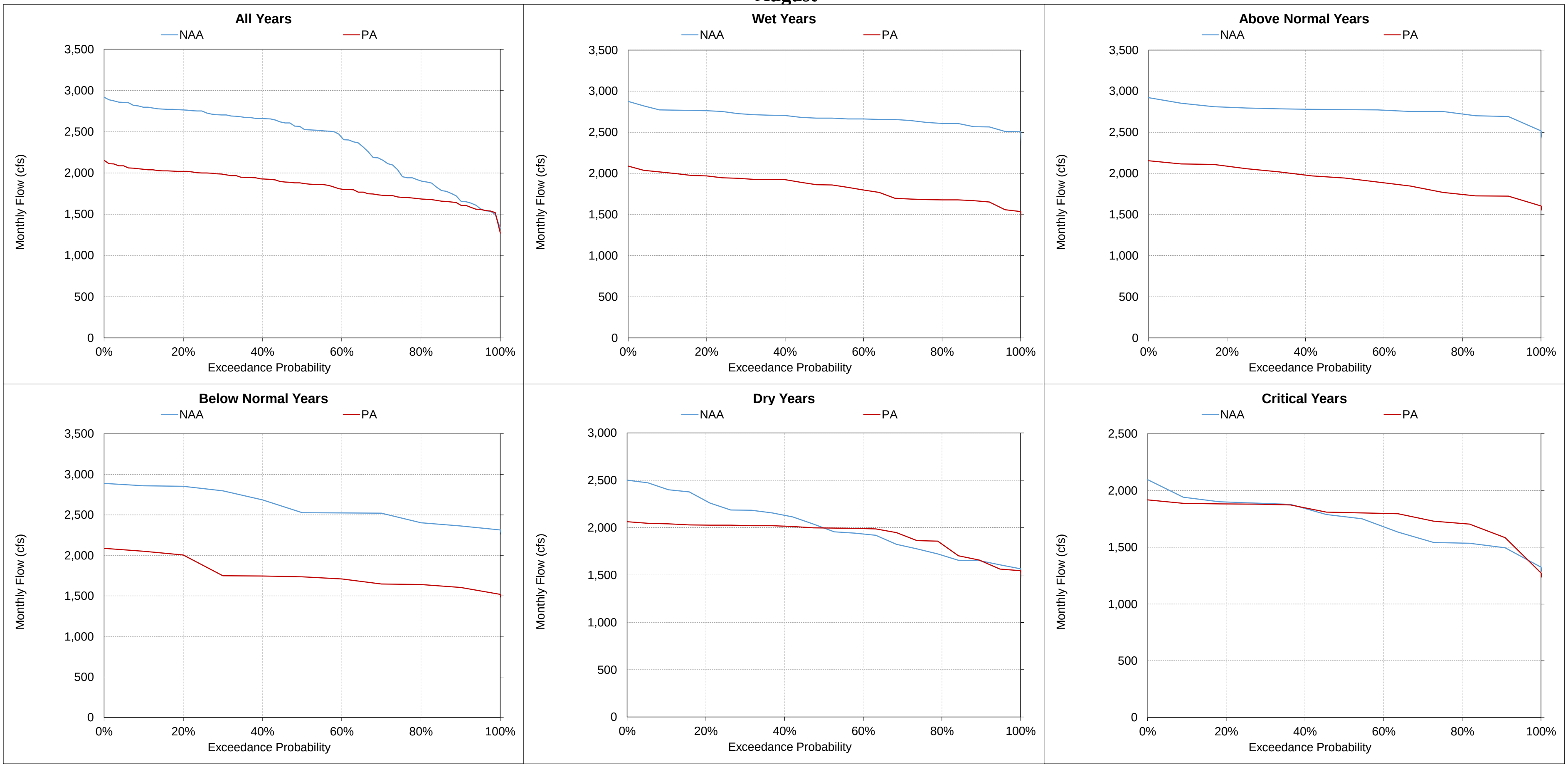
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

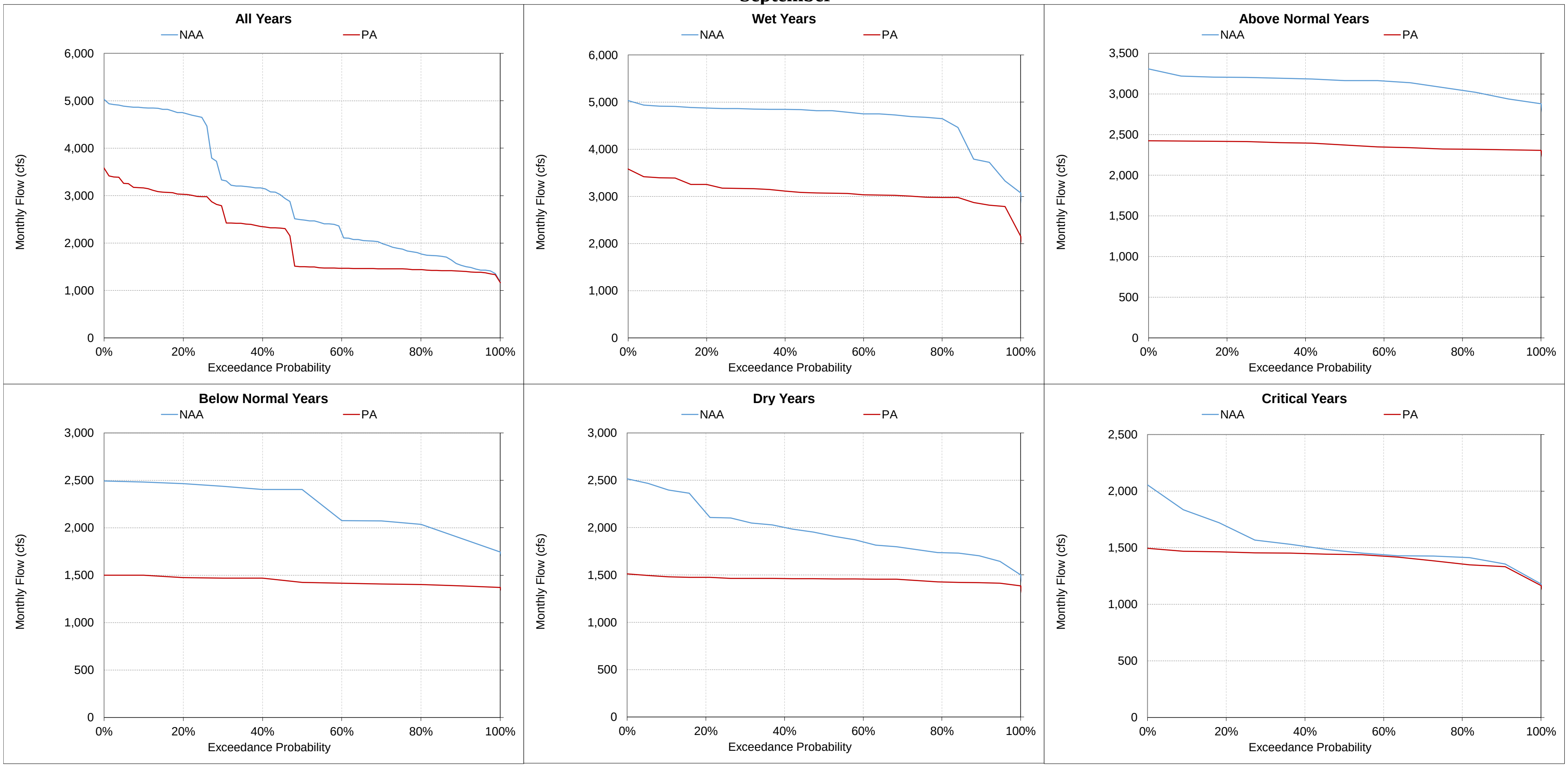
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-18. Georgiana Slough, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-5-19. Georgiana Slough, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-6. Sacramento River at Rio Vista, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	10,483	5,171	-5,312	-51%	18,143	12,437	-5,706	-31%	58,427	54,243	-4,184	-7%	87,560	75,132	-12,428	-14%	115,544	108,076	-7,468	-6%	71,803	65,987	-5,817	-8%
20%	8,824	4,693	-4,131	-47%	14,964	9,316	-5,648	-38%	33,723	31,324	-2,399	-7%	59,378	51,998	-7,381	-12%	73,677	68,005	-5,672	-8%	56,286	48,284	-8,002	-14%
30%	7,812	4,347	-3,465	-44%	14,172	7,762	-6,410	-45%	18,869	18,501	-368	-2%	43,828	38,892	-4,936	-11%	56,048	49,453	-6,595	-12%	39,265	32,303	-6,961	-18%
40%	6,846	4,197	-2,649	-39%	12,413	6,742	-5,671	-46%	14,917	14,458	-460	-3%	26,793	24,024	-2,769	-10%	43,150	38,611	-4,539	-11%	30,053	23,928	-6,126	-20%
50%	5,719	4,116	-1,603	-28%	10,290	5,437	-4,853	-47%	12,030	11,179	-850	-7%	19,470	18,088	-1,382	-7%	32,300	26,522	-5,778	-18%	22,660	18,112	-4,548	-20%
60%	4,585	3,999	-586	-13%	8,435	4,685	-3,750	-44%	10,751	9,305	-1,447	-13%	15,556	14,422	-1,133	-7%	23,282	18,493	-4,789	-21%	18,111	13,886	-4,225	-23%
70%	4,114	3,889	-226	-5%	6,326	4,503	-1,823	-29%	10,274	8,558	-1,716	-17%	12,529	11,583	-946	-8%	16,358	14,568	-1,790	-11%	15,926	12,174	-3,752	-24%
80%	3,890	3,781	-109	-3%	4,757	4,327	-429	-9%	7,152	7,031	-122	-2%	10,566	9,699	-867	-8%	13,187	11,838	-1,349	-10%	12,115	10,012	-2,103	-17%
90%	3,038	3,194	156	5%	4,076	4,103	27	1%	5,845	5,578	-267	-5%	9,219	8,494	-725	-8%	11,383	10,097	-1,286	-11%	8,624	7,882	-742	-9%
Long Term Full Simulation Period[b]	6,523	4,527	-1,996	-31%	11,797	8,279	-3,518	-30%	22,393	20,774	-1,619	-7%	37,722	34,564	-3,158	-8%	47,887	43,814	-4,073	-9%	36,582	32,232	-4,350	-12%
Water Year Types[c]																								
Wet (32%)	9,222	4,912	-4,310	-47%	16,588	11,073	-5,515	-33%	26,018	24,219	-1,798	-7%	44,188	40,900	-3,288	-7%	86,112	80,141	-5,971	-7%	65,624	59,015	-6,608	-10%
Above Normal (16%)	7,432	4,611	-2,821	-38%	14,406	8,176	-6,231	-43%	19,826	18,198	-1,628	-8%	34,555	31,662	-2,893	-8%	56,961	51,873	-5,088	-9%	45,657	40,448	-5,209	-11%
Below Normal (13%)	6,952	6,122	-830	-12%	8,129	5,587	-2,542	-31%	19,936	18,383	-1,553	-8%	33,570	30,702	-2,868	-9%	29,951	26,767	-3,183	-11%	16,589	13,441	-3,148	-19%
Dry (24%)	4,321	4,009	-312	-7%	10,466	8,665	-1,801	-17%	28,418	26,399	-2,018	-7%	39,283	35,255	-4,028	-10%	22,657	19,755	-2,903	-13%	19,653	16,033	-3,619	-18%
Critical (15%)	2,967	3,002	35	1%	4,172	4,165	-7	0%	9,533	8,919	-614	-6%	28,351	26,368	-1,983	-7%	13,724	12,098	-1,625	-12%	10,369	9,526	-843	-8%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	53,068	49,514	-3,554	-7%	32,163	27,414	-4,748	-15%	13,530	8,054	-5,476	-40%	15,636	8,163	-7,473	-48%	9,548	5,072	-4,476	-47%	23,544	13,746	-9,797	-42%
20%	33,908	31,822	-2,086	-6%	21,128	20,039	-1,089	-5%	9,024	6,817	-2,207	-24%	14,960	7,124	-7,836	-52%	9,107	4,816	-4,291	-47%	22,742	12,757	-9,985	-44%
30%	20,991	19,293	-1,697	-8%	12,972	11,814	-1,158	-9%	7,188	6,388	-800	-11%	13,135	6,667	-6,468	-49%	8,721	4,649	-4,072	-47%	13,916	10,003	-3,913	-28%
40%	17,291	16,482	-808	-5%	10,097	9,150	-948	-9%	6,858	6,224	-634	-9%	11,330	6,445	-4,885	-43%	8,288	4,539	-3,749	-45%	12,746	7,588	-5,158	-40%
50%	12,594	11,960	-635	-5%	9,435	8,479	-956	-10%	6,695	5,823	-872	-13%	10,020	5,874	-4,146	-41%	7,638	4,375	-3,263	-43%	7,653	3,246	-4,406	-58%
60%	10,185	9,556	-629	-6%	8,310	7,957	-352	-4%	6,459	5,563	-896	-14%	9,515	5,436	-4,079	-43%	7,136	4,094	-3,042	-43%	5,906	3,107	-2,799	-47%
70%	8,639	8,476	-163	-2%	7,736	7,396	-340	-4%	6,080	5,396	-685	-11%	8,884	5,112	-3,772	-42%	5,385	3,908	-1,478	-27%	4,784	3,040	-1,744	-36%
80%	8,077	7,942	-134	-2%	7,051	6,864	-187	-3%	5,336	5,052	-284	-5%	7,428	4,743	-2,685	-36%	4,284	3,782	-502	-12%	3,917	3,007	-910	-23%
90%	7,298	7,168	-129	-2%	6,133	5,920	-213	-3%	4,773	4,171	-602	-13%	5,267	3,920	-1,347	-26%	3,513	3,422	-91	-3%	3,270	2,905	-366	-11%
Long Term Full Simulation Period[b]	21,586	20,376	-1,210	-6%	14,161	12,966	-1,195	-8%	8,714	6,878	-1,836	-21%	10,678	6,023	-4,655	-44%	7,033	4,282	-2,752	-39%	11,461	6,949	-4,512	-39%
Water Year Types[c]																								
Wet (32%)	38,583	36,150	-2,433	-6%	24,873	22,172	-2,701	-11%	14,007	9,782	-4,226	-30%	12,181	6,889	-5,292	-43%	8,583	4,241	-4,342	-51%	21,970	13,044	-8,926	-41%
Above Normal (16%)	23,092	21,944	-1,148	-5%	13,278	12,164	-1,114	-8%	7,295	5,851	-1,443	-20%	13,964	6,908	-7,055	-51%	9,113	4,672	-4,441	-49%	12,544	7,728	-4,816	-38%
Below Normal (13%)	11,319	10,800	-519	-5%	9,282	8,875	-407	-4%	6,575	6,041	-534	-8%	12,980	6,704	-6,277	-48%	8,246	4,114	-4,132	-50%	6,143	3,015	-3,128	-51%
Dry (24%)	12,531	11,923	-609	-5%	8,620	8,305	-315	-4%	6,505	5,780	-725	-11%	8,759	5,219	-3,540	-40%	4,982	4,432	-551	-11%	4,896	3,029	-1,867	-38%
Critical (15%)	7,630	7,366	-264	-3%	5,618	5,407	-211	-4%	4,422	4,294	-128	-3%	4,946	3,899	-1,046	-21%	3,729	3,850	122	3%	3,334	3,039	-294	-9%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

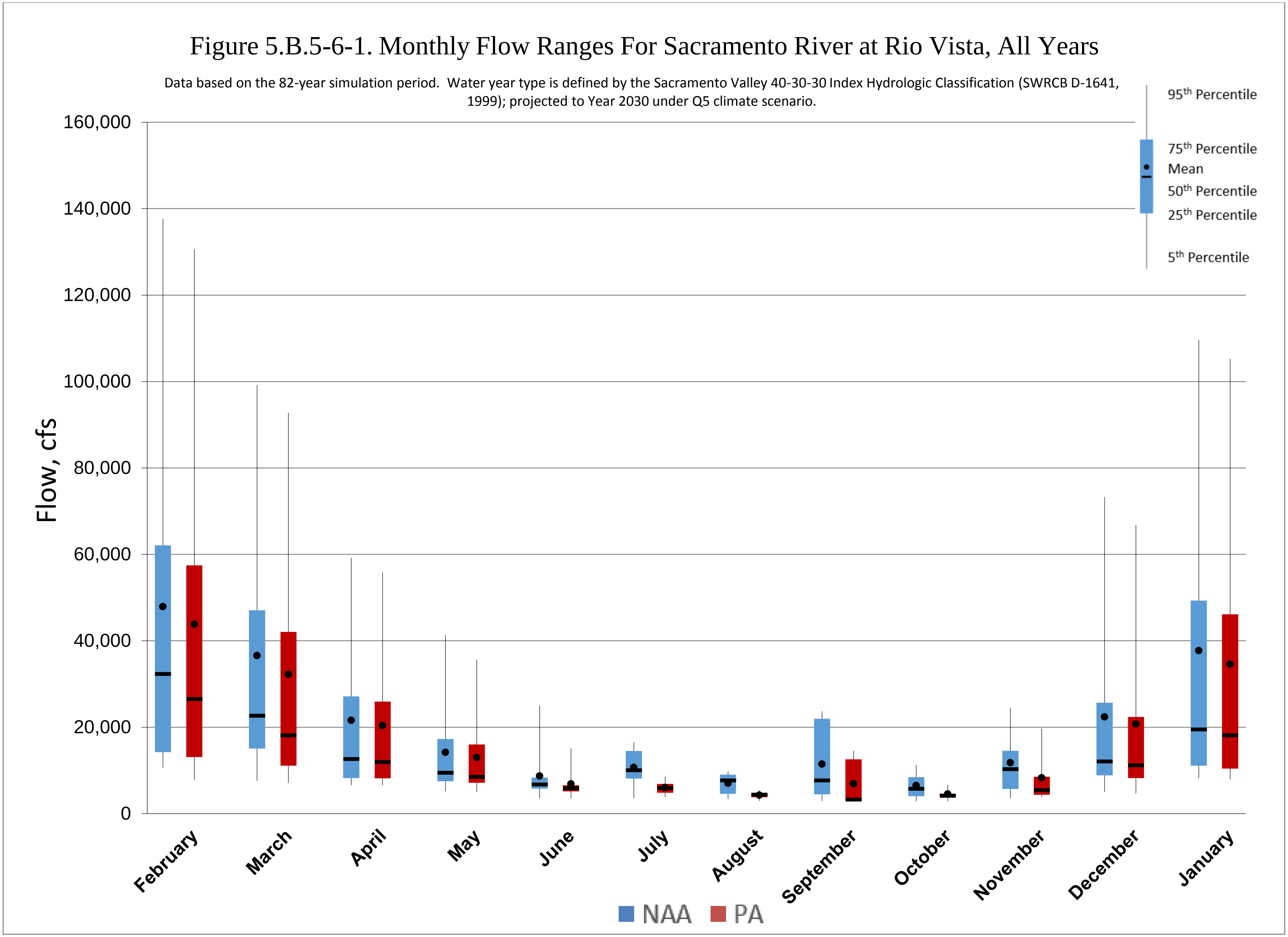


Figure 5.B.5-6-1. Monthly Flow Ranges For Sacramento River at Rio Vista, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

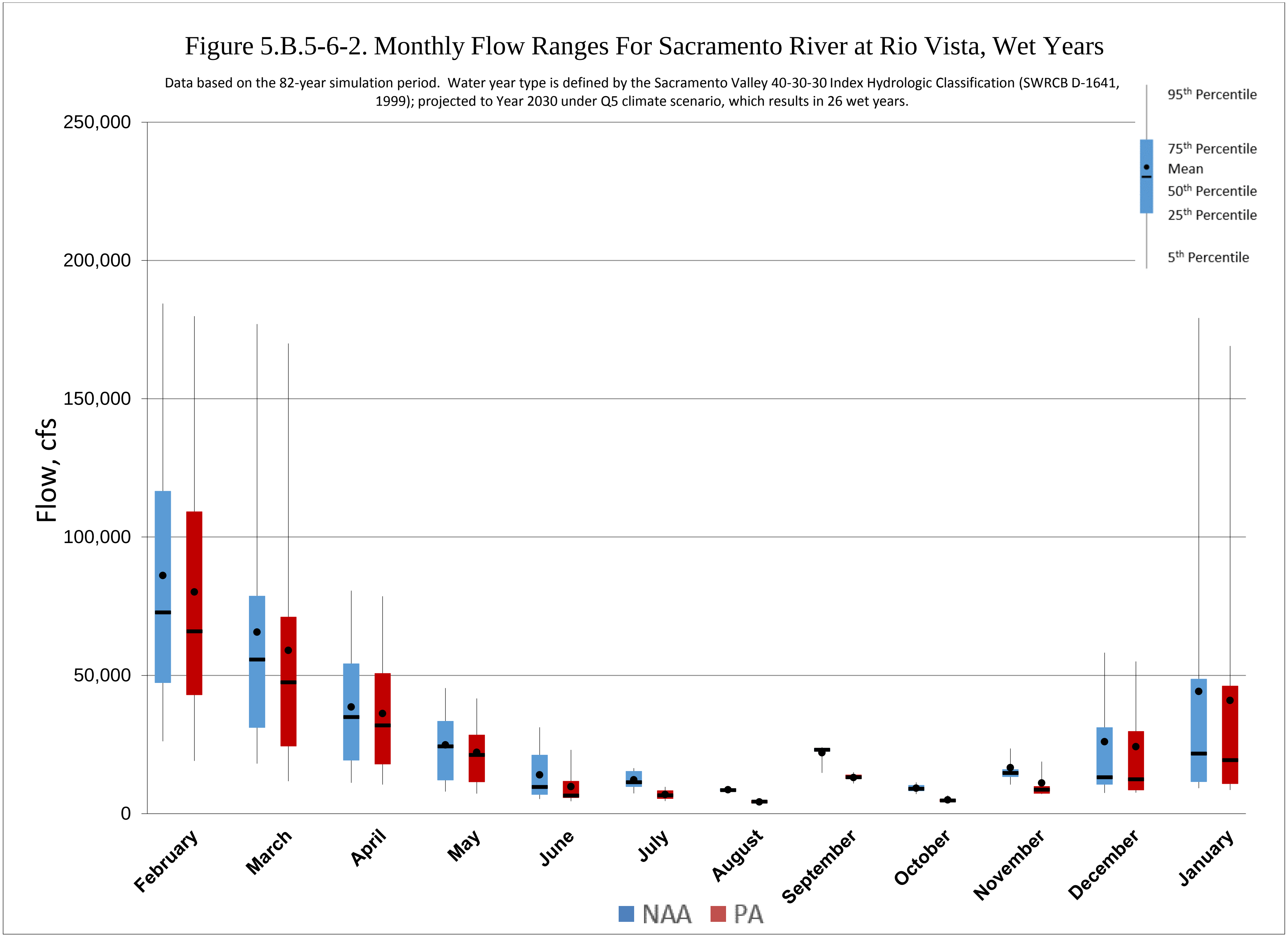


Figure 5.B.5-6-2. Monthly Flow Ranges For Sacramento River at Rio Vista, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
Flow, cfs
250,000
200,000
150,000
100,000
50,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-6-3. Monthly Flow Ranges For Sacramento River at Rio Vista, Above Normal Years

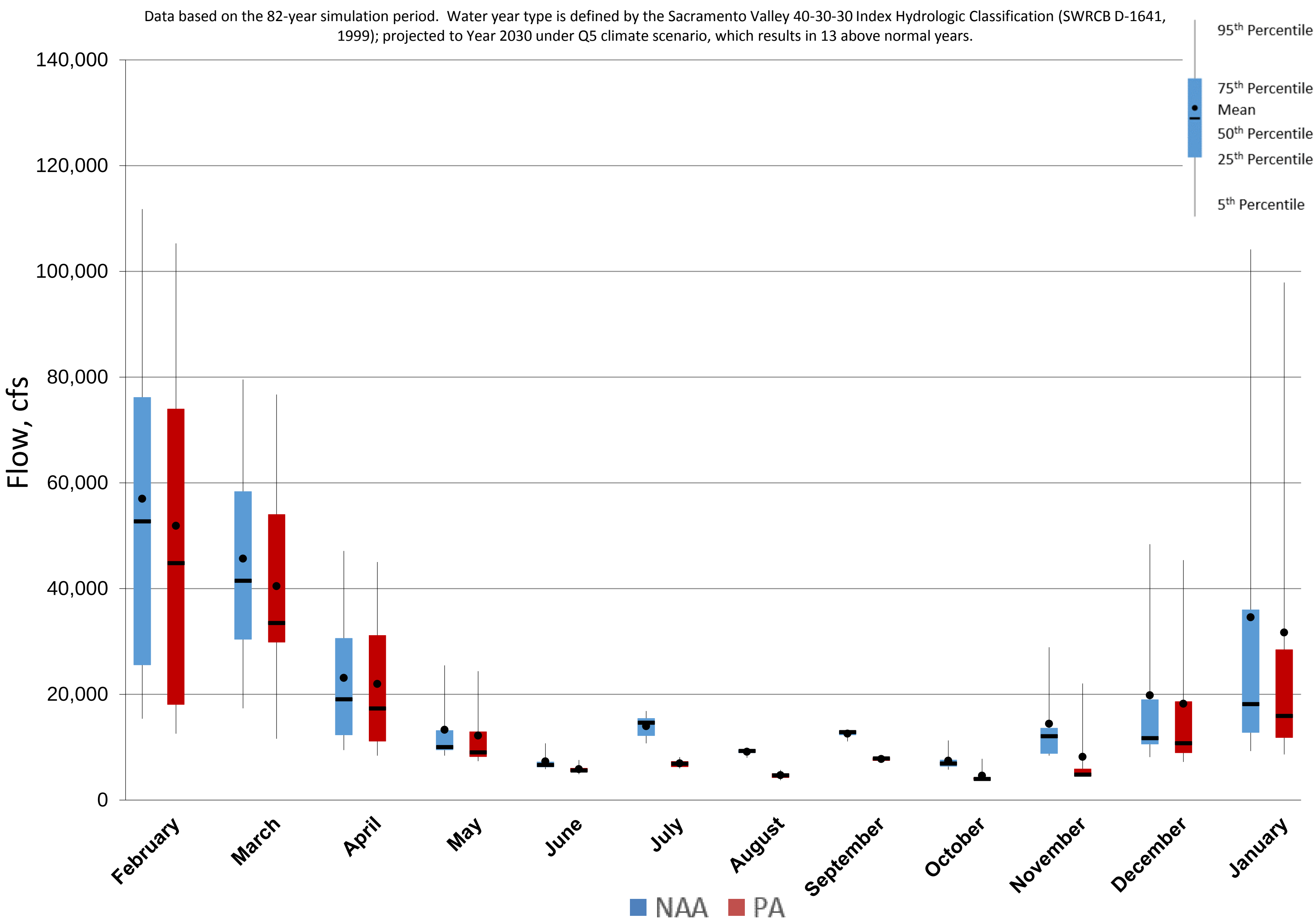


Figure 5.B.5-6-4. Monthly Flow Ranges For Sacramento River at Rio Vista, Below Normal Years

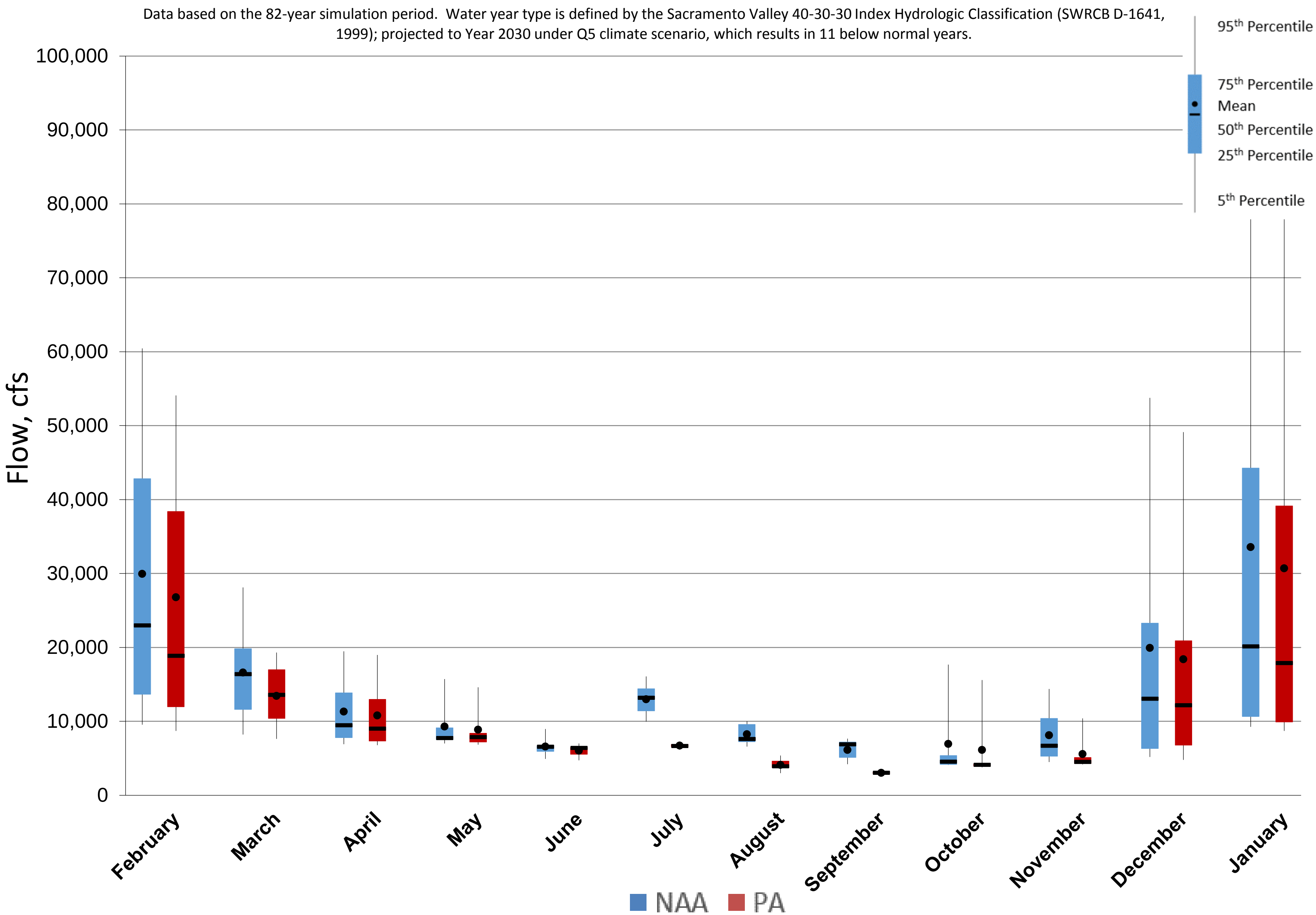
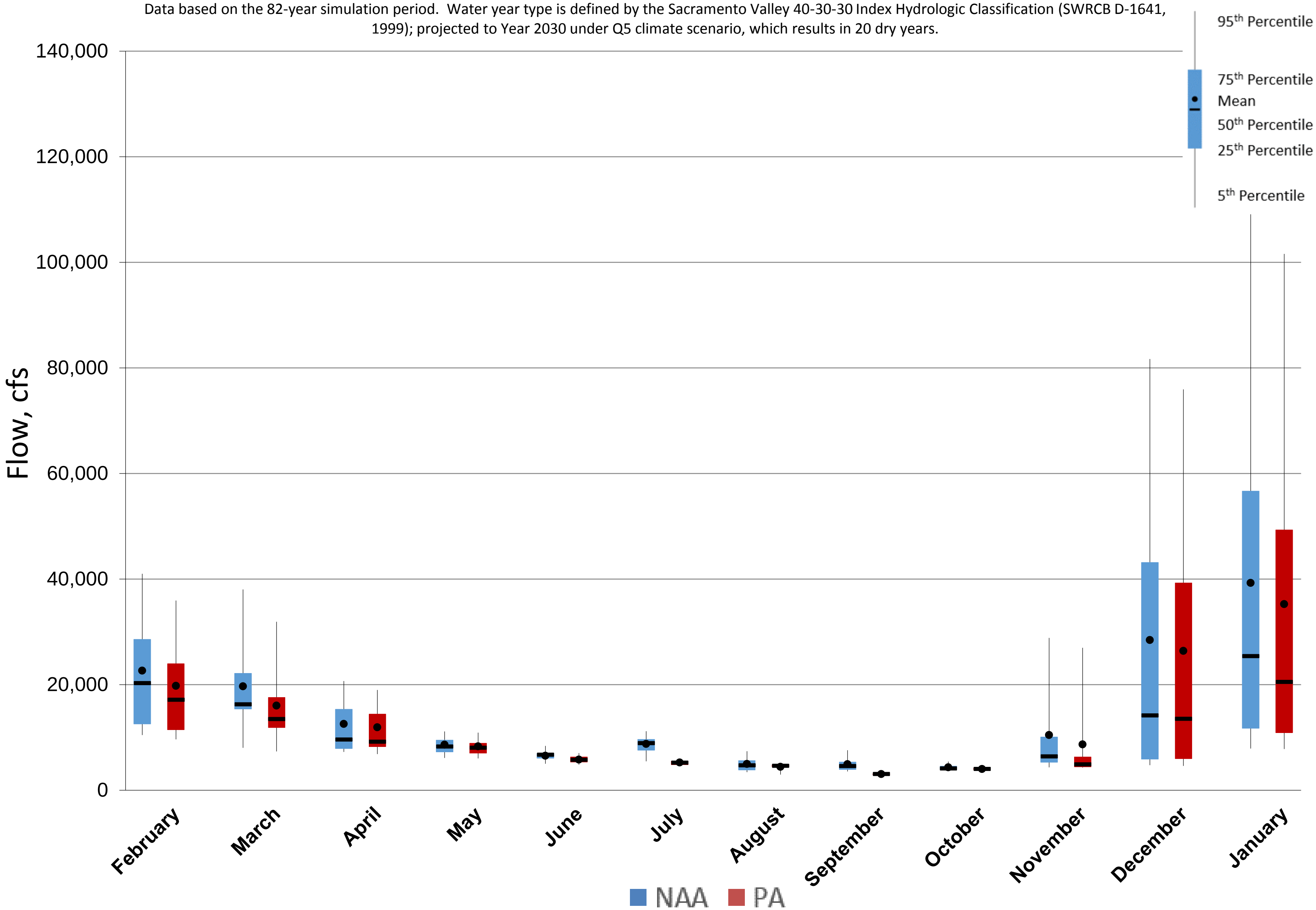


Figure 5.B.5-6-5. Monthly Flow Ranges For Sacramento River at Rio Vista, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.



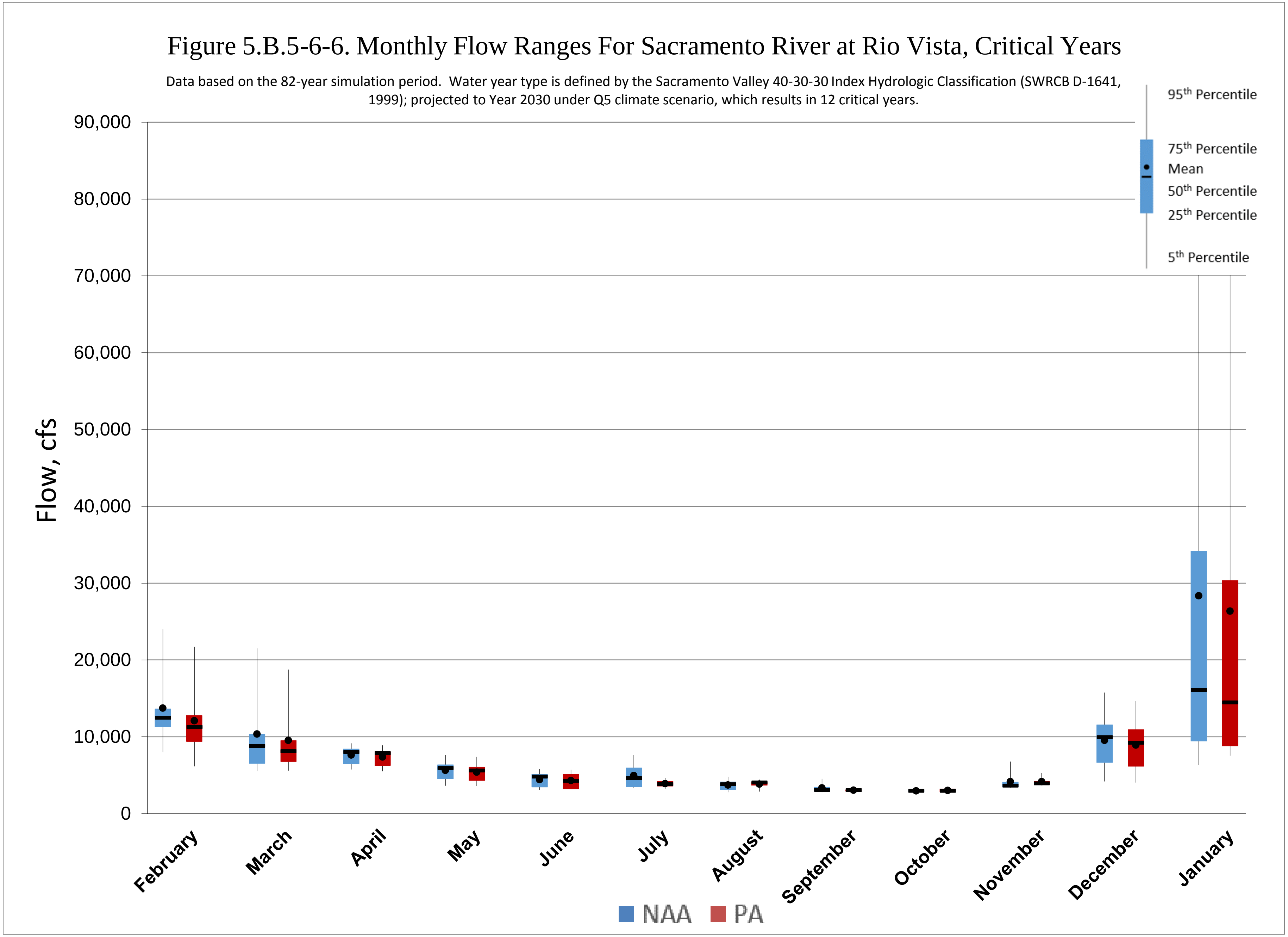
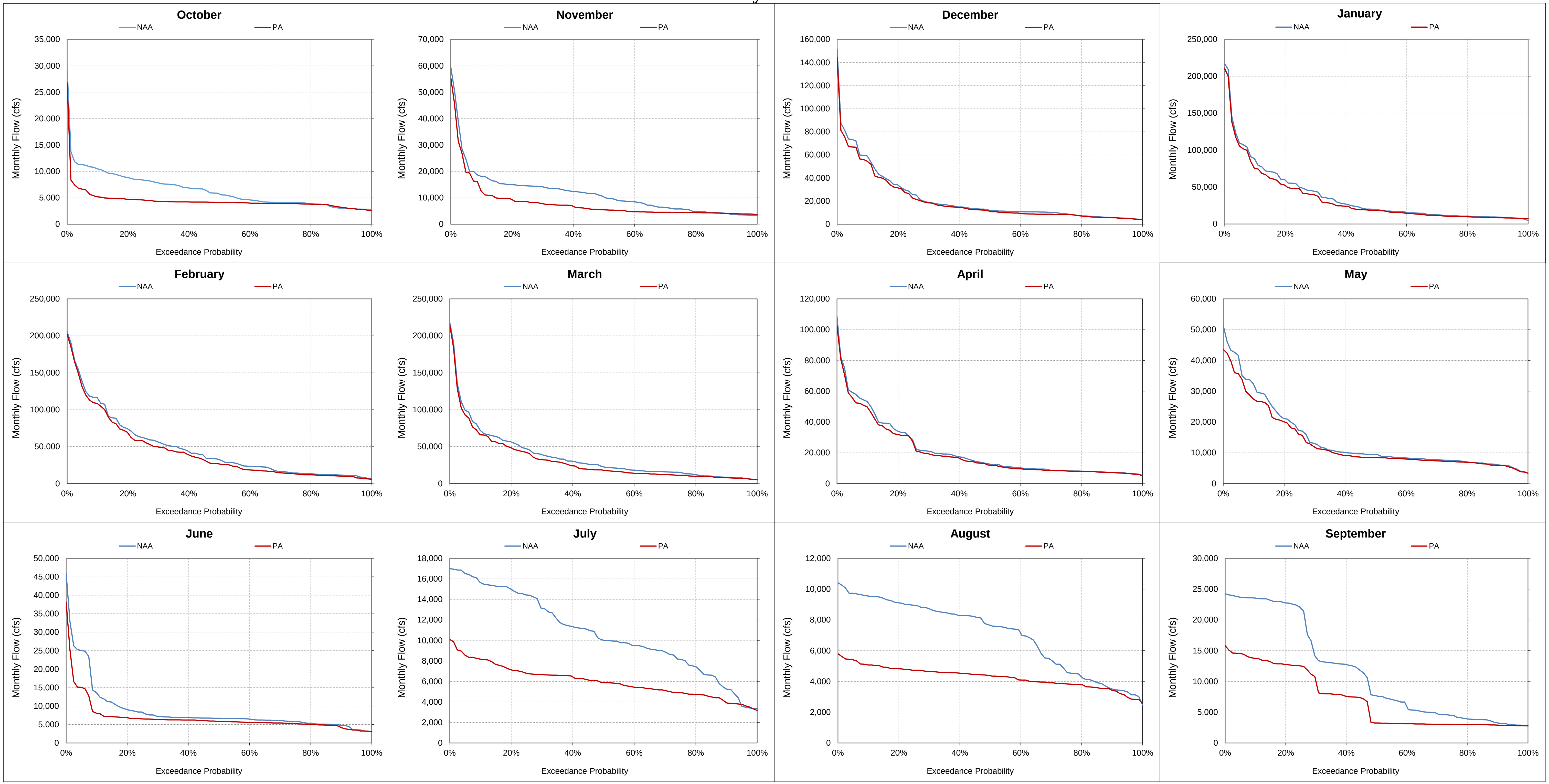


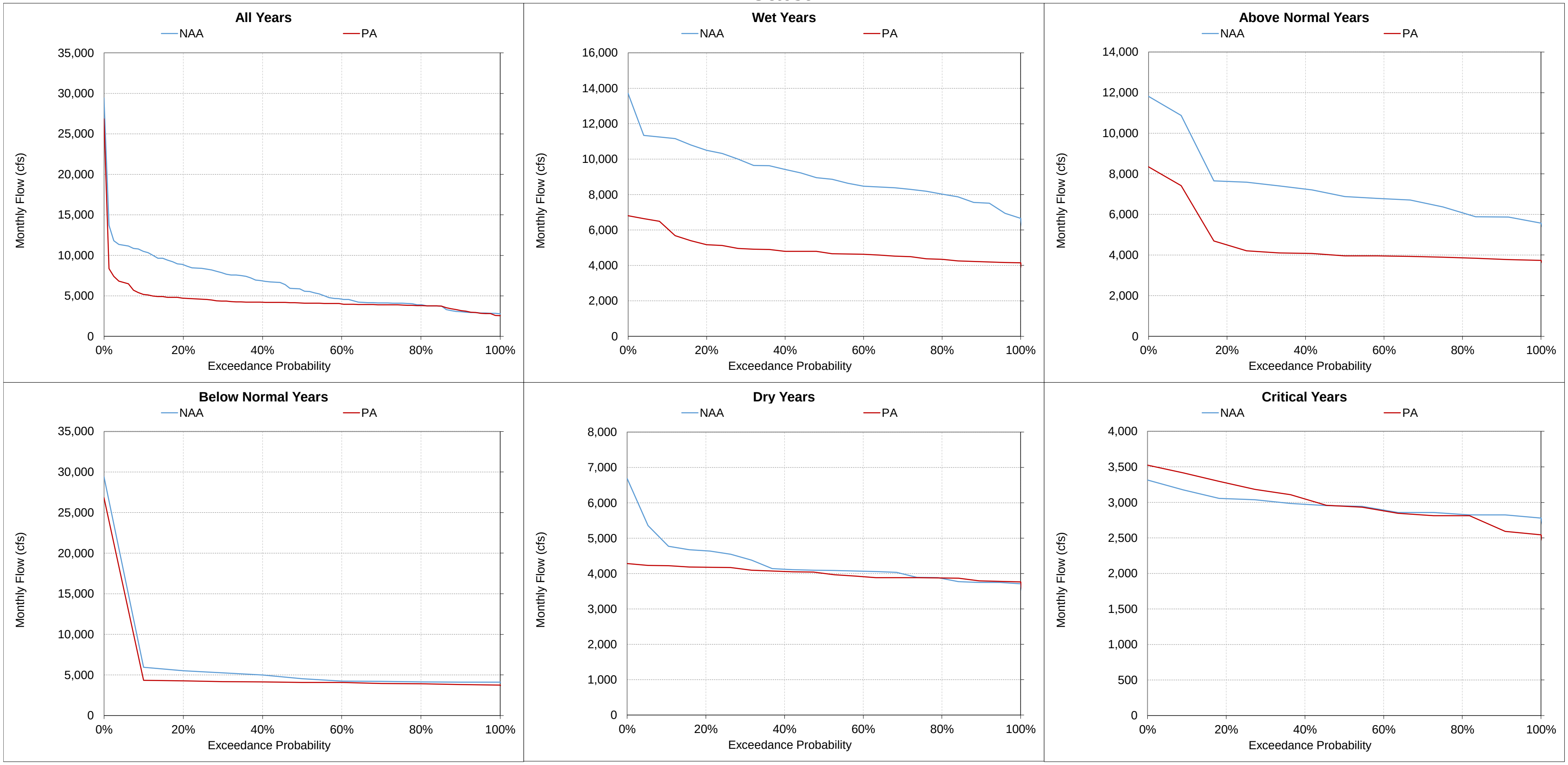
Figure 5.B.5-6-6. Monthly Flow Ranges For Sacramento River at Rio Vista, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-6-7. Sacramento River at Rio Vista, Monthly Flow Probability of Exceedance



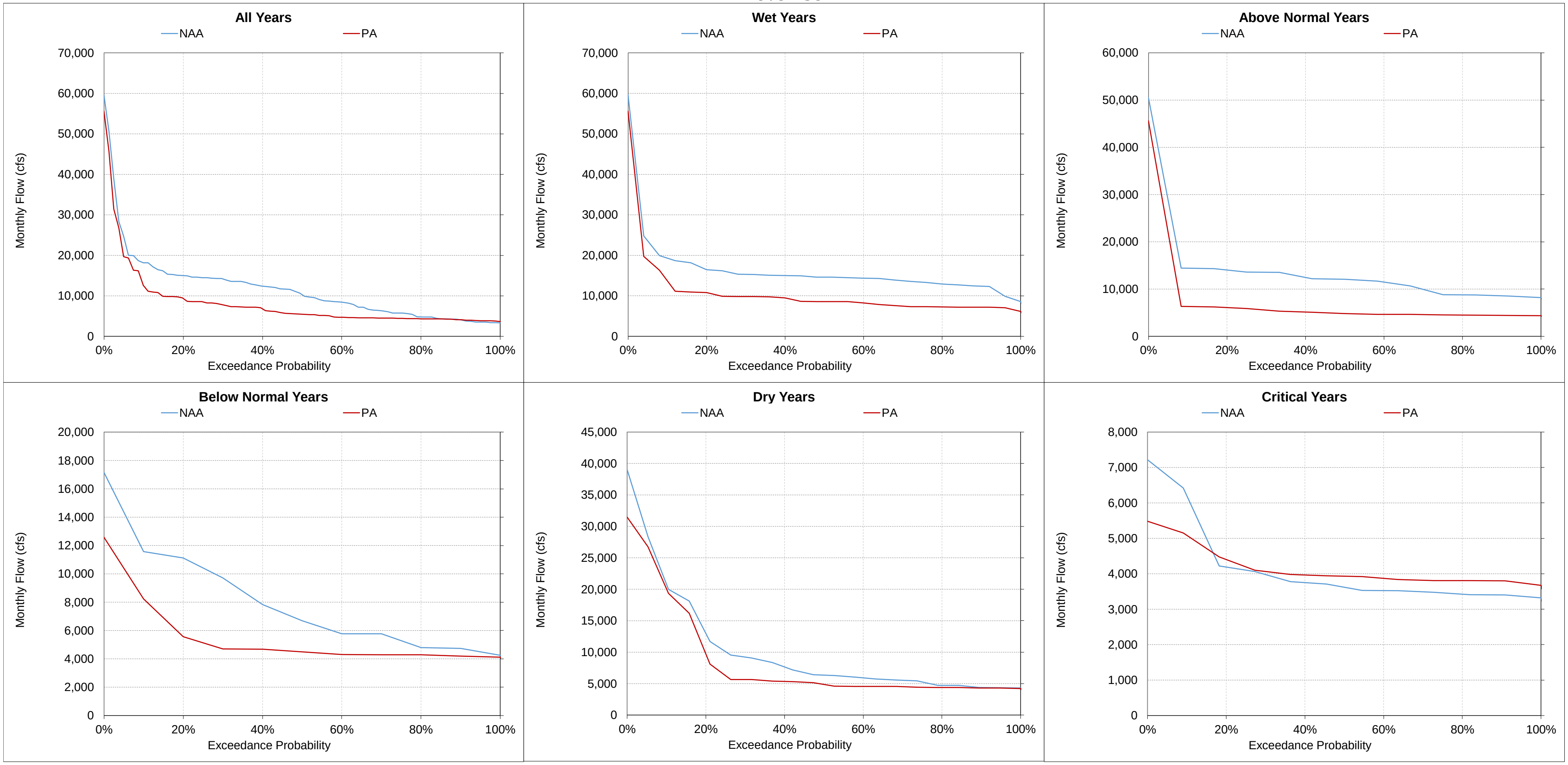
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-8. Sacramento River at Rio Vista, Monthly Flow
October



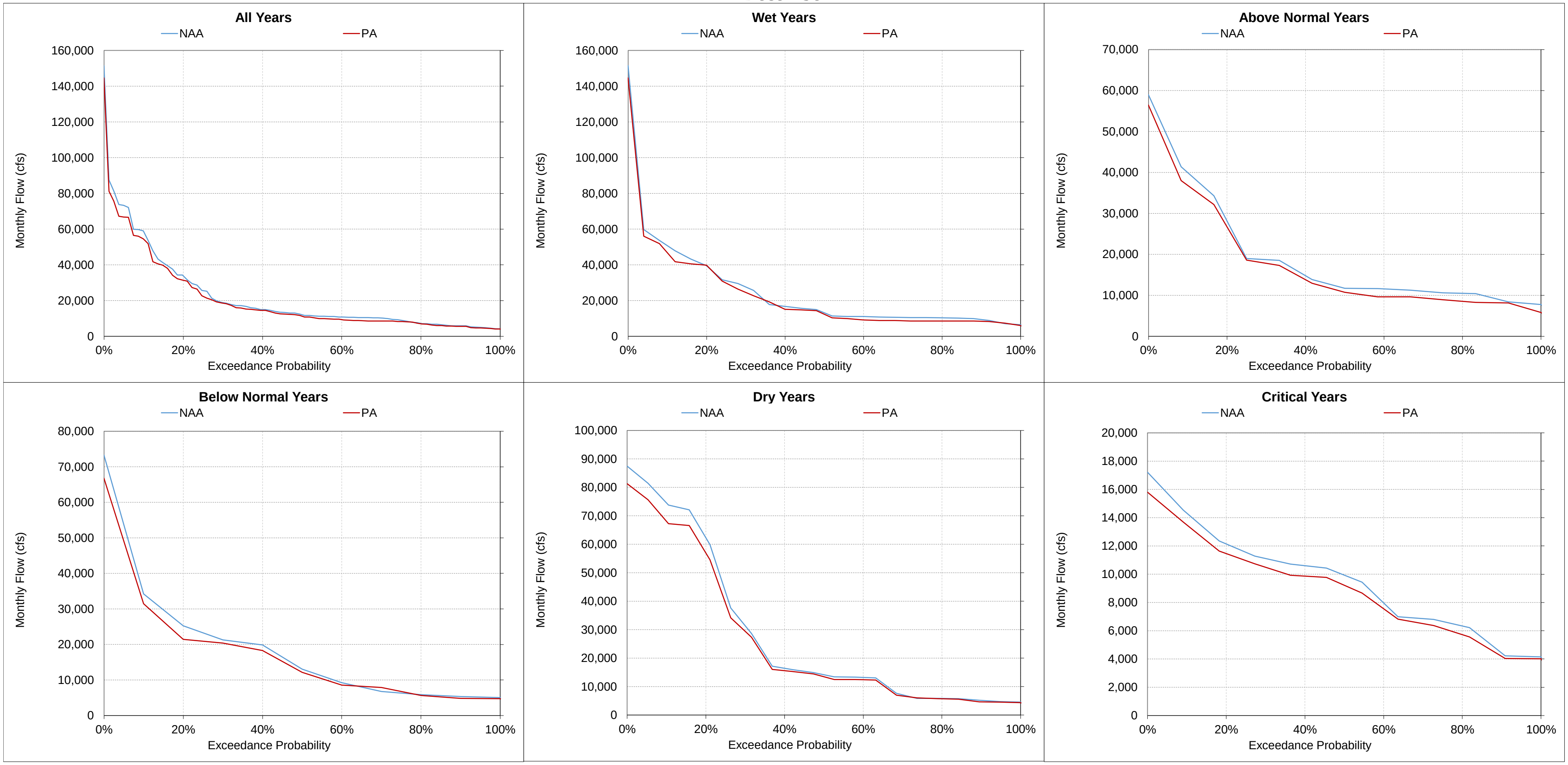
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-9. Sacramento River at Rio Vista, Monthly Flow November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-10. Sacramento River at Rio Vista, Monthly Flow December



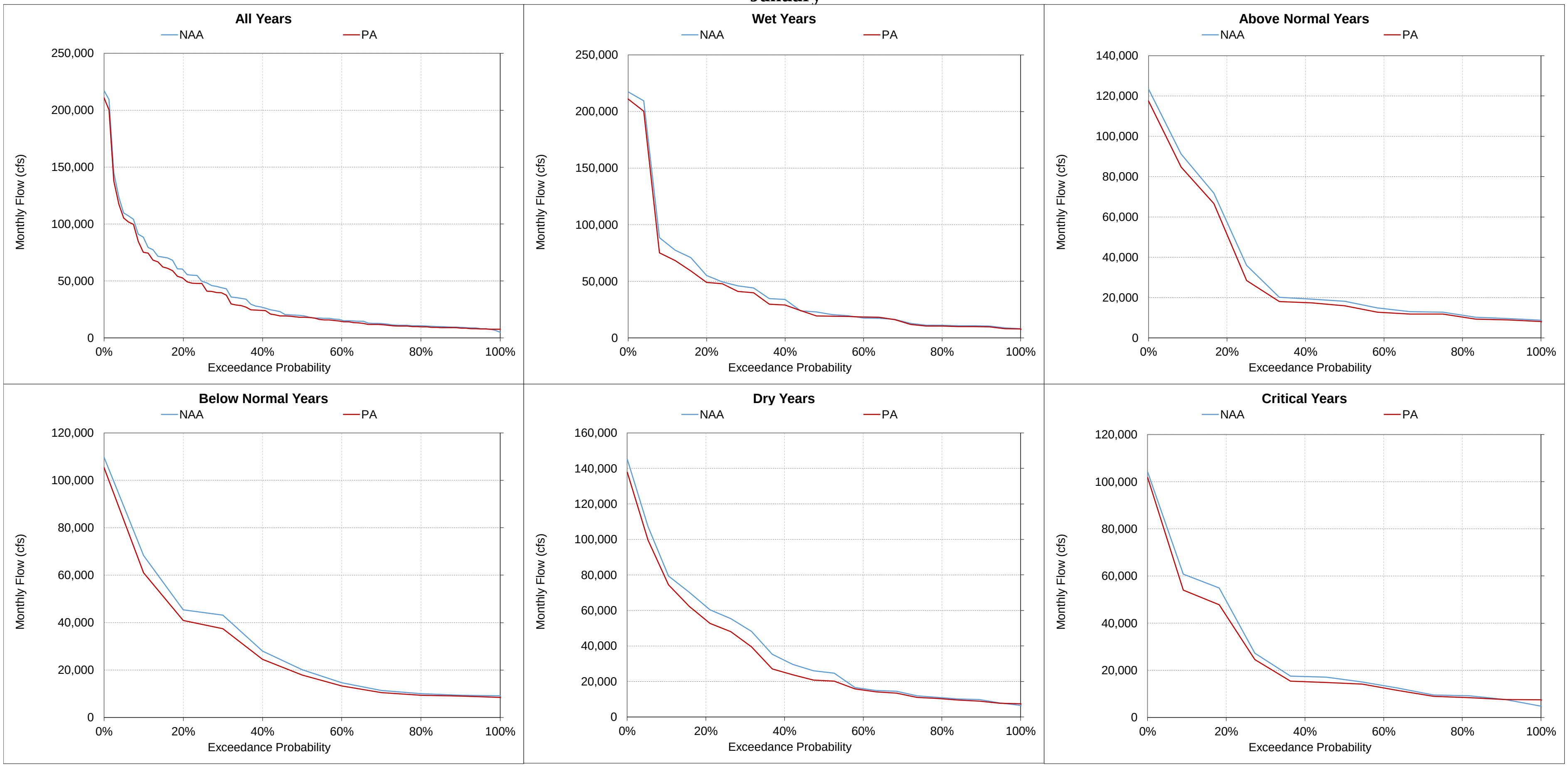
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

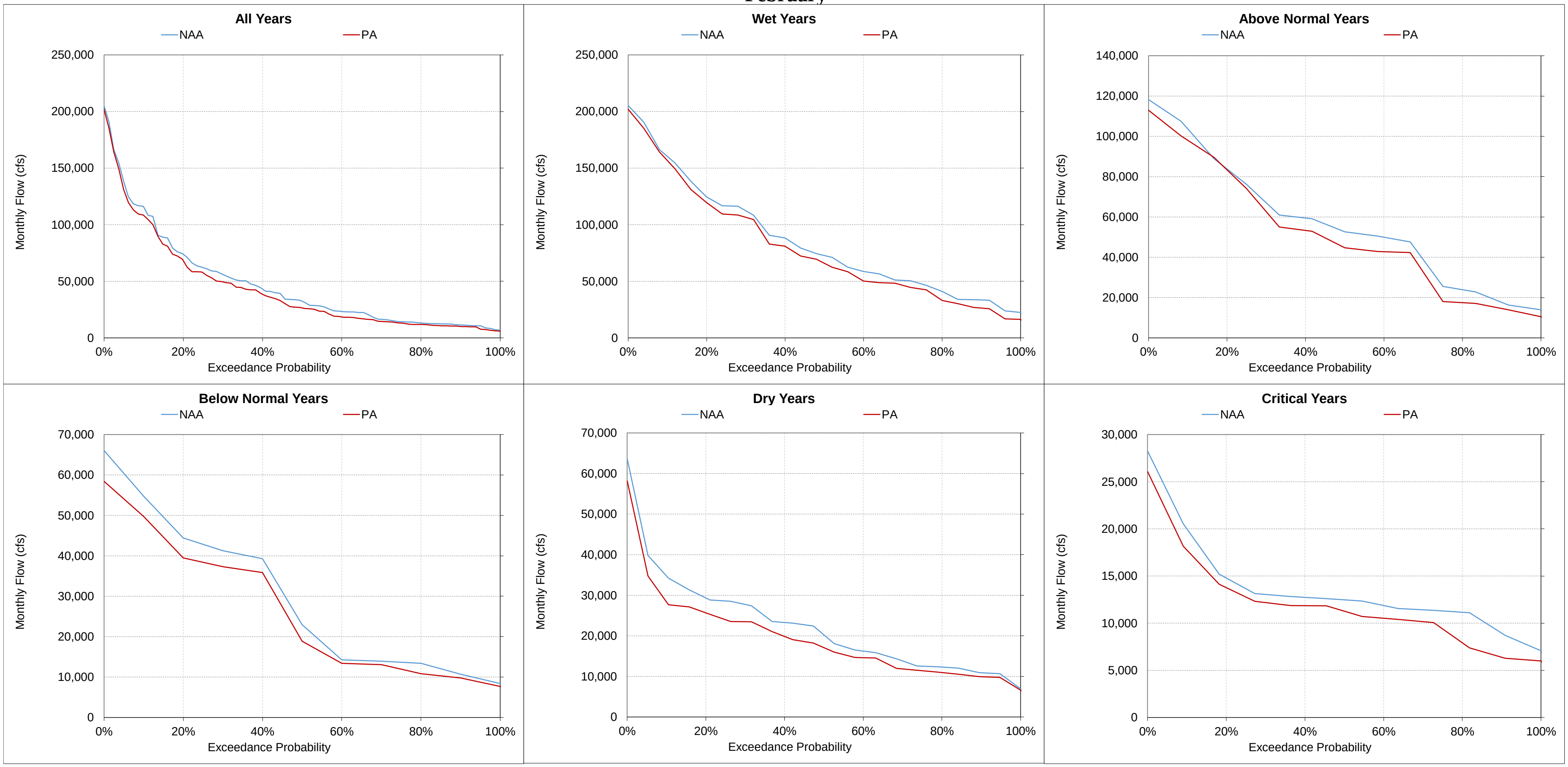
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-11. Sacramento River at Rio Vista, Monthly Flow
January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-12. Sacramento River at Rio Vista, Monthly Flow
February



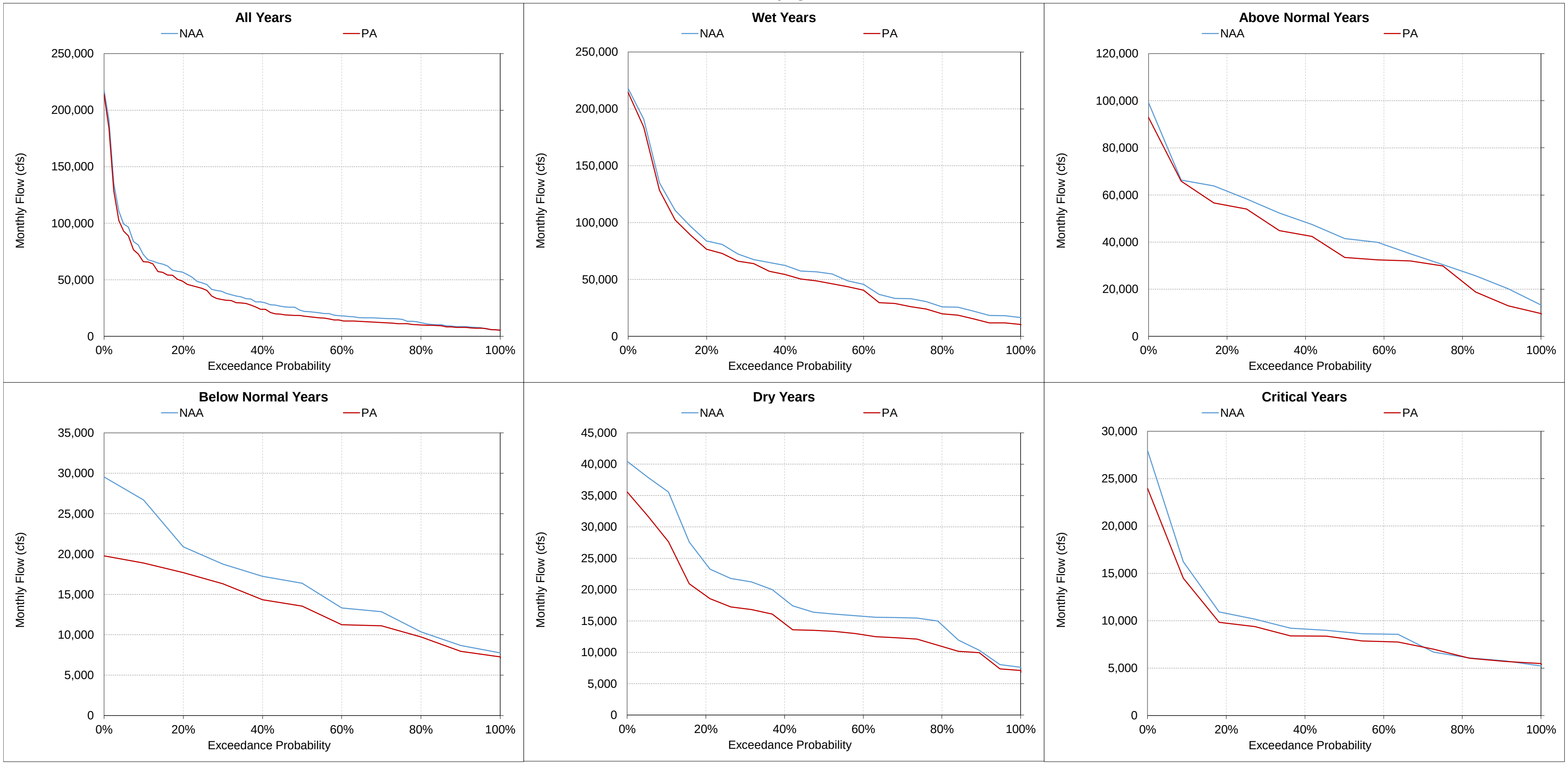
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

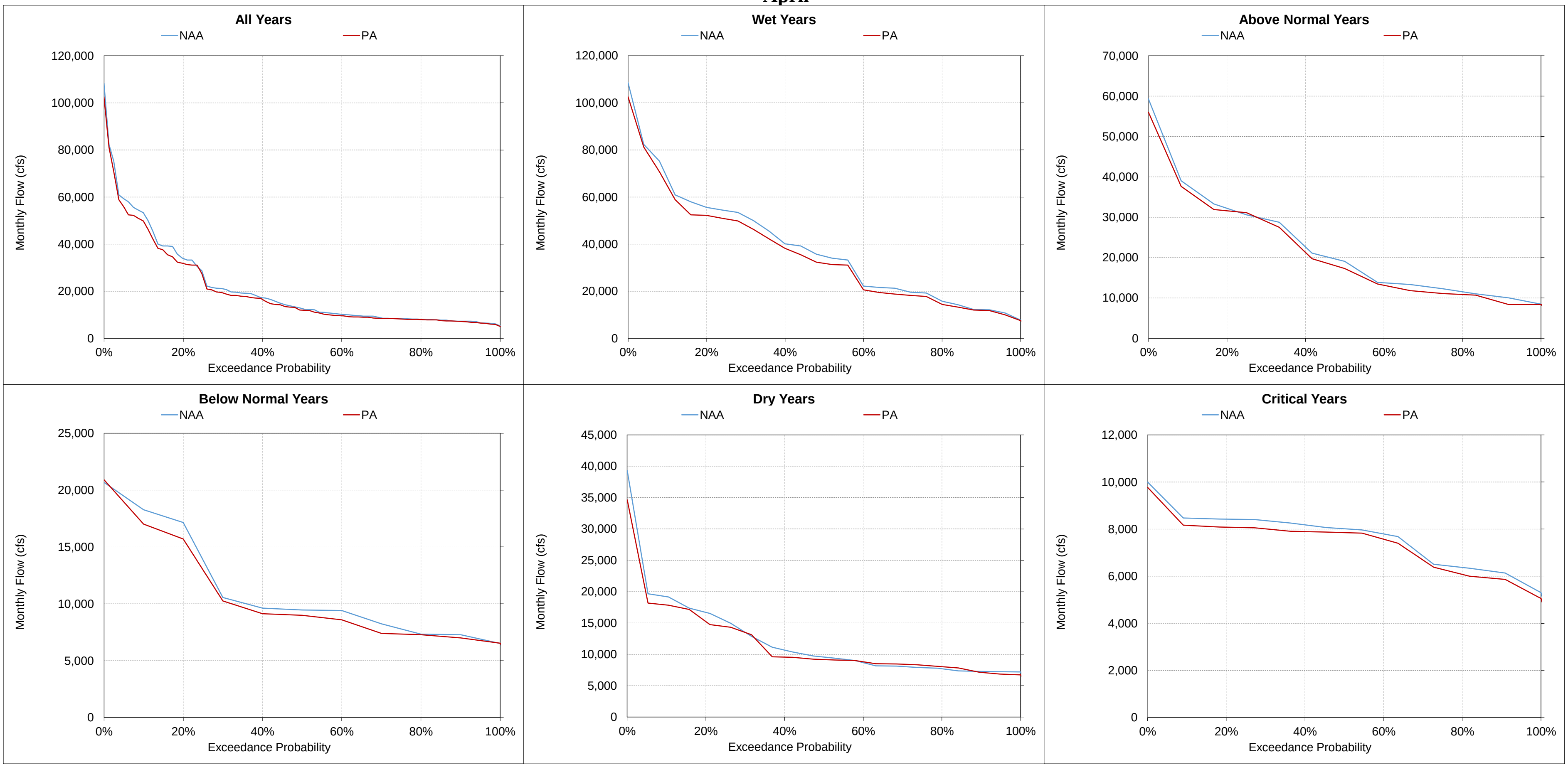
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-13. Sacramento River at Rio Vista, Monthly Flow March



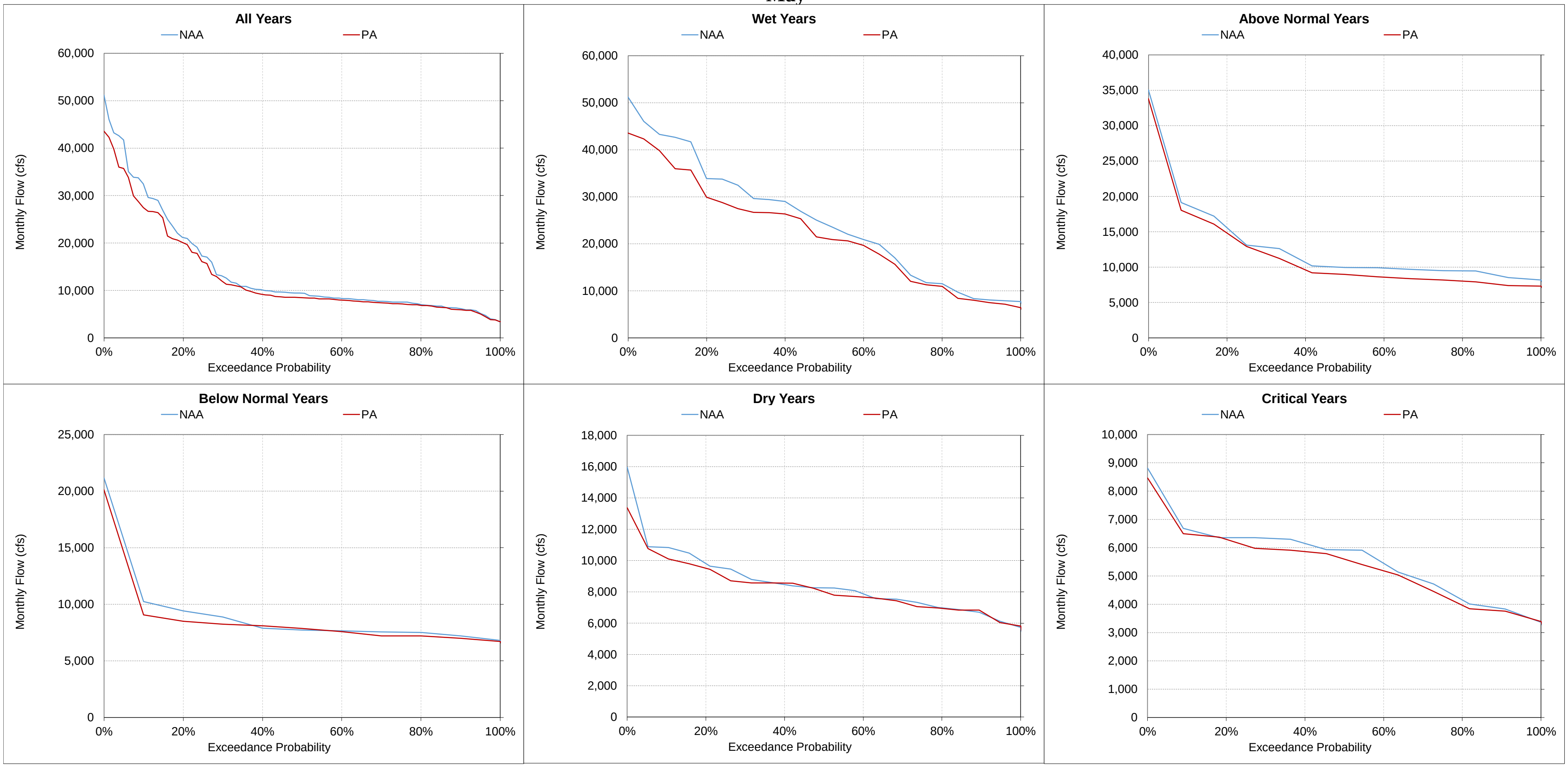
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-14. Sacramento River at Rio Vista, Monthly Flow
April



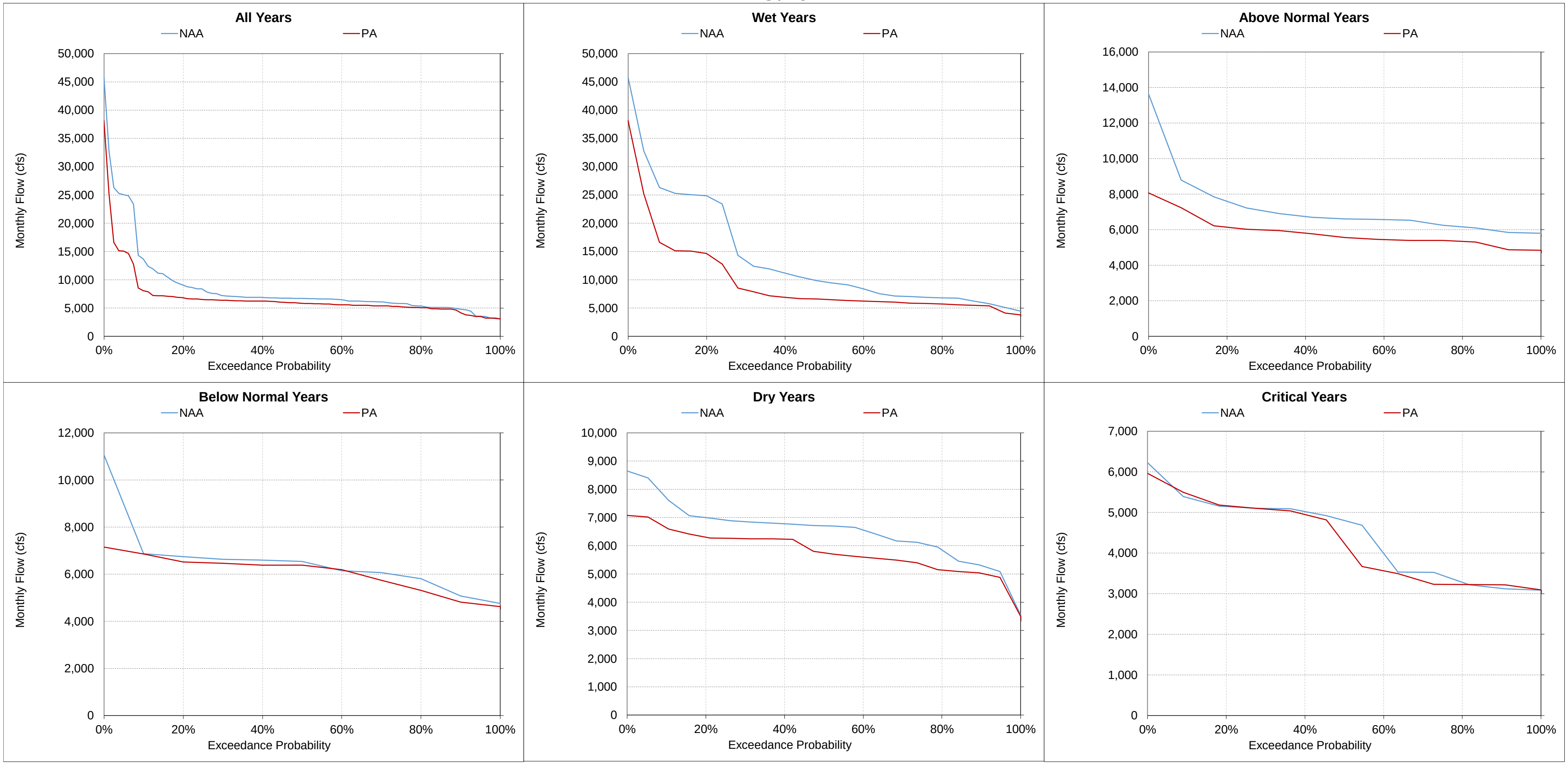
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-15. Sacramento River at Rio Vista, Monthly Flow
May



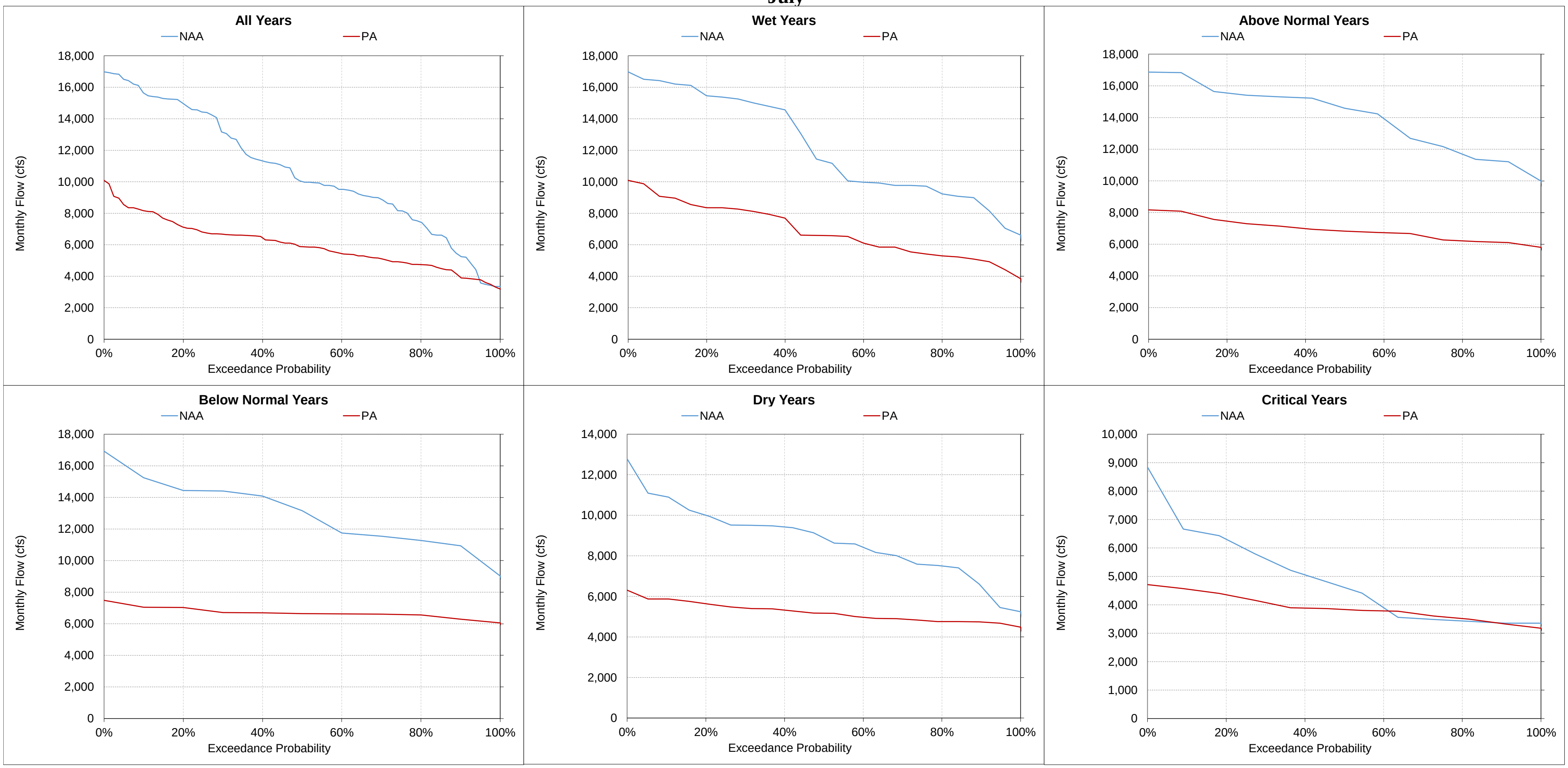
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-16. Sacramento River at Rio Vista, Monthly Flow
June



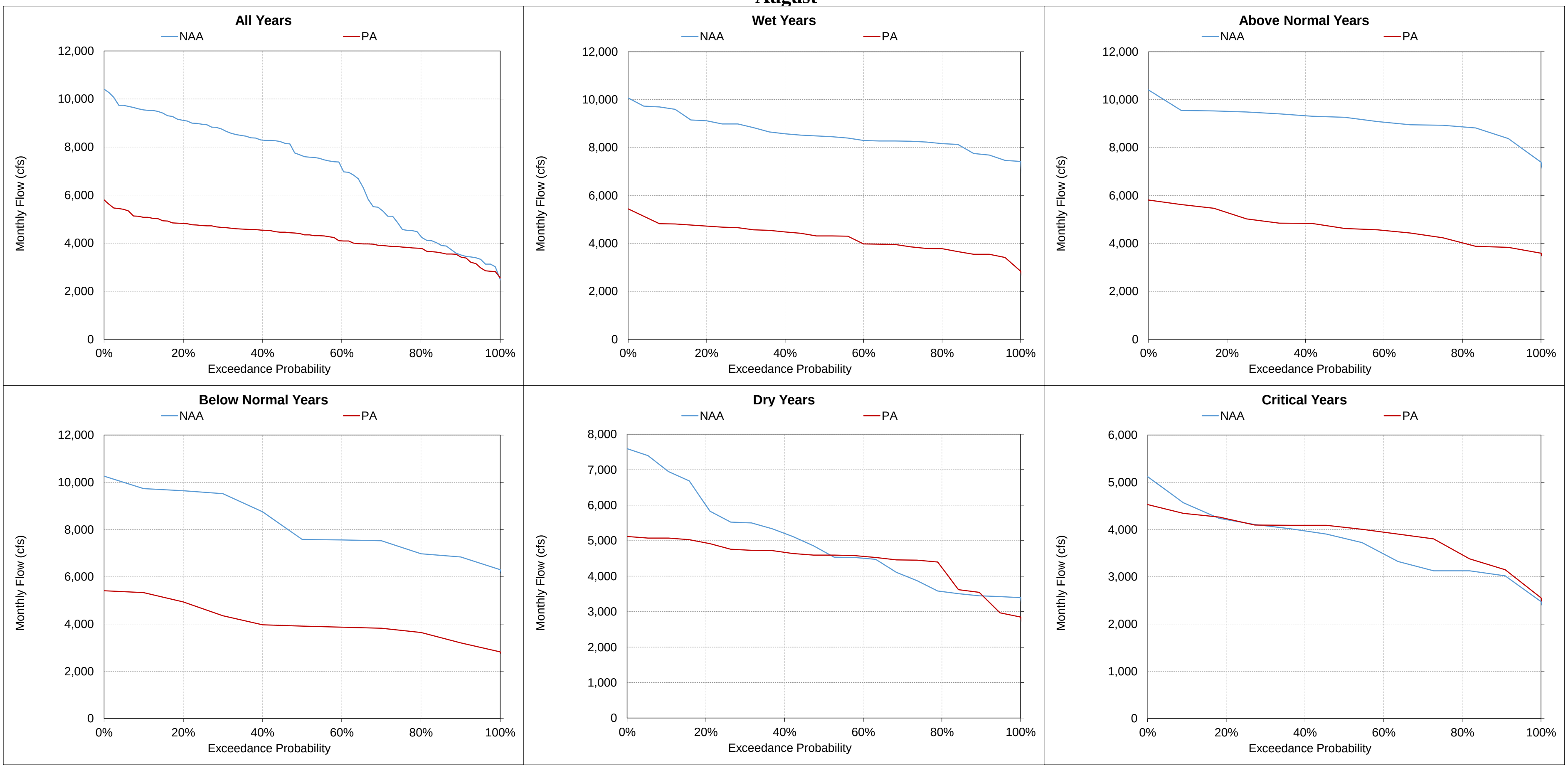
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-17. Sacramento River at Rio Vista, Monthly Flow
July



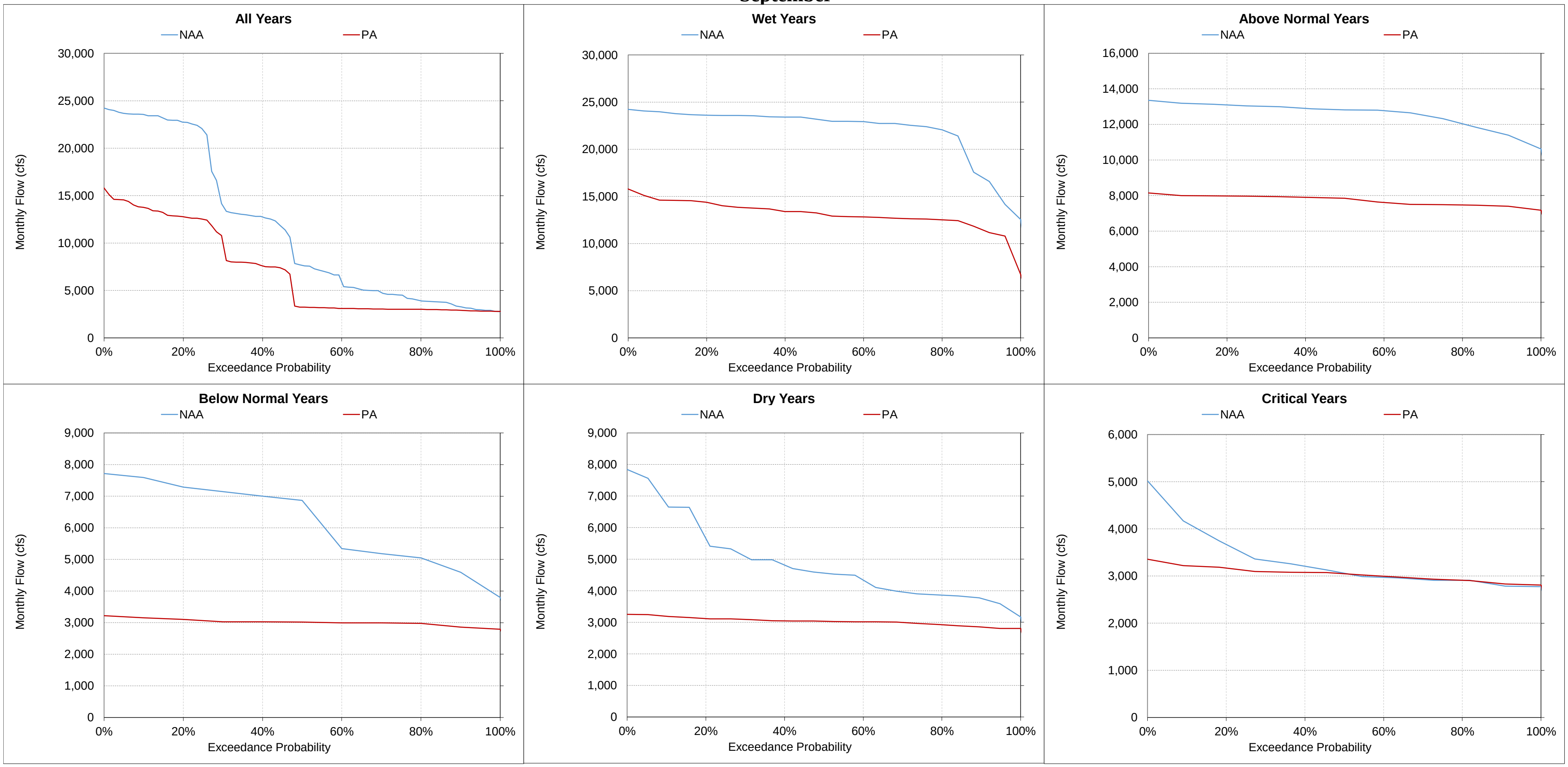
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-18. Sacramento River at Rio Vista, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-6-19. Sacramento River at Rio Vista, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-7. San Joaquin River at Antioch, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	1,470	4,271	2,801	191%	1,604	5,060	3,456	216%	11,893	12,775	881	7%	23,782	24,466	683	3%	27,582	30,935	3,353	12%	21,239	25,501	4,262	20%
20%	1,206	3,842	2,635	218%	734	4,505	3,771	514%	4,772	4,430	-342	-7%	15,741	16,682	941	6%	18,663	22,433	3,770	20%	14,480	18,535	4,055	28%
30%	770	3,302	2,532	329%	509	3,571	3,062	601%	944	1,017	72	8%	8,970	9,712	742	8%	14,088	14,986	899	6%	8,853	11,640	2,787	31%
40%	292	2,481	2,189	750%	14	2,957	2,943	20874%	393	301	-92	-23%	4,897	5,924	1,027	21%	10,519	12,301	1,783	17%	6,630	9,037	2,407	36%
50%	55	2,174	2,119	3878%	-110	1,618	1,728	-1573%	-126	-4	121	-97%	2,893	4,339	1,446	50%	6,737	7,169	432	6%	5,030	5,978	948	19%
60%	-69	2,023	2,093	-3014%	-337	348	685	-203%	-935	-613	322	-34%	1,966	3,690	1,724	88%	3,619	4,399	781	22%	3,156	3,488	332	11%
70%	-181	1,822	2,002	-1109%	-543	119	662	-122%	-1,708	-948	759	-44%	622	2,586	1,964	315%	3,141	3,246	105	3%	2,396	2,828	432	18%
80%	-262	1,591	1,853	-708%	-815	-103	711	-87%	-2,251	-1,544	707	-31%	106	1,350	1,244	1172%	2,250	2,397	146	7%	2,001	2,283	282	14%
90%	-561	1,202	1,763	-314%	-1,306	-434	873	-67%	-2,699	-1,794	905	-34%	-289	470	759	-263%	784	1,527	743	95%	1,490	1,519	29	2%
Long Term																								
Full Simulation Period[b]	333	2,549	2,216	665%	427	2,350	1,923	450%	2,500	2,864	364	15%	8,546	9,894	1,348	16%	11,922	13,208	1,286	11%	9,441	11,153	1,712	18%
Water Year Types[c]																								
Wet (32%)	1,273	3,956	2,683	211%	1,947	5,306	3,359	173%	3,645	4,396	751	21%	11,994	15,300	3,306	28%	23,343	26,550	3,206	14%	19,254	22,752	3,498	18%
Above Normal (16%)	371	2,453	2,082	560%	-90	3,193	3,283	-3630%	265	852	587	221%	6,006	6,784	778	13%	13,425	14,281	856	6%	10,397	13,735	3,338	32%
Below Normal (13%)	-424	2,373	2,798	-659%	-814	72	886	-109%	1,637	1,340	-298	-18%	7,209	7,608	400	6%	7,335	7,838	503	7%	2,866	3,604	739	26%
Dry (24%)	-168	1,867	2,034	-1213%	-147	794	942	-638%	4,414	4,661	247	6%	8,597	8,978	381	4%	4,326	4,606	280	6%	4,077	3,965	-112	-3%
Critical (15%)	-215	902	1,118	-519%	-208	-288	-80	38%	43	126	83	190%	4,969	5,175	205	4%	2,412	2,395	-16	-1%	2,110	2,125	15	1%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	19,157	21,094	1,937	10%	15,023	16,489	1,466	10%	5,676	8,019	2,343	41%	268	1,929	1,662	621%	138	358	220	159%	71	5,599	5,528	7742%
20%	11,426	12,383	957	8%	7,842	8,262	420	5%	2,362	4,649	2,287	97%	-204	1,416	1,620	-793%	-500	142	641	-128%	-343	5,032	5,375	-1565%
30%	8,660	9,171	512	6%	6,043	6,747	704	12%	1,577	2,294	717	45%	-724	868	1,592	-220%	-921	-86	835	-91%	-574	4,484	5,058	-882%
40%	6,682	7,243	561	8%	5,011	5,752	740	15%	1,351	1,638	287	21%	-1,185	676	1,862	-157%	-1,526	-204	1,322	-87%	-670	3,156	3,826	-571%
50%	5,455	5,787	332	6%	3,766	4,521	755	20%	1,100	1,462	362	33%	-1,620	246	1,865	-115%	-2,170	-347	1,823	-84%	-765	232	997	-130%
60%	3,938	3,932	-6	0%	2,637	2,539	-98	-4%	808	1,199	391	48%	-1,925	43	1,968	-102%	-2,488	-444	2,044	-82%	-882	52	934	-106%
70%	2,958	2,738	-220	-7%	1,904	1,943	39	2%	571	822	251	44%	-2,180	-154	2,027	-93%	-2,556	-548	2,008	-79%	-1,035	-116	919	-89%
80%	2,139	1,928	-212	-10%	1,214	1,427	213	18%	432	548	116	27%	-2,463	-485	1,978	-80%	-2,729	-794	1,934	-71%	-1,431	-238	1,192	-83%
90%	1,650	1,456	-194	-12%	800	777	-23	-3%	292	357	66	23%	-2,804	-755	2,049	-73%	-2,938	-1,058	1,880	-64%	-1,876	-361	1,515	-81%
Long Term																								
Full Simulation Period[b]	7,979	8,430	451	6%	5,844	6,412	568	10%	2,126	3,071	945	44%	-1,213	642	1,855	-153%	-1,700	-311	1,389	-82%	-727	2,097	2,824	-389%
Water Year Types[c]																								
Wet (32%)	15,376	16,475	1,099	7%	12,167	13,380	1,213	10%	4,824	6,898	2,073	43%	-76	1,831	1,908	-2495%	-2,366	-108	2,259	-95%	-262	5,327	5,588	-2136%
Above Normal (16%)	8,256	8,882	626	8%	5,526	6,089	563	10%	951	1,934	984	103%	-1,041	1,339	2,381	-229%	-2,699	-132	2,567	-95%	-151	3,122	3,274	-2162%
Below Normal (13%)	4,428	4,467	39	1%	3,125	3,350	225	7%	834	1,159	324	39%	-2,369	43	2,412	-102%	-2,412	-13	2,399	-99%	-1,747	-185	1,562	-89%
Dry (24%)	3,916	3,998	82	2%	2,312	2,592	279	12%	827	1,157	330	40%	-2,343	-463	1,880	-80%	-648	-715	-67	10%	-1,235	-124	1,111	-90%
Critical (15%)	1,677	1,528	-149	-9%	868	842	-26	-3%	904	955	51	6%	-920	-297	623	-68%	-274	-545	-271	99%	-577	-216	361	-63%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

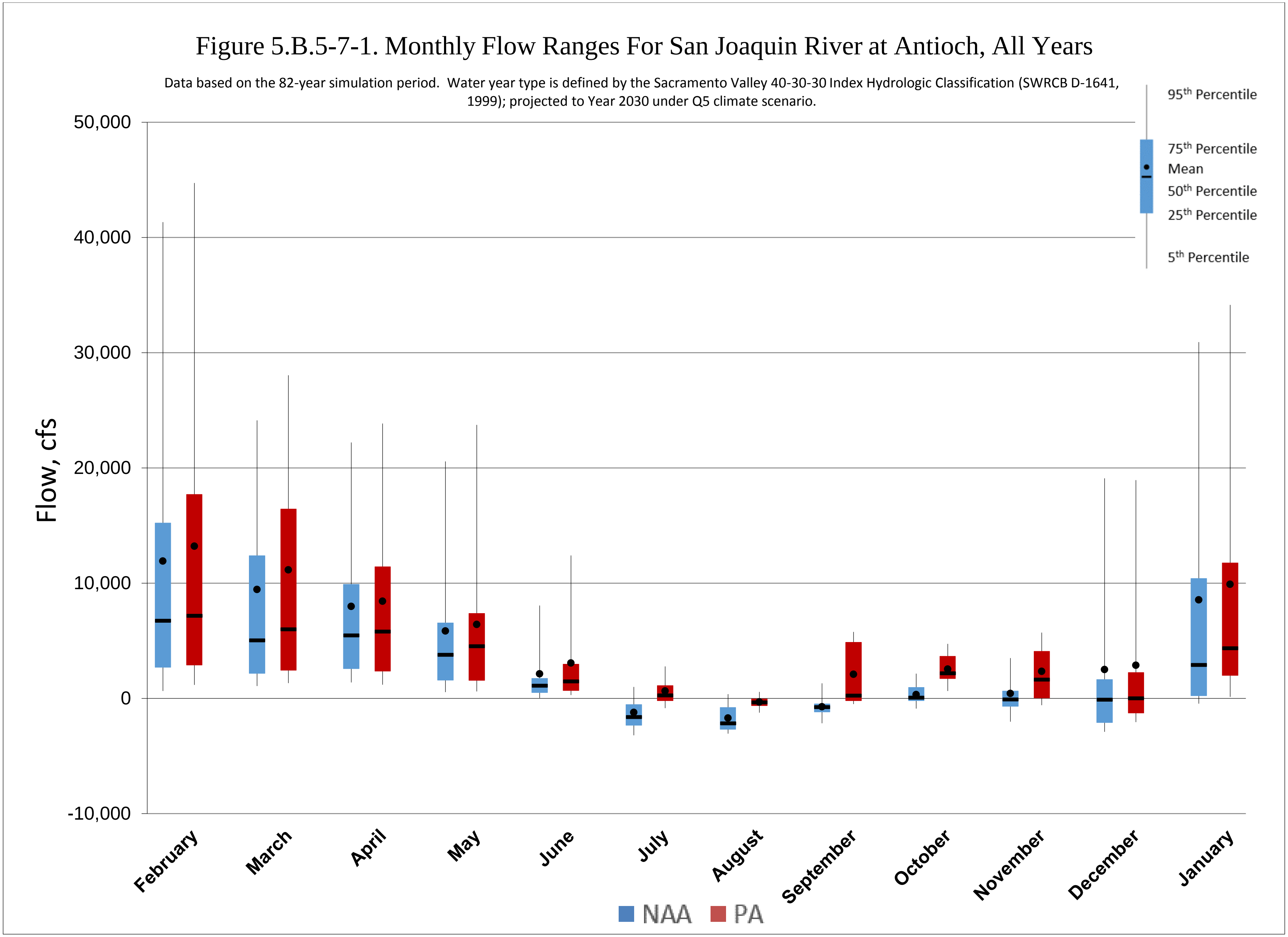


Figure 5.B.5-7-1. Monthly Flow Ranges For San Joaquin River at Antioch, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
50,000
40,000
30,000
20,000
10,000
0
-10,000
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

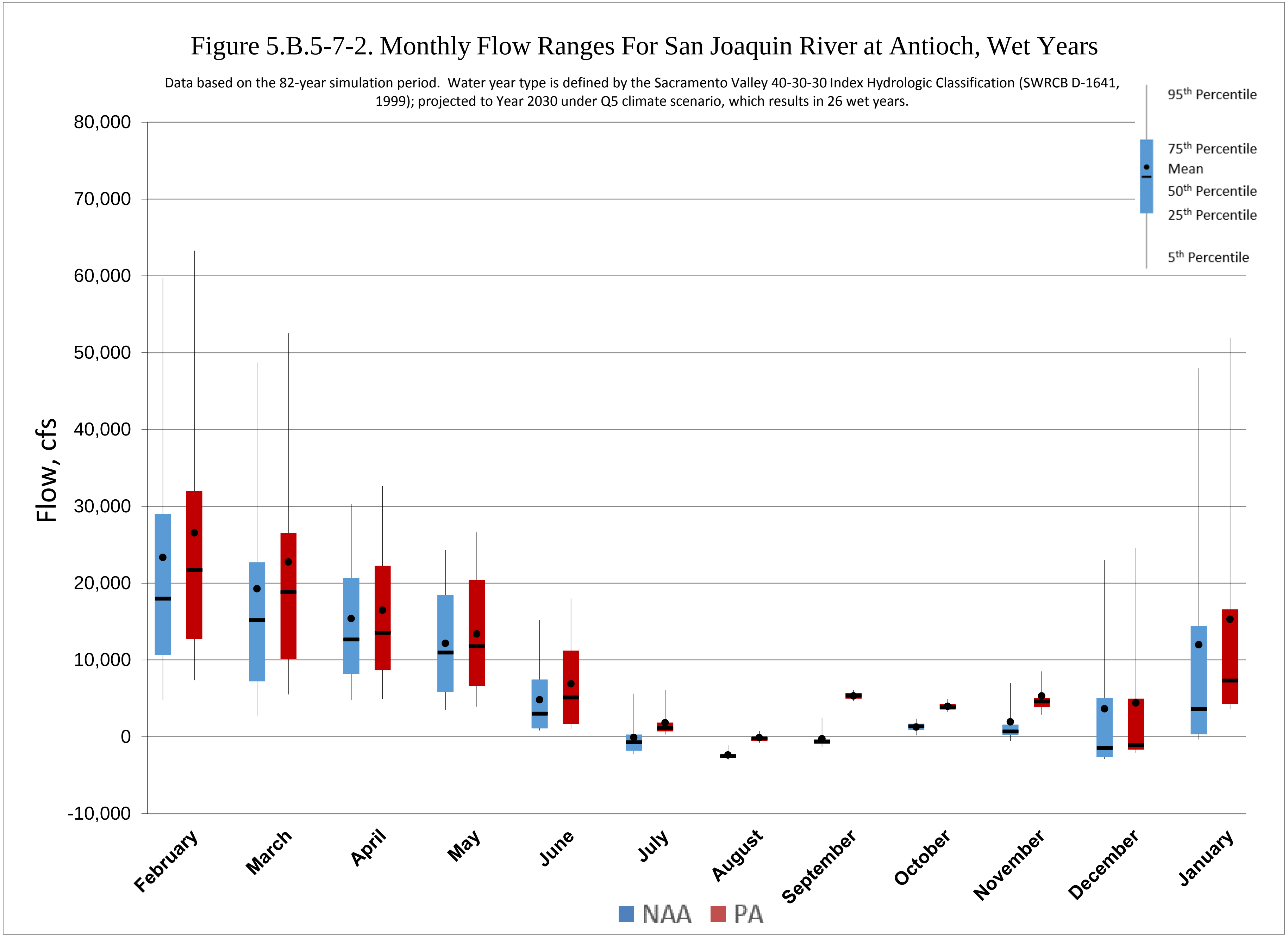
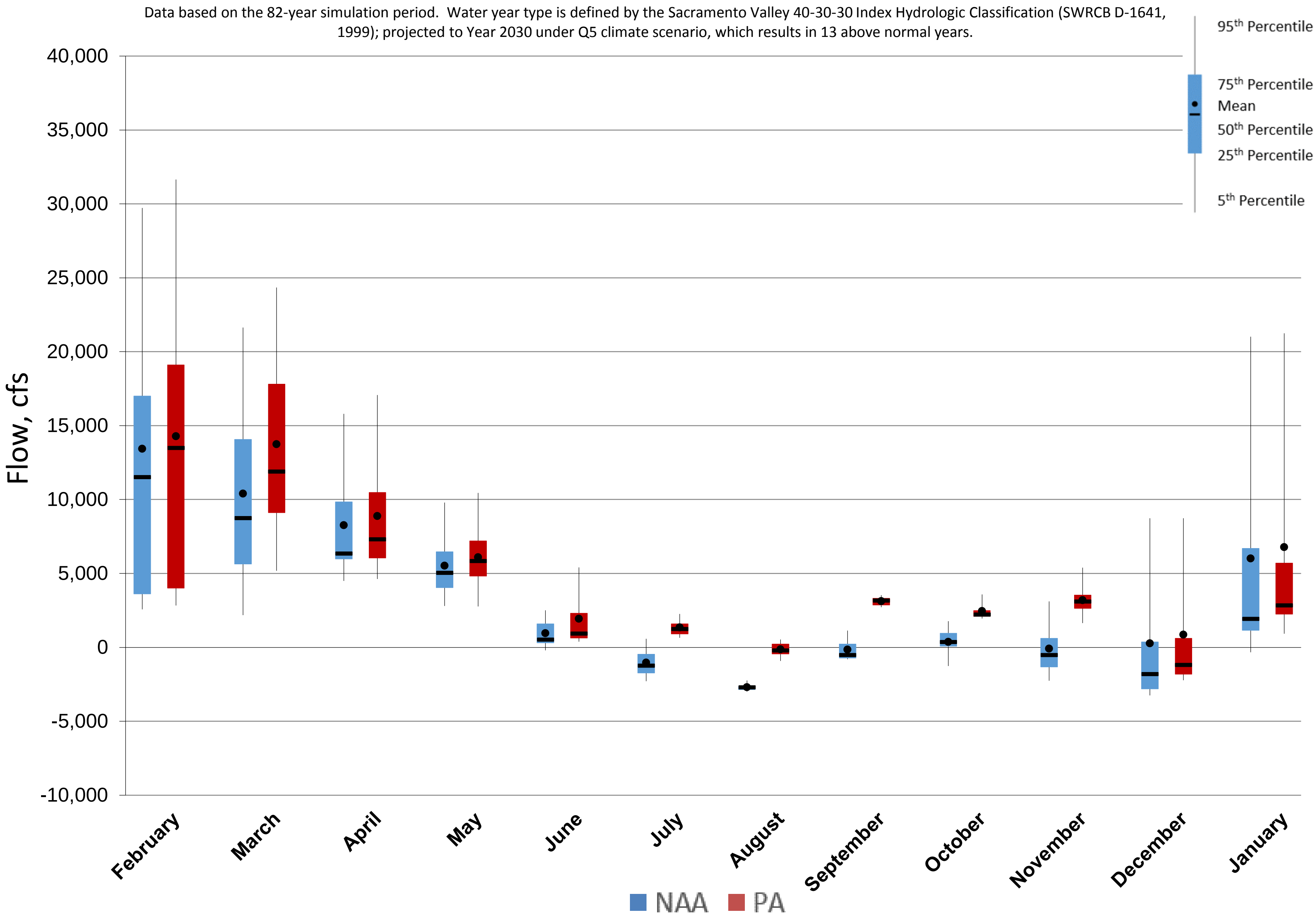


Figure 5.B.5-7-2. Monthly Flow Ranges For San Joaquin River at Antioch, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
-10,000
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-7-3. Monthly Flow Ranges For San Joaquin River at Antioch, Above Normal Years



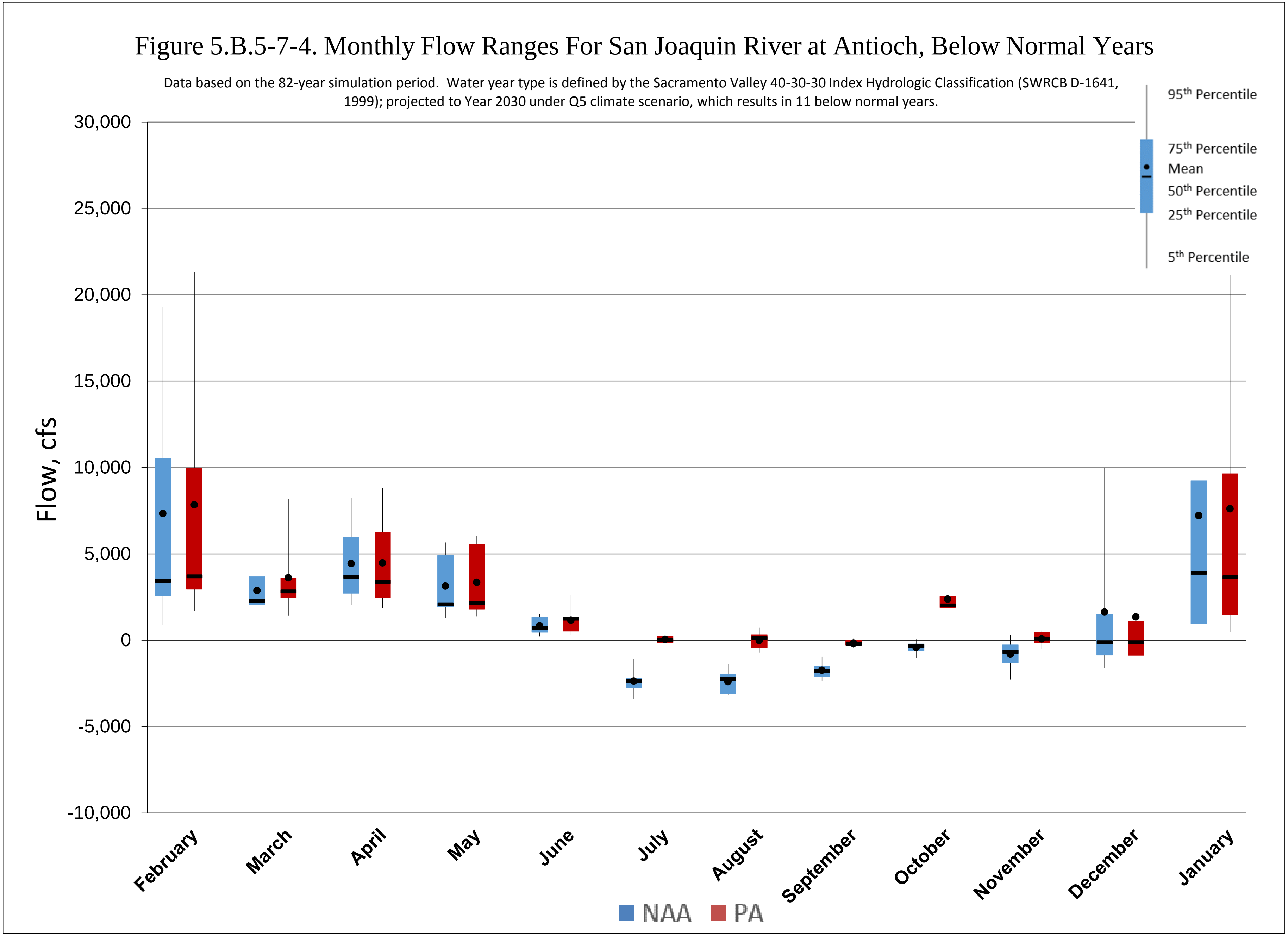


Figure 5.B.5-7-4. Monthly Flow Ranges For San Joaquin River at Antioch, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
30,000
25,000
20,000
15,000
10,000
5,000
0
-5,000
-10,000
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-7-5. Monthly Flow Ranges For San Joaquin River at Antioch, Dry Years

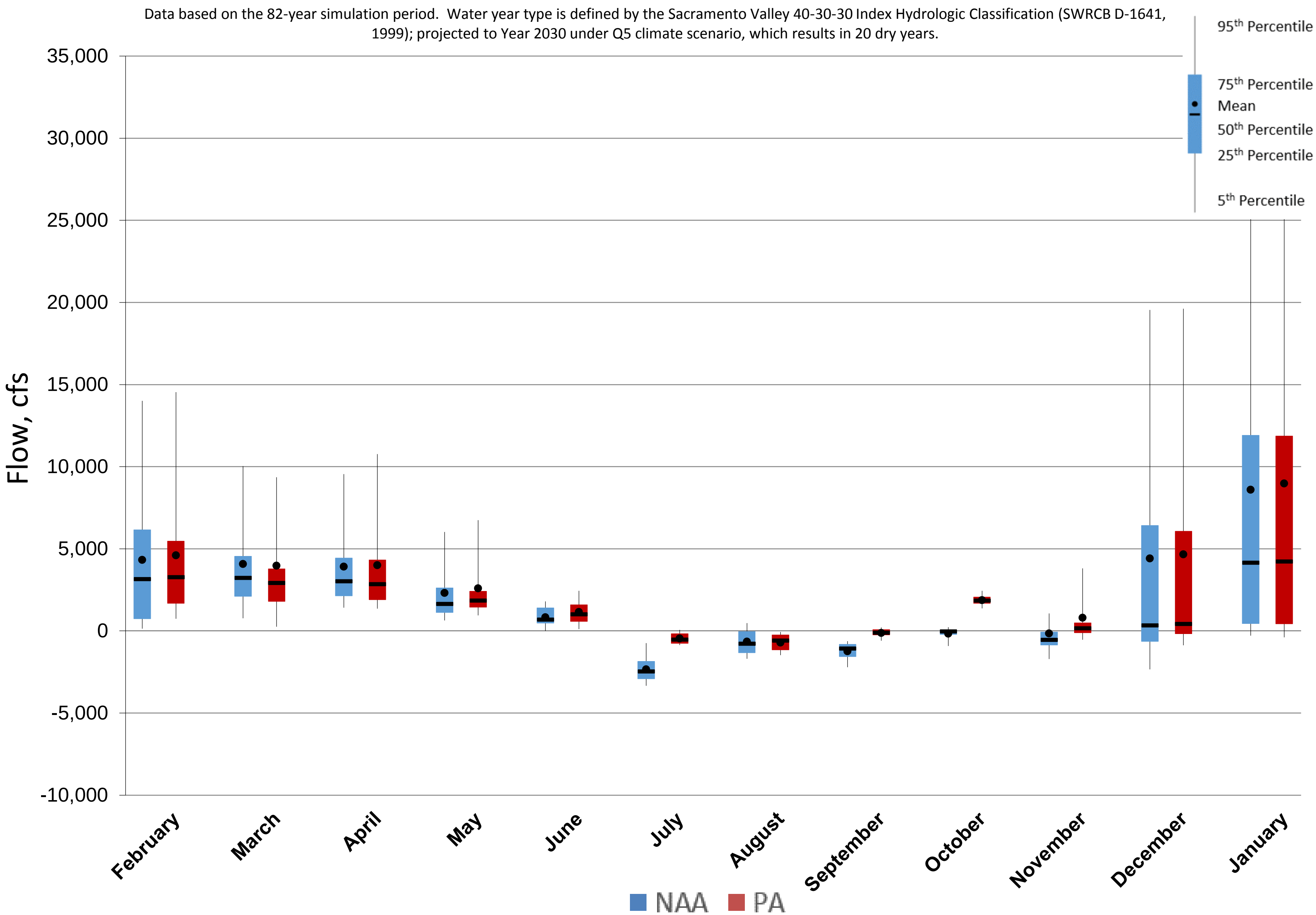


Figure 5.B.5-7-6. Monthly Flow Ranges For San Joaquin River at Antioch, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

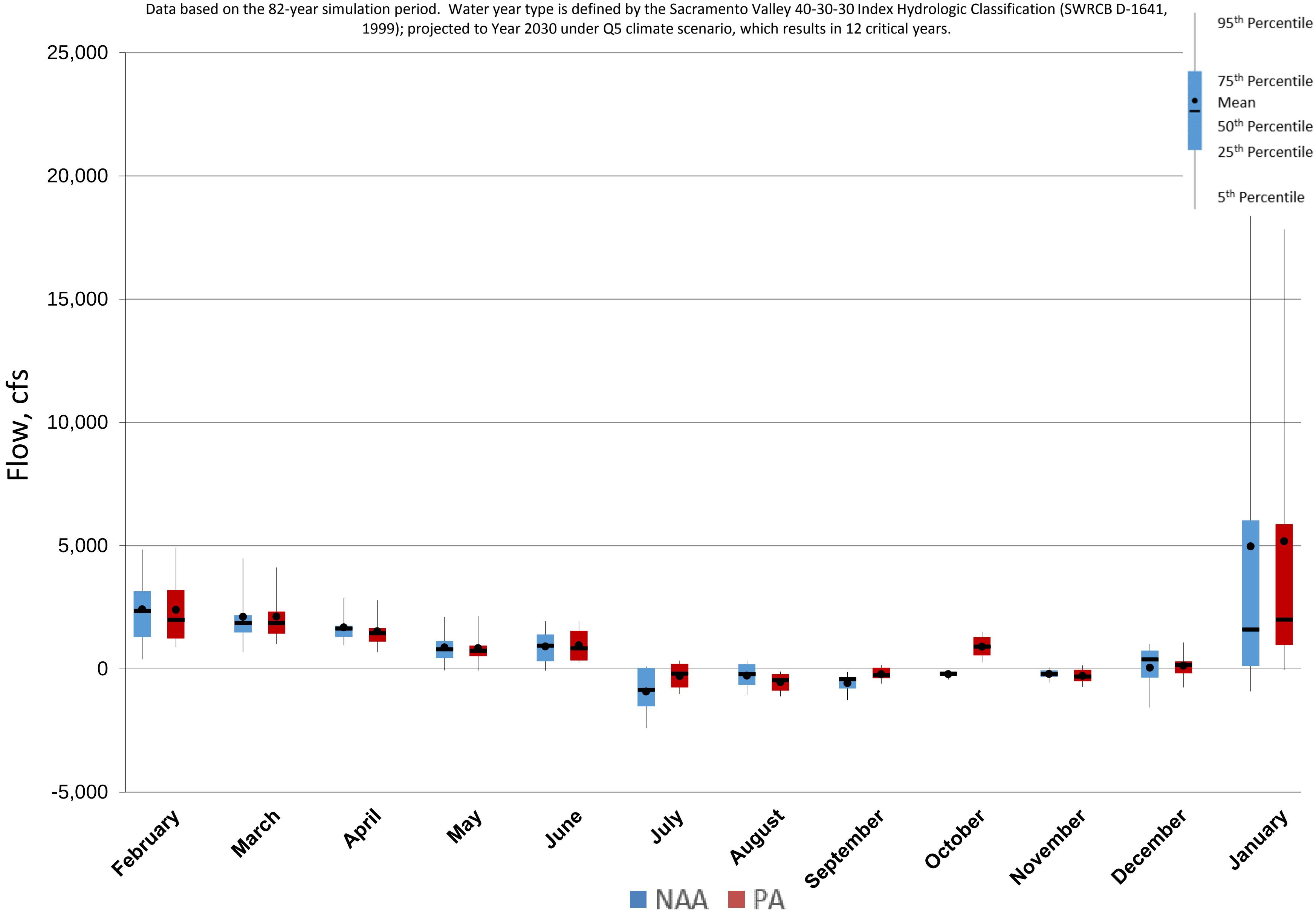
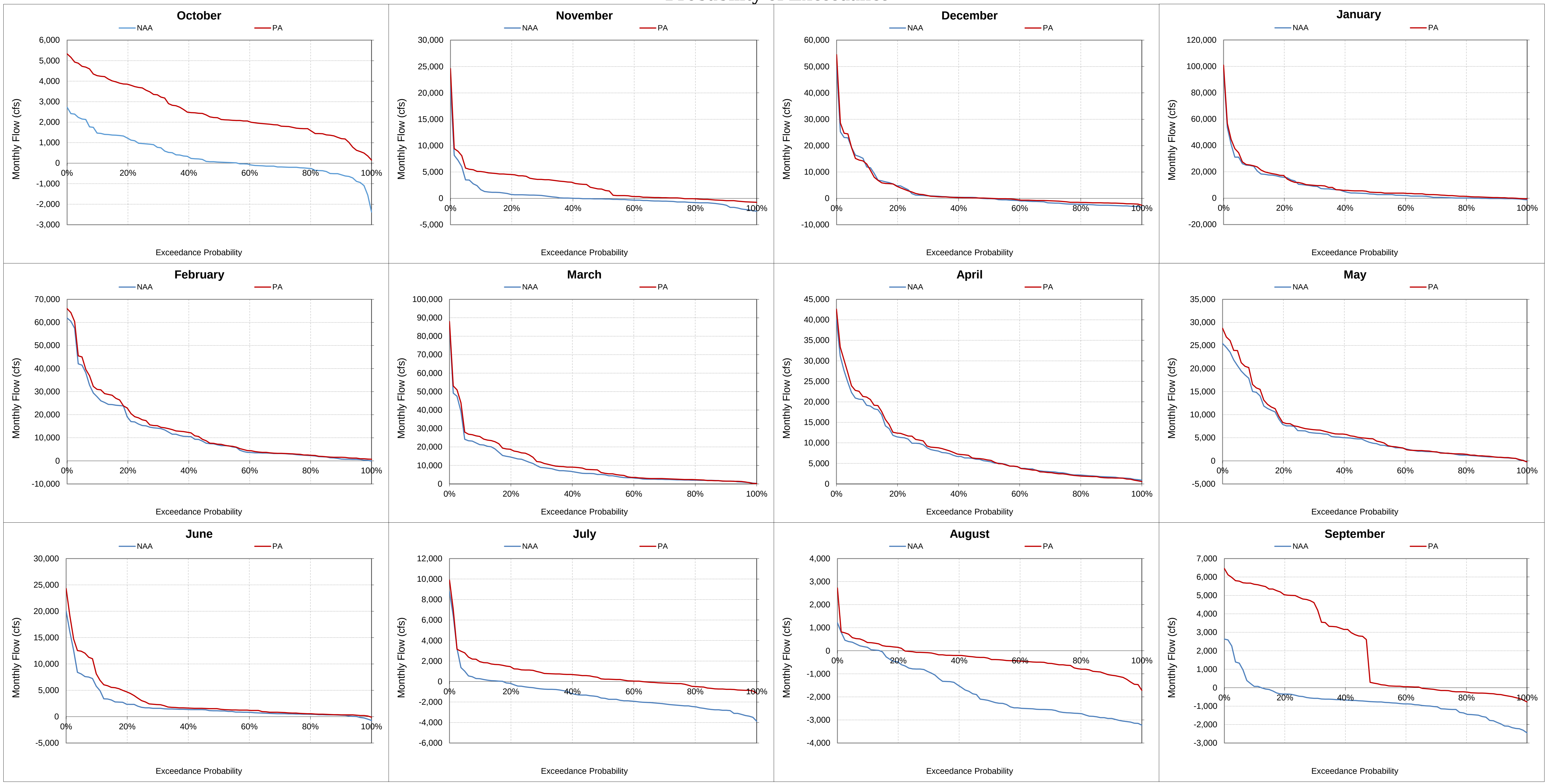
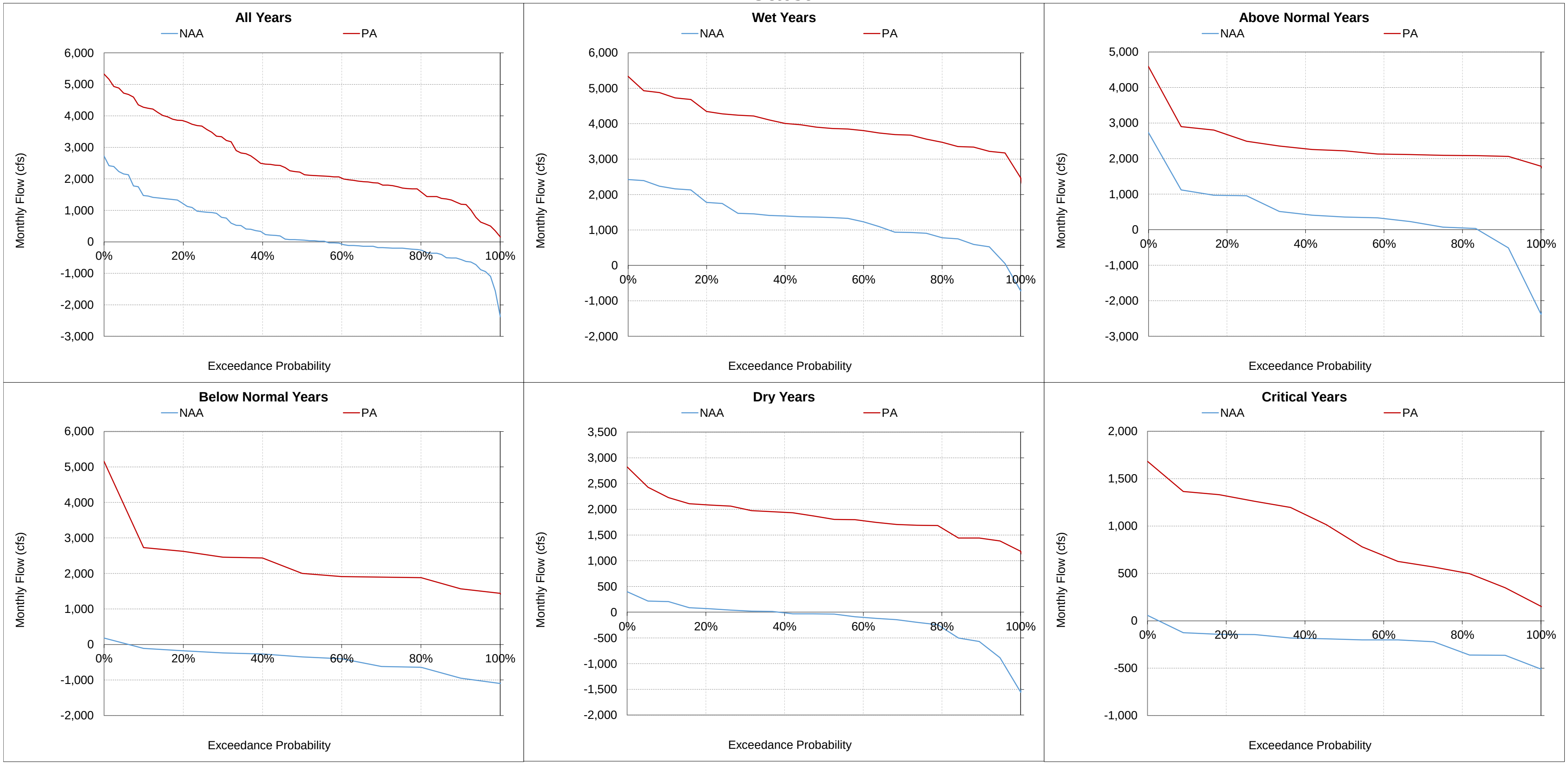


Figure 5.B.5-7-7. San Joaquin River at Antioch, Monthly Flow Probability of Exceedance



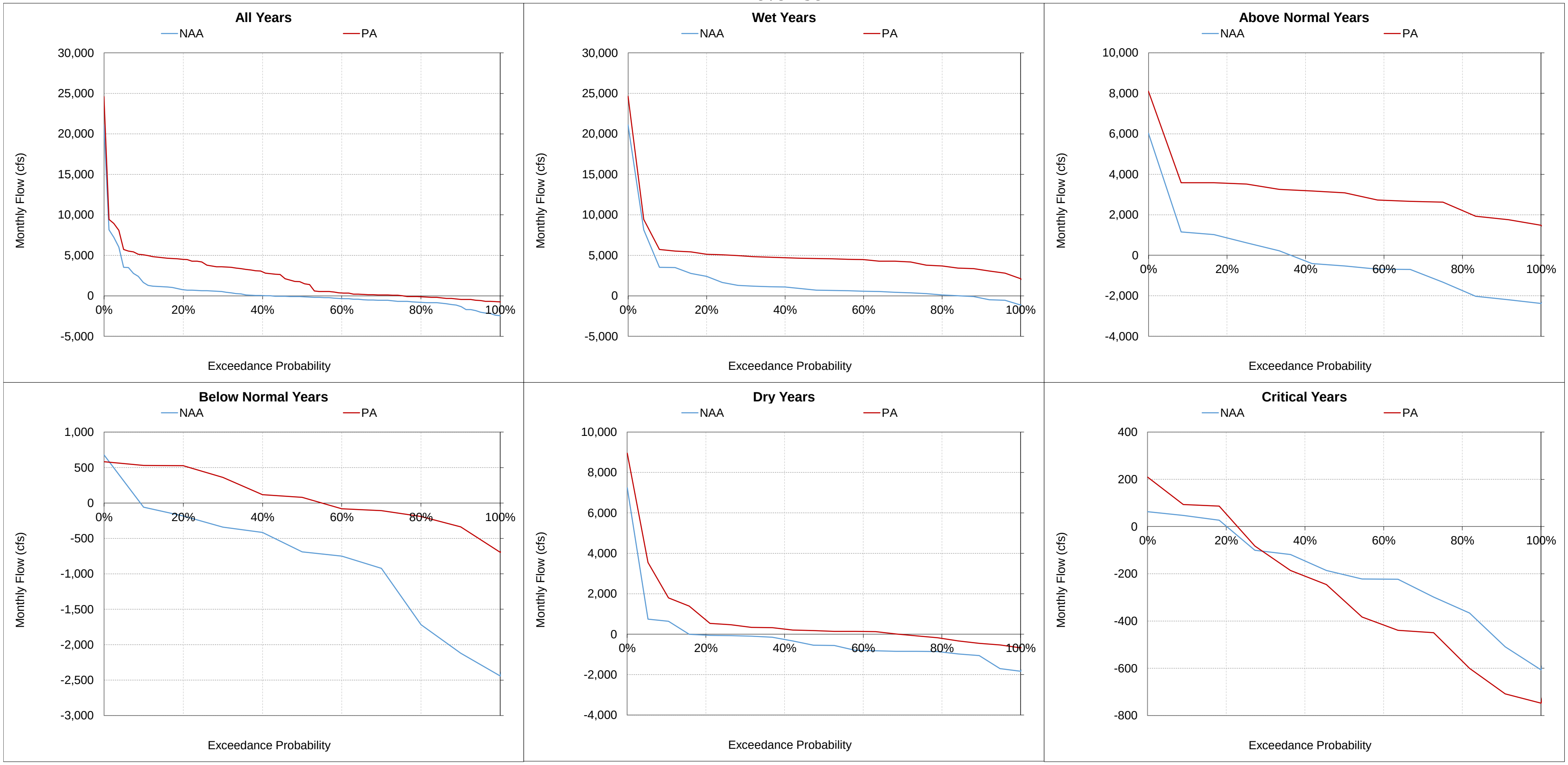
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-8. San Joaquin River at Antioch, Monthly Flow
October



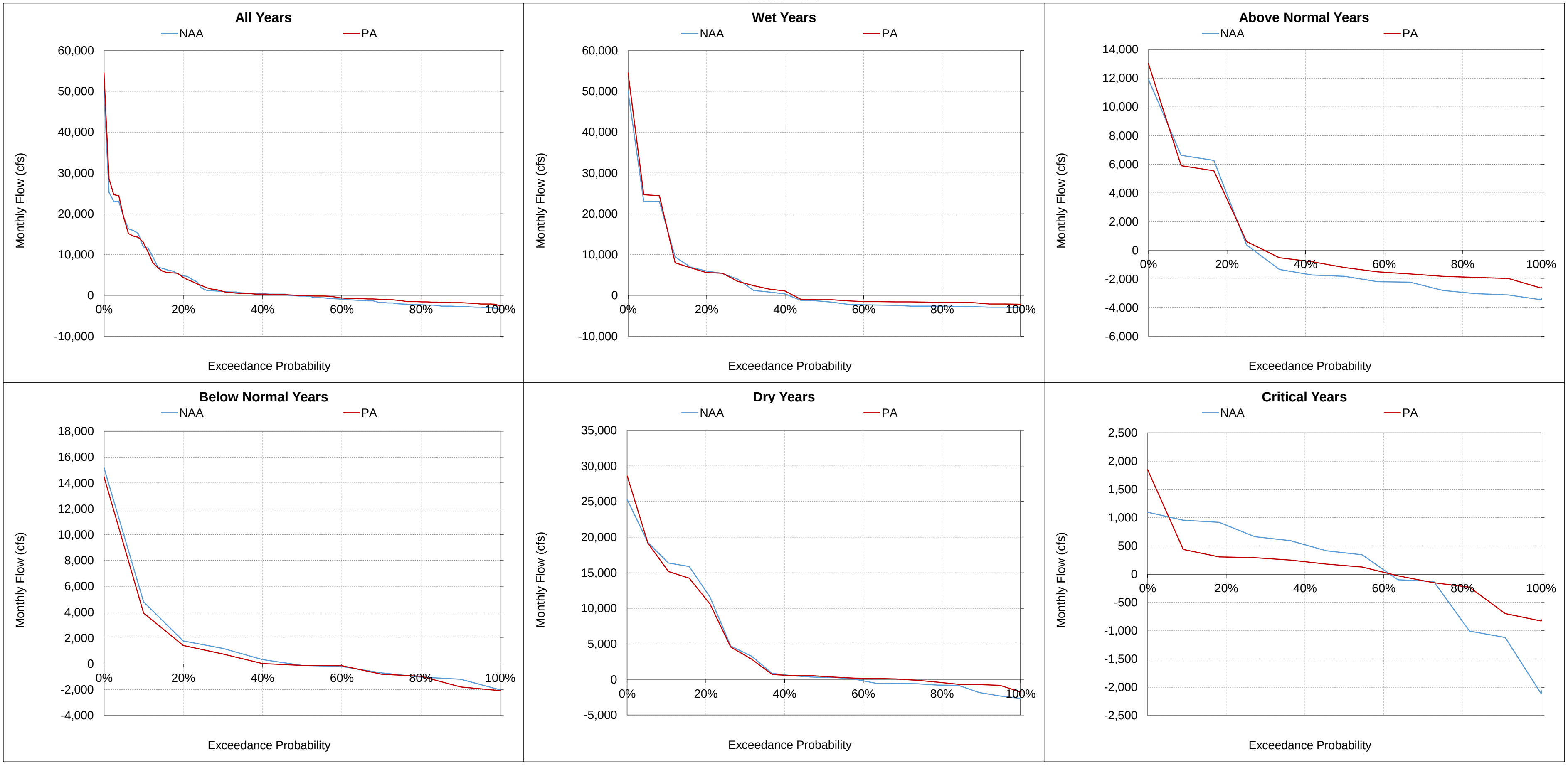
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-9. San Joaquin River at Antioch, Monthly Flow November



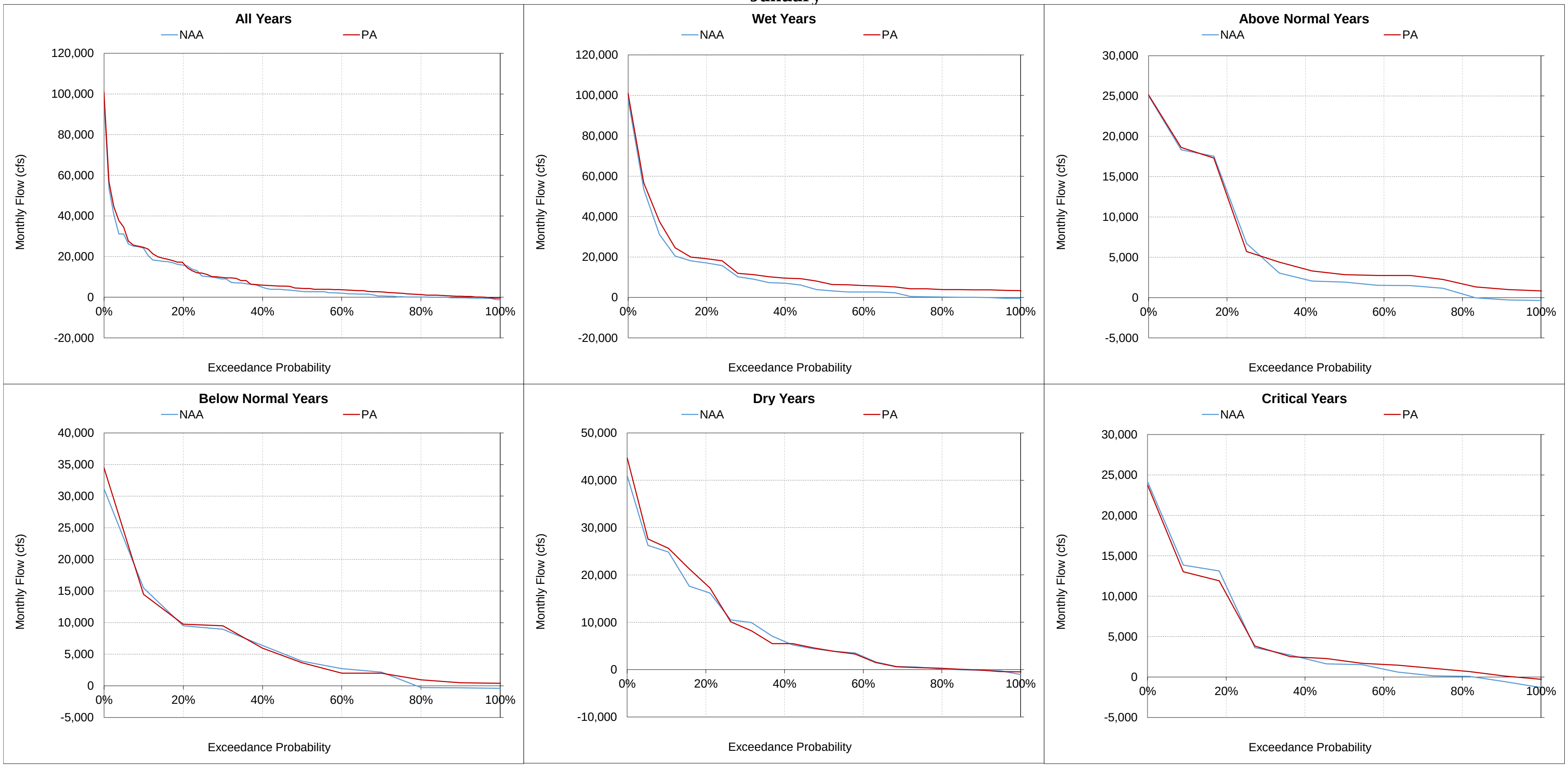
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-10. San Joaquin River at Antioch, Monthly Flow December



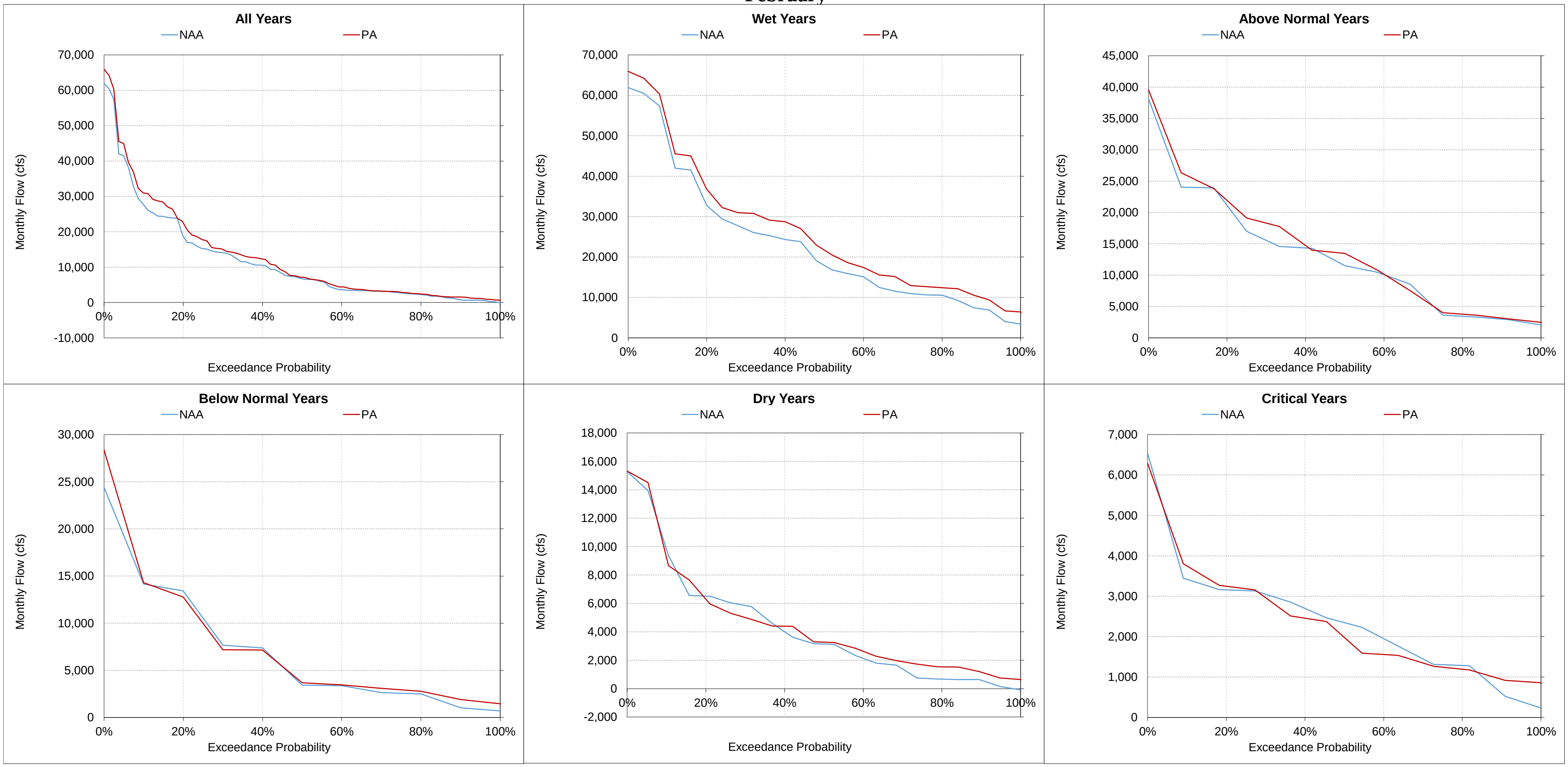
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-11. San Joaquin River at Antioch, Monthly Flow
January



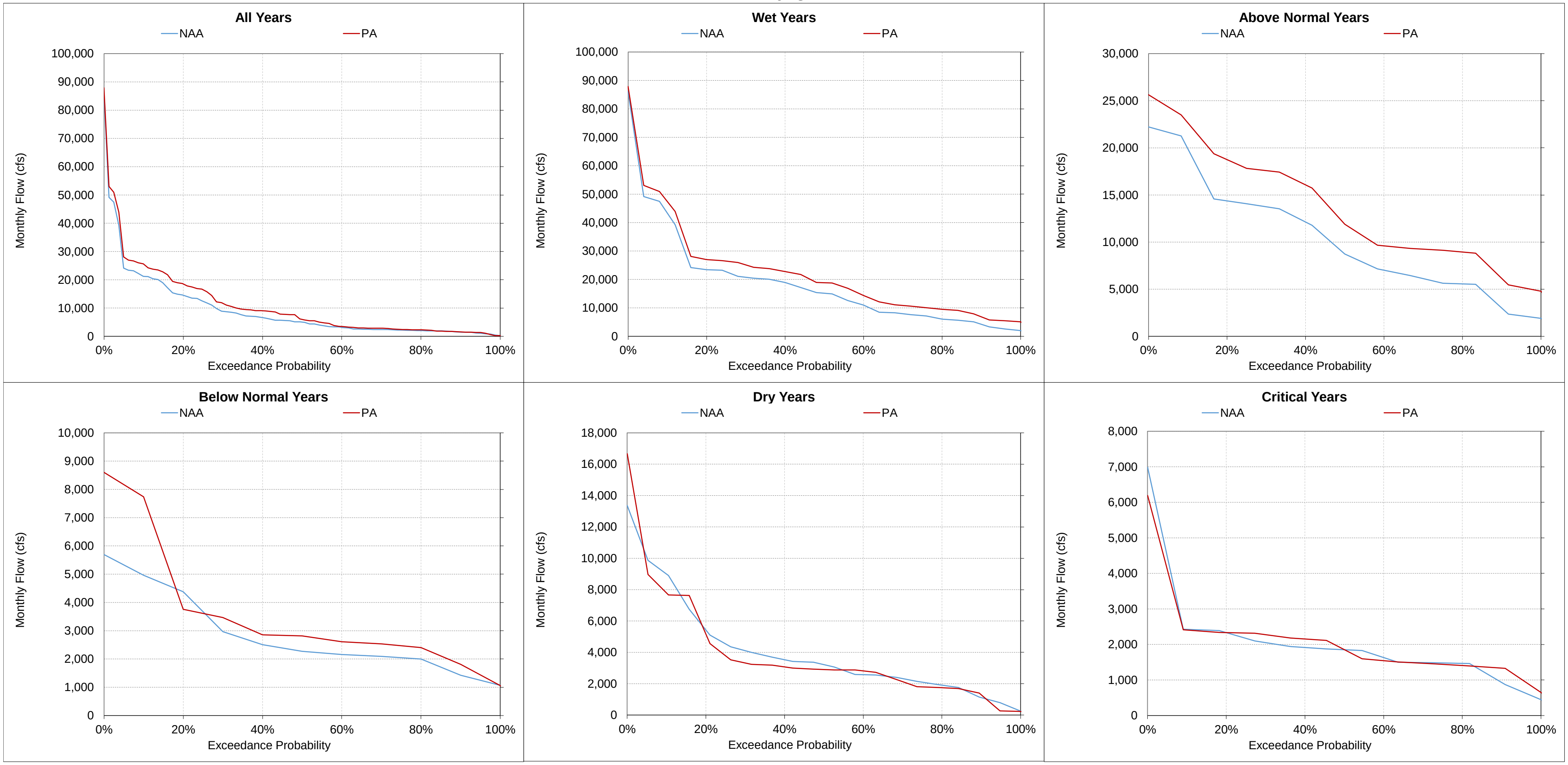
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-12. San Joaquin River at Antioch, Monthly Flow
February



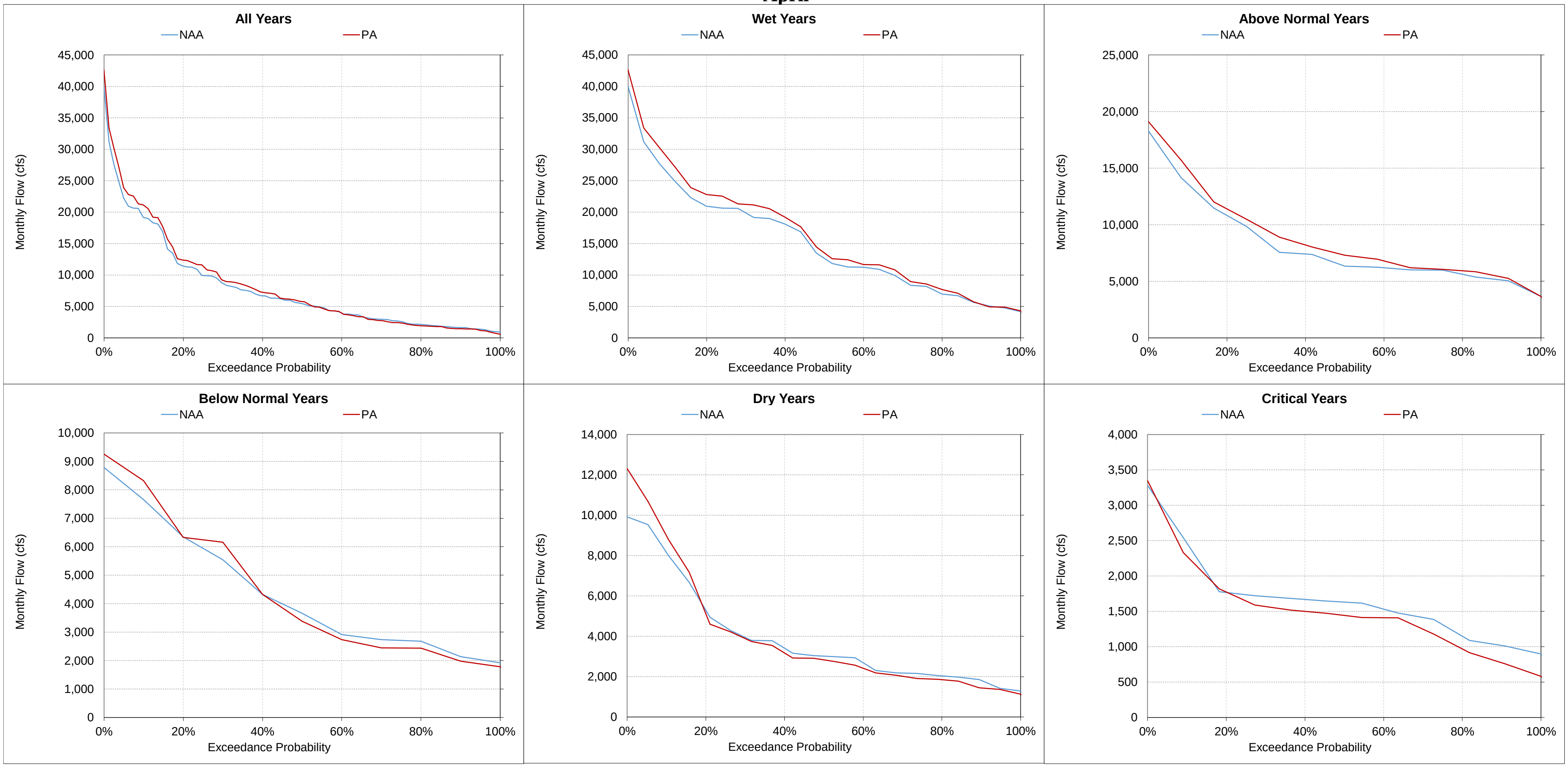
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-13. San Joaquin River at Antioch, Monthly Flow March



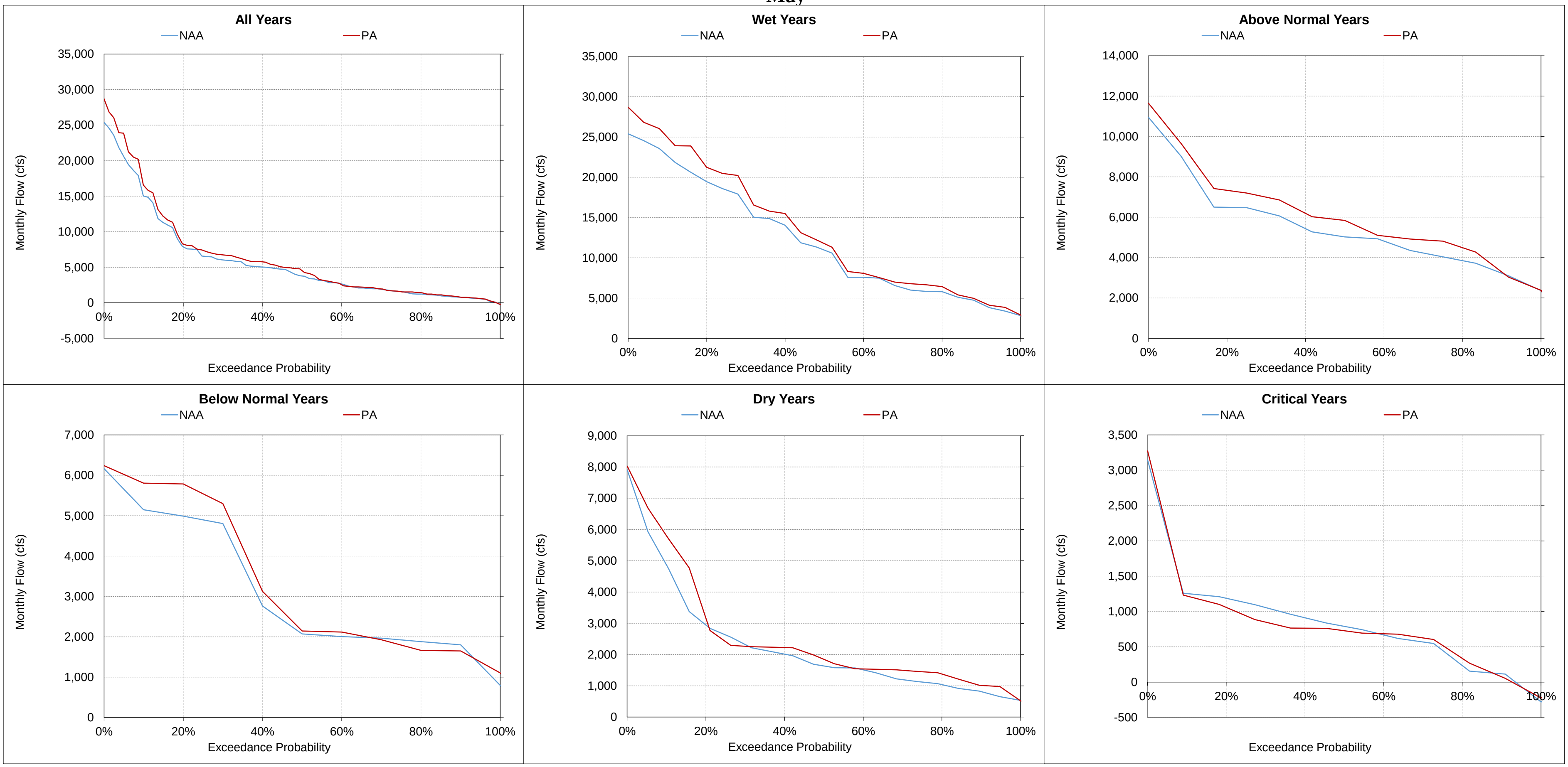
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-14. San Joaquin River at Antioch, Monthly Flow
April



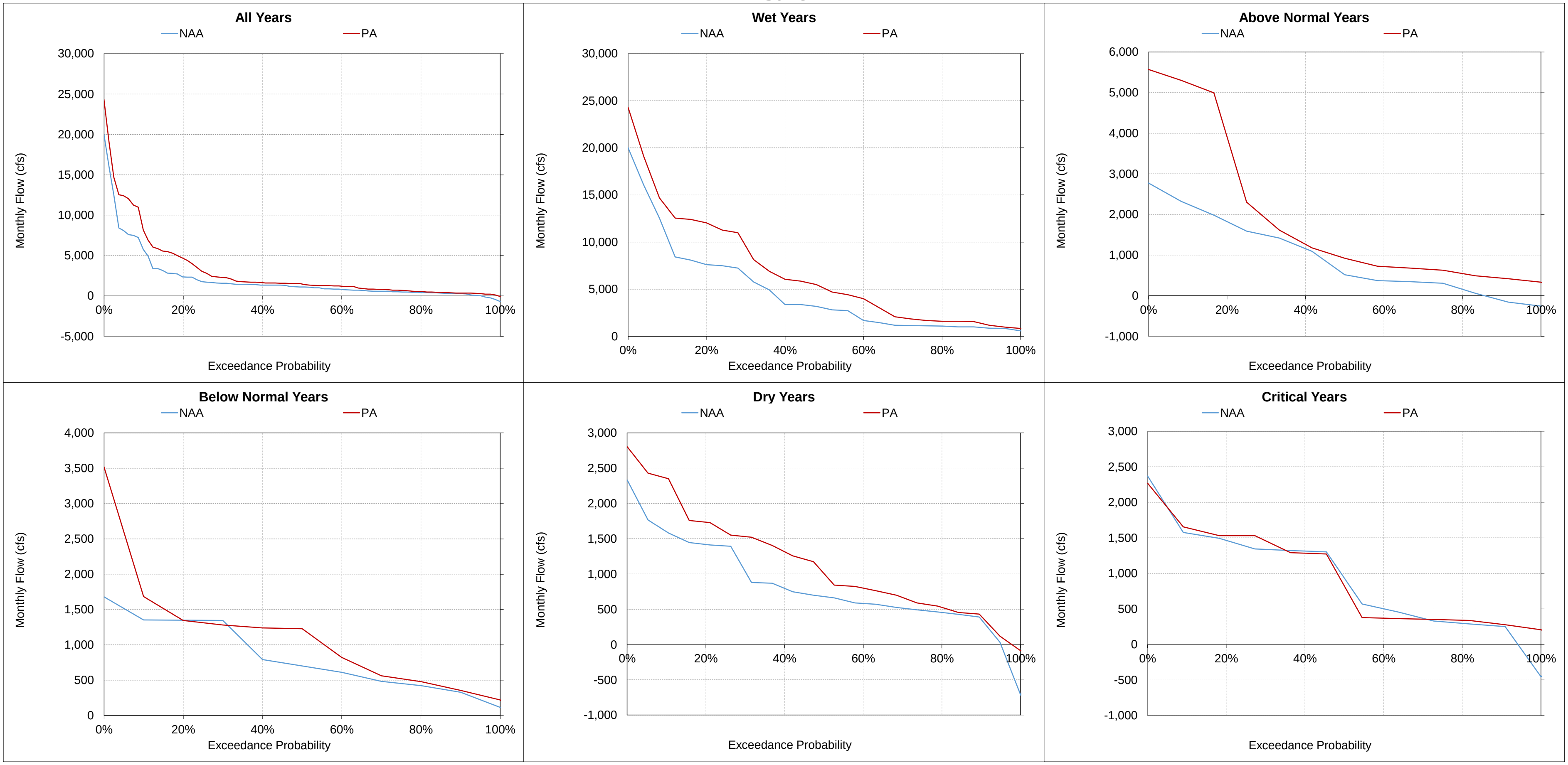
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-15. San Joaquin River at Antioch, Monthly Flow
May



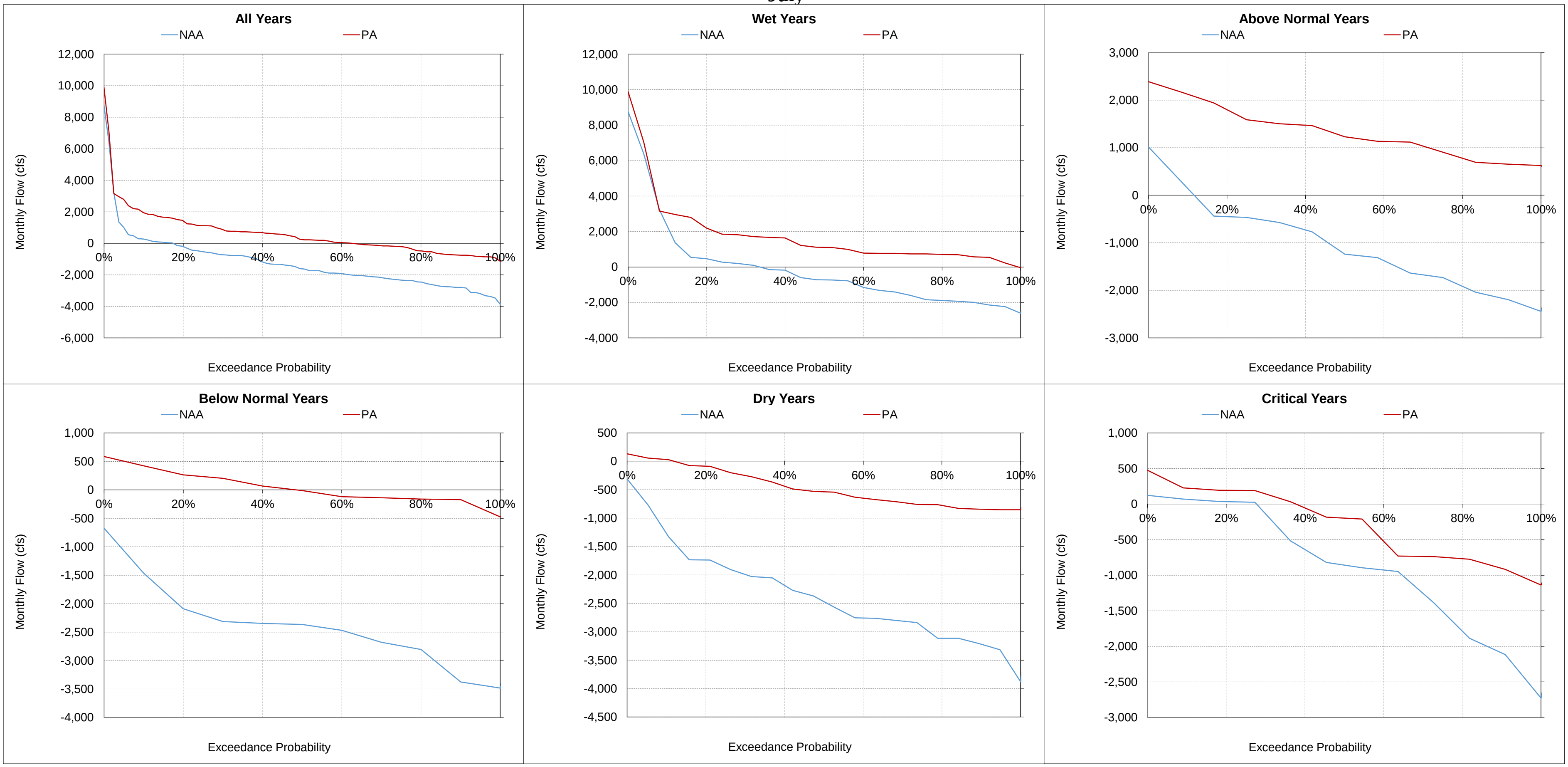
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-16. San Joaquin River at Antioch, Monthly Flow
June



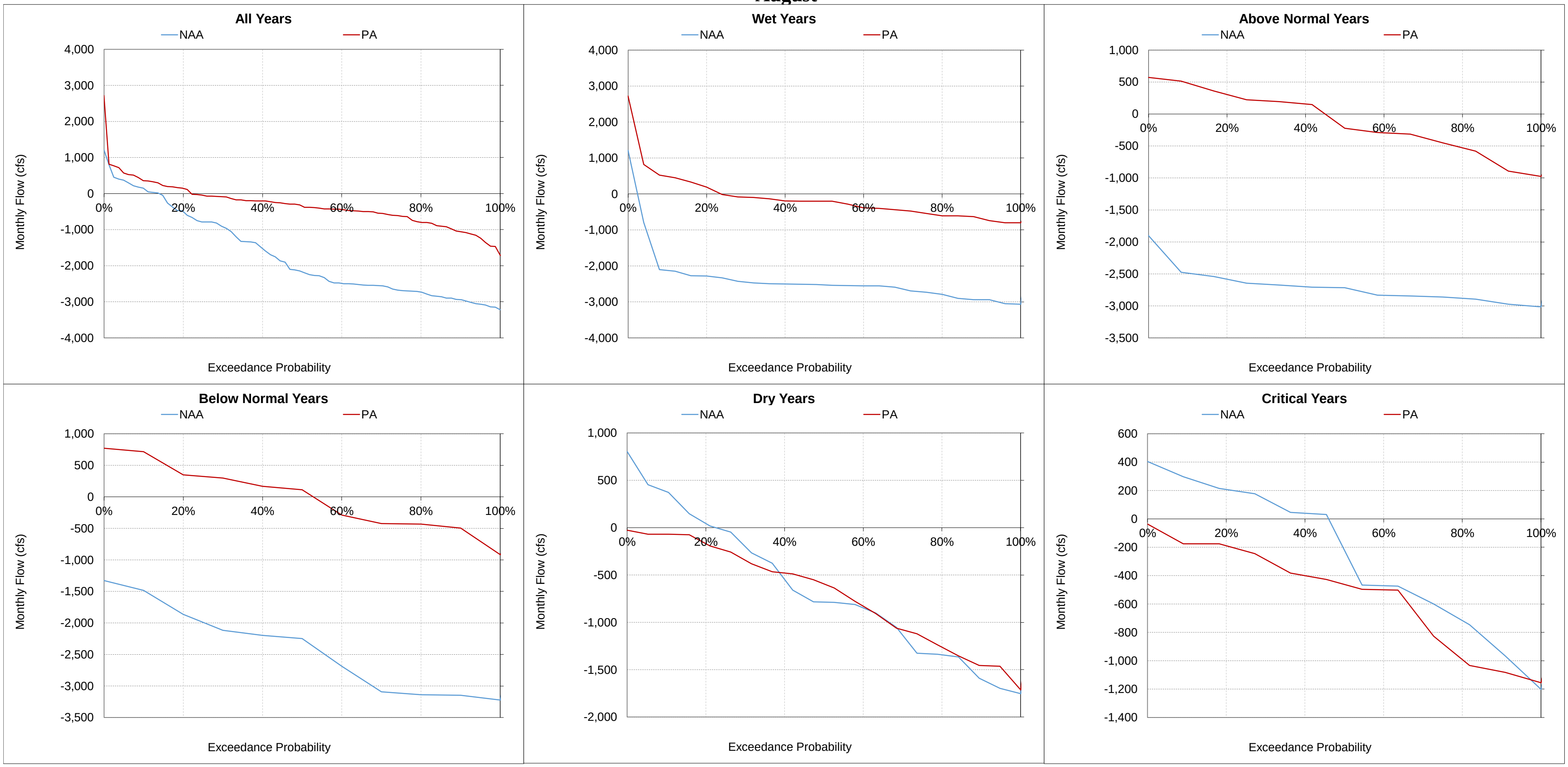
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-17. San Joaquin River at Antioch, Monthly Flow July



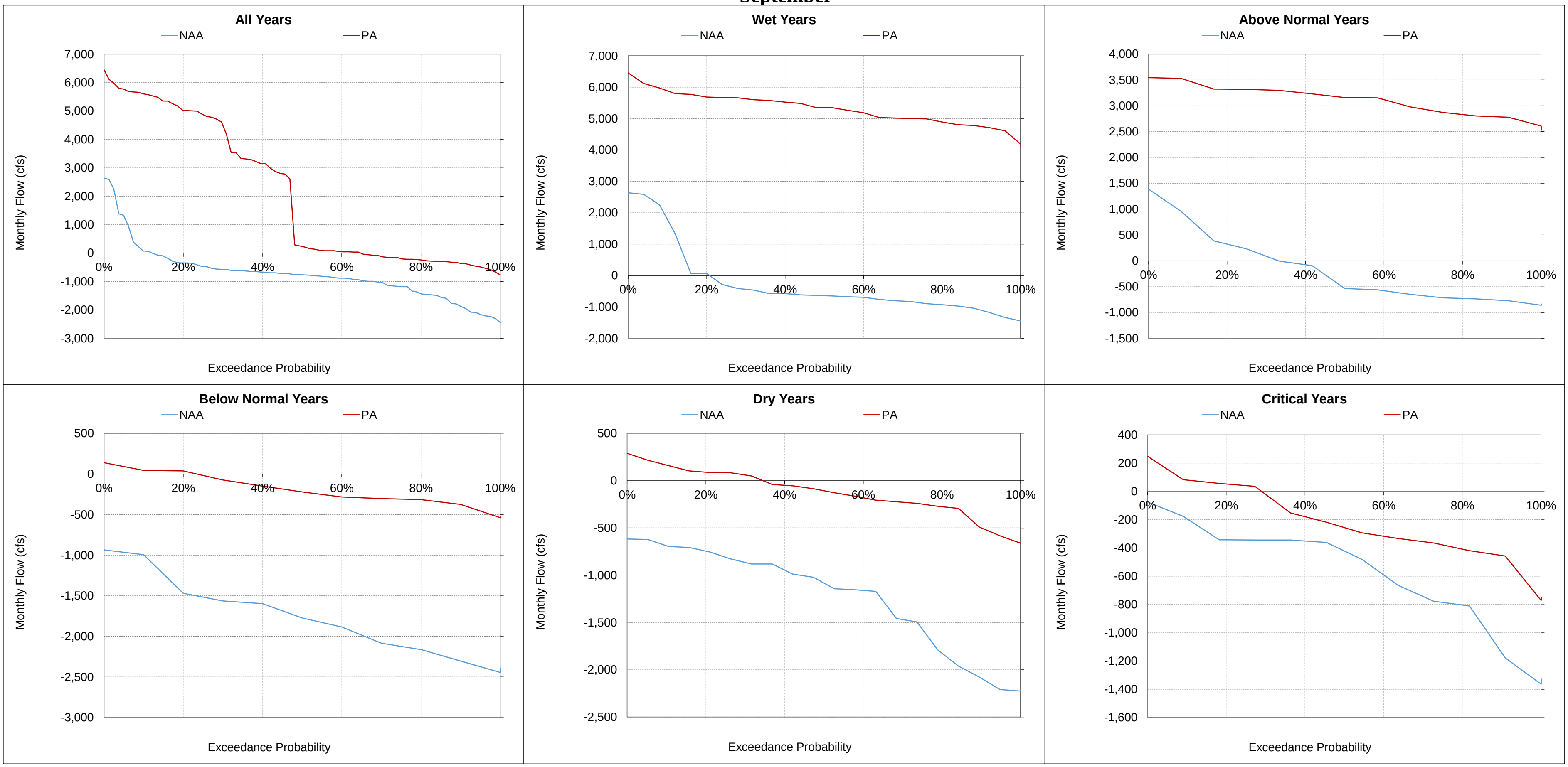
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-18. San Joaquin River at Antioch, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-7-19. San Joaquin River at Antioch, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-8. Head of Old River, Monthly Flow

Statistic	October				November				December				January				February				March			
	Monthly Flow (cfs)																							
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	1,131	751	-380	-34%	959	1,110	151	16%	2,745	2,720	-26	-1%	6,113	5,279	-834	-14%	6,958	6,212	-746	-11%	7,790	7,183	-607	-8%
20%	1,018	634	-384	-38%	885	1,000	115	13%	1,806	1,787	-19	-1%	2,692	1,323	-1,369	-51%	5,274	4,510	-764	-14%	5,072	3,696	-1,376	-27%
30%	969	601	-368	-38%	832	971	140	17%	1,704	1,660	-43	-3%	2,115	963	-1,152	-54%	3,214	1,721	-1,493	-46%	4,237	2,441	-1,796	-42%
40%	907	567	-340	-37%	795	907	113	14%	1,589	1,562	-27	-2%	1,662	786	-876	-53%	2,399	1,079	-1,321	-55%	2,689	1,225	-1,464	-54%
50%	861	535	-326	-38%	760	844	84	11%	1,549	1,524	-24	-2%	1,555	720	-835	-54%	2,102	899	-1,203	-57%	2,003	907	-1,096	-55%
60%	814	496	-318	-39%	714	823	108	15%	1,485	1,480	-5	0%	1,471	695	-776	-53%	1,617	758	-859	-53%	1,782	826	-955	-54%
70%	748	470	-278	-37%	679	790	111	16%	1,400	1,396	-4	0%	1,396	668	-728	-52%	1,479	729	-750	-51%	1,552	694	-859	-55%
80%	677	441	-237	-35%	648	757	110	17%	1,343	1,314	-29	-2%	1,286	639	-647	-50%	1,410	698	-712	-51%	1,255	650	-605	-48%
90%	624	413	-211	-34%	579	715	136	23%	1,210	1,212	2	0%	1,193	624	-569	-48%	1,309	659	-649	-50%	1,146	607	-539	-47%
Long Term																								
Full Simulation Period[b]	897	567	-330	-37%	914	1,027	113	12%	2,006	1,985	-22	-1%	2,662	1,832	-831	-31%	3,345	2,474	-871	-26%	3,451	2,551	-900	-26%
Water Year Types[c]																								
Wet (32%)	1,161	709	-452	-39%	1,348	1,426	78	6%	2,684	2,651	-33	-1%	3,884	3,039	-845	-22%	5,802	4,832	-970	-17%	6,329	5,372	-957	-15%
Above Normal (16%)	909	584	-325	-36%	818	875	58	7%	1,772	1,728	-43	-2%	1,920	903	-1,018	-53%	3,196	2,169	-1,027	-32%	3,403	2,250	-1,153	-34%
Below Normal (13%)	871	545	-326	-37%	739	885	146	20%	1,635	1,634	-1	0%	2,085	1,217	-868	-42%	2,605	1,776	-829	-32%	2,103	1,046	-1,057	-50%
Dry (24%)	738	484	-254	-34%	712	866	154	22%	1,938	1,921	-17	-1%	2,543	1,835	-708	-28%	1,812	1,045	-767	-42%	1,853	1,068	-785	-42%
Critical (15%)	605	402	-203	-34%	575	729	153	27%	1,248	1,246	-2	0%	1,546	779	-767	-50%	1,417	715	-702	-50%	1,166	614	-552	-47%

Statistic	April				May				June				July				August				September			
	Monthly Flow (cfs)																							
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	7,588	7,287	-301	-4%	7,676	7,647	-29	0%	4,570	3,940	-629	-14%	2,969	2,908	-61	-2%	1,561	1,450	-111	-7%	1,350	1,529	179	13%
20%	4,124	2,438	-1,686	-41%	3,862	1,909	-1,953	-51%	2,171	1,472	-699	-32%	1,462	1,344	-117	-8%	1,419	1,271	-148	-10%	1,187	1,326	139	12%
30%	3,185	1,543	-1,641	-52%	2,768	1,323	-1,445	-52%	1,709	1,171	-539	-32%	1,165	1,055	-110	-9%	1,189	1,016	-173	-15%	1,129	1,268	139	12%
40%	2,786	1,335	-1,451	-52%	2,356	1,100	-1,256	-53%	1,487	1,045	-442	-30%	1,073	930	-143	-13%	1,044	866	-178	-17%	1,016	1,087	71	7%
50%	2,312	1,089	-1,223	-53%	2,088	973	-1,115	-53%	1,181	824	-358	-30%	966	801	-165	-17%	968	813	-155	-16%	954	1,006	52	5%
60%	1,915	908	-1,008	-53%	1,702	813	-889	-52%	965	725	-240	-25%	912	715	-197	-22%	921	760	-160	-17%	914	945	31	3%
70%	1,659	789	-870	-52%	1,567	756	-811	-52%	691	547	-145	-21%	786	622	-164	-21%	733	707	-27	-4%	824	888	65	8%
80%	1,297	673	-624	-48%	1,296	656	-640	-49%	585	452	-133	-23%	704	538	-166	-24%	610	624	14	2%	744	798	54	7%
90%	1,051	578	-473	-45%	1,044	578	-466	-45%	469	363	-106	-23%	516	467	-49	-10%	527	513	-14	-3%	626	728	102	16%
Long Term																								
Full Simulation Period[b]	3,144	2,197	-947	-30%	3,014	2,139	-875	-29%	1,967	1,650	-317	-16%	1,440	1,321	-119	-8%	1,042	951	-91	-9%	1,026	1,122	96	9%
Water Year Types[c]																								
Wet (32%)	5,488	4,540	-948	-17%	5,301	4,437	-864	-16%	4,046	3,628	-418	-10%	2,706	2,623	-83	-3%	1,548	1,420	-128	-8%	1,399	1,524	125	9%
Above Normal (16%)	3,046	1,794	-1,252	-41%	2,866	1,670	-1,196	-42%	1,691	1,208	-483	-29%	1,179	1,019	-160	-14%	1,100	933	-168	-15%	1,048	1,110	62	6%
Below Normal (13%)	2,268	1,091	-1,177	-52%	1,991	957	-1,034	-52%	1,017	751	-267	-26%	978	811	-167	-17%	988	806	-183	-18%	953	1,037	84	9%
Dry (24%)	1,883	989	-894	-47%	1,846	1,032	-813	-44%	857	624	-233	-27%	794	645	-149	-19%	731	724	-7	-1%	824	904	81	10%
Critical (15%)	1,077	587	-489	-45%	1,105	595	-511	-46%	479	376	-104	-22%	481	425	-56	-12%	454	469	15	3%	600	706	105	18%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

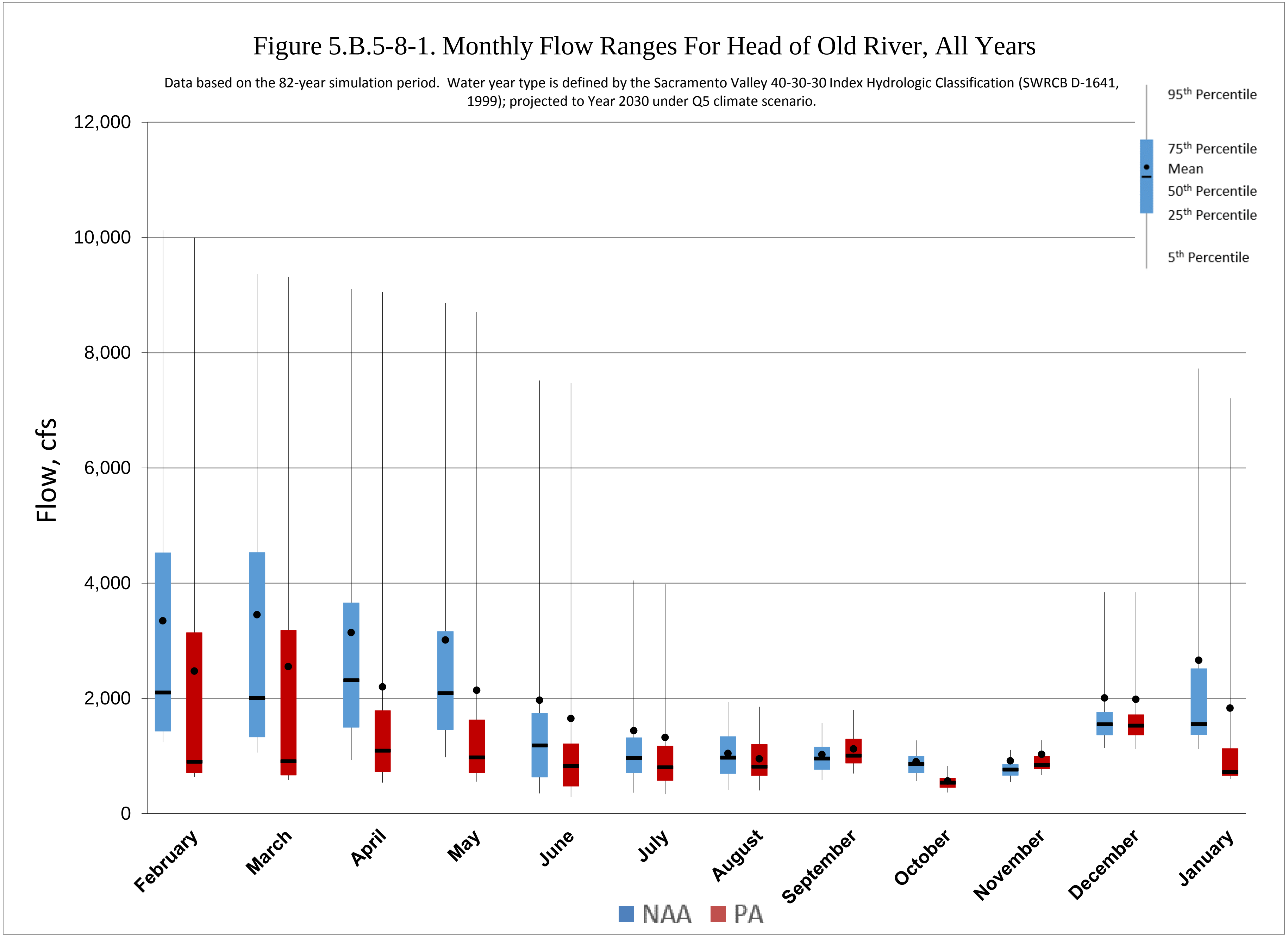


Figure 5.B.5-8-1. Monthly Flow Ranges For Head of Old River, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-8-2. Monthly Flow Ranges For Head of Old River, Wet Years

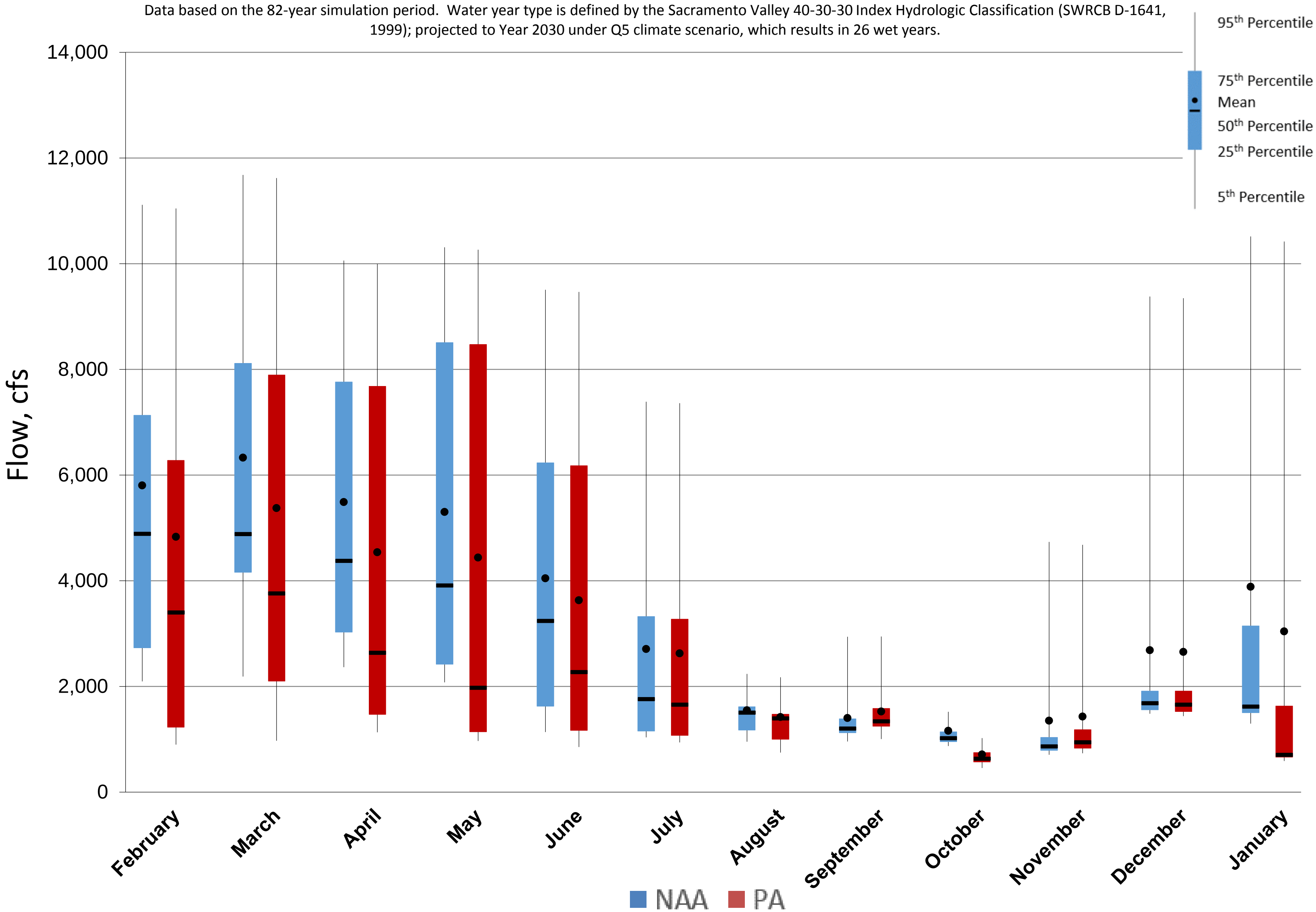
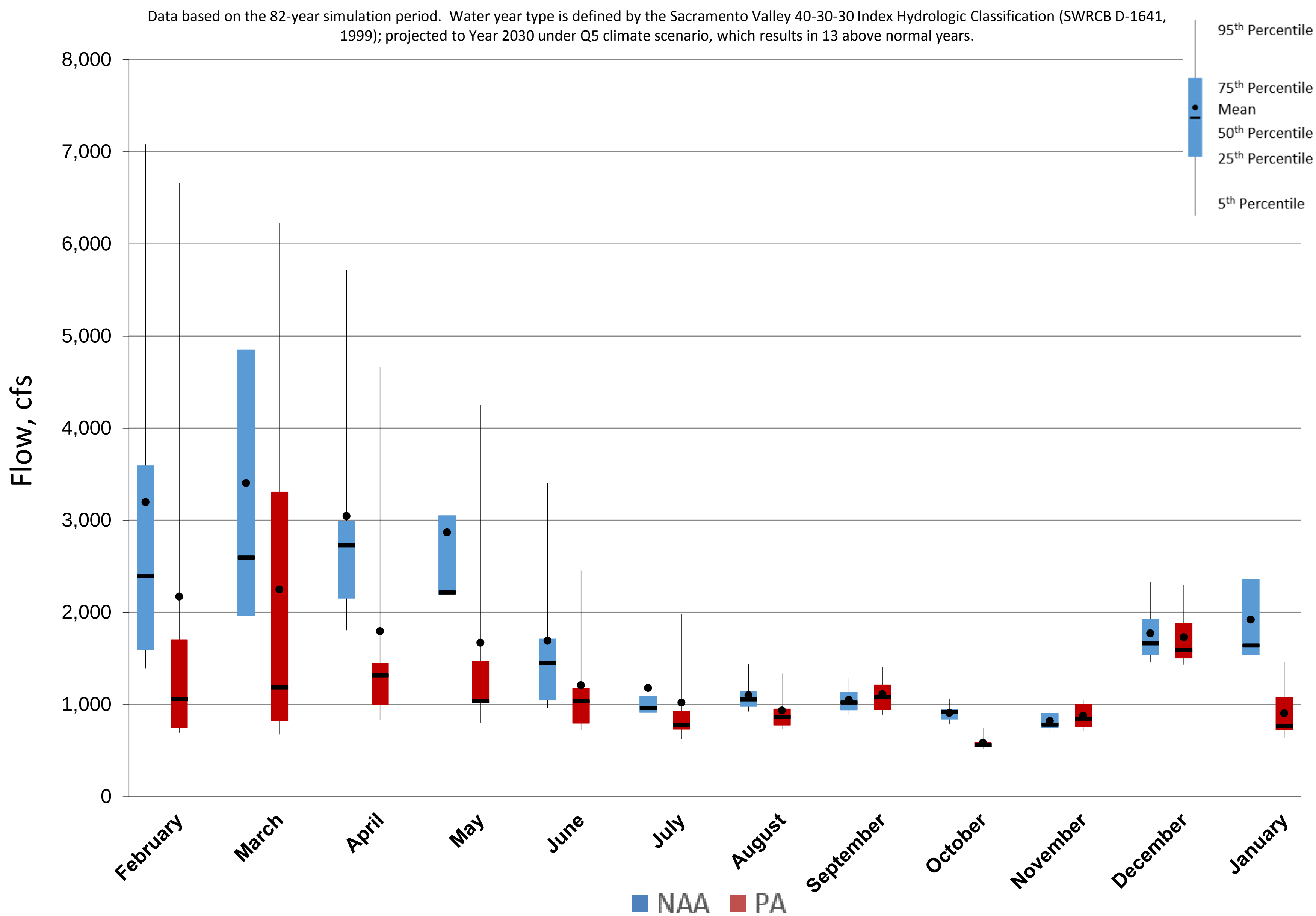


Figure 5.B.5-8-3. Monthly Flow Ranges For Head of Old River, Above Normal Years



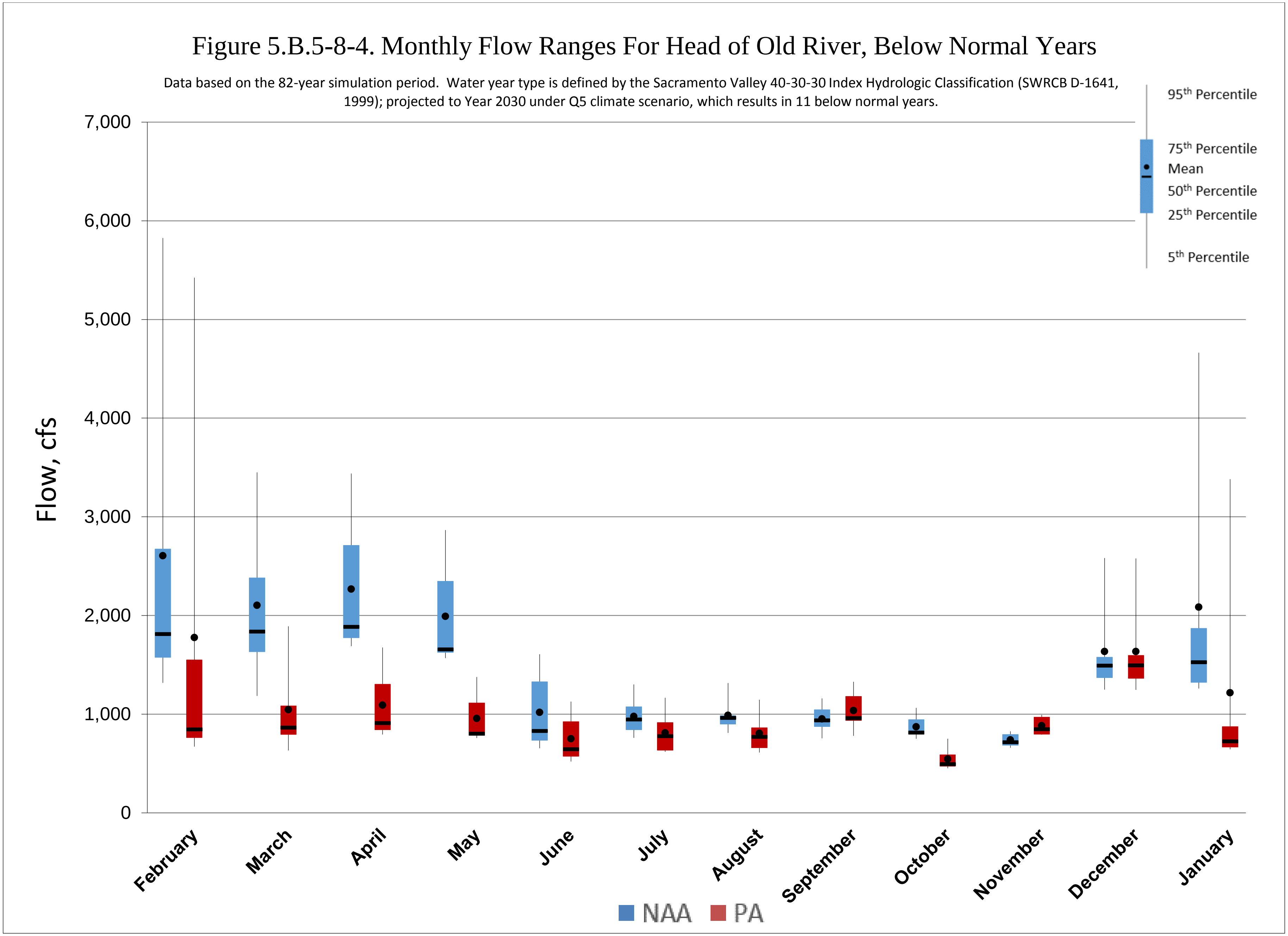


Figure 5.B.5-8-4. Monthly Flow Ranges For Head of Old River, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

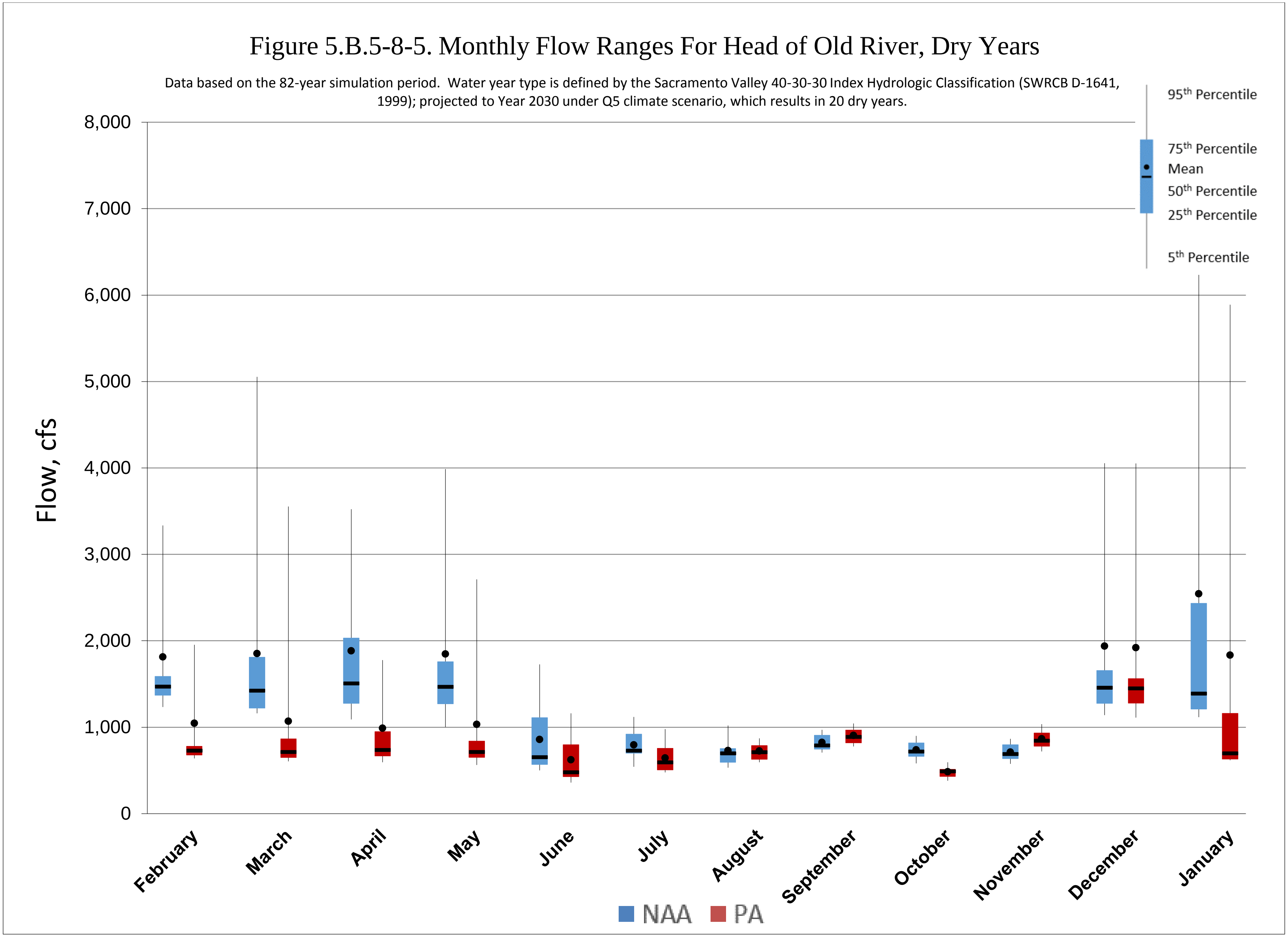


Figure 5.B.5-8-5. Monthly Flow Ranges For Head of Old River, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-8-6. Monthly Flow Ranges For Head of Old River, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

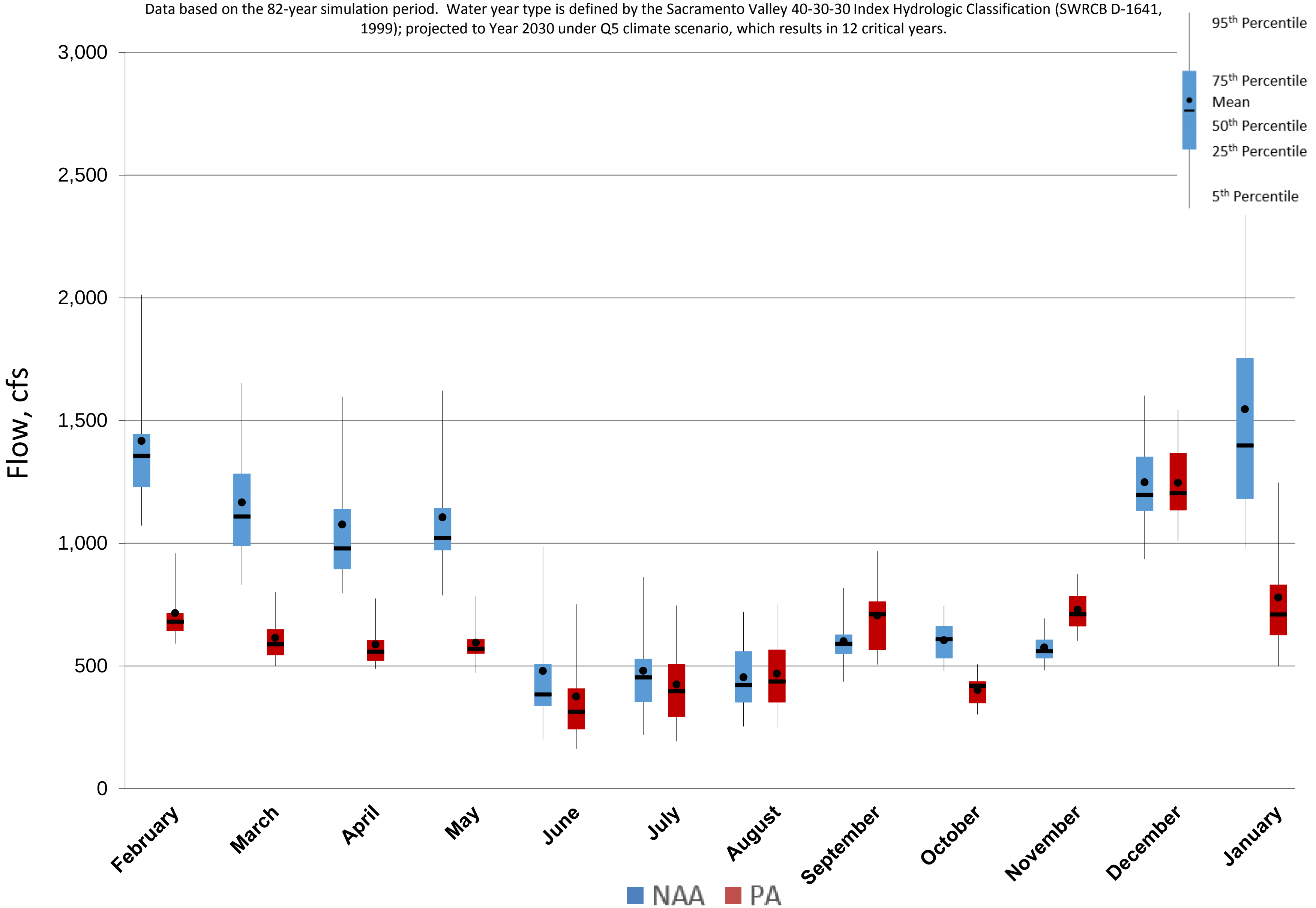
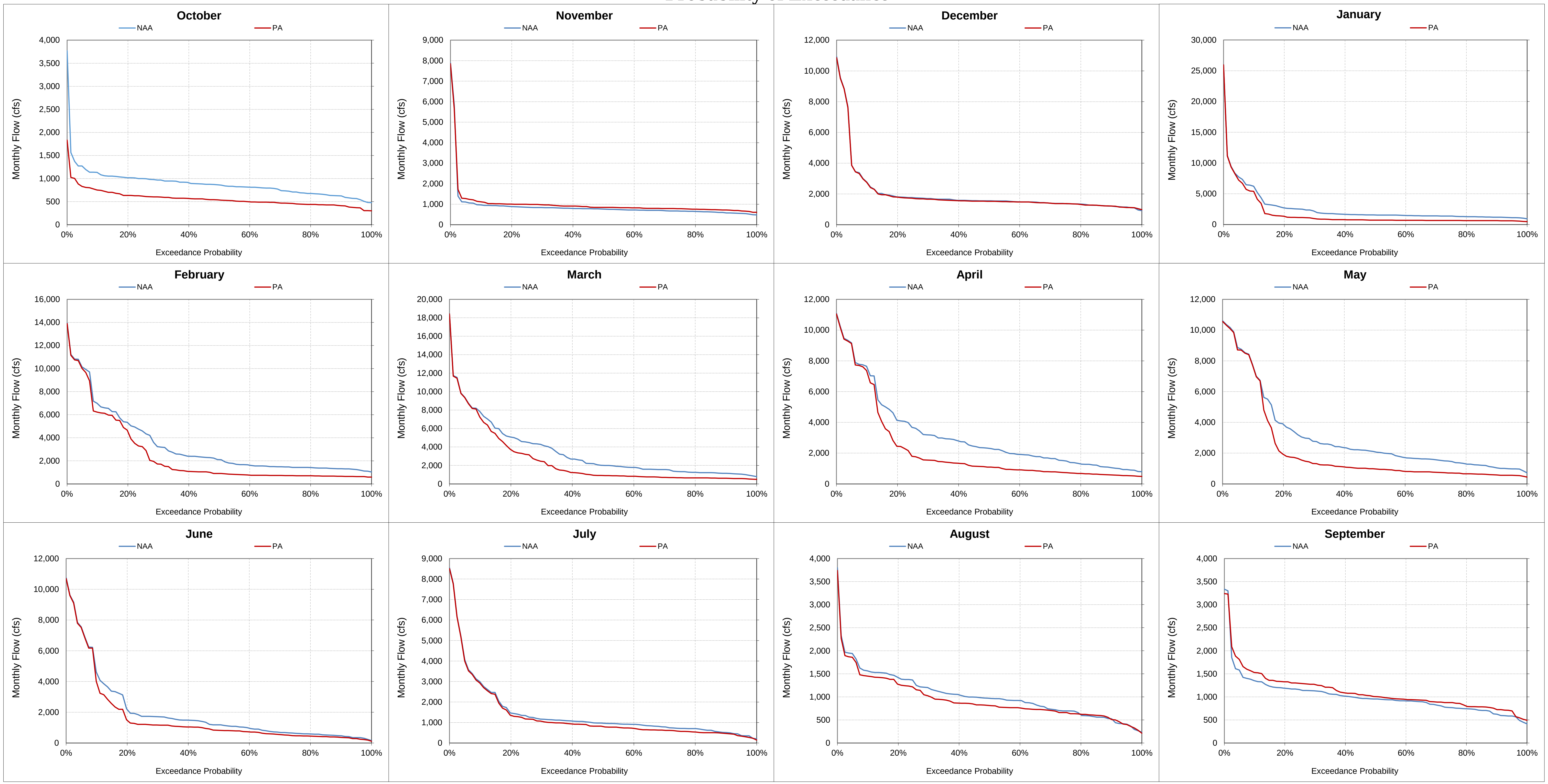
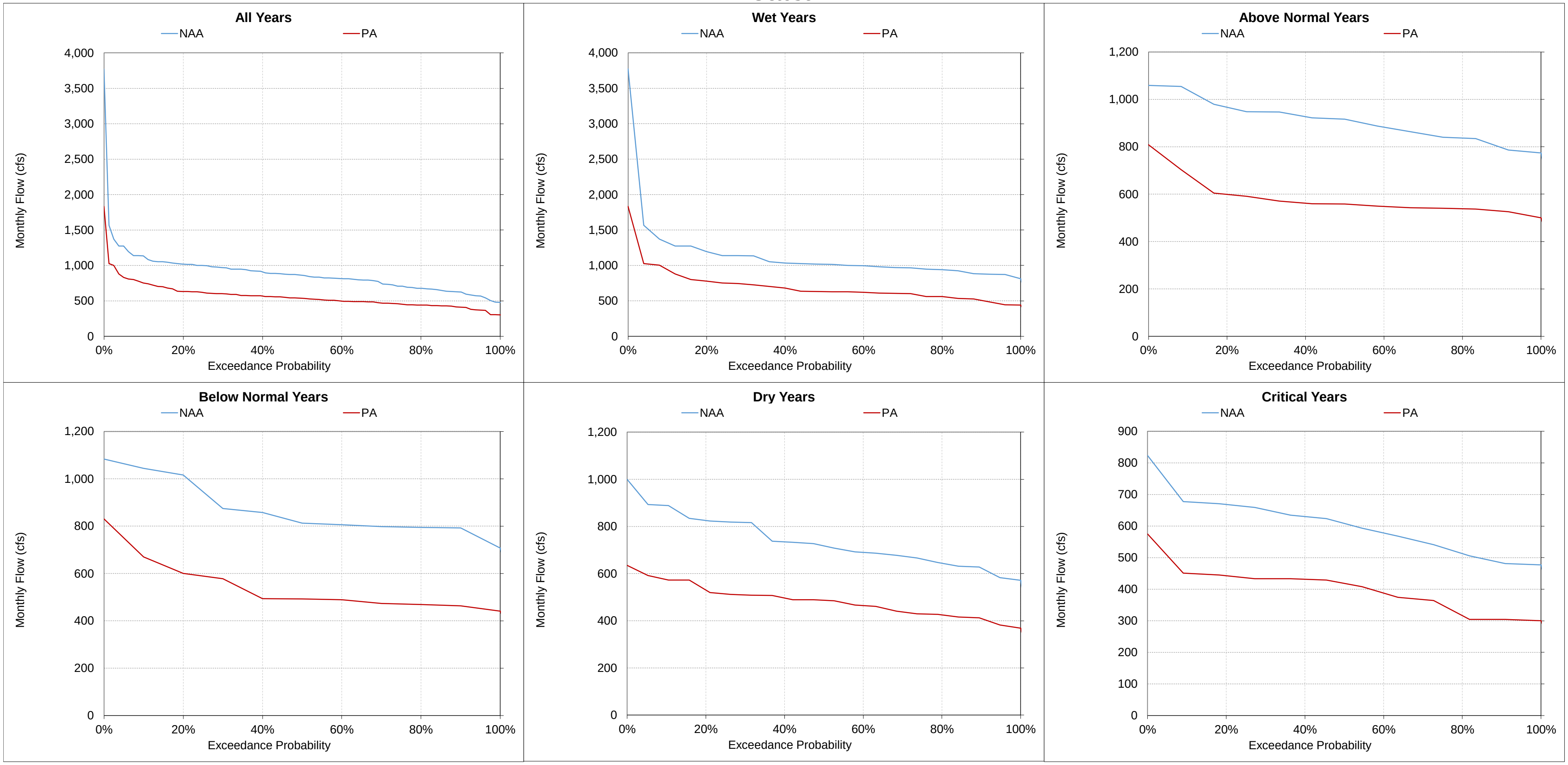


Figure 5.B.5-8-7. Head of Old River, Monthly Flow Probability of Exceedance



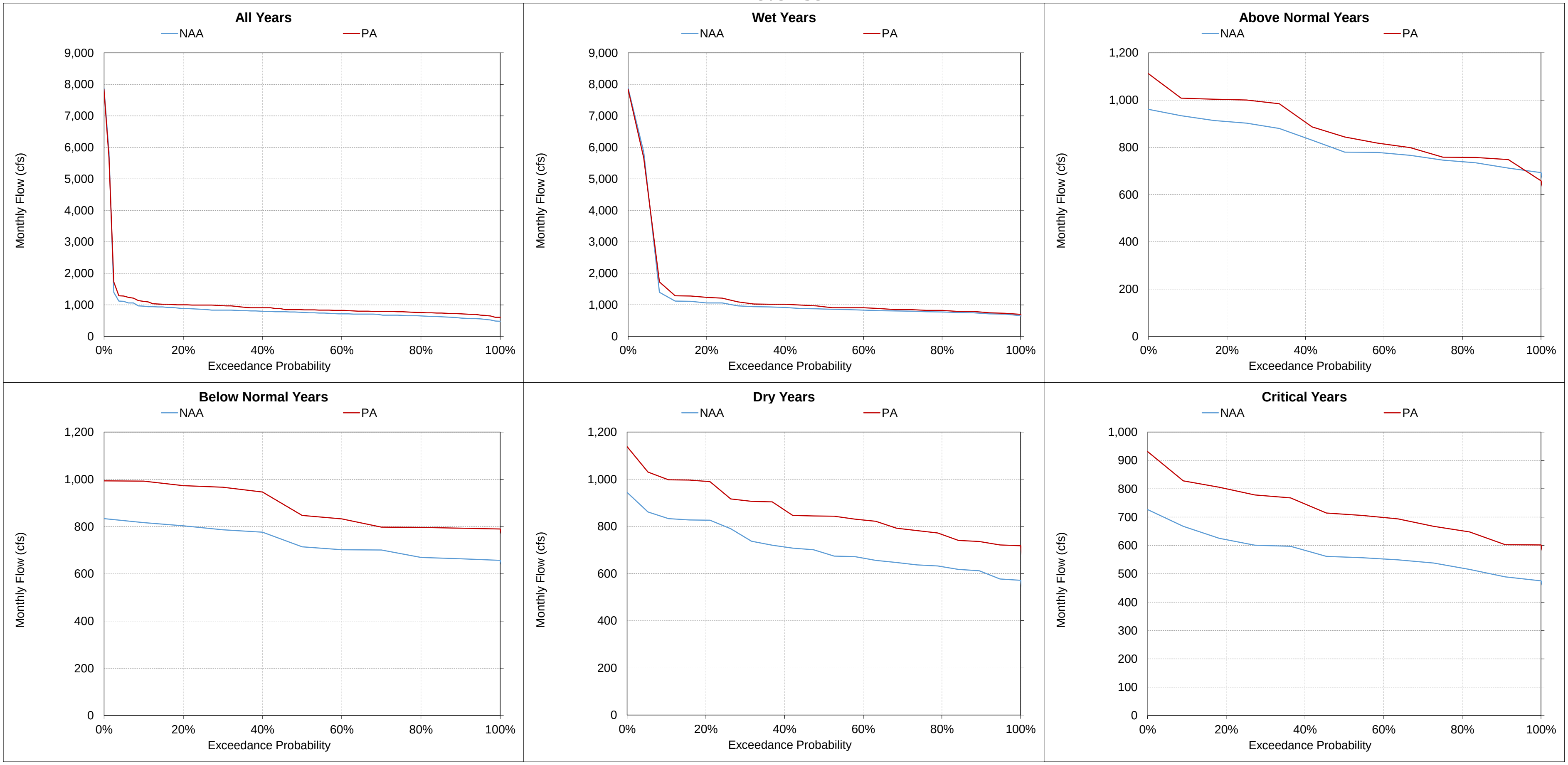
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-8. Head of Old River, Monthly Flow October



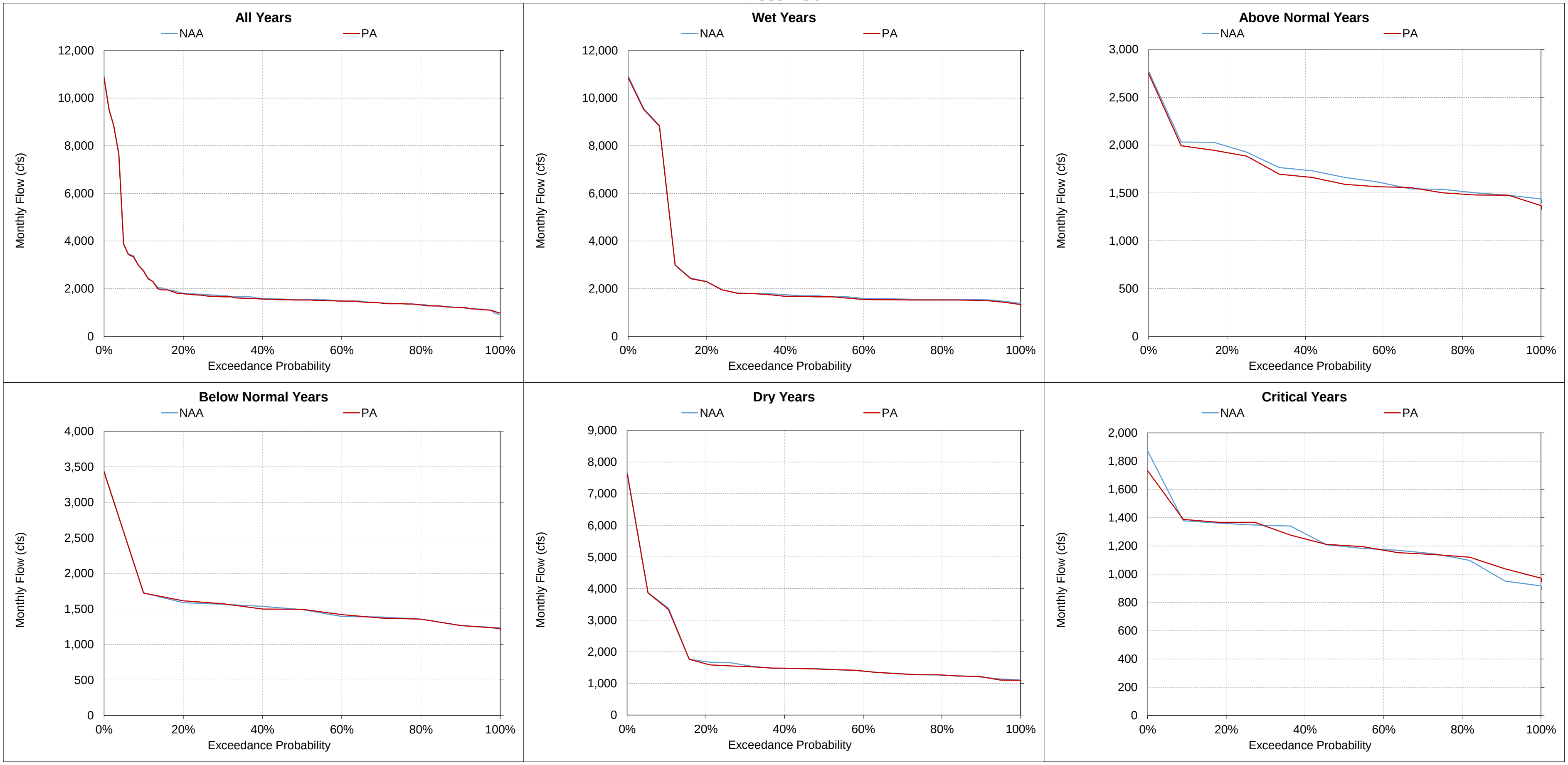
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-9. Head of Old River, Monthly Flow November



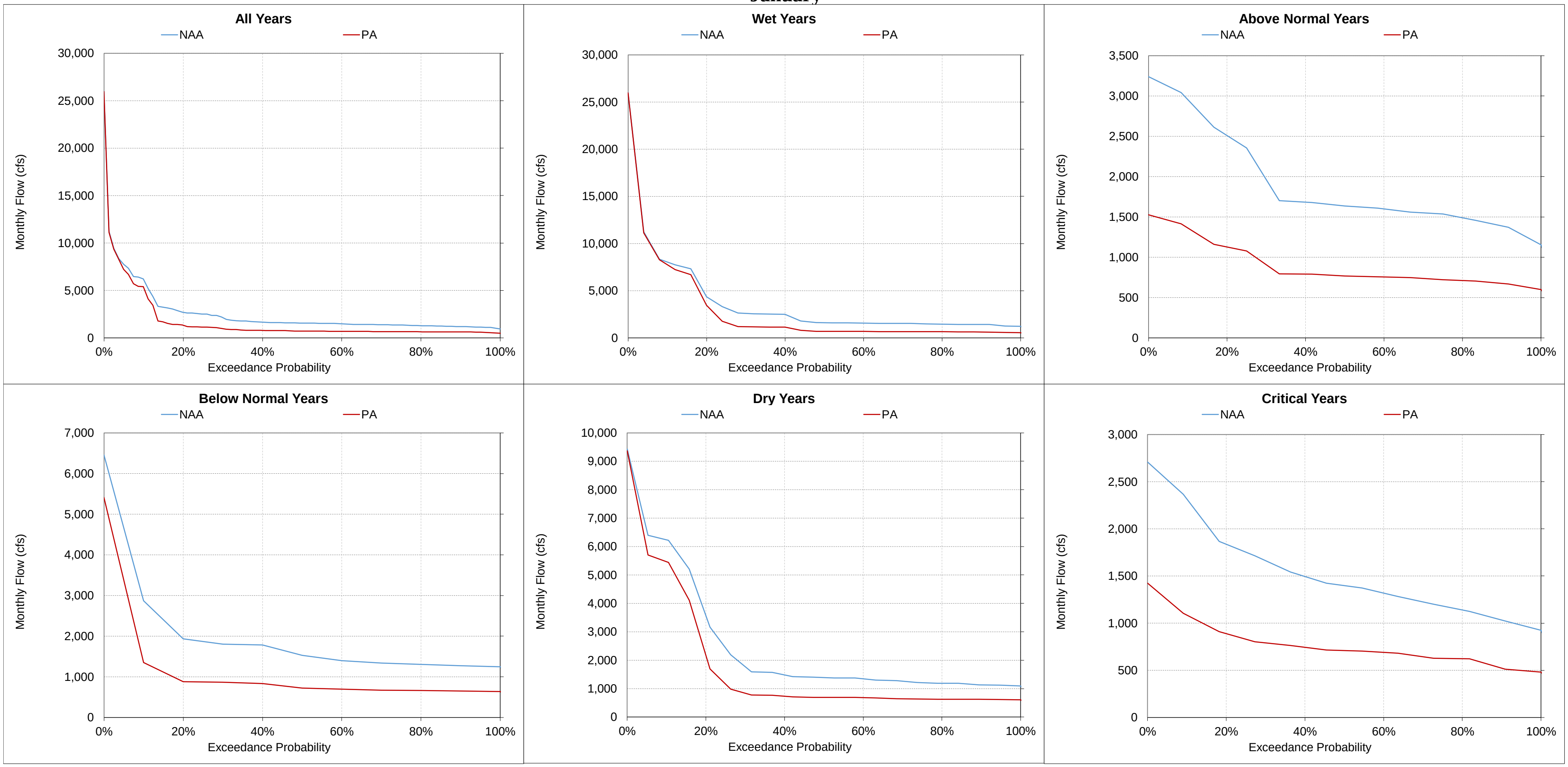
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-10. Head of Old River, Monthly Flow December



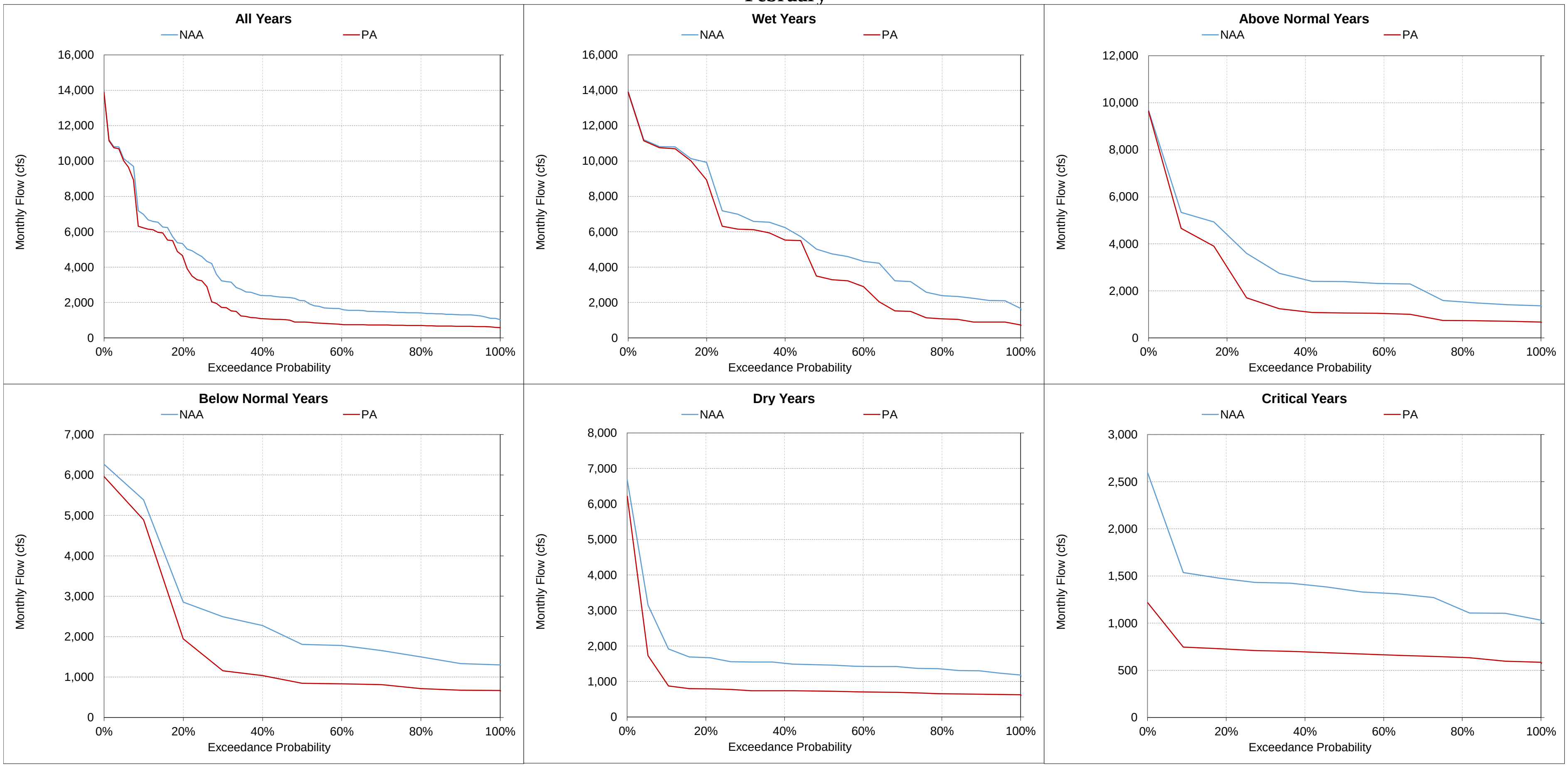
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-11. Head of Old River, Monthly Flow
January



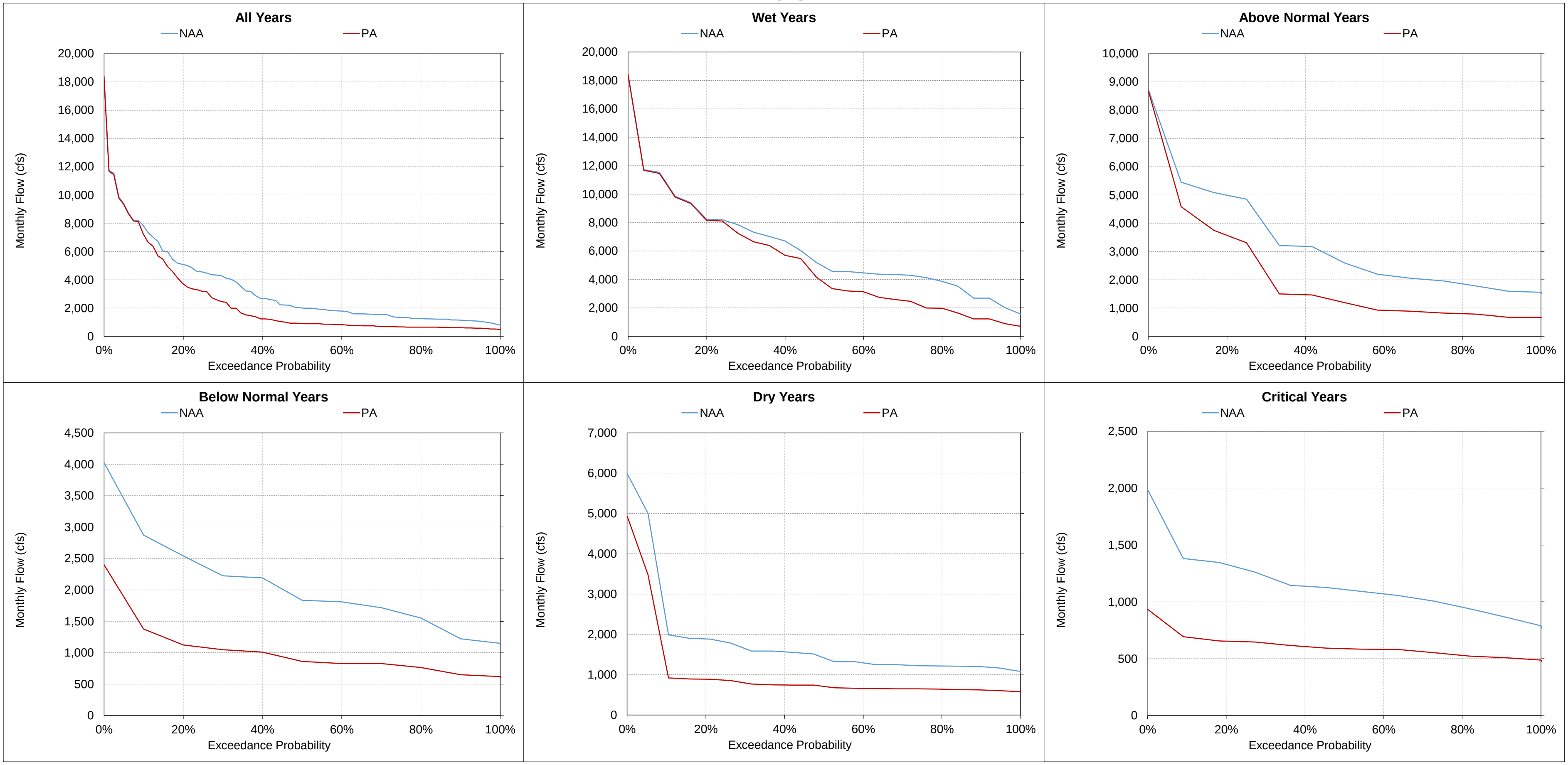
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-12. Head of Old River, Monthly Flow
February



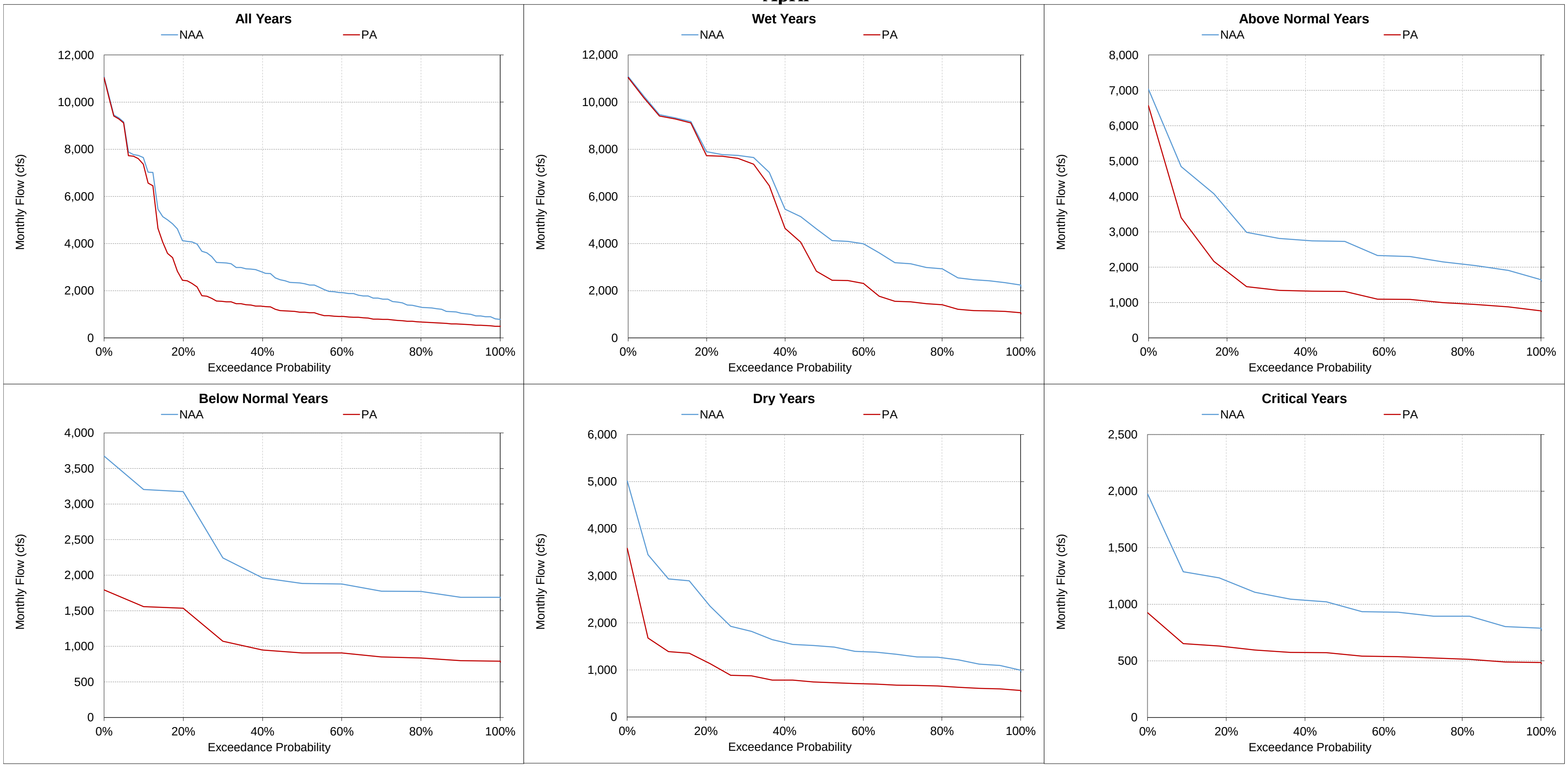
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-13. Head of Old River, Monthly Flow
March



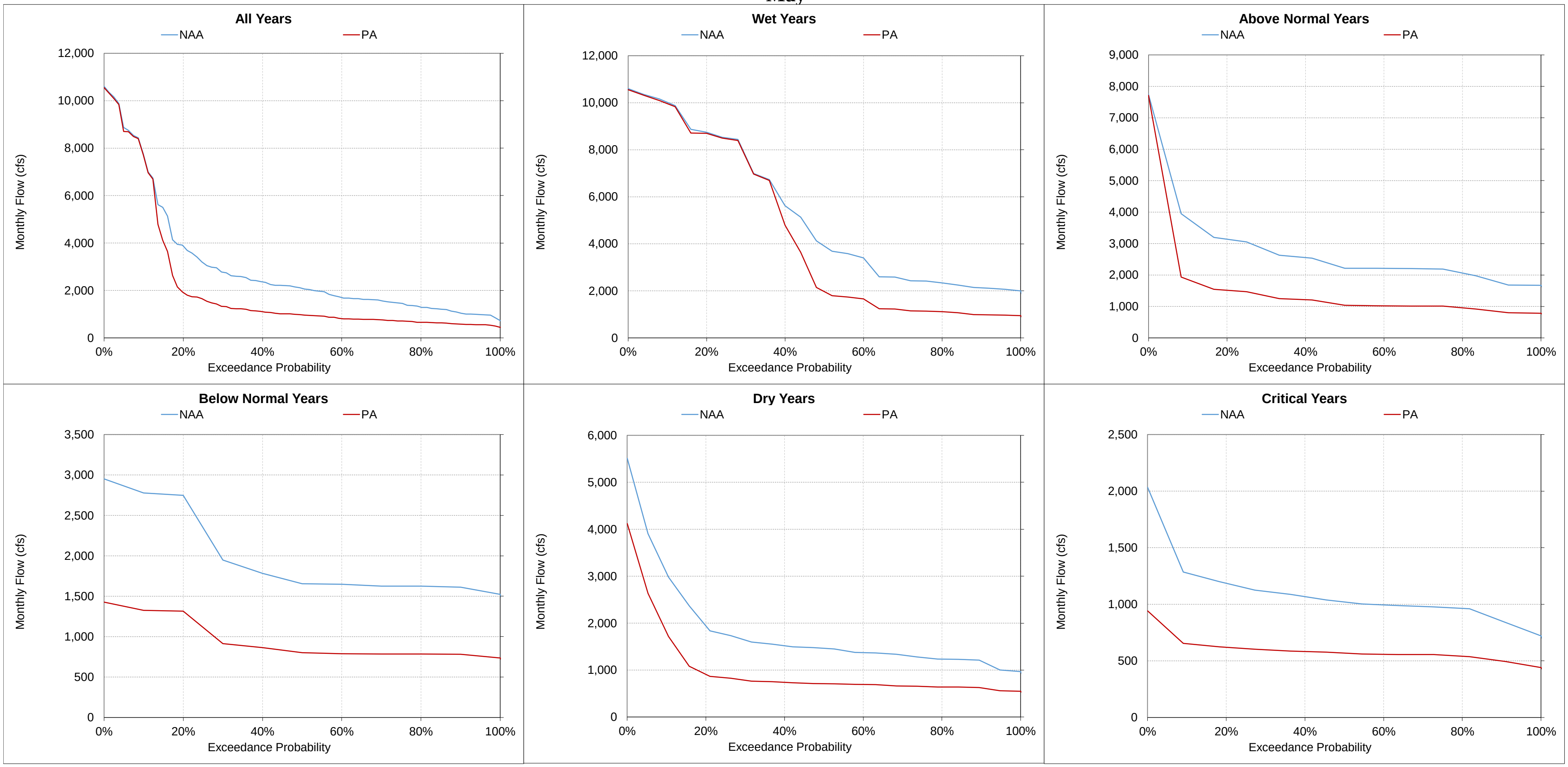
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-14. Head of Old River, Monthly Flow
April



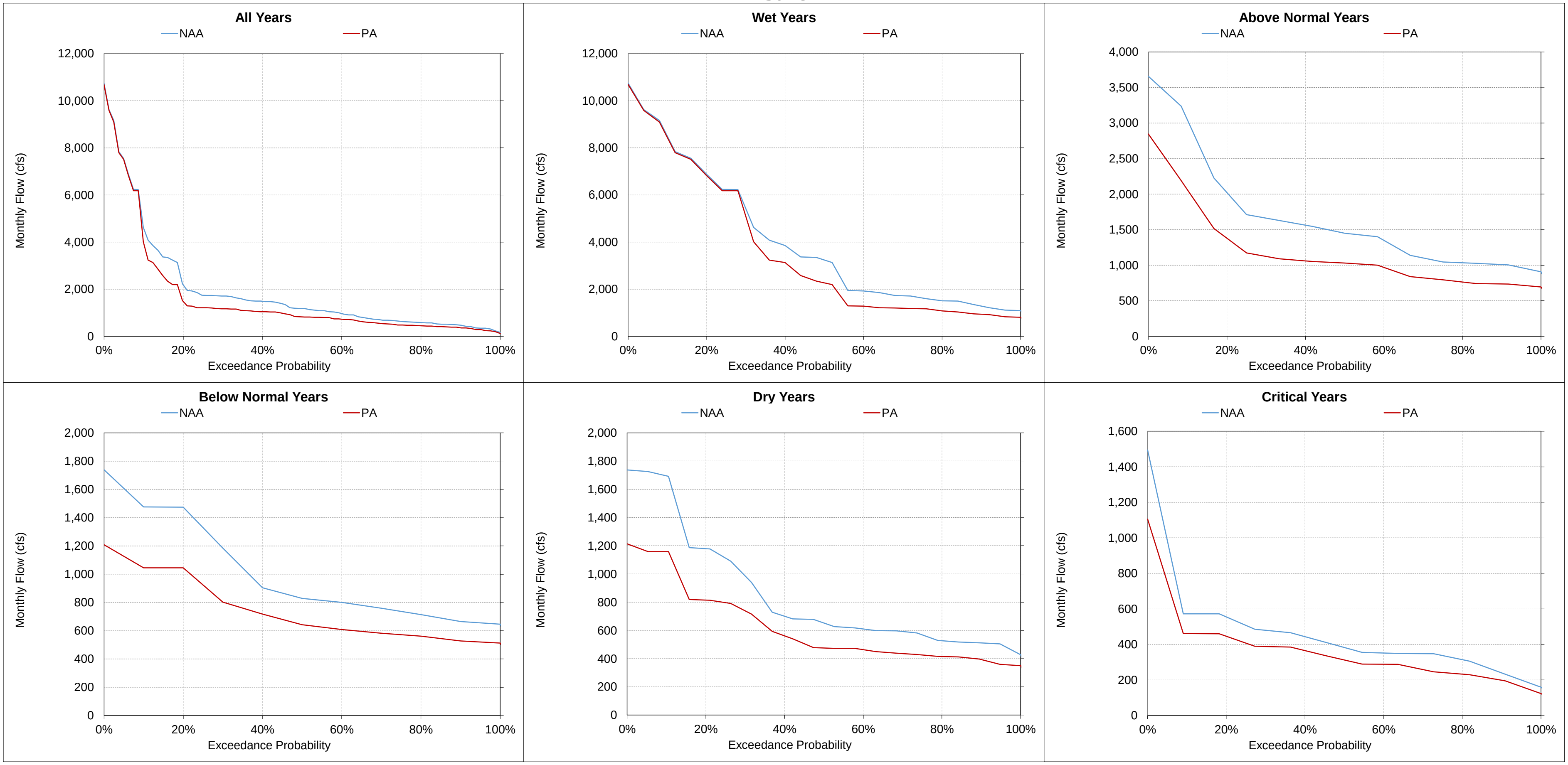
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-15. Head of Old River, Monthly Flow
May



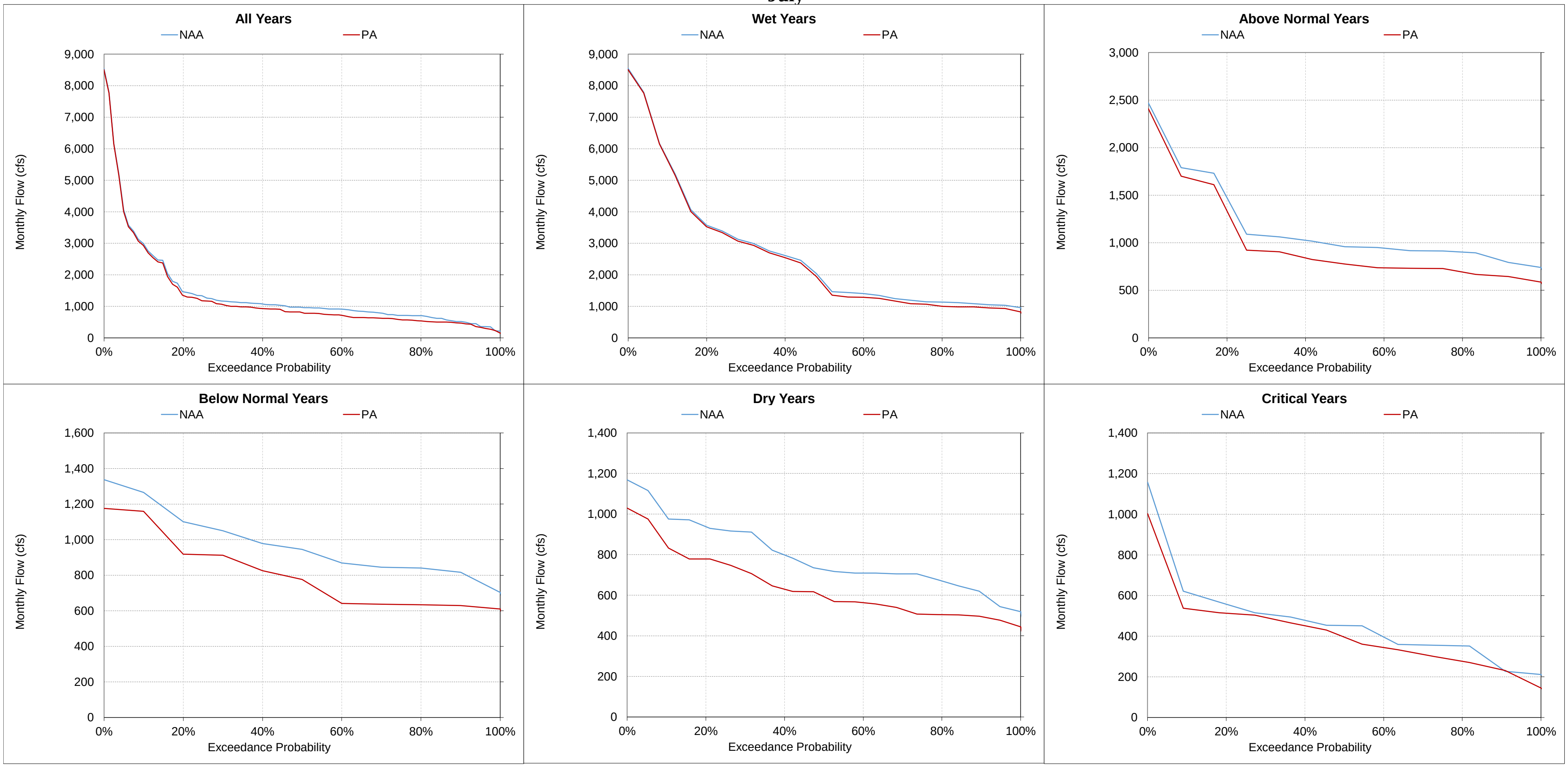
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-16. Head of Old River, Monthly Flow
June



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-17. Head of Old River, Monthly Flow July



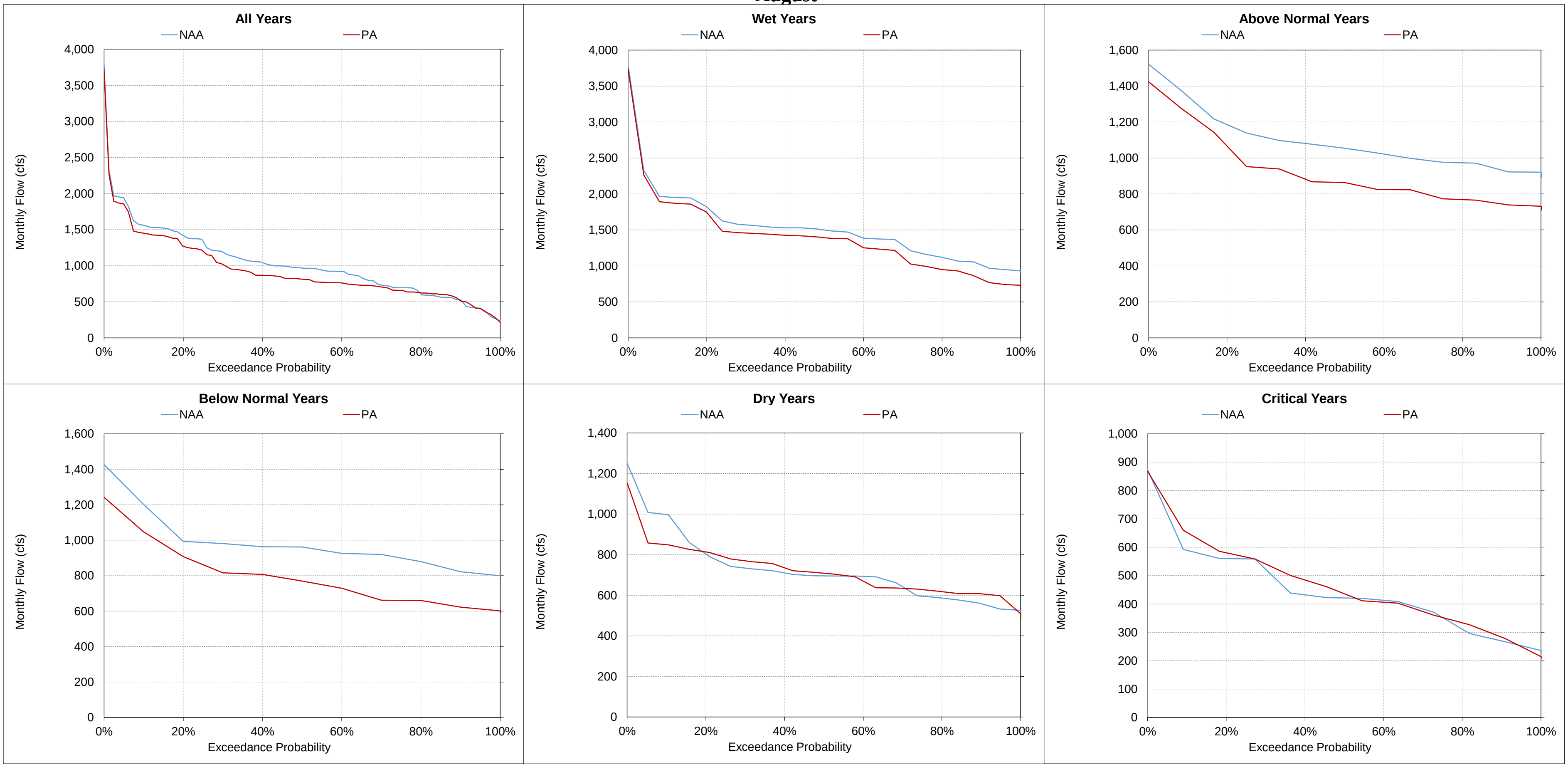
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-18. Head of Old River, Monthly Flow August



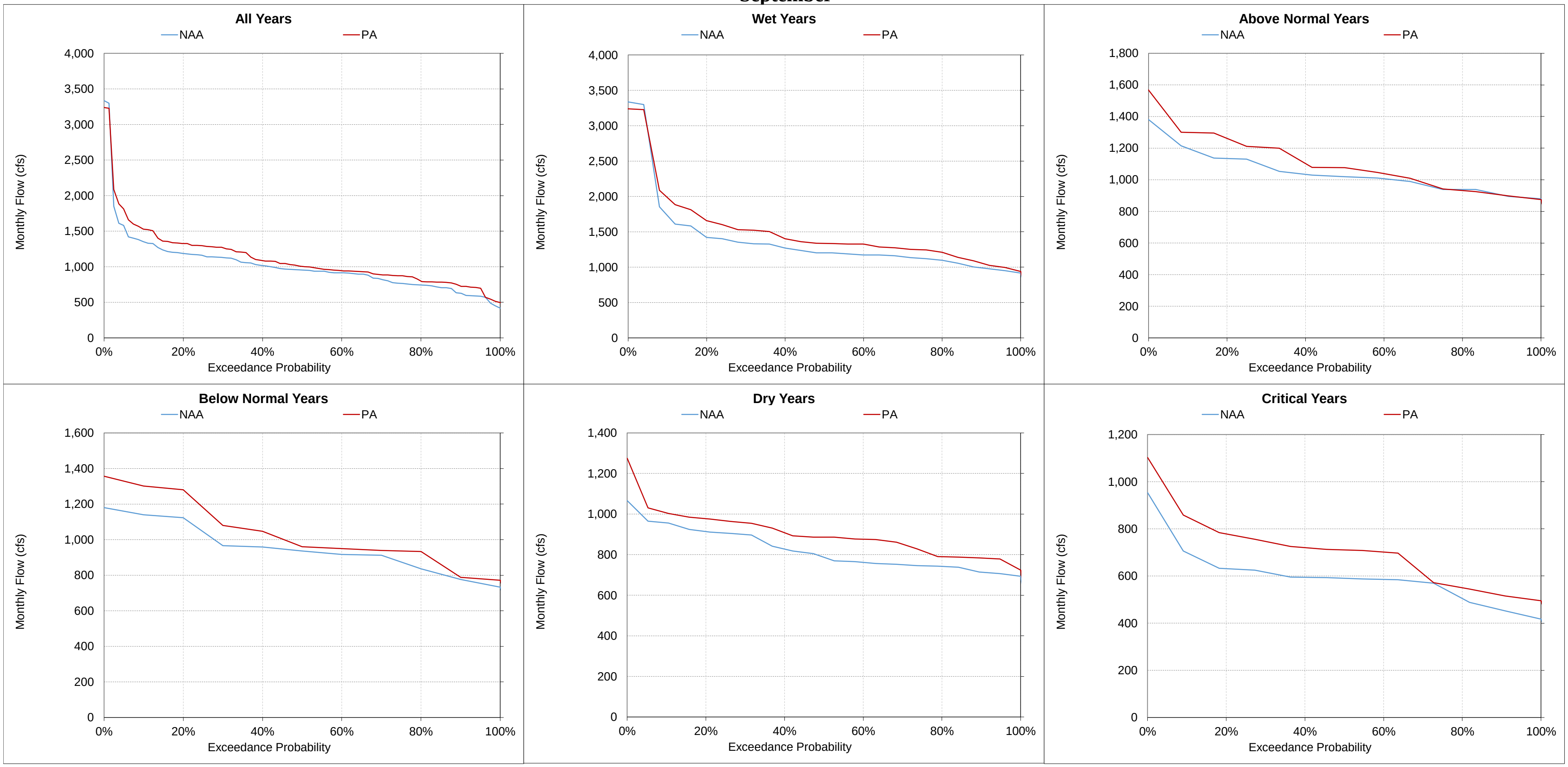
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-8-19. Head of Old River, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-9. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	177	177	0	0%	177	177	0	0%	179	179	0	0%	181	182	0	0%	180	180	0	0%	177	177	0	0%
20%	176	176	0	0%	176	176	0	0%	178	178	0	0%	181	181	0	0%	179	179	0	0%	177	177	0	0%
30%	176	176	0	0%	176	176	0	0%	177	177	0	0%	180	179	0	0%	178	178	0	0%	177	177	0	0%
40%	176	176	0	0%	176	176	0	0%	177	177	0	0%	179	179	0	0%	177	178	0	0%	176	176	0	0%
50%	176	176	0	0%	176	176	0	0%	176	176	0	0%	179	179	0	0%	177	177	0	0%	176	176	0	0%
60%	176	176	0	0%	176	176	0	0%	176	176	0	0%	178	178	0	0%	177	177	0	0%	176	176	0	0%
70%	176	176	0	0%	176	176	0	0%	176	176	0	0%	178	178	0	0%	176	177	0	0%	176	176	0	0%
80%	176	176	0	0%	175	176	0	0%	176	176	0	0%	177	177	0	0%	176	176	0	0%	176	176	0	0%
90%	175	176	0	0%	175	176	0	0%	175	176	0	0%	177	177	0	0%	176	176	0	0%	176	176	0	0%
Long Term Full Simulation Period[b]	176	176	0	0%	176	176	0	0%	177	177	0	0%	179	179	0	0%	178	178	0	0%	176	176	0	0%
Water Year Types[c]																								
Wet (32%)	176	176	0	0%	176	176	0	0%	177	177	0	0%	178	178	0	0%	177	177	0	0%	176	176	0	0%
Above Normal (16%)	176	176	0	0%	176	176	0	0%	177	177	0	0%	179	180	0	0%	177	178	0	0%	176	176	0	0%
Below Normal (13%)	176	176	0	0%	176	176	0	0%	177	177	0	0%	180	180	0	0%	178	178	0	0%	176	176	0	0%
Dry (24%)	176	176	0	0%	176	176	0	0%	177	177	0	0%	178	178	0	0%	178	178	0	0%	176	177	0	0%
Critical (15%)	177	177	0	0%	176	176	0	0%	179	179	0	0%	180	180	0	0%	178	179	0	0%	177	177	0	0%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	177	177	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	177	0	0%
20%	177	177	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%
30%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%
40%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	1	0%
50%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%
60%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	175	176	0	0%
70%	176	176	0	0%	176	176	0	0%	176	176	0	0%	175	176	0	0%	176	176	0	0%	175	175	0	0%
80%	176	176	0	0%	175	175	0	0%	176	176	0	0%	175	176	0	0%	176	176	0	0%	175	175	0	0%
90%	175	175	0	0%	175	175	0	0%	176	176	0	0%	175	176	0	0%	176	176	0	0%	175	175	0	0%
Long Term Full Simulation Period[b]	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%
Water Year Types[c]																								
Wet (32%)	176	176	0	0%	175	175	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	175	175	0	0%
Above Normal (16%)	176	176	0	0%	176	176	0	0%	176	176	0	0%	175	176	0	0%	176	176	0	0%	175	176	0	0%
Below Normal (13%)	176	176	0	0%	176	176	0	0%	176	176	0	0%	175	176	0	0%	176	176	0	0%	176	176	0	0%
Dry (24%)	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%
Critical (15%)	177	177	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	176	0	0%	176	177	0	0%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-1. Monthly EC Ranges For Sacramento River downstream of Georgiana Slough Salinity, All Years

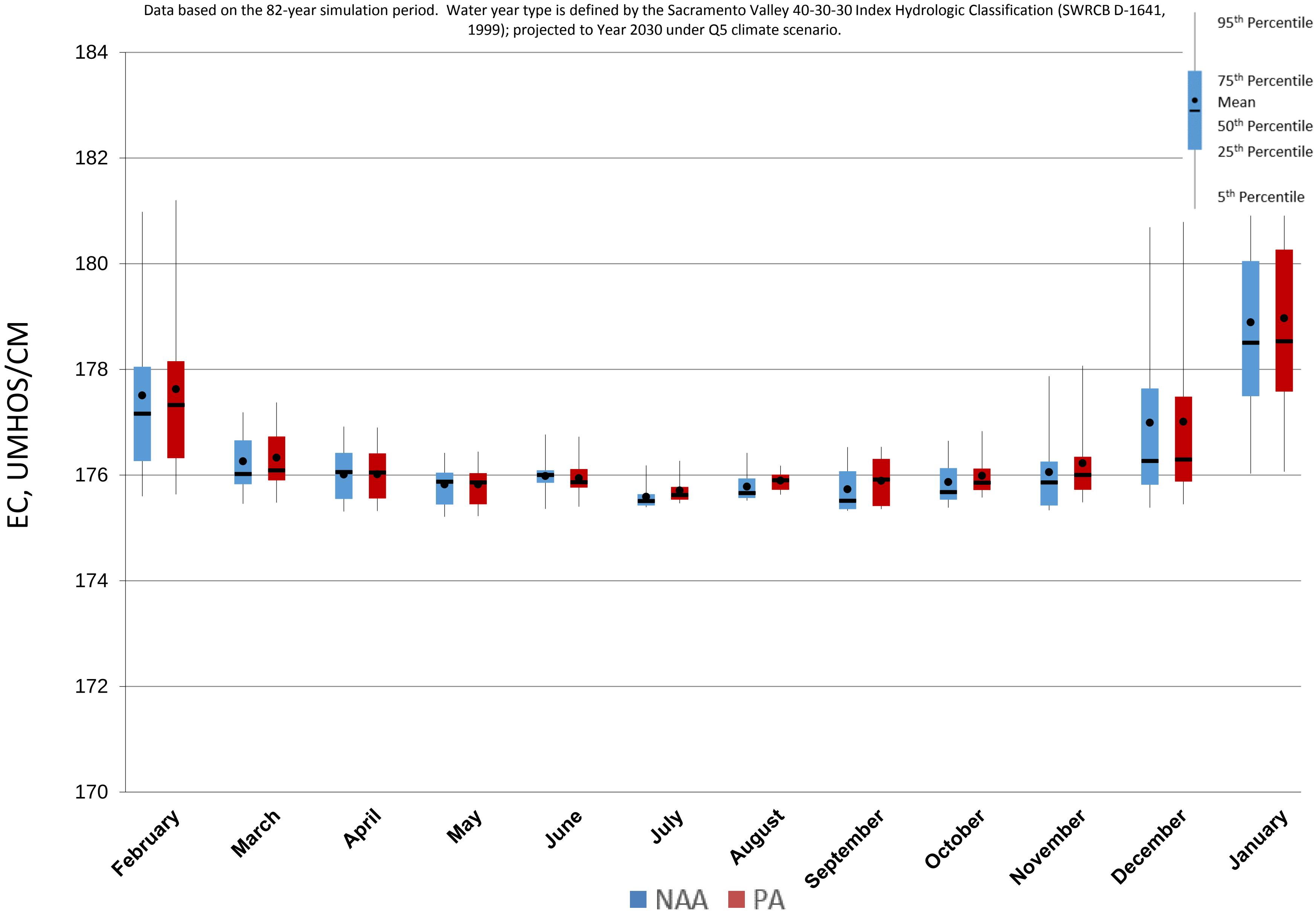


Figure 5.B.5-9-2. Monthly EC Ranges For Sacramento River downstream of Georgiana Slough Salinity, Wet Years

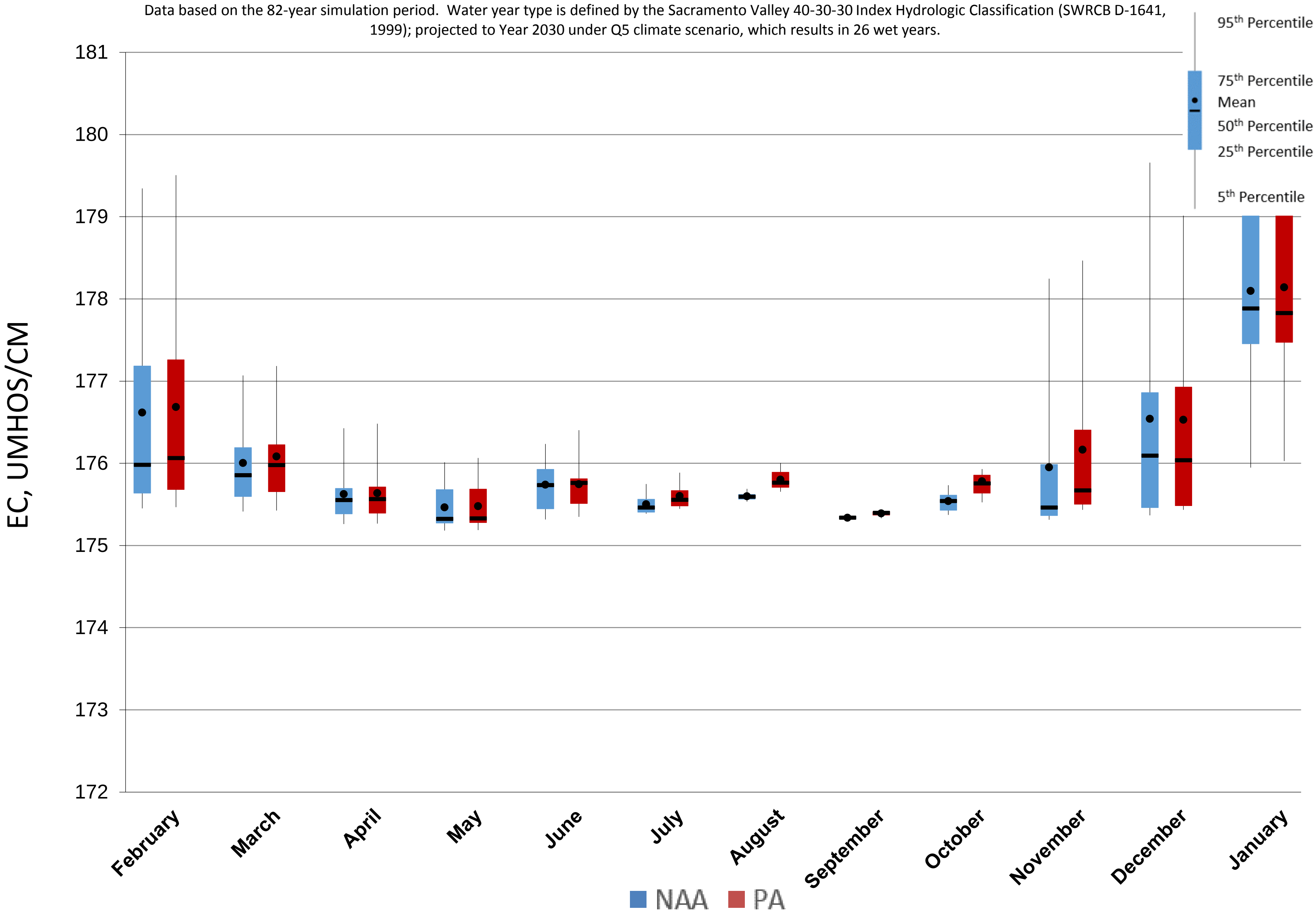


Figure 5.B.5-9-3. Monthly EC Ranges For Sacramento River downstream of Georgiana Slough Salinity, Above Normal Years

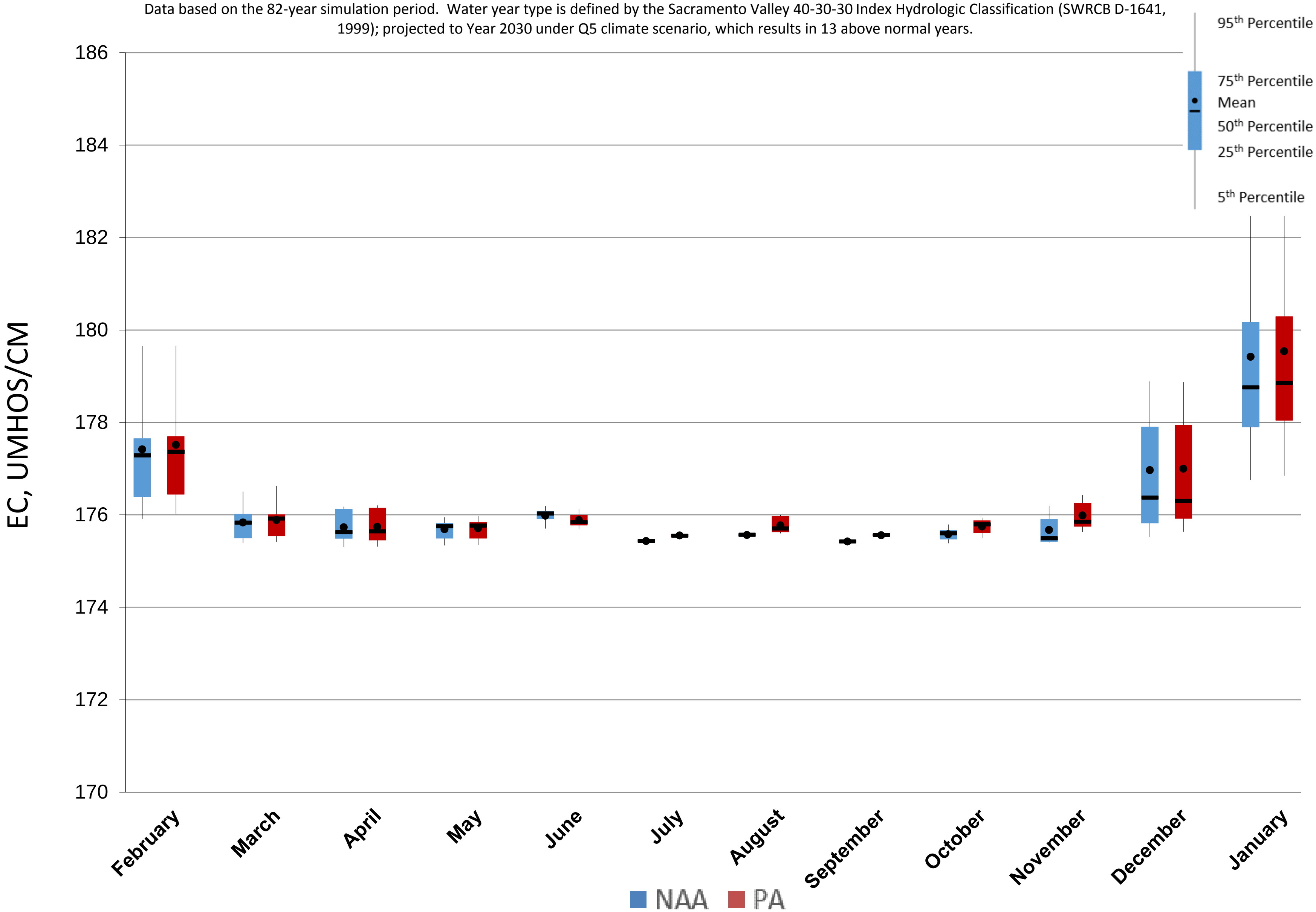


Figure 5.B.5-9-4. Monthly EC Ranges For Sacramento River downstream of Georgiana Slough Salinity, Below Normal Years

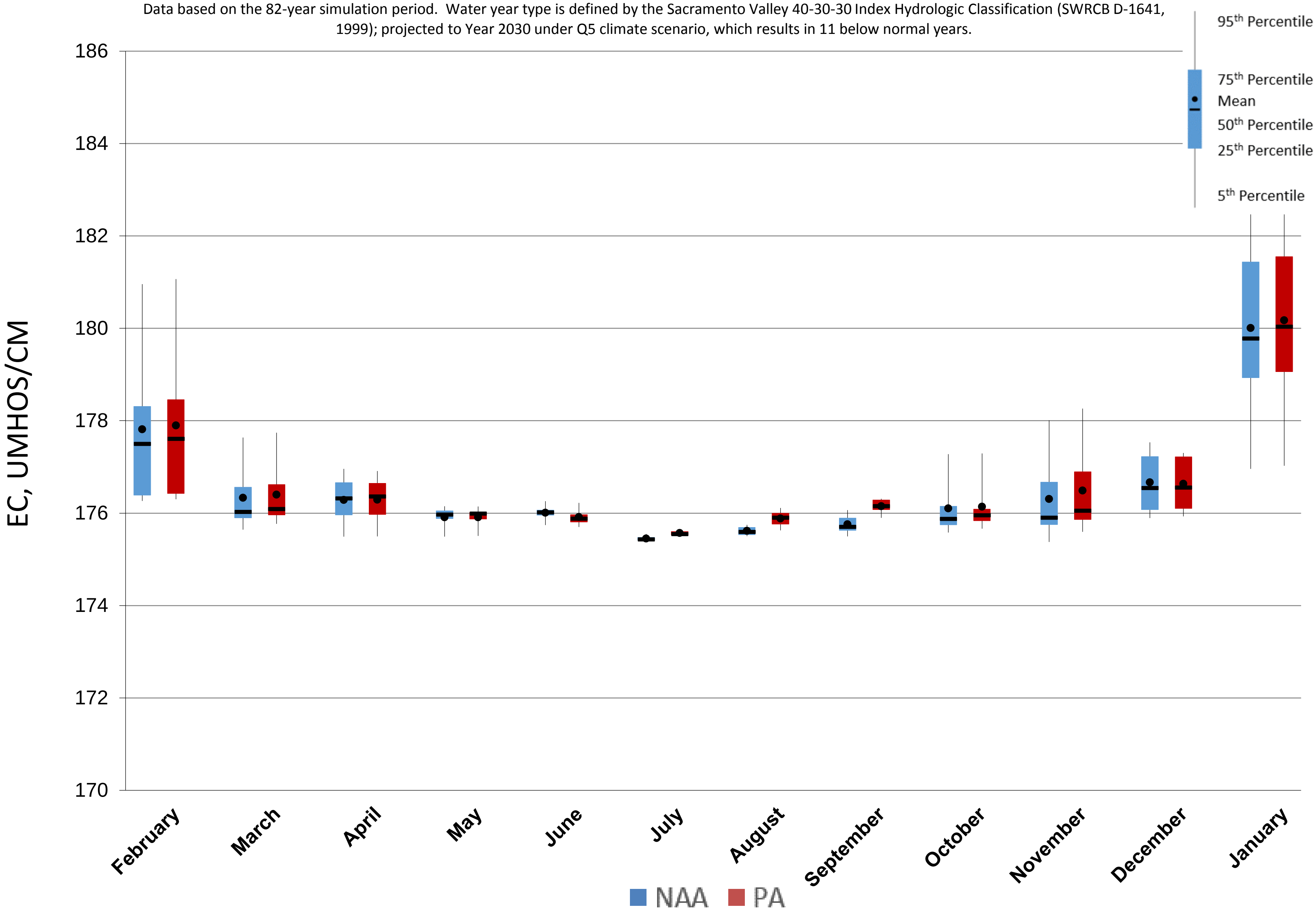


Figure 5.B.5-9-5. Monthly EC Ranges For Sacramento River downstream of Georgiana Slough Salinity, Dry Years

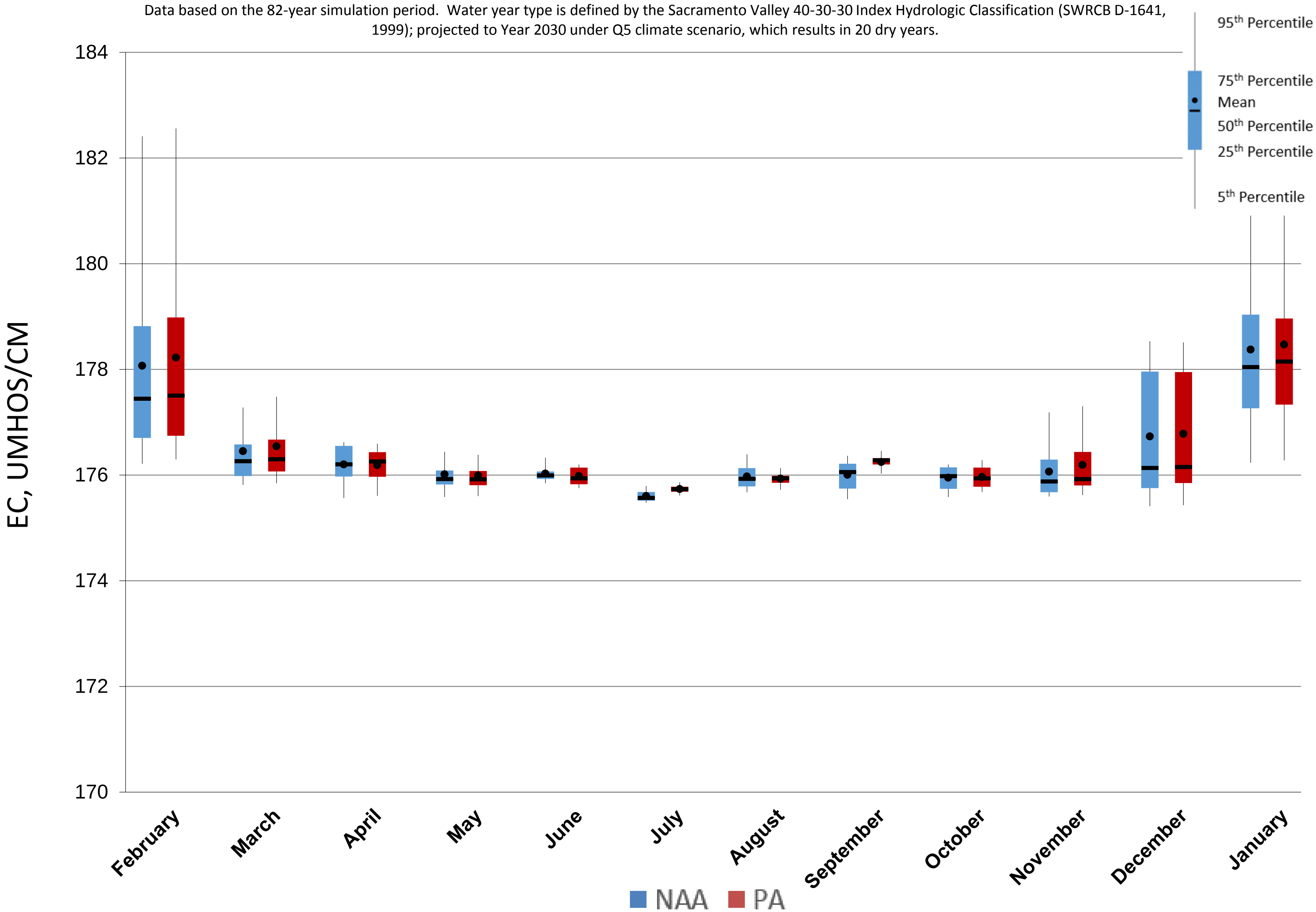


Figure 5.B.5-9-6. Monthly EC Ranges For Sacramento River downstream of Georgiana Slough Salinity, Critical Years

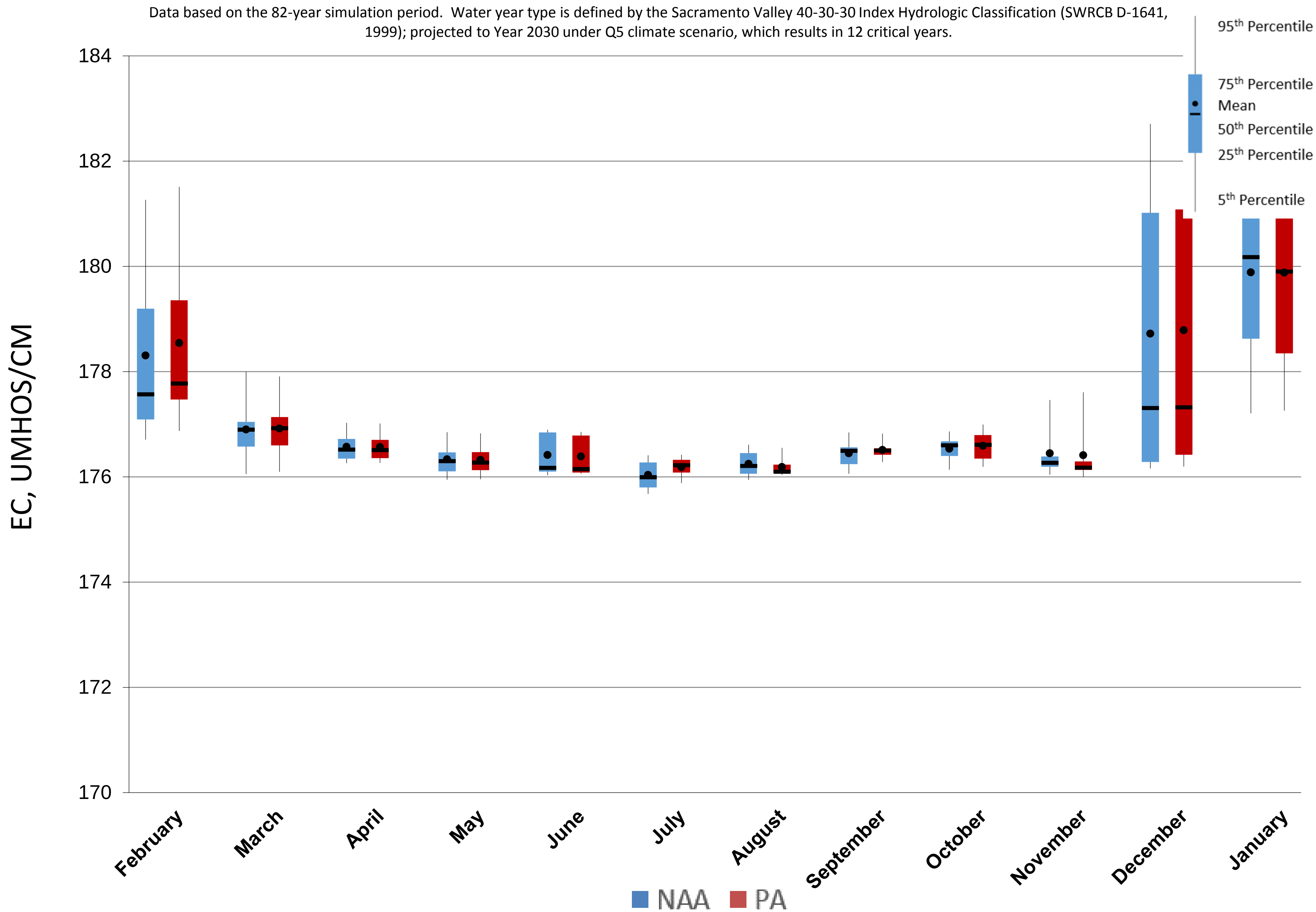
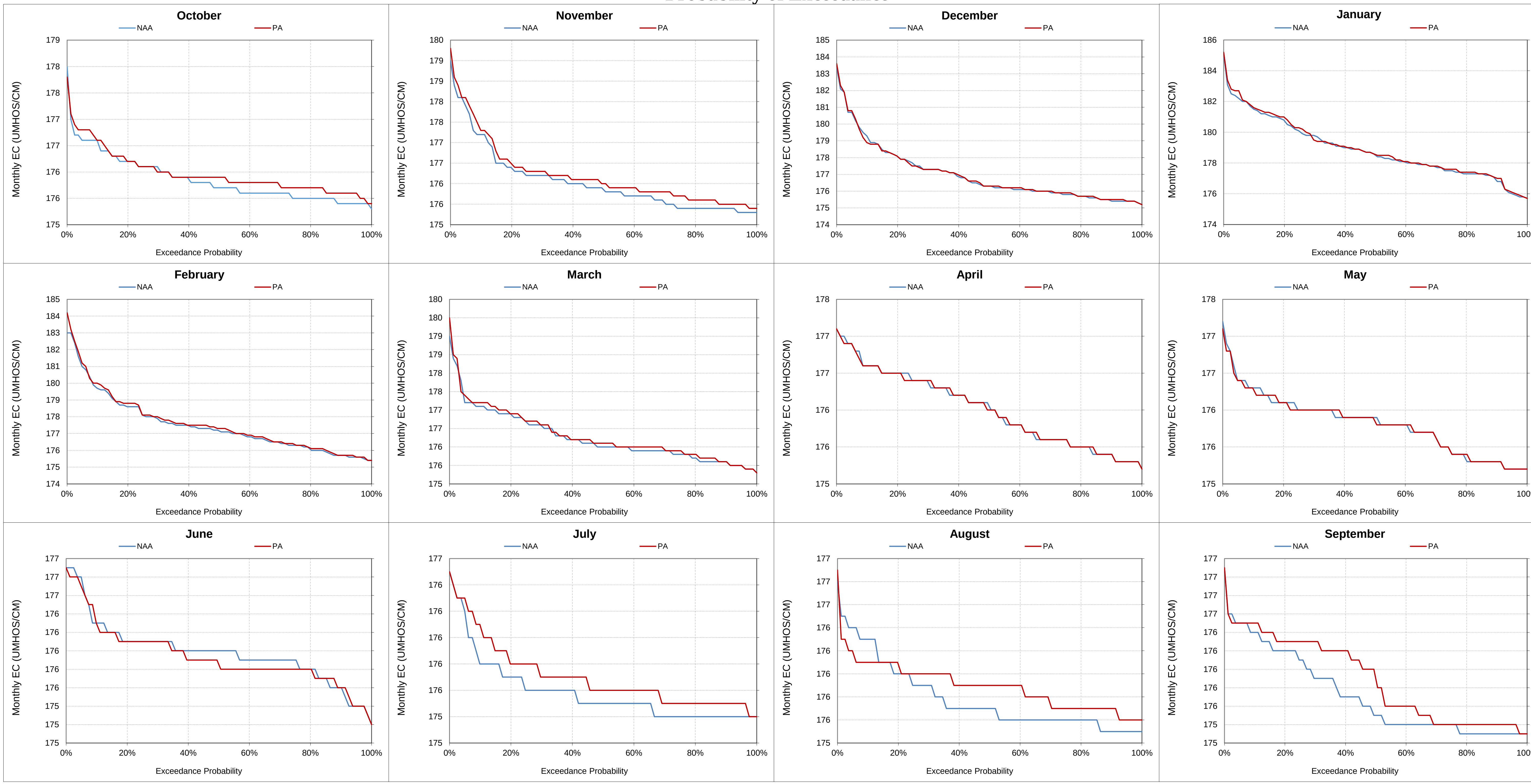
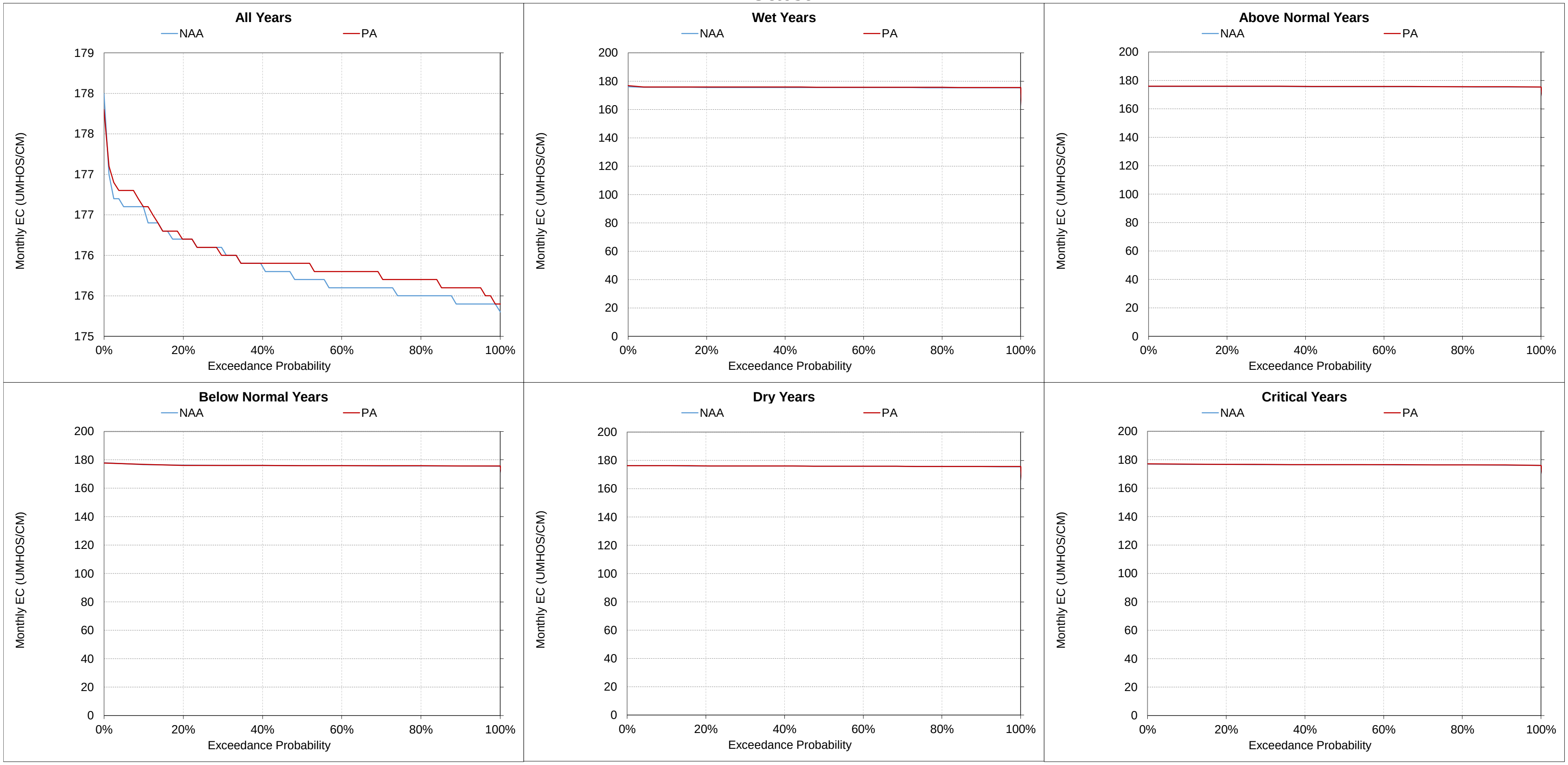


Figure 5.B.5-9-7. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC Probability of Exceedance



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-8. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC October



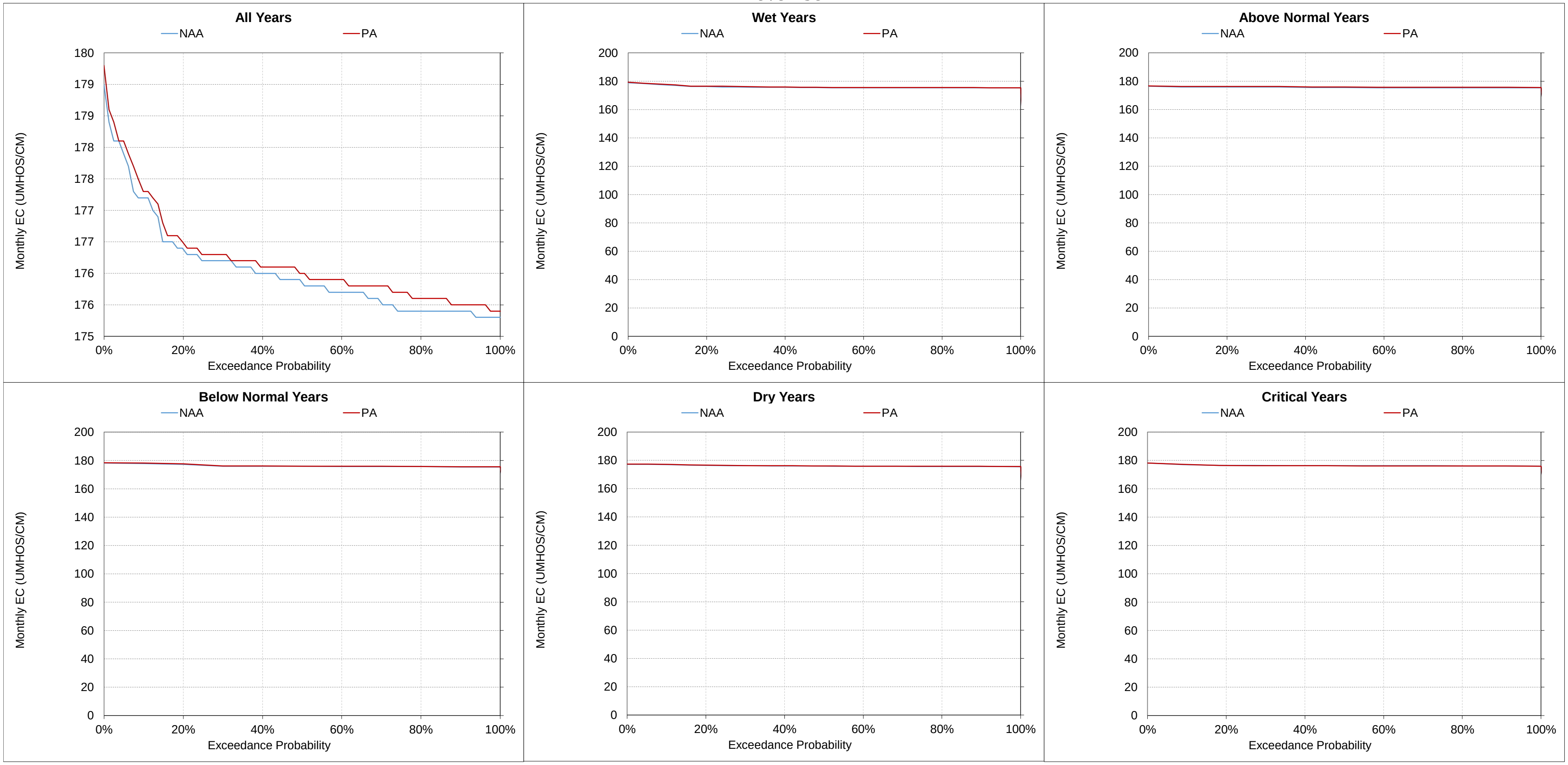
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

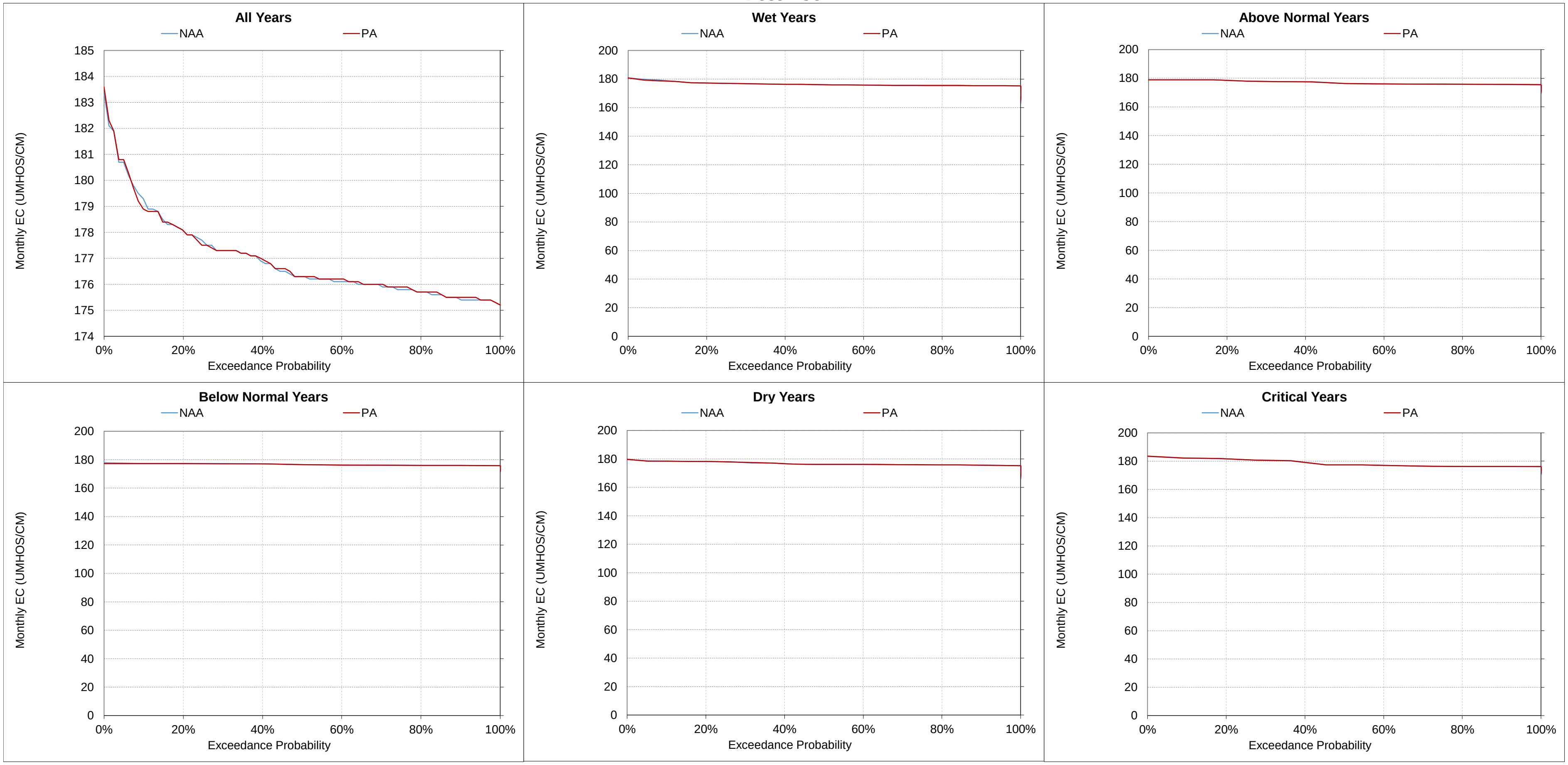
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-9. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC
November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-10. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC December



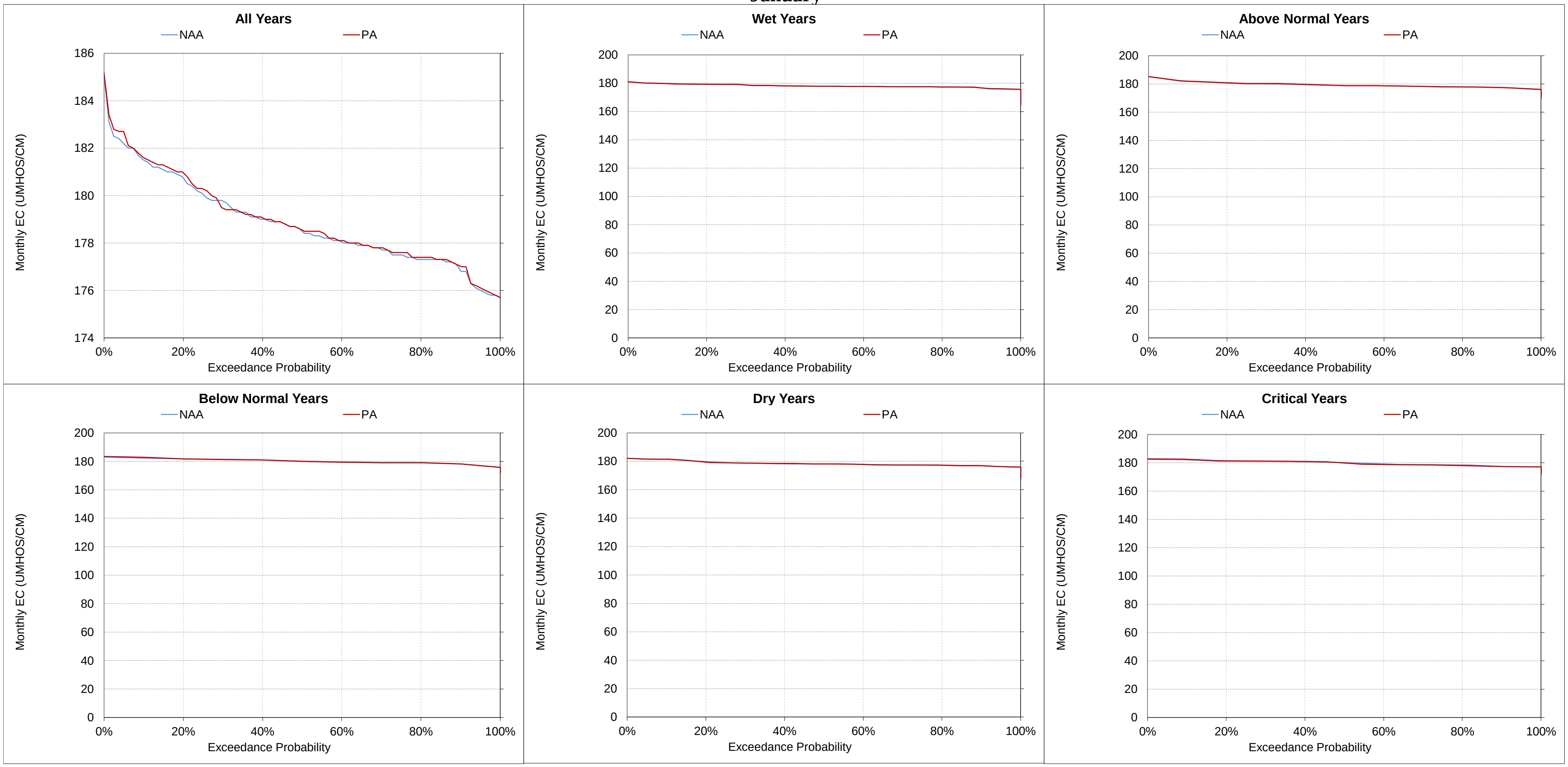
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

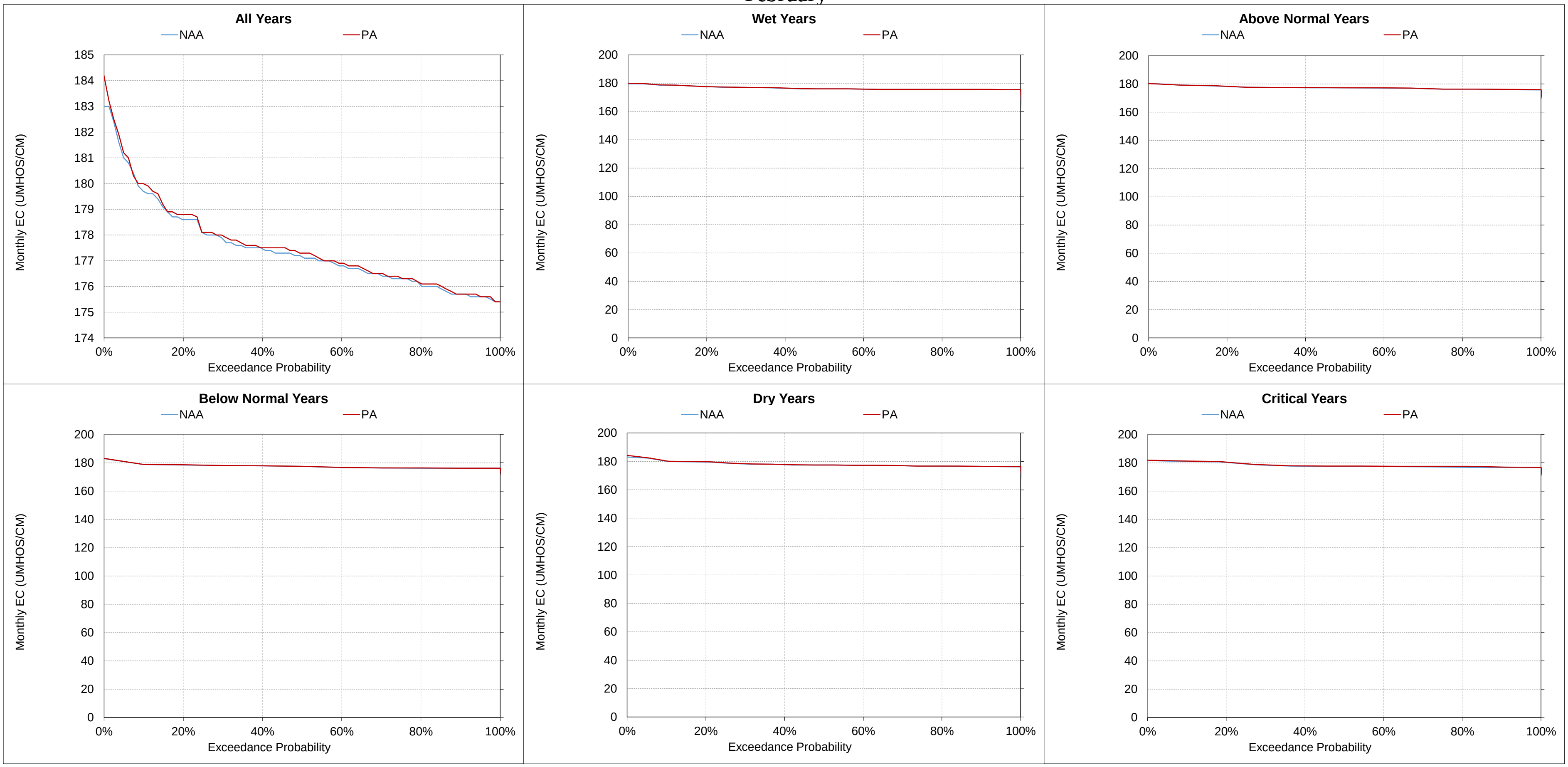
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-11. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC
January



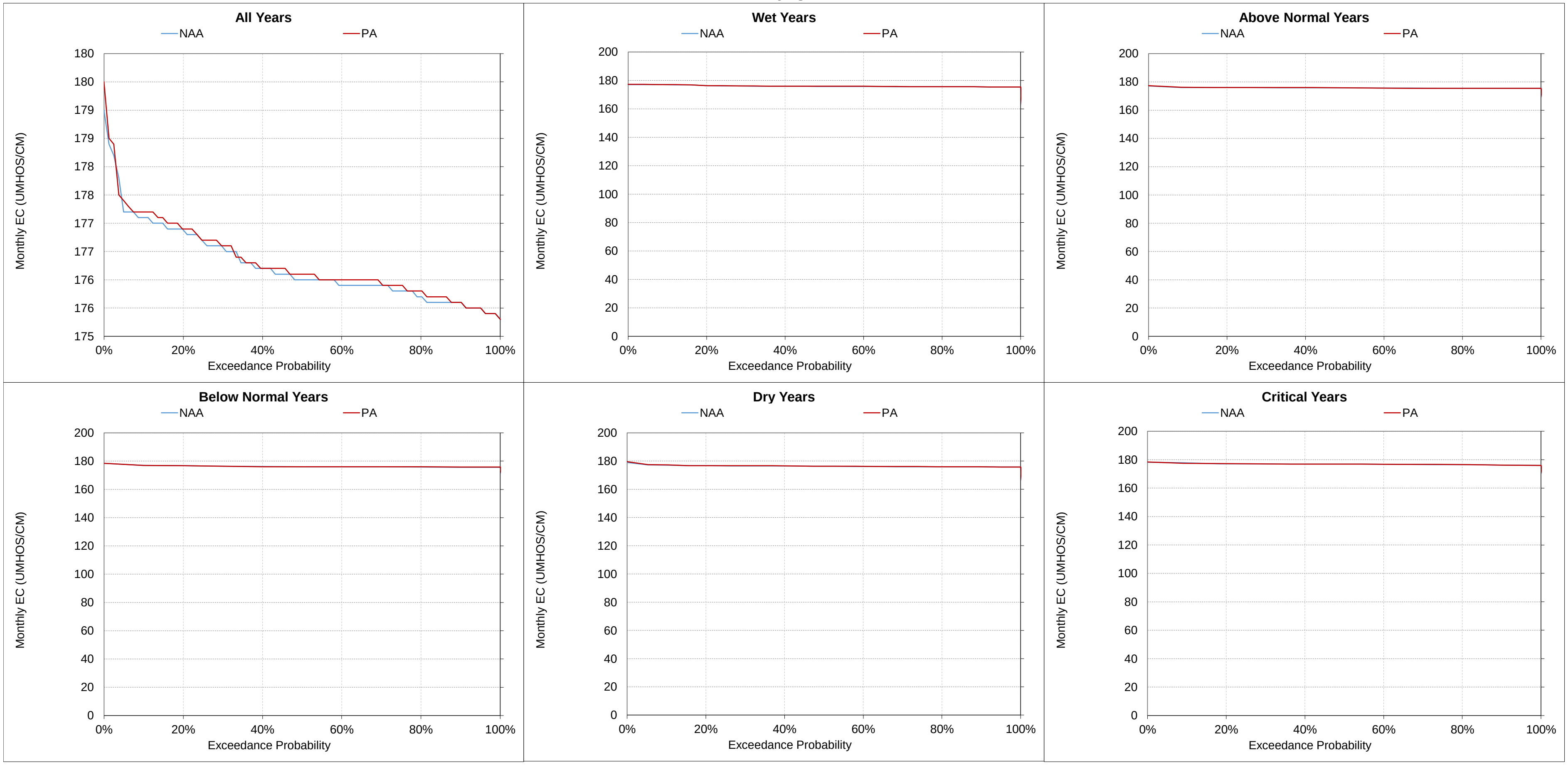
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-12. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC
February



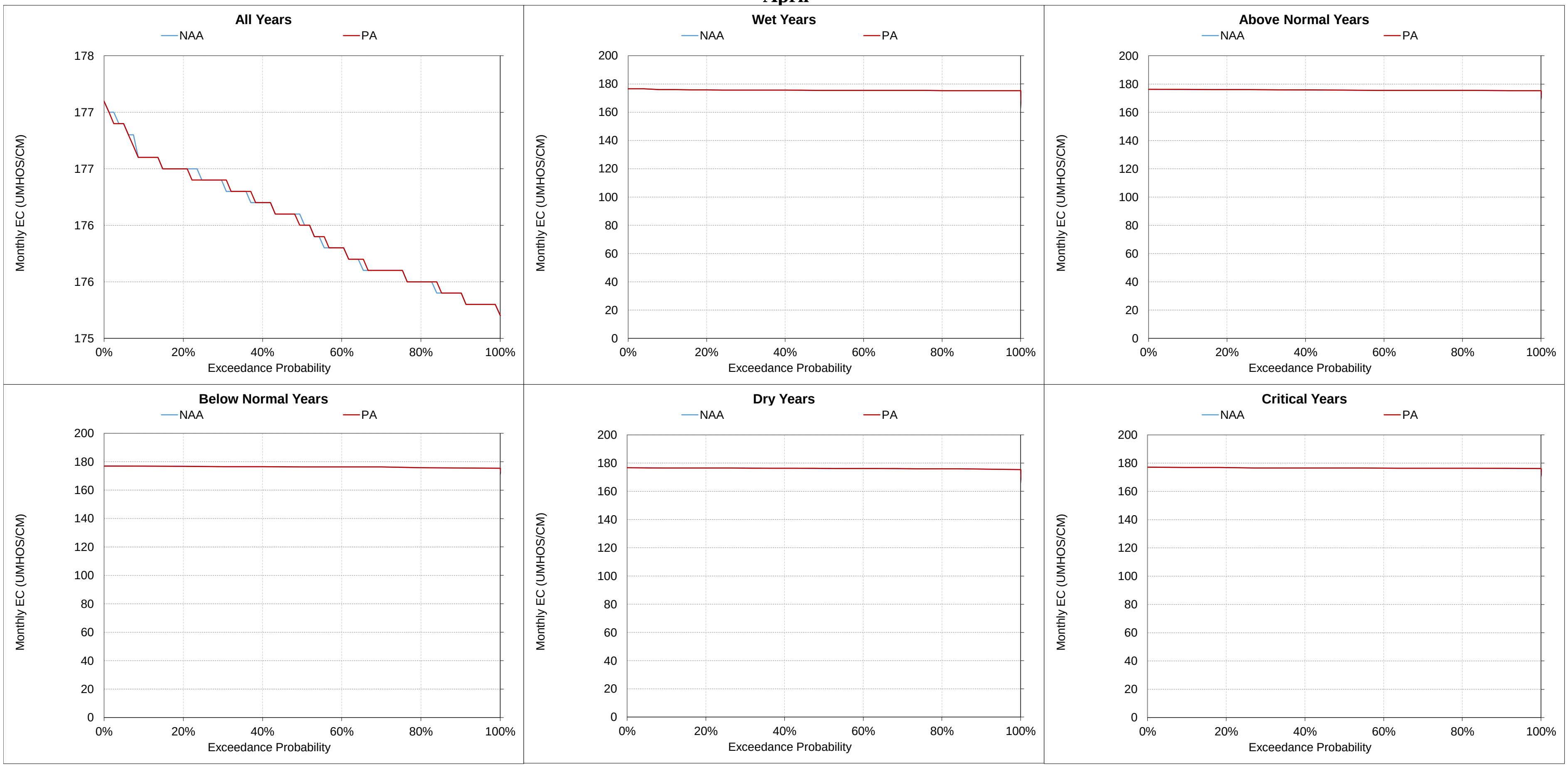
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-13. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC March



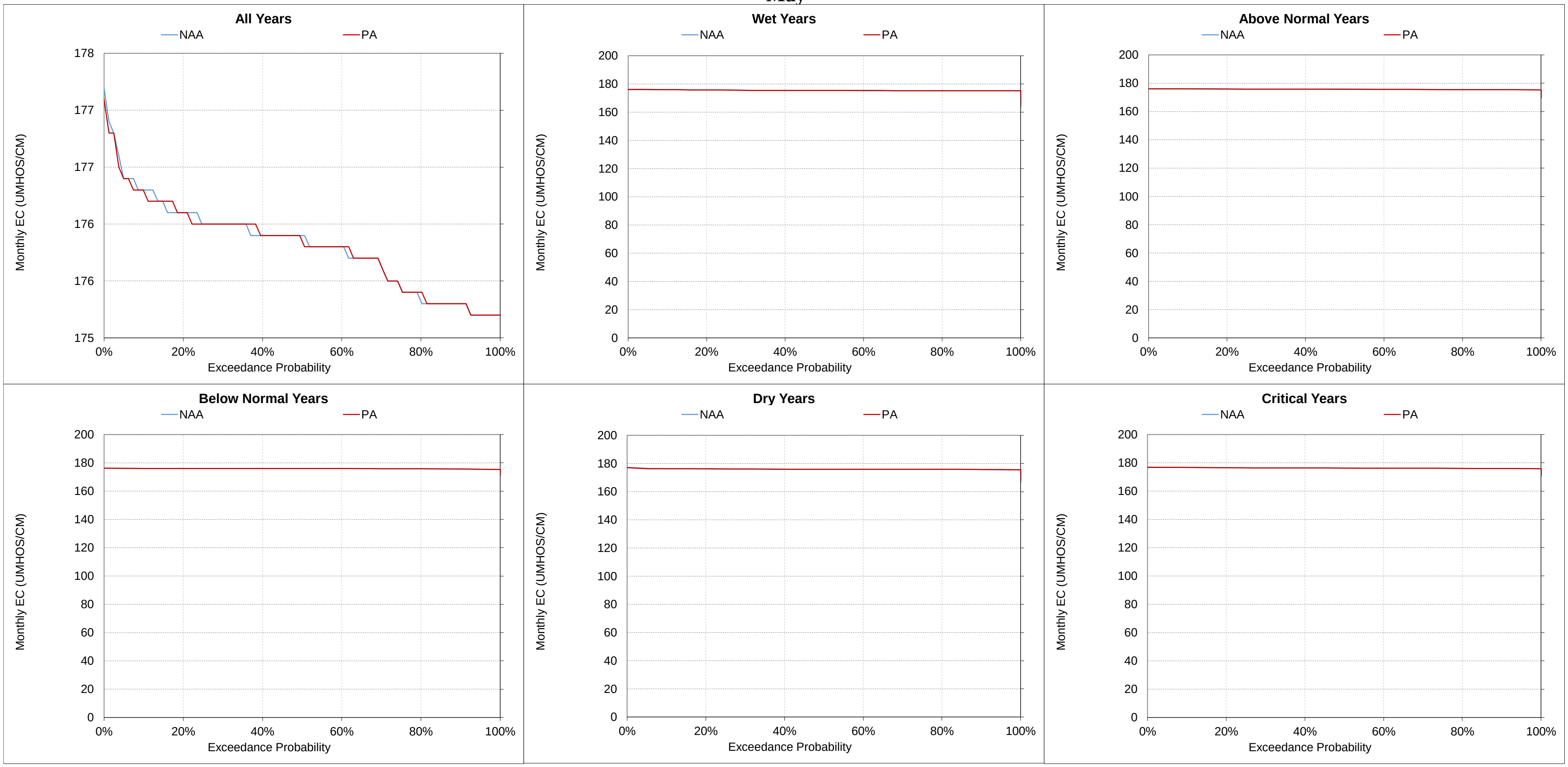
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-14. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-15. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC May



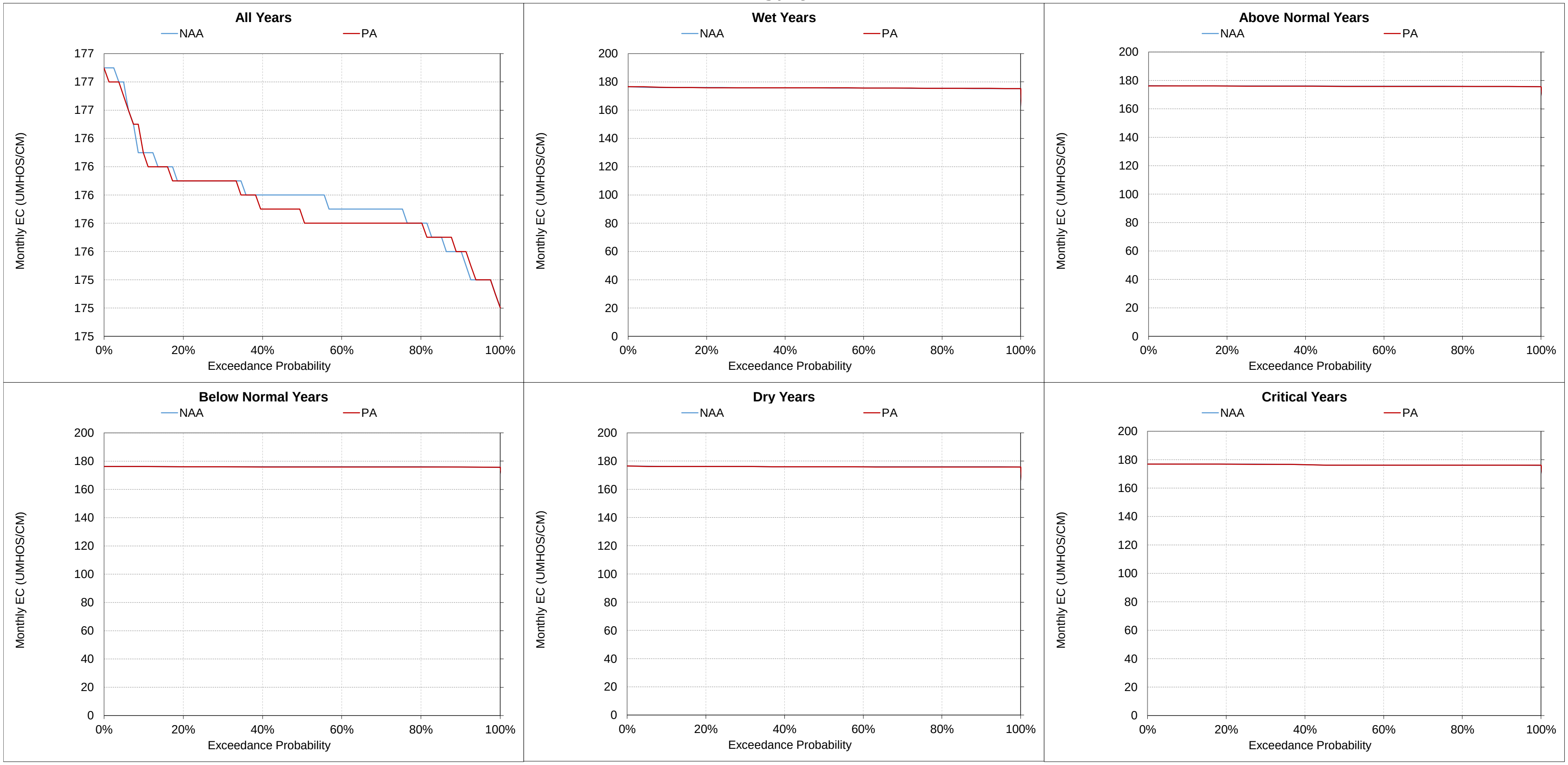
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

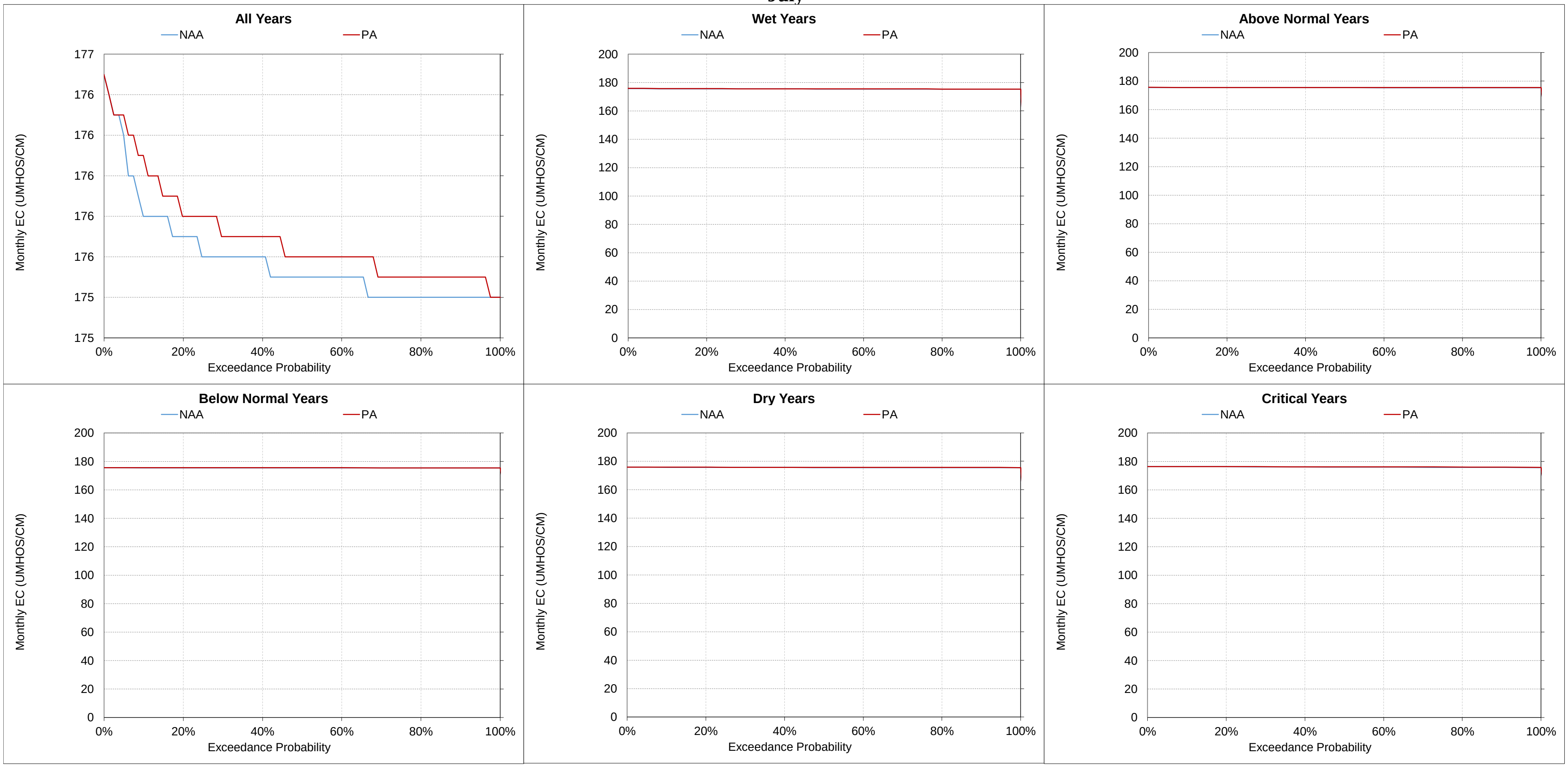
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-16. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC
June



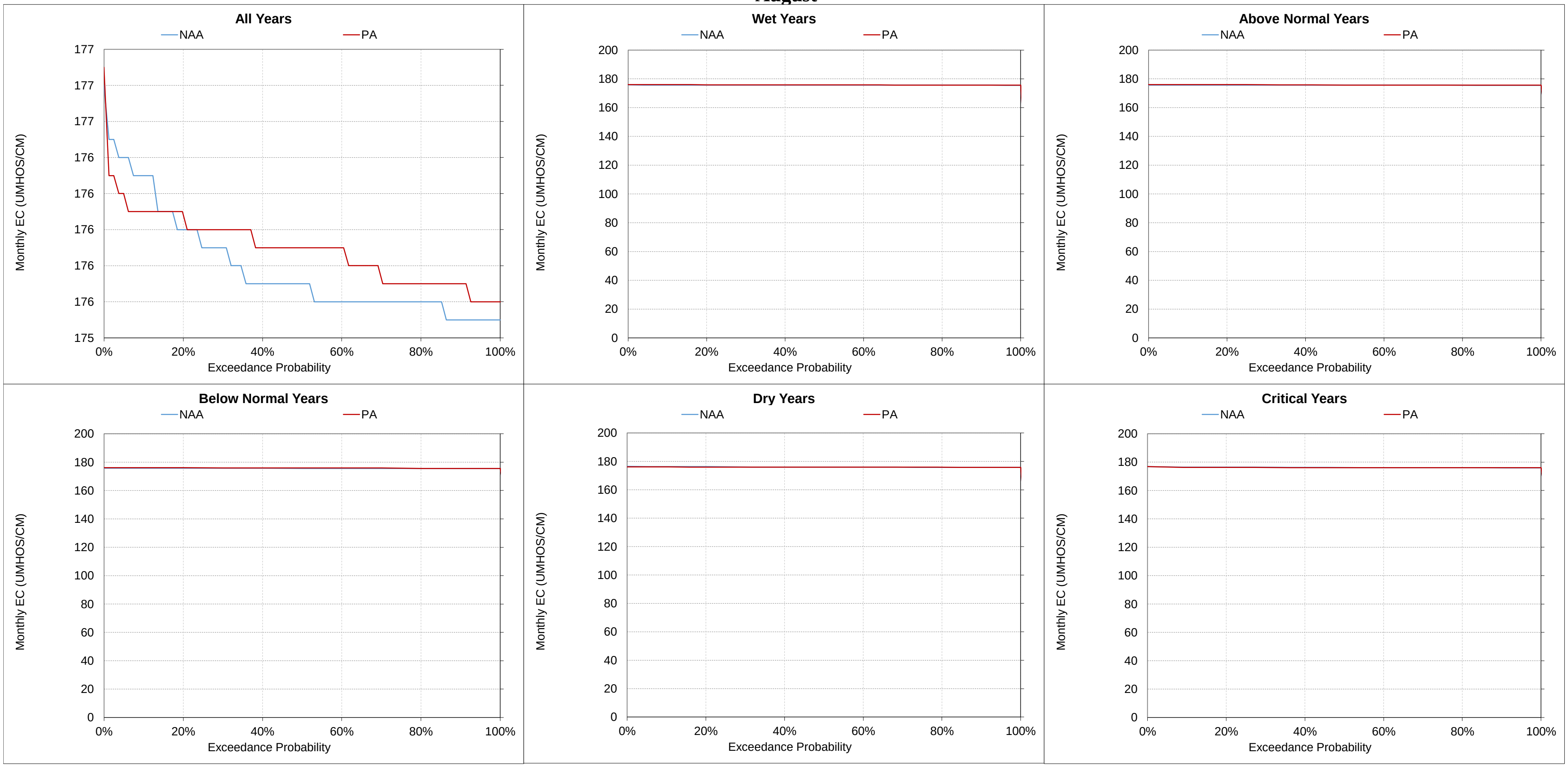
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-17. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC
July



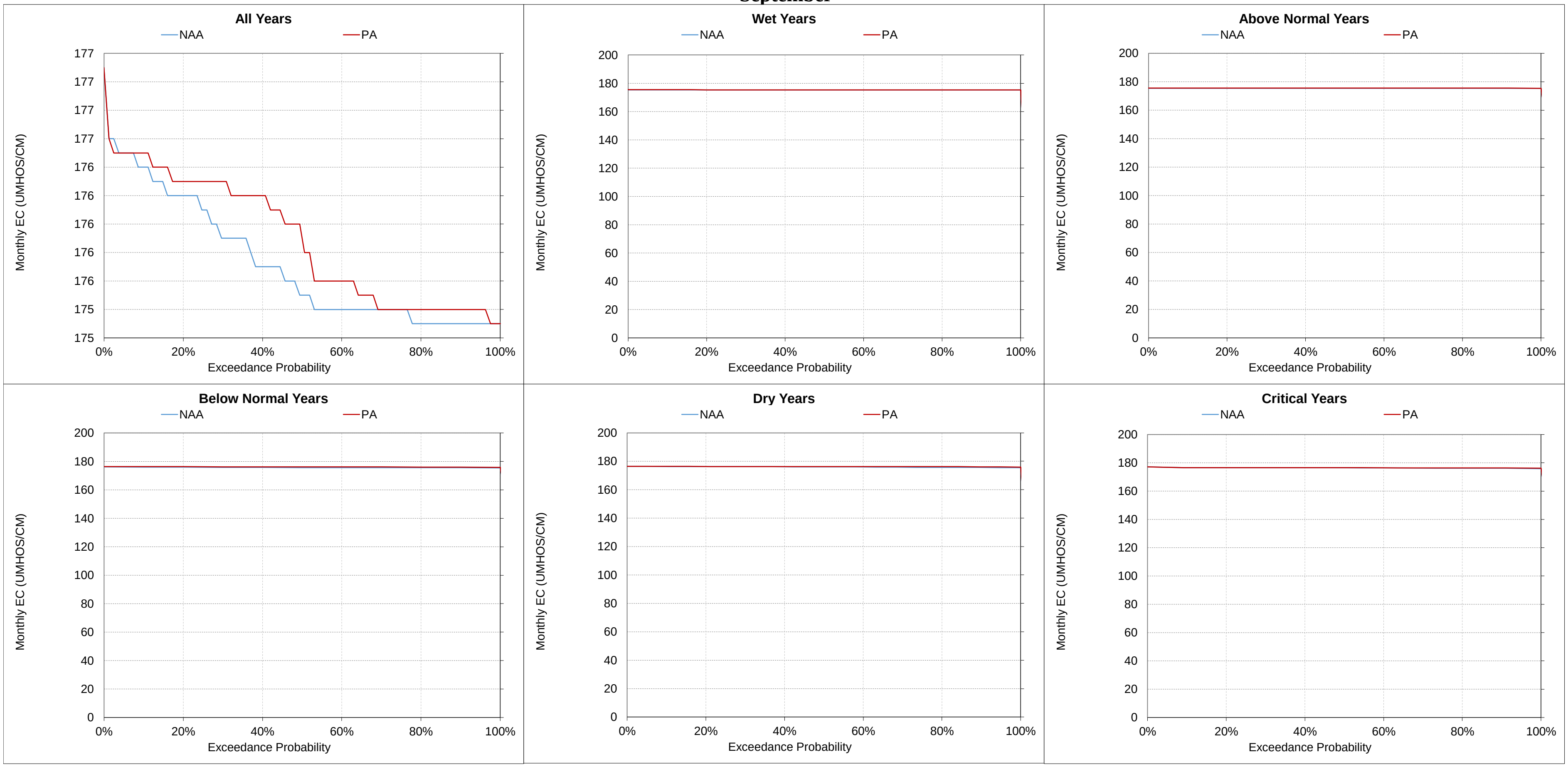
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-18. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-9-19. Sacramento River downstream of Georgiana Slough Salinity, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-10. Cache Slough at Ryer Island Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	201	201	0	0%	208	200	-8	-4%	196	195	0	0%	202	203	1	0%	201	203	2	1%	193	195	1	1%
20%	188	188	1	0%	189	190	2	1%	190	191	0	0%	197	197	0	0%	196	199	3	2%	192	193	1	1%
30%	185	188	2	1%	186	189	2	1%	188	188	0	0%	194	194	0	0%	193	194	1	0%	189	190	1	0%
40%	184	187	3	2%	185	186	2	1%	186	186	0	0%	193	193	1	0%	191	192	1	0%	187	188	1	1%
50%	182	186	4	2%	182	185	3	2%	184	185	1	0%	191	191	1	0%	189	189	1	0%	185	186	1	1%
60%	180	183	2	1%	181	184	3	2%	182	183	1	1%	190	190	0	0%	186	187	1	1%	184	185	1	0%
70%	180	182	2	1%	180	183	3	2%	181	182	1	1%	188	188	0	0%	185	186	1	1%	183	184	1	0%
80%	180	182	2	1%	179	182	2	1%	180	181	1	1%	186	187	1	0%	183	184	1	1%	182	182	1	0%
90%	179	181	2	1%	179	181	2	1%	180	180	1	0%	183	183	1	0%	182	182	0	0%	181	181	0	0%
Long Term Full Simulation Period[b]	186	187	1	1%	187	188	1	0%	187	188	1	0%	192	193	1	0%	190	191	1	0%	186	187	1	1%
Water Year Types[c]																								
Wet (32%)	180	182	2	1%	180	183	2	1%	183	183	1	0%	188	189	0	0%	184	185	1	0%	183	184	1	0%
Above Normal (16%)	180	182	2	1%	180	183	3	2%	183	184	1	1%	193	195	1	1%	190	191	1	0%	184	185	1	0%
Below Normal (13%)	187	189	2	1%	186	188	2	1%	186	186	0	0%	198	199	1	0%	191	192	1	0%	188	189	1	1%
Dry (24%)	186	187	2	1%	186	187	1	1%	188	188	0	0%	189	190	1	0%	195	196	1	1%	188	190	1	1%
Critical (15%)	204	202	-3	-1%	213	204	-9	-4%	201	203	2	1%	198	198	0	0%	196	197	1	1%	191	192	1	0%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	187	188	0	0%	184	185	0	0%	185	185	1	0%	186	188	2	1%	188	188	0	0%	189	195	6	3%
20%	186	187	0	0%	183	184	0	0%	184	184	0	0%	182	184	3	2%	185	186	2	1%	185	193	8	4%
30%	186	186	0	0%	183	183	0	0%	183	184	0	0%	181	184	3	2%	182	185	3	1%	182	191	9	5%
40%	185	185	1	0%	183	183	0	0%	183	183	0	0%	181	183	3	1%	181	185	4	2%	181	190	9	5%
50%	183	184	1	0%	182	182	0	0%	182	183	1	0%	180	183	2	1%	180	184	4	2%	180	187	8	4%
60%	183	183	1	0%	181	182	0	0%	182	182	1	0%	180	182	2	1%	180	184	4	2%	179	181	2	1%
70%	182	183	0	0%	181	181	0	0%	182	182	1	0%	180	182	2	1%	180	183	4	2%	179	180	2	1%
80%	180	181	0	0%	180	180	0	0%	180	182	1	1%	180	182	2	1%	179	183	3	2%	178	180	2	1%
90%	180	180	0	0%	179	179	1	0%	179	181	1	1%	179	181	2	1%	179	182	3	2%	178	180	2	1%
Long Term Full Simulation Period[b]	184	184	0	0%	182	182	0	0%	183	184	1	0%	181	184	2	1%	182	185	2	1%	182	187	5	3%
Water Year Types[c]																								
Wet (32%)	182	182	0	0%	180	181	0	0%	181	182	1	1%	180	182	2	1%	180	184	4	2%	178	180	2	1%
Above Normal (16%)	183	183	0	0%	181	182	0	0%	182	183	1	0%	180	182	2	1%	179	183	3	2%	179	181	2	1%
Below Normal (13%)	185	185	0	0%	182	182	0	0%	182	182	0	0%	180	182	2	1%	180	184	4	2%	181	190	9	5%
Dry (24%)	185	186	1	0%	183	183	0	0%	183	183	0	0%	181	184	3	2%	184	185	1	0%	184	192	9	5%
Critical (15%)	187	187	0	0%	185	185	0	0%	190	190	0	0%	188	191	2	1%	191	190	0	0%	192	195	3	2%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-1. Monthly EC Ranges For Cache Slough at Ryer Island Salinity, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.

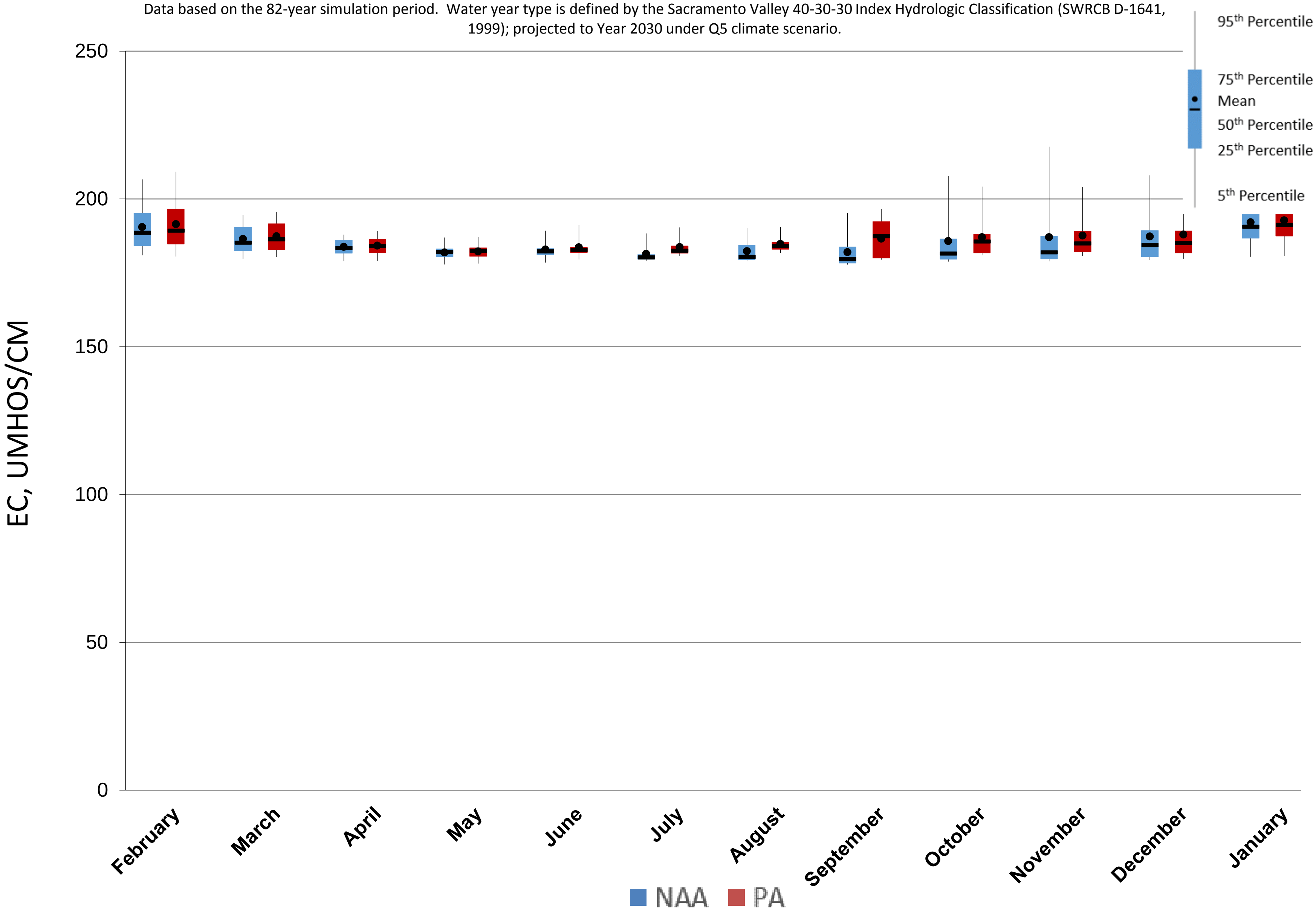


Figure 5.B.5-10-2. Monthly EC Ranges For Cache Slough at Ryer Island Salinity, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

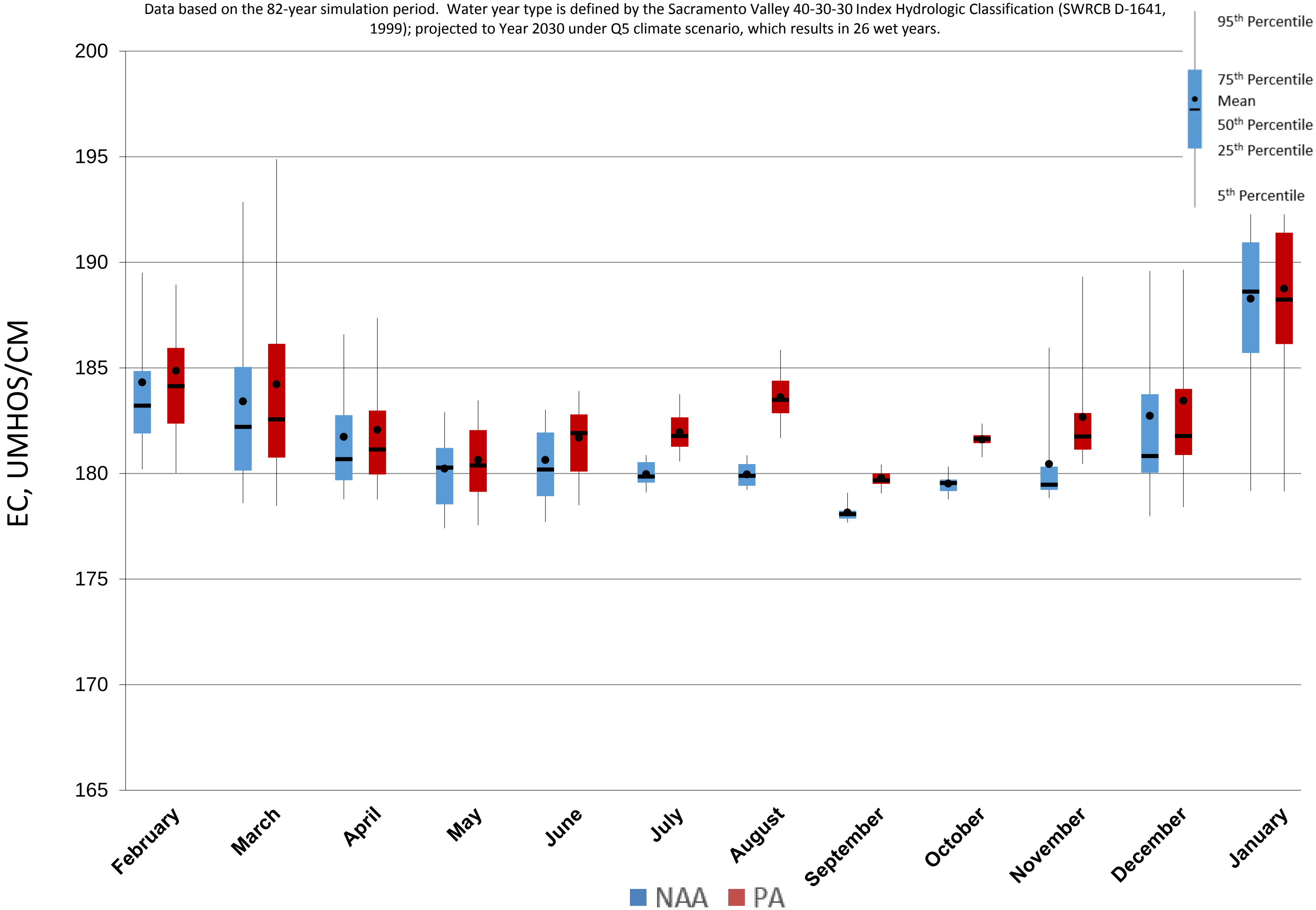


Figure 5.B.5-10-3. Monthly EC Ranges For Cache Slough at Ryer Island Salinity, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

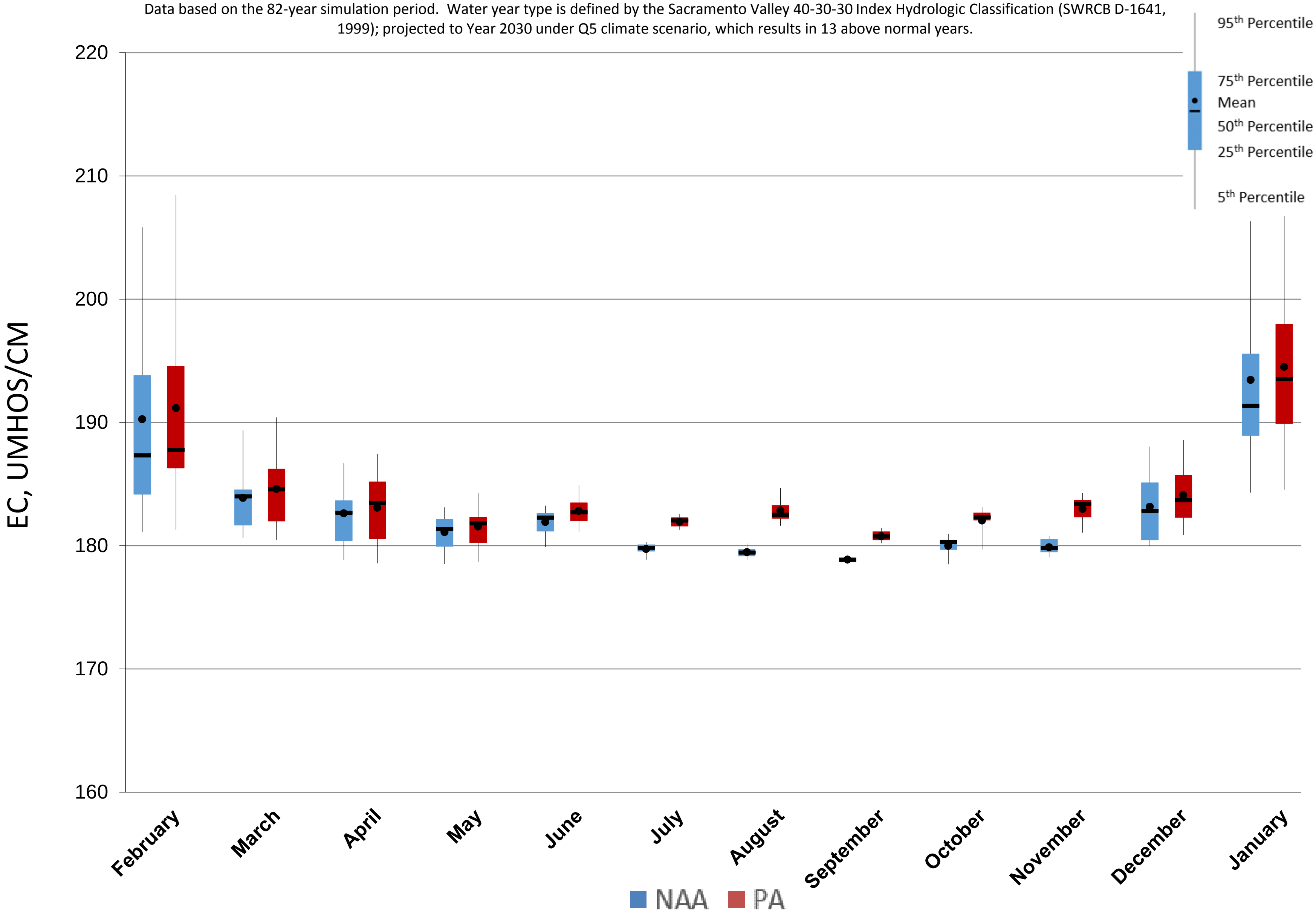


Figure 5.B.5-10-4. Monthly EC Ranges For Cache Slough at Ryer Island Salinity, Below Normal Years

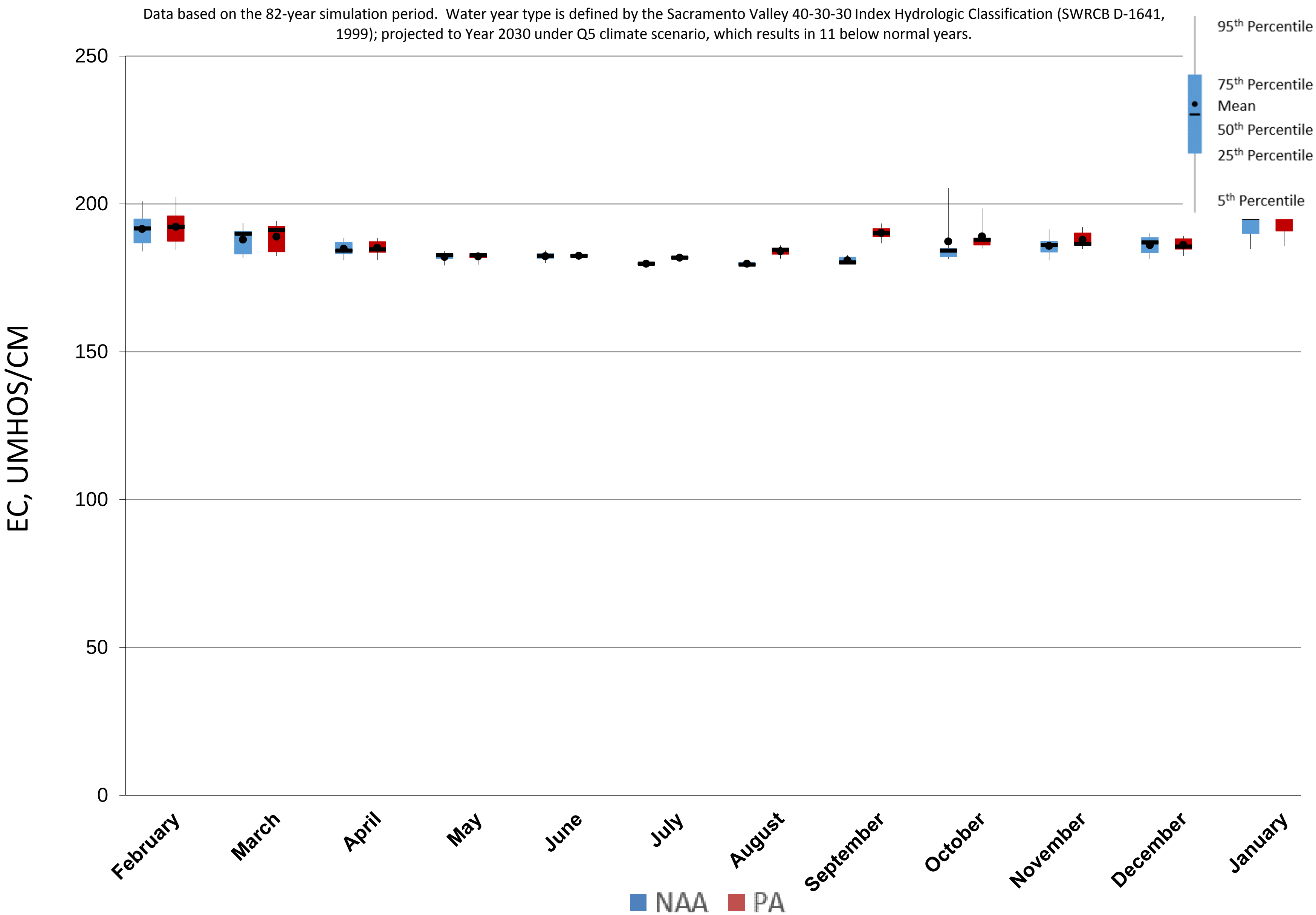
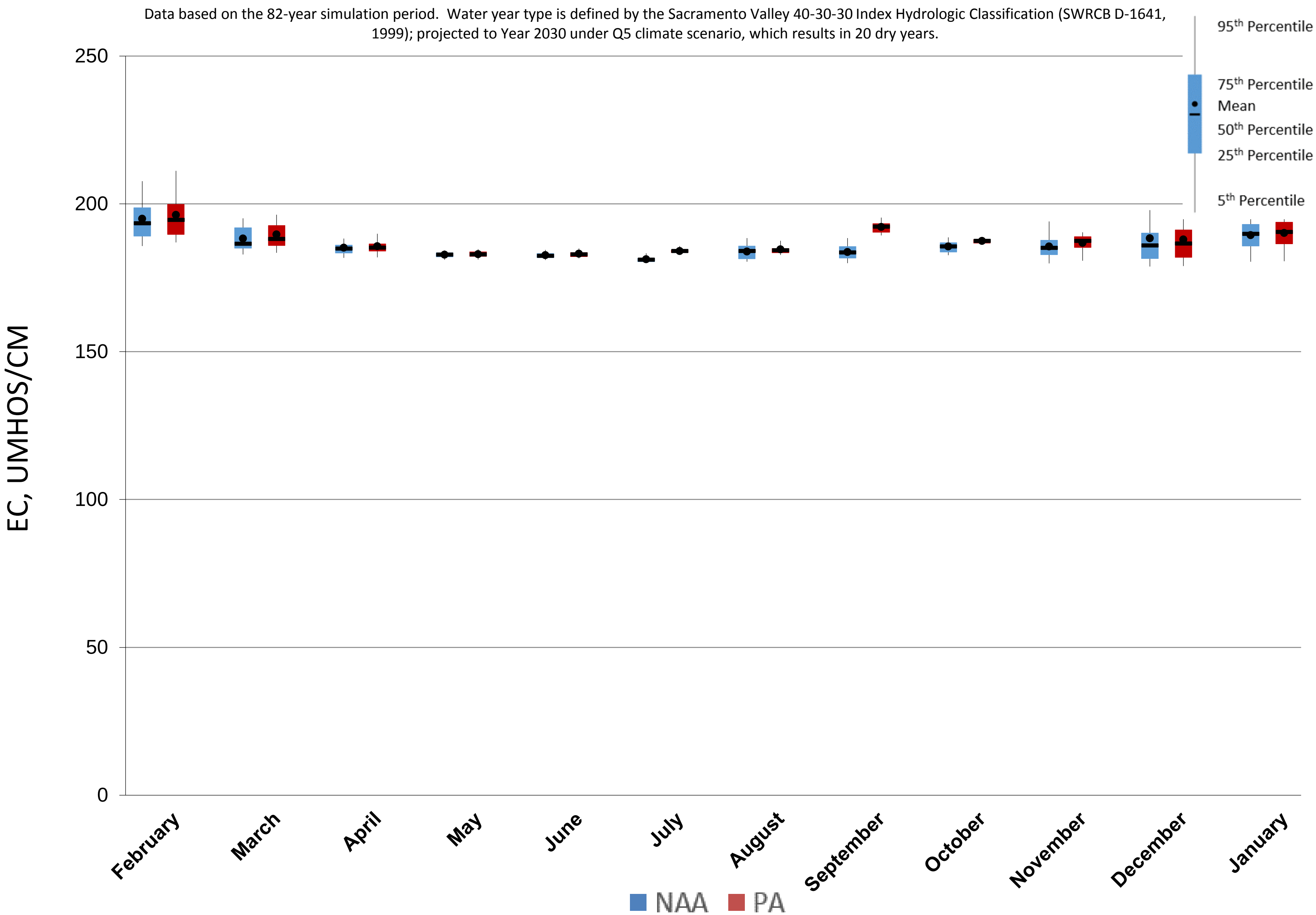


Figure 5.B.5-10-5. Monthly EC Ranges For Cache Slough at Ryer Island Salinity, Dry Years



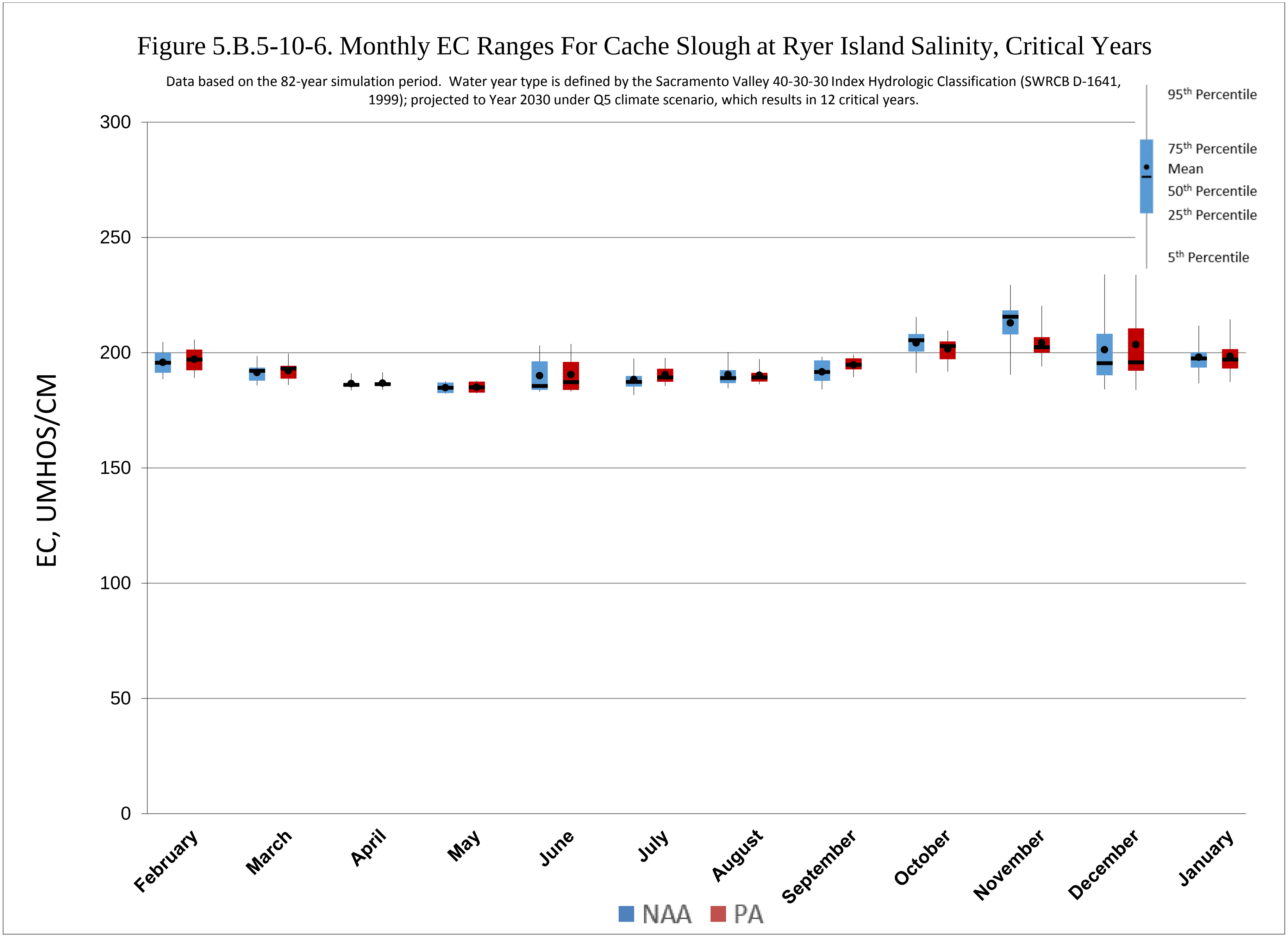
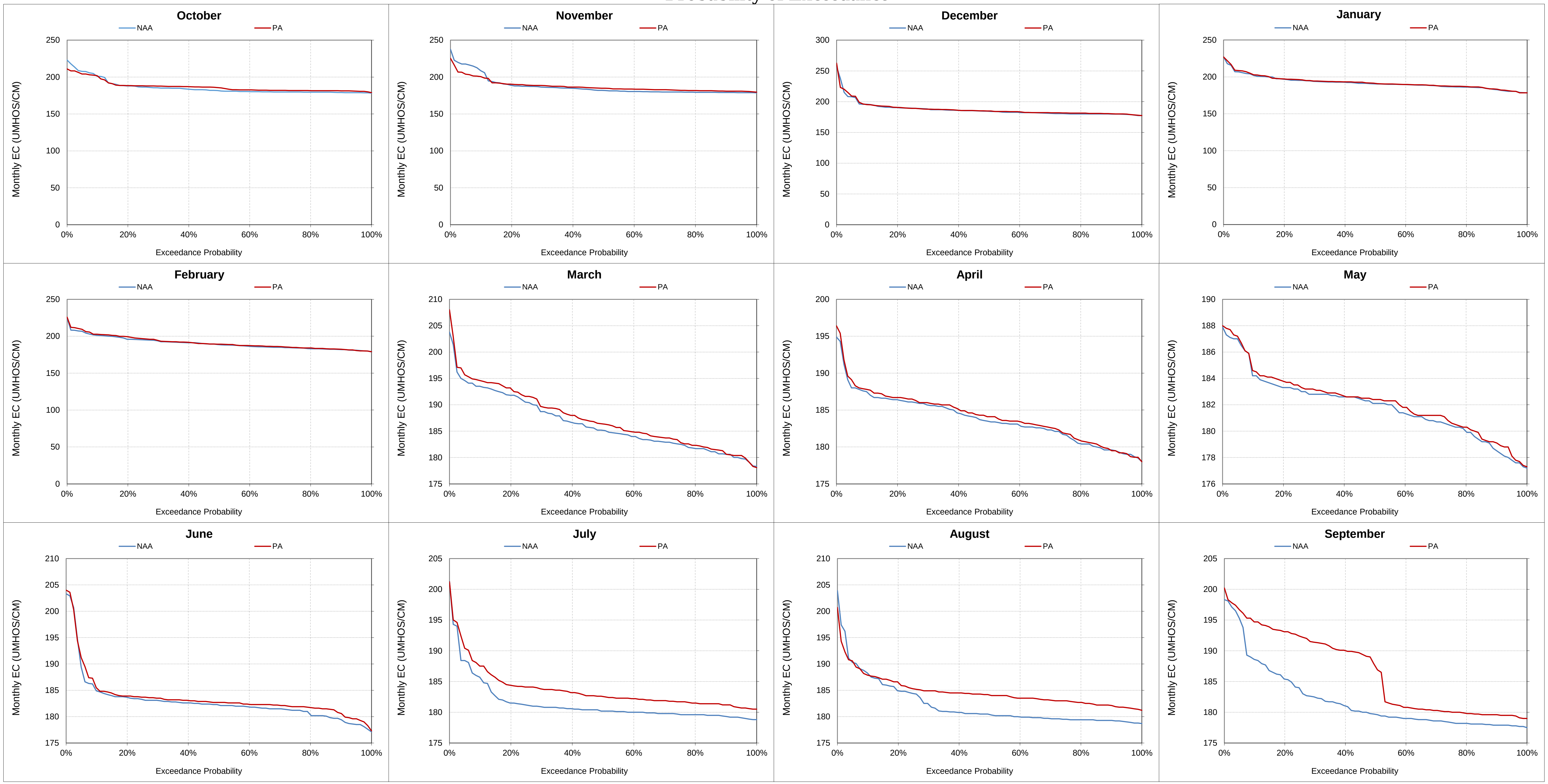


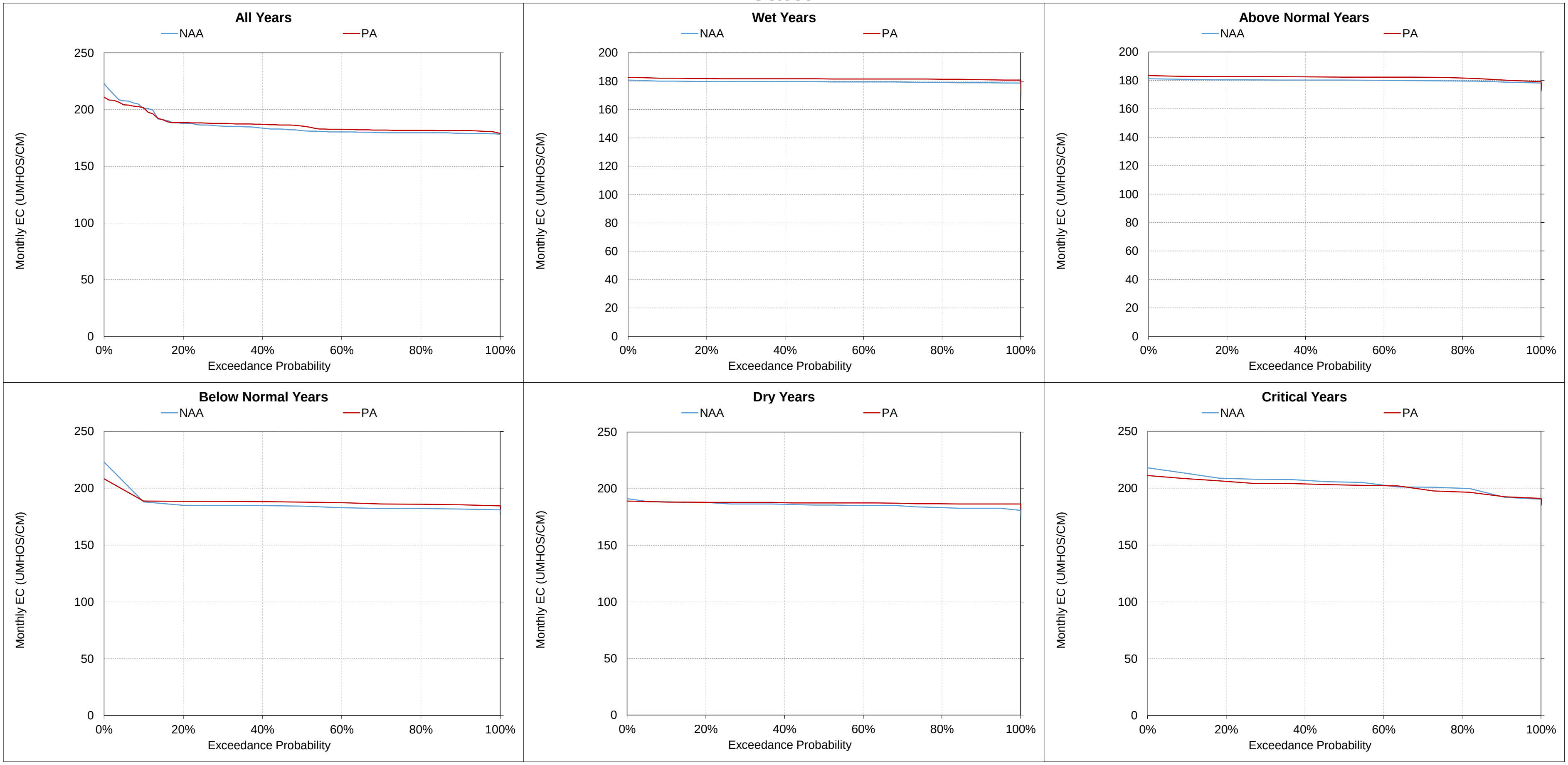
Figure 5.B.5-10-6. Monthly EC Ranges For Cache Slough at Ryer Island Salinity, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
300
250
200
150
100
50
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-10-7. Cache Slough at Ryer Island Salinity, Monthly EC Probability of Exceedance



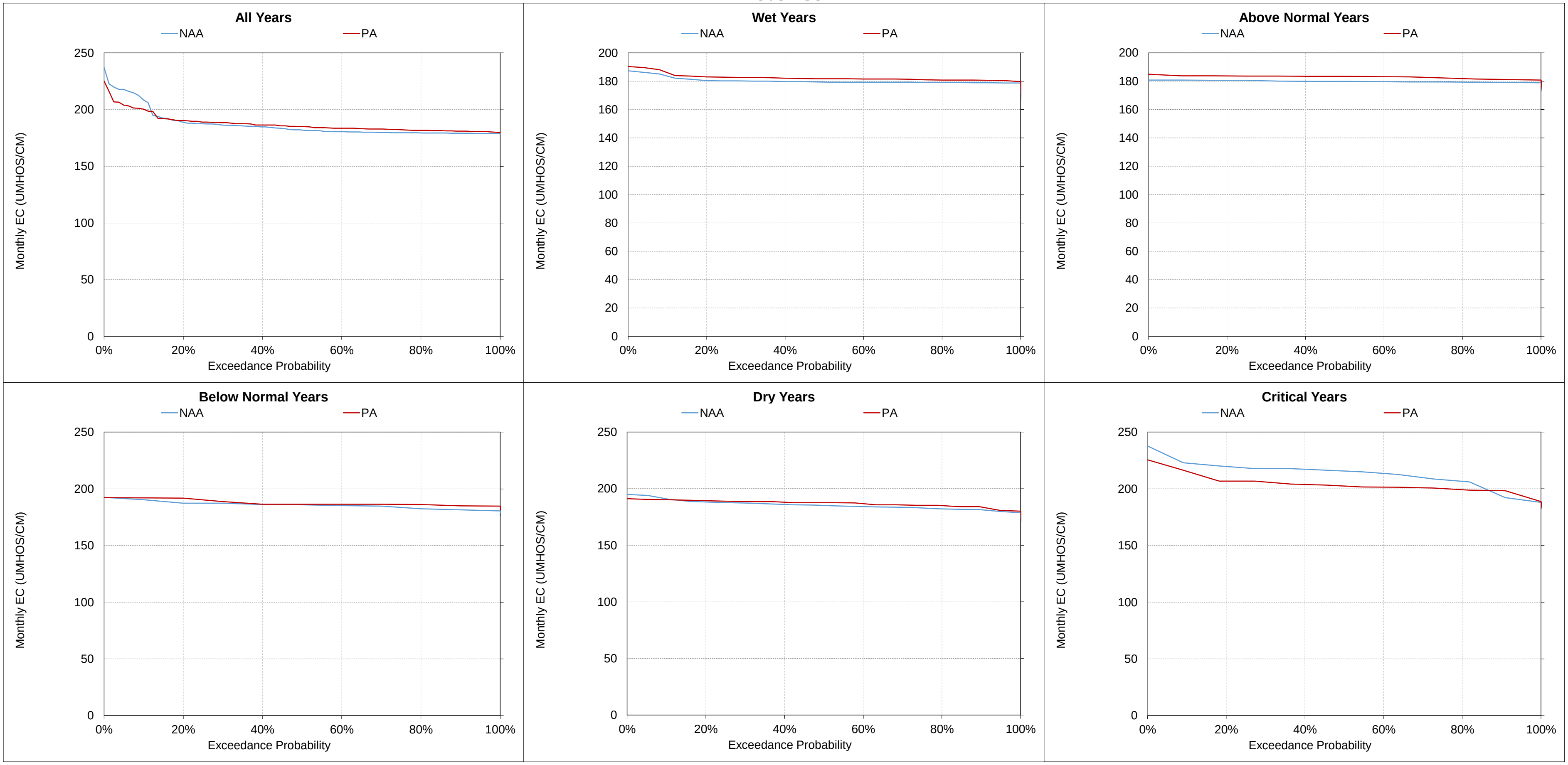
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-8. Cache Slough at Ryer Island Salinity, Monthly EC October



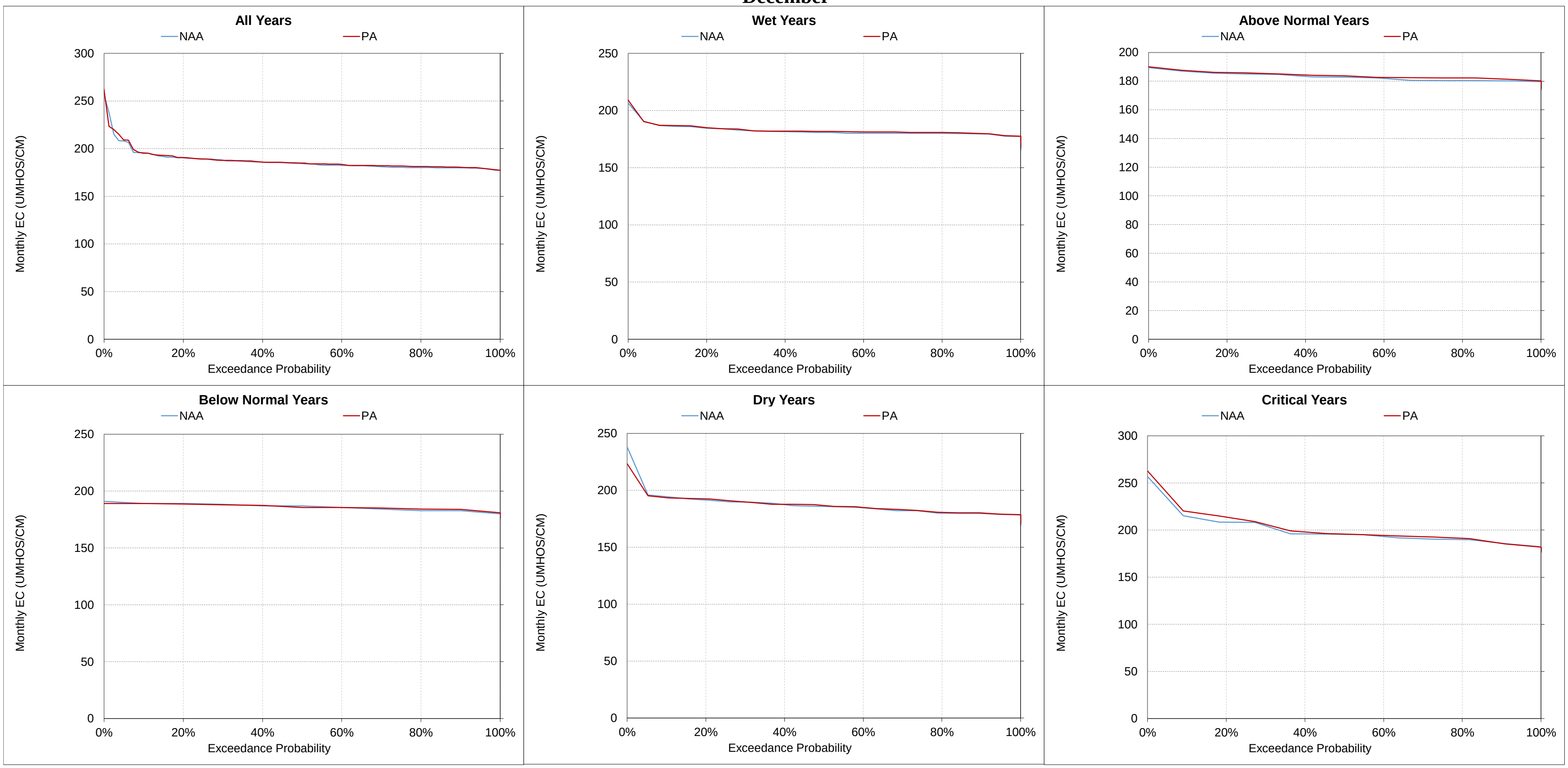
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-9. Cache Slough at Ryer Island Salinity, Monthly EC November



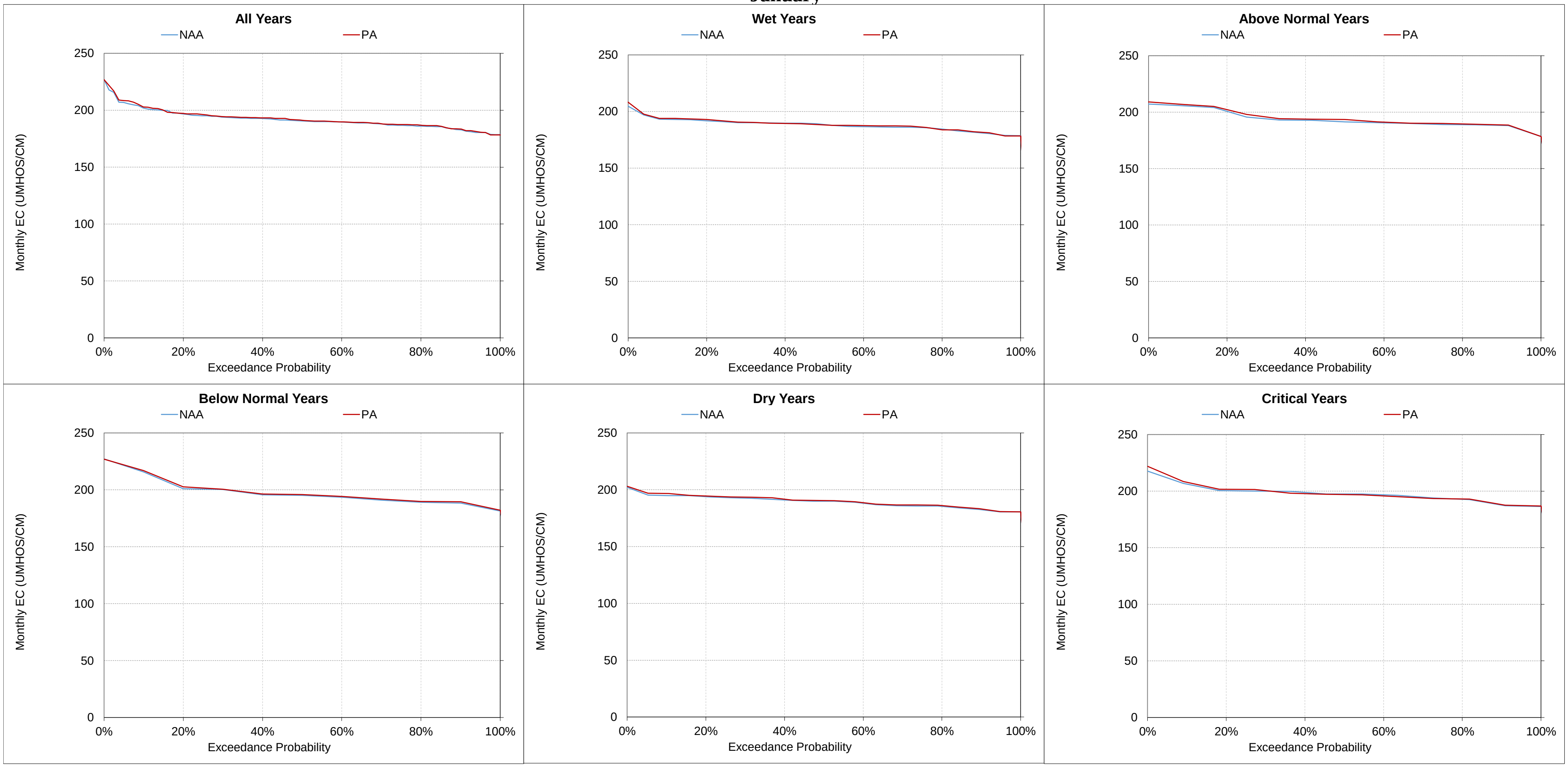
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-10. Cache Slough at Ryer Island Salinity, Monthly EC
December



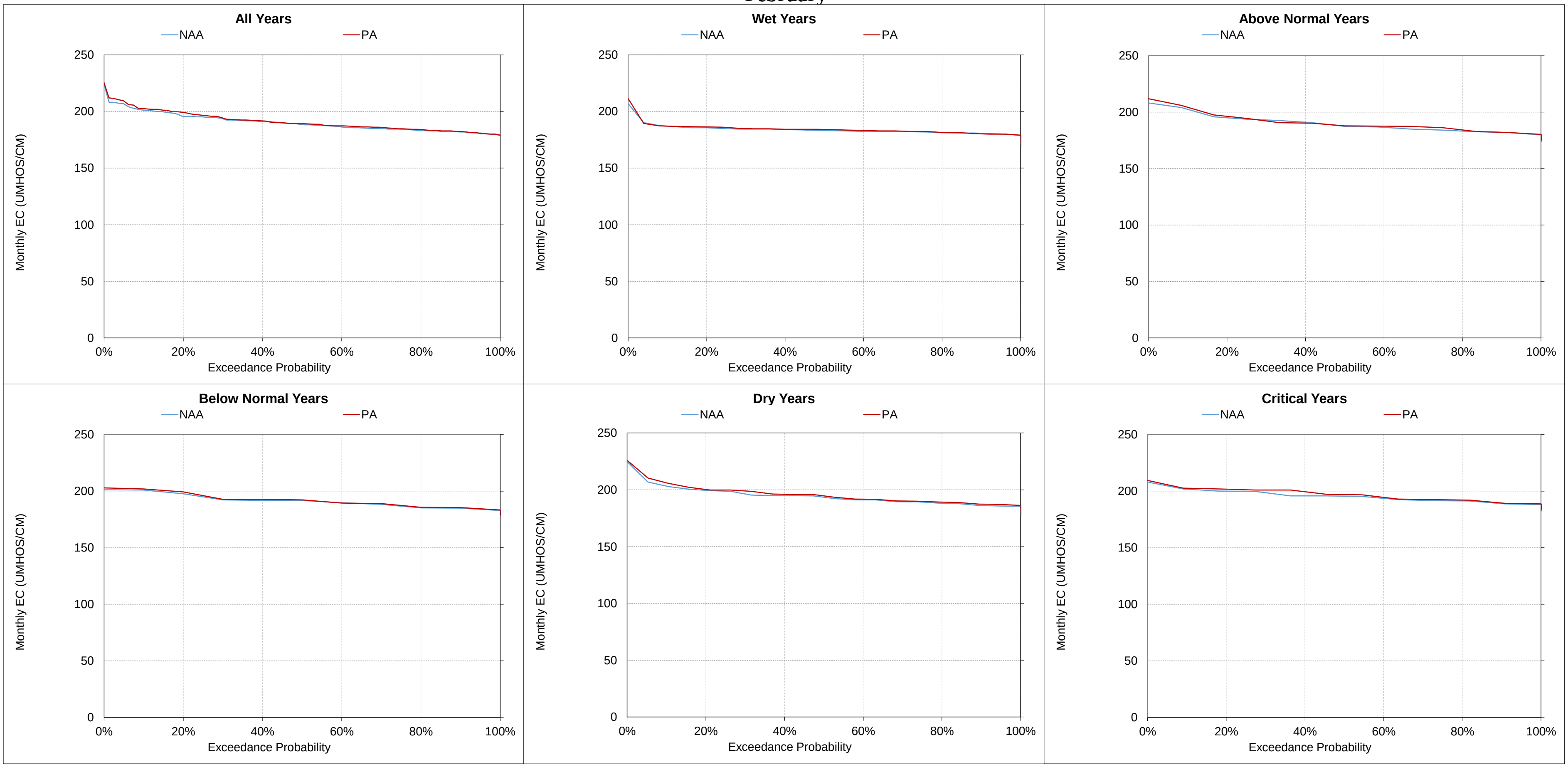
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-11. Cache Slough at Ryer Island Salinity, Monthly EC
January



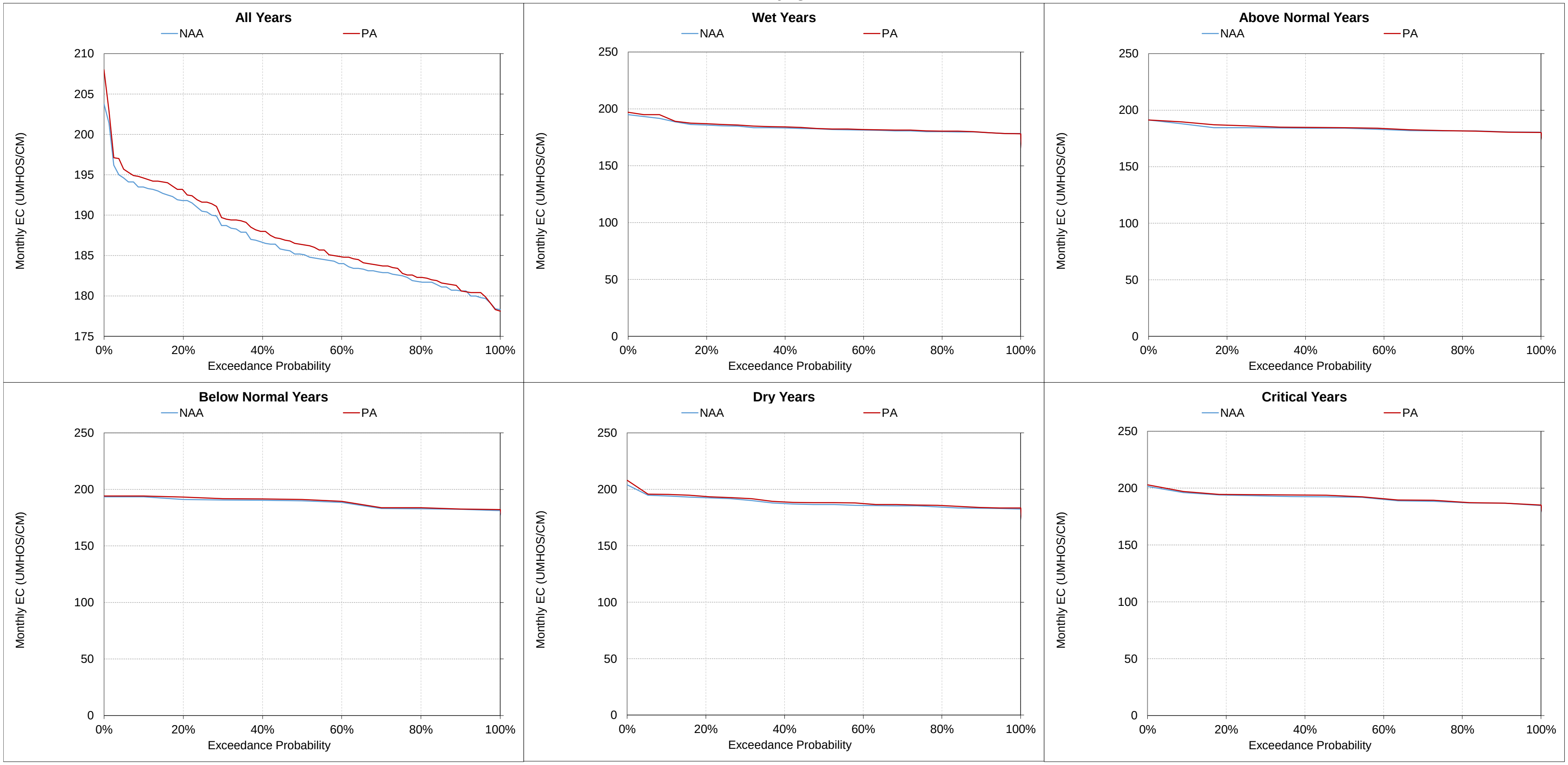
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-12. Cache Slough at Ryer Island Salinity, Monthly EC
February



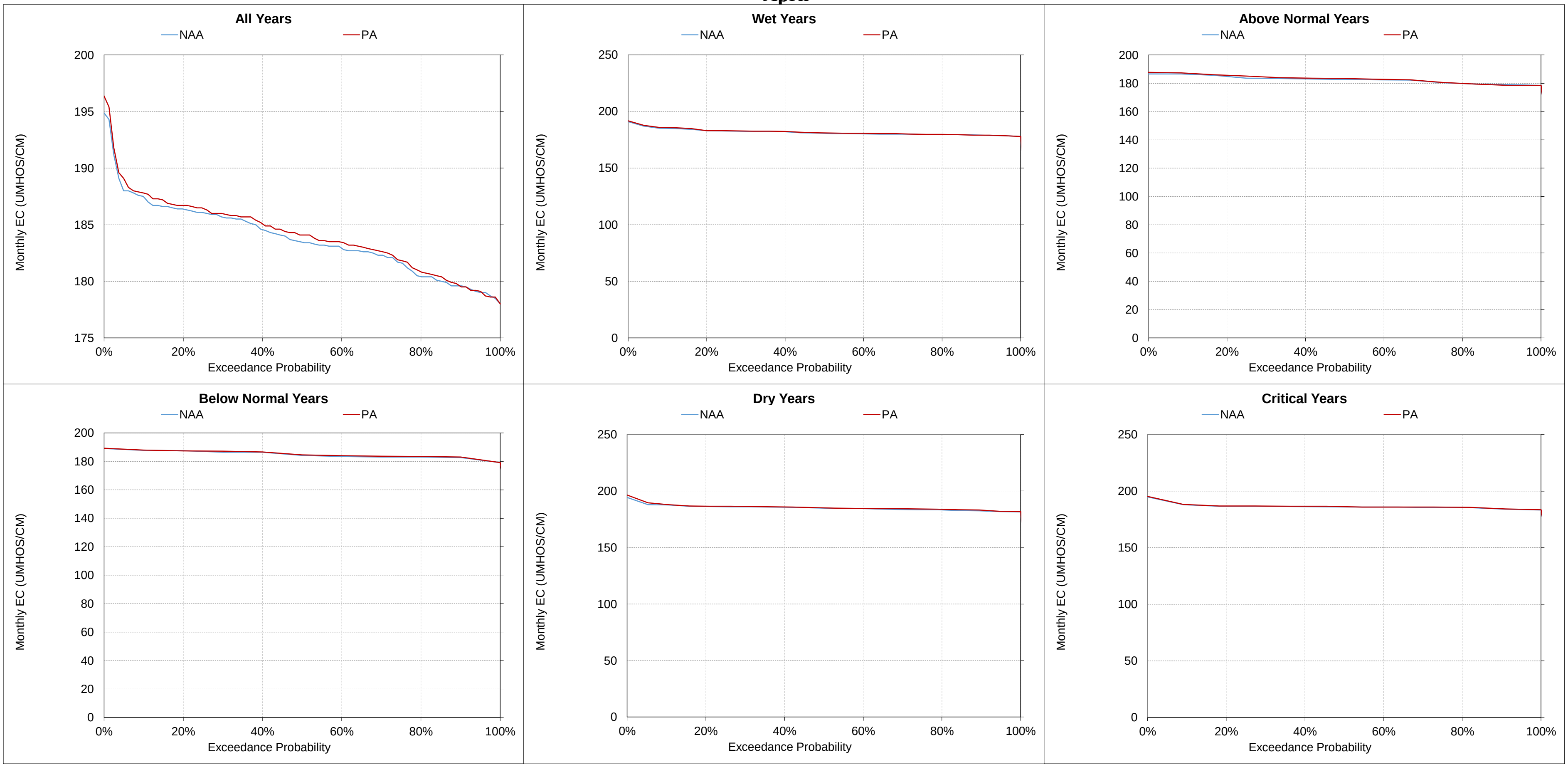
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-13. Cache Slough at Ryer Island Salinity, Monthly EC
March



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-14. Cache Slough at Ryer Island Salinity, Monthly EC
April



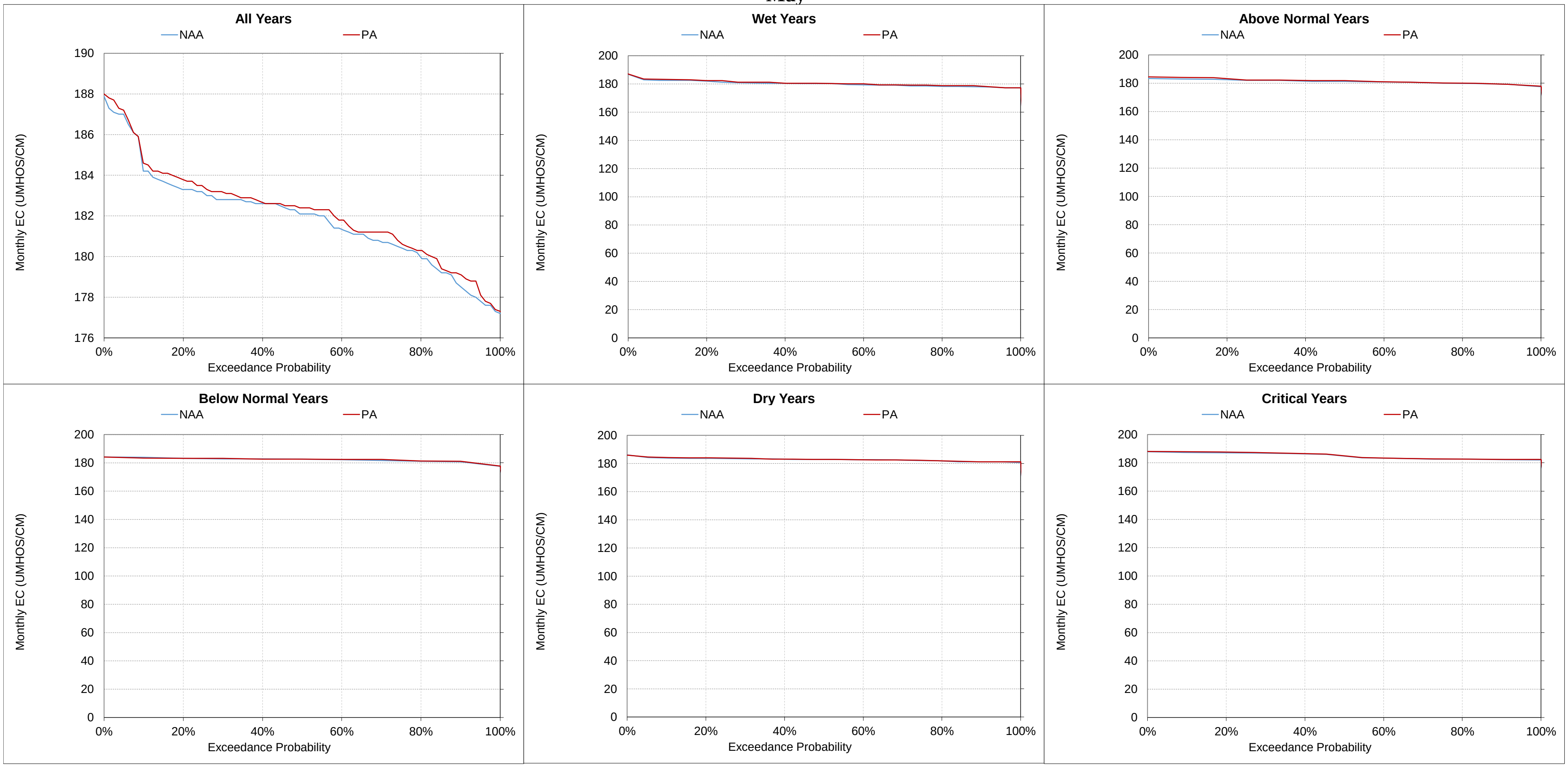
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

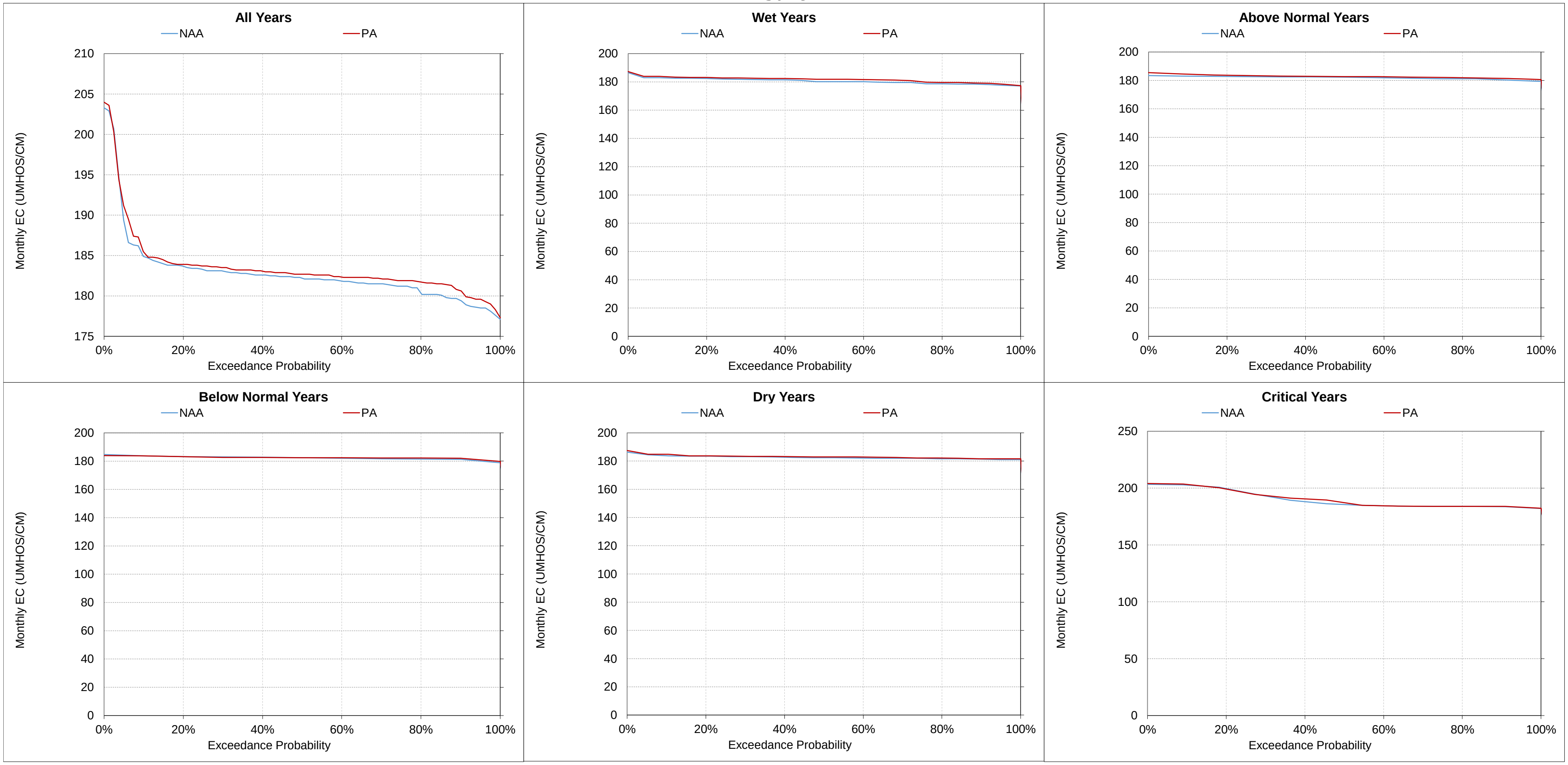
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-15. Cache Slough at Ryer Island Salinity, Monthly EC May



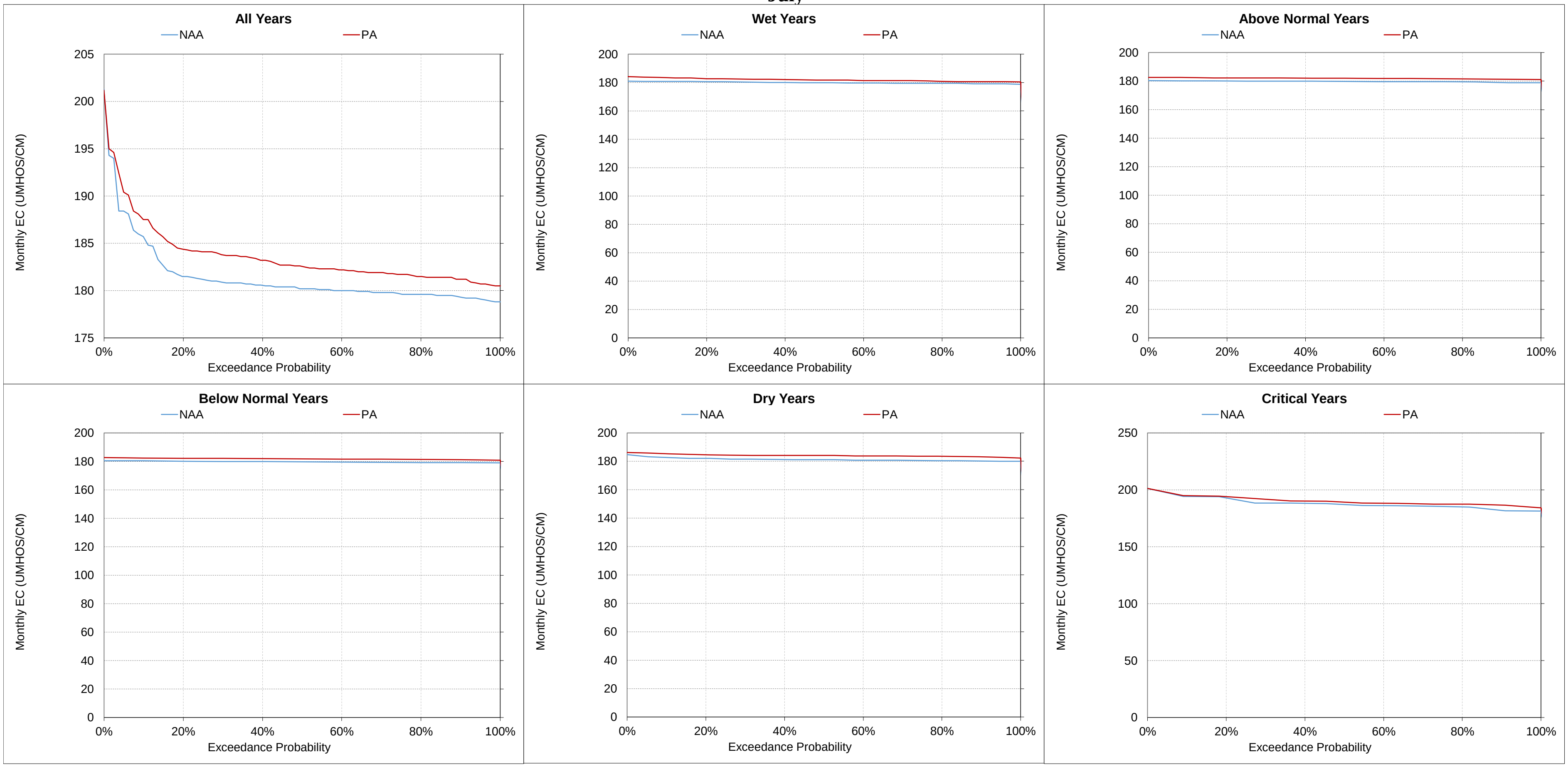
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-16. Cache Slough at Ryer Island Salinity, Monthly EC
June



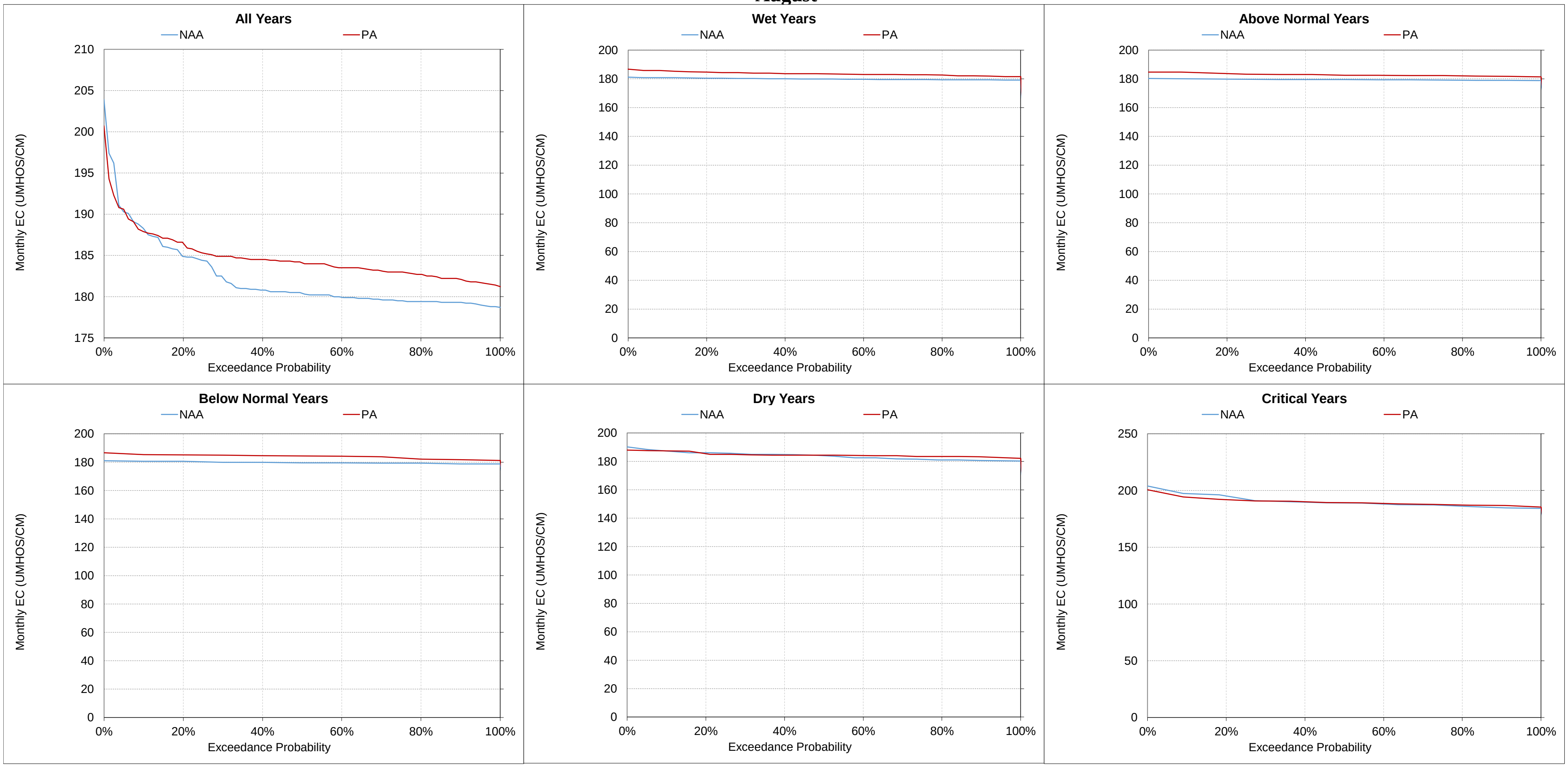
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-17. Cache Slough at Ryer Island Salinity, Monthly EC
July



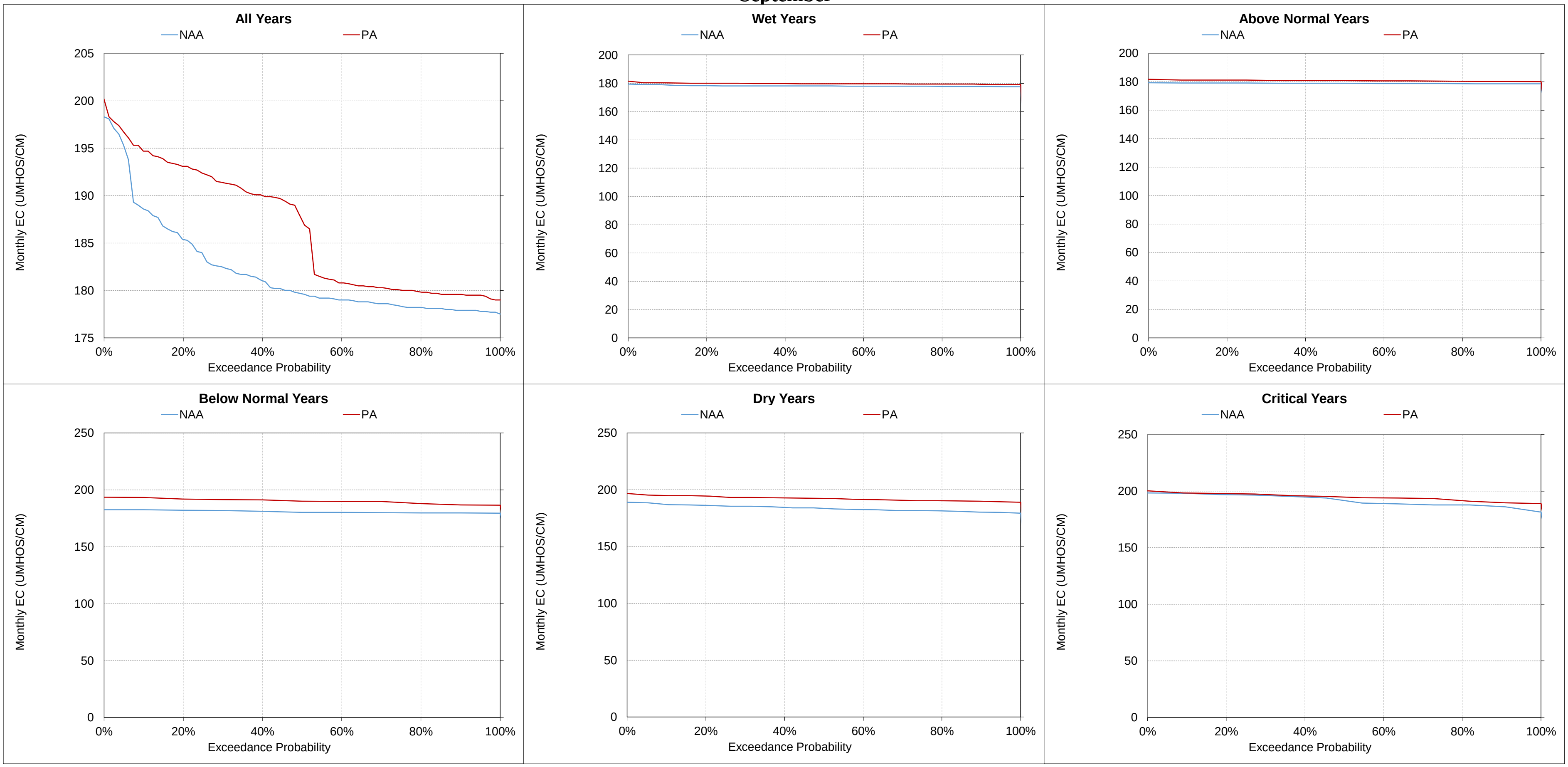
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-18. Cache Slough at Ryer Island Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-10-19. Cache Slough at Ryer Island Salinity, Monthly EC
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-11. Sacramento River at Rio Vista Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	702	532	-170	-24%	699	561	-137	-20%	429	404	-26	-6%	258	254	-4	-1%	209	210	2	1%	196	198	2	1%
20%	483	409	-74	-15%	462	395	-67	-14%	366	351	-16	-4%	245	240	-5	-2%	201	202	1	0%	190	194	4	2%
30%	457	391	-66	-14%	415	357	-58	-14%	244	247	3	1%	226	220	-7	-3%	198	198	0	0%	188	191	3	2%
40%	427	376	-51	-12%	335	305	-30	-9%	230	227	-4	-2%	212	211	-1	-1%	193	195	2	1%	185	189	3	2%
50%	349	330	-19	-5%	221	214	-7	-3%	207	209	2	1%	204	203	0	0%	190	191	1	0%	184	187	3	2%
60%	201	203	2	1%	197	207	10	5%	201	202	1	1%	198	199	1	1%	185	187	1	1%	182	185	3	2%
70%	188	191	3	2%	188	196	7	4%	195	192	-4	-2%	190	192	2	1%	183	185	2	1%	181	182	1	1%
80%	186	189	4	2%	182	191	9	5%	186	187	1	1%	186	187	1	0%	182	183	1	0%	180	181	1	0%
90%	185	188	4	2%	181	189	8	4%	180	181	1	0%	181	182	1	0%	180	181	1	0%	179	180	1	0%
Long Term Full Simulation Period[b]	362	328	-34	-9%	339	306	-33	-10%	268	267	-2	-1%	216	213	-3	-1%	194	194	0	0%	186	188	2	1%
Water Year Types[c]																								
Wet (32%)	185	189	4	2%	183	191	8	4%	194	196	2	1%	203	198	-5	-3%	182	183	1	1%	181	183	2	1%
Above Normal (16%)	199	200	1	1%	198	205	8	4%	210	210	-1	0%	217	214	-4	-2%	188	189	1	1%	181	184	2	1%
Below Normal (13%)	428	376	-52	-12%	359	309	-49	-14%	287	272	-15	-5%	224	225	1	0%	197	196	-1	0%	187	190	3	1%
Dry (24%)	451	391	-60	-13%	385	338	-46	-12%	302	285	-17	-6%	215	215	0	0%	200	200	0	0%	188	190	2	1%
Critical (15%)	712	618	-94	-13%	739	609	-129	-17%	420	448	28	7%	237	233	-4	-2%	213	212	-1	0%	199	201	2	1%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	194	196	2	1%	201	202	1	1%	234	233	-1	-1%	307	326	19	6%	424	450	27	6%	533	610	78	15%
20%	191	193	2	1%	195	194	-1	-1%	209	210	1	1%	253	270	17	7%	357	355	-3	-1%	429	559	130	30%
30%	188	191	3	2%	191	192	0	0%	205	203	-2	-1%	238	249	11	5%	315	335	21	7%	389	535	145	37%
40%	186	189	3	2%	188	190	2	1%	201	201	0	0%	207	225	18	9%	273	313	40	15%	360	513	153	43%
50%	184	186	2	1%	186	189	3	2%	195	197	2	1%	199	211	12	6%	242	285	43	18%	302	449	146	48%
60%	183	184	2	1%	185	187	2	1%	191	194	3	1%	192	204	11	6%	231	267	35	15%	203	201	-2	-1%
70%	181	183	2	1%	182	183	1	1%	188	192	4	2%	190	198	8	4%	226	253	27	12%	194	195	2	1%
80%	179	180	1	0%	179	180	1	1%	184	189	6	3%	188	195	8	4%	220	247	27	12%	184	188	5	2%
90%	178	178	0	0%	178	178	0	0%	180	185	4	2%	185	193	8	4%	217	244	27	13%	182	185	2	1%
Long Term Full Simulation Period[b]	186	187	2	1%	191	193	1	1%	212	215	3	1%	229	243	14	6%	288	312	24	8%	316	381	65	21%
Water Year Types[c]																								
Wet (32%)	181	182	1	1%	180	181	1	0%	185	189	3	2%	187	195	8	4%	226	255	29	13%	185	188	4	2%
Above Normal (16%)	182	185	3	1%	184	186	2	1%	193	197	4	2%	191	203	12	6%	223	253	30	13%	203	202	-1	0%
Below Normal (13%)	188	190	2	1%	189	190	1	1%	200	199	-1	0%	201	215	14	7%	244	288	44	18%	342	475	133	39%
Dry (24%)	187	189	2	1%	191	191	1	0%	203	205	2	1%	246	264	17	7%	330	340	10	3%	406	554	148	36%
Critical (15%)	197	199	2	1%	227	229	2	1%	317	322	5	2%	361	383	22	6%	463	478	16	3%	549	616	67	12%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

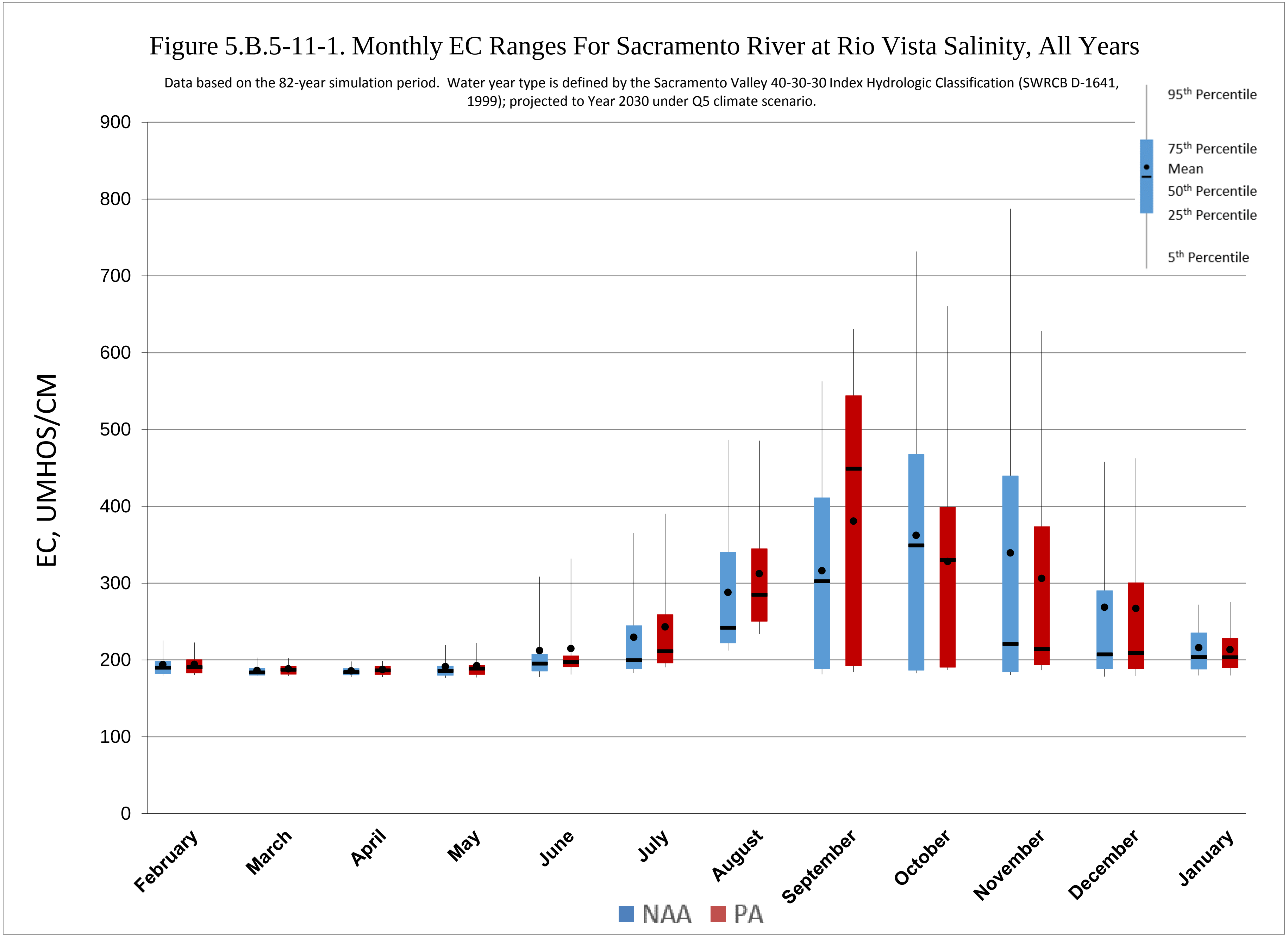
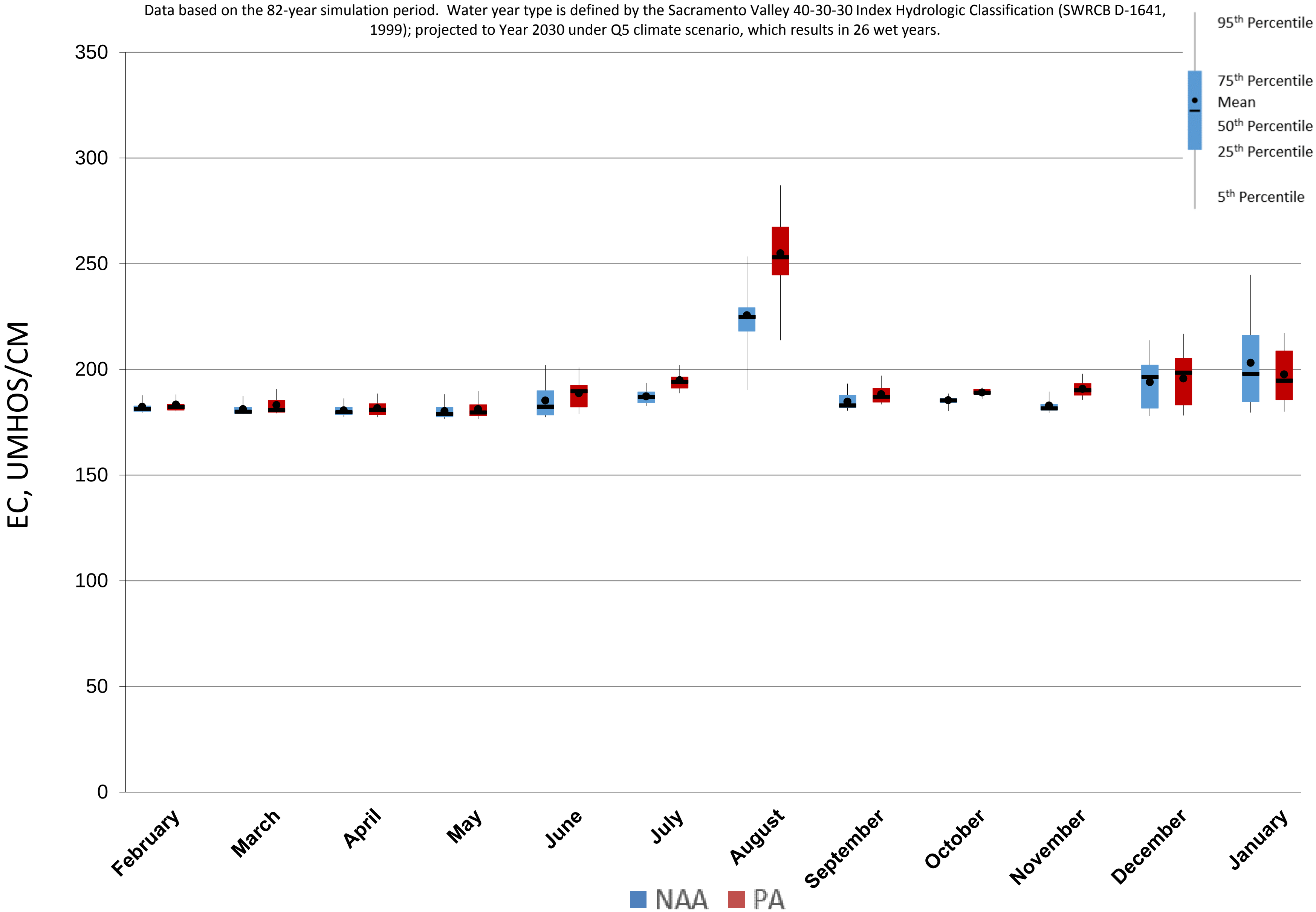


Figure 5.B.5-11-1. Monthly EC Ranges For Sacramento River at Rio Vista Salinity, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
EC, UMHOS/CM
900
800
700
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-11-2. Monthly EC Ranges For Sacramento River at Rio Vista Salinity, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.



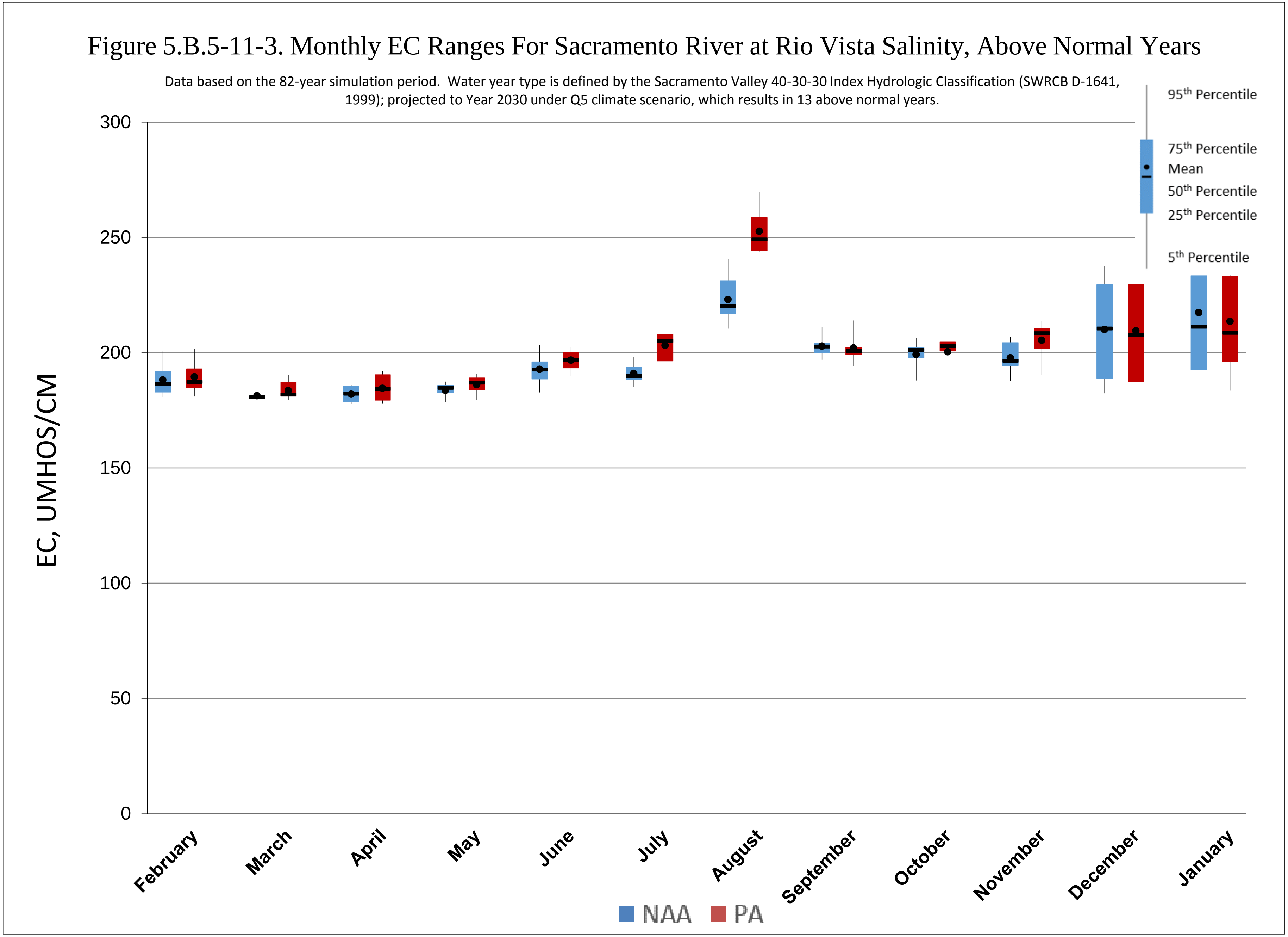


Figure 5.B.5-11-3. Monthly EC Ranges For Sacramento River at Rio Vista Salinity, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
300
250
200
150
100
50
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

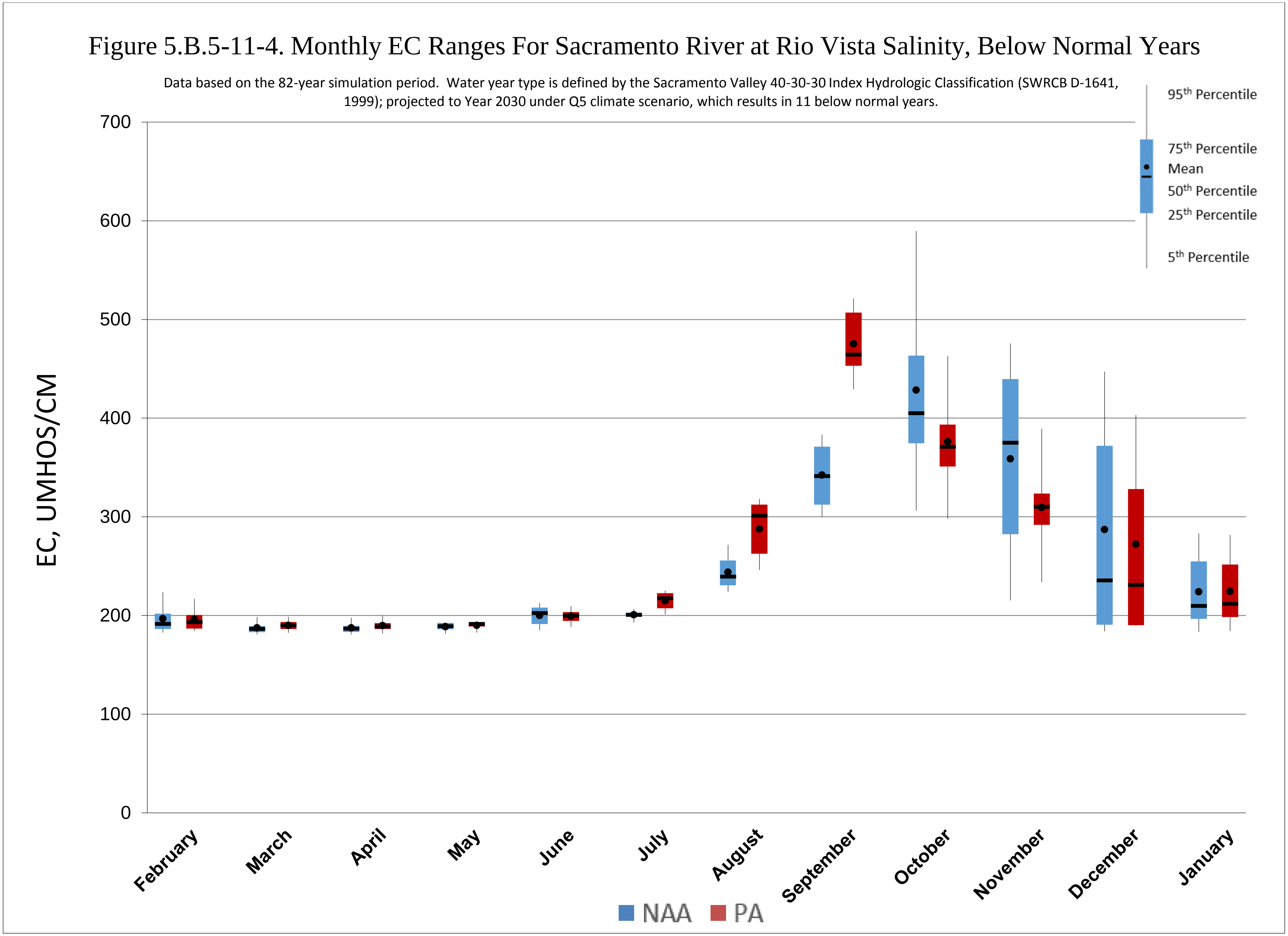


Figure 5.B.5-11-4. Monthly EC Ranges For Sacramento River at Rio Vista Salinity, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
EC, UMHOS/CM
0
100
200
300
400
500
600
700
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

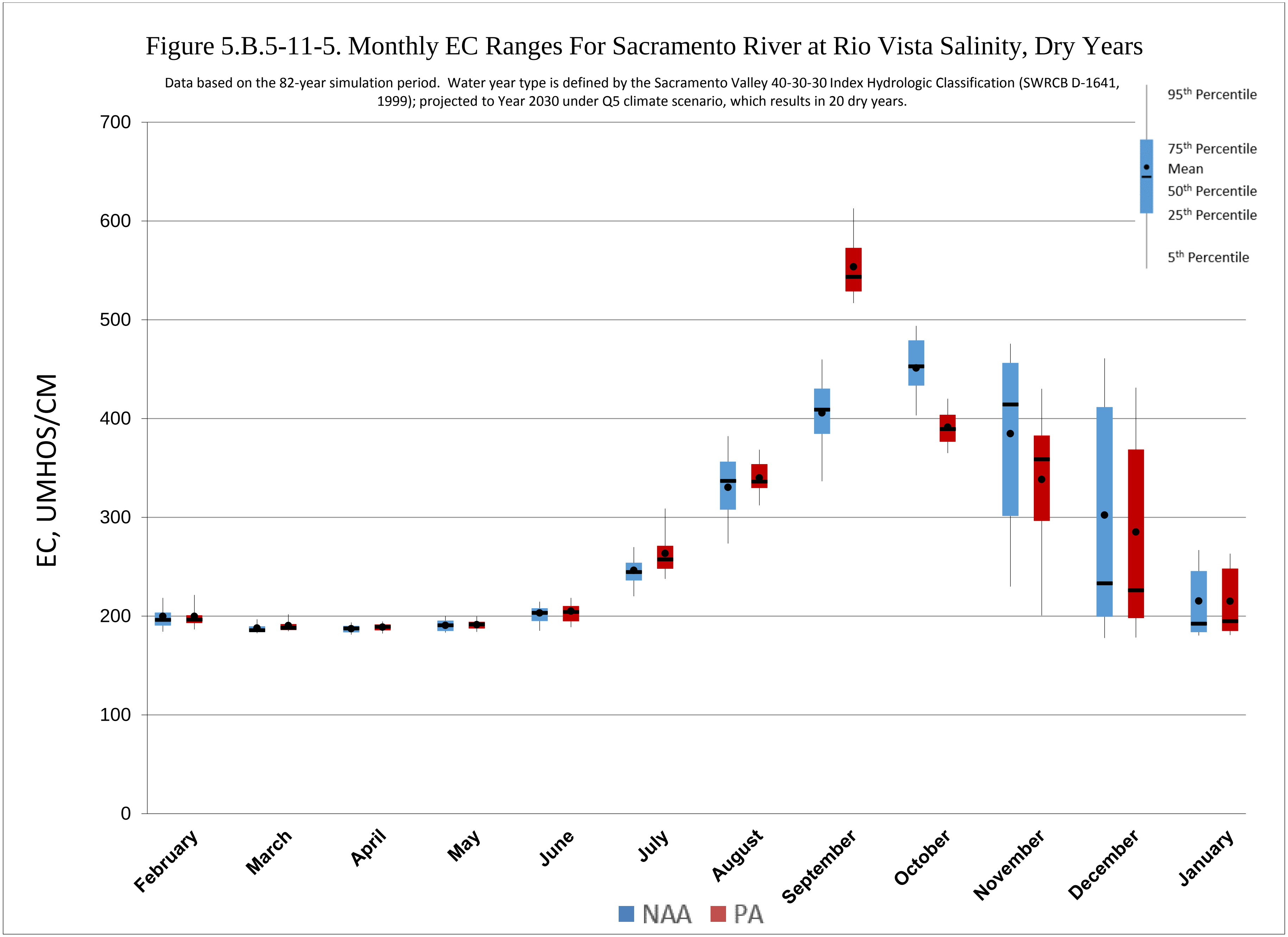


Figure 5.B.5-11-5. Monthly EC Ranges For Sacramento River at Rio Vista Salinity, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
EC, UMHOS/CM
700
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

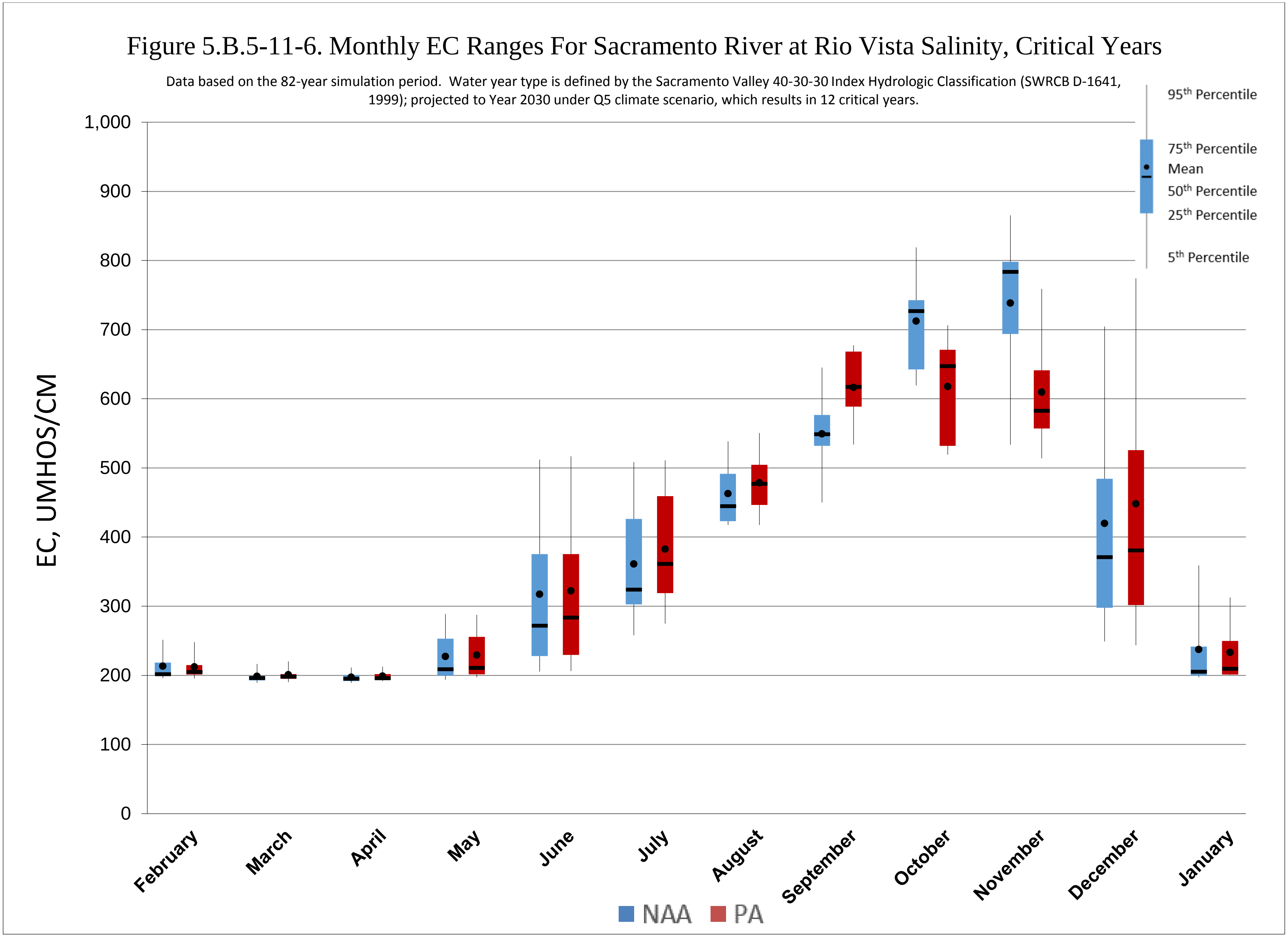
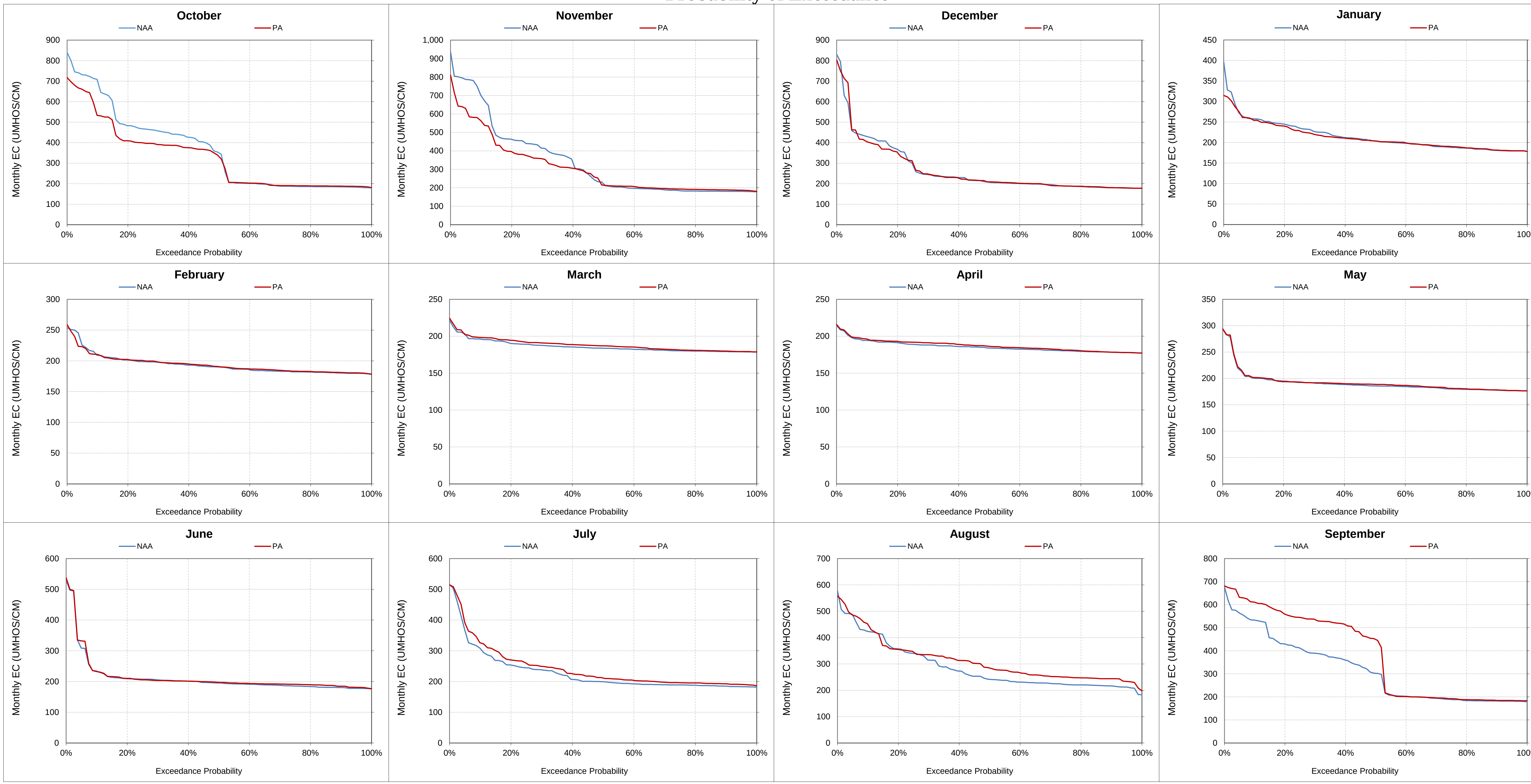


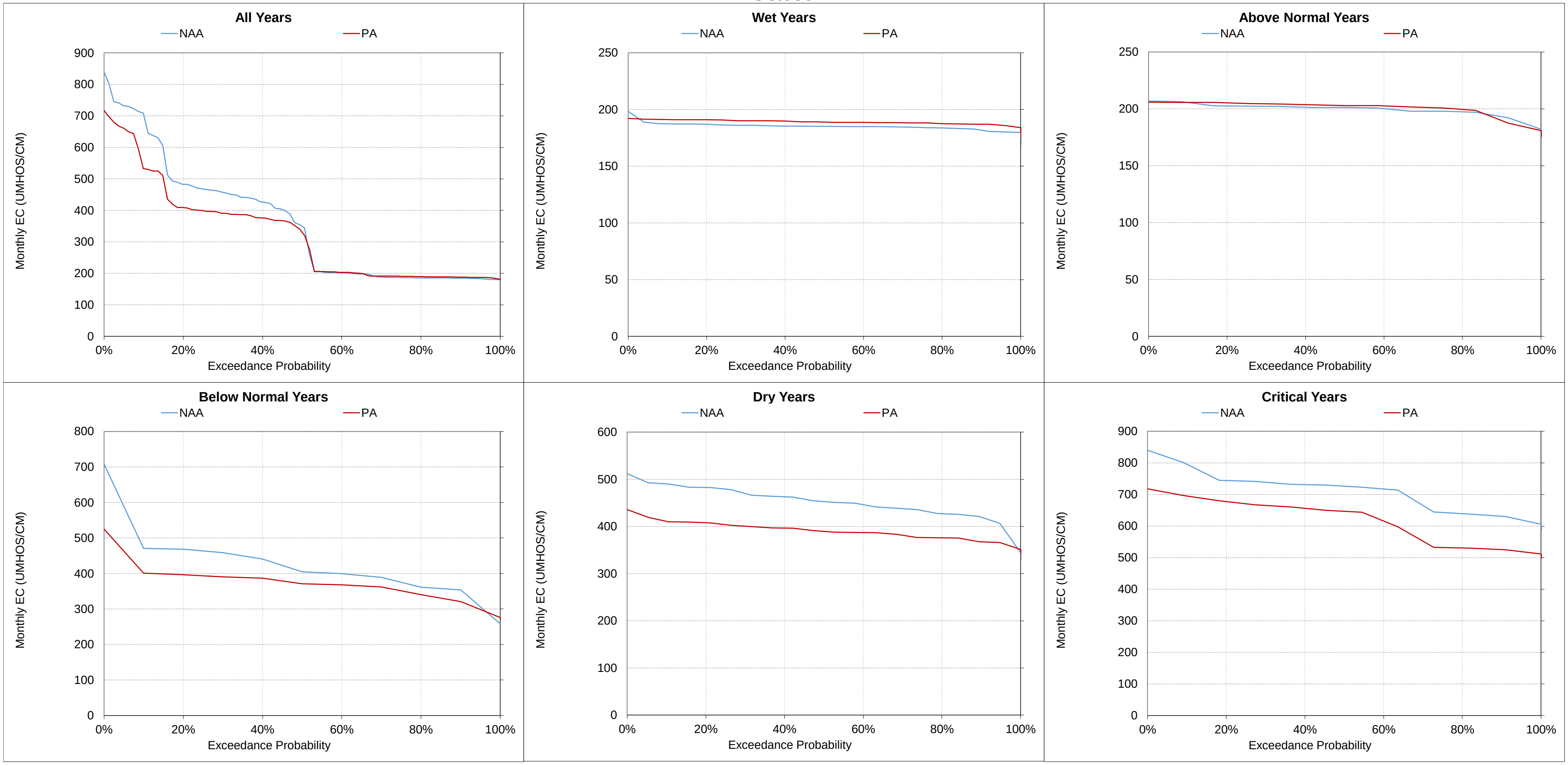
Figure 5.B.5-11-6. Monthly EC Ranges For Sacramento River at Rio Vista Salinity, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
EC, UMHOS/CM
1,000
900
800
700
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-11-7. Sacramento River at Rio Vista Salinity, Monthly EC Probability of Exceedance



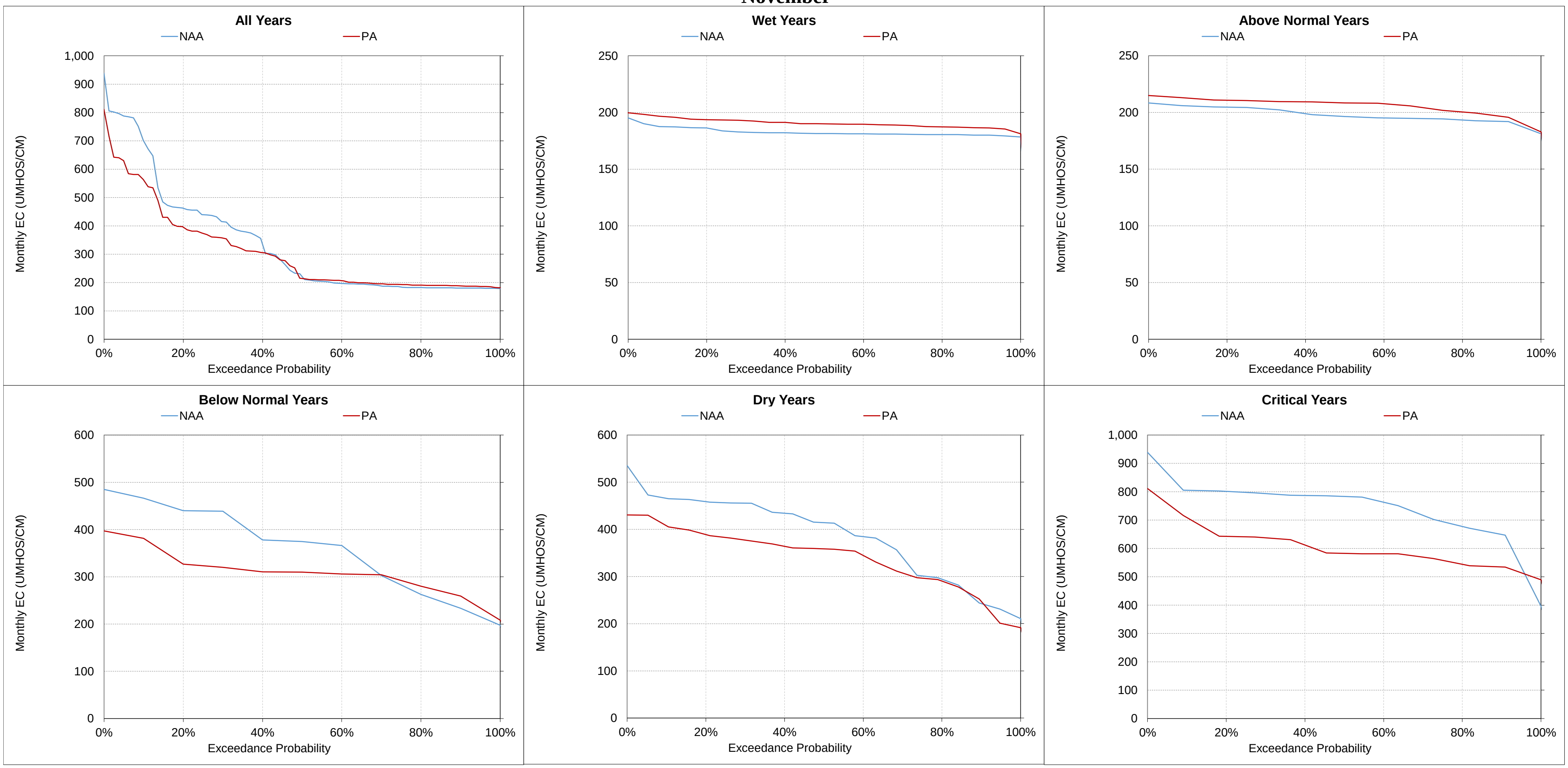
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-8. Sacramento River at Rio Vista Salinity, Monthly EC October



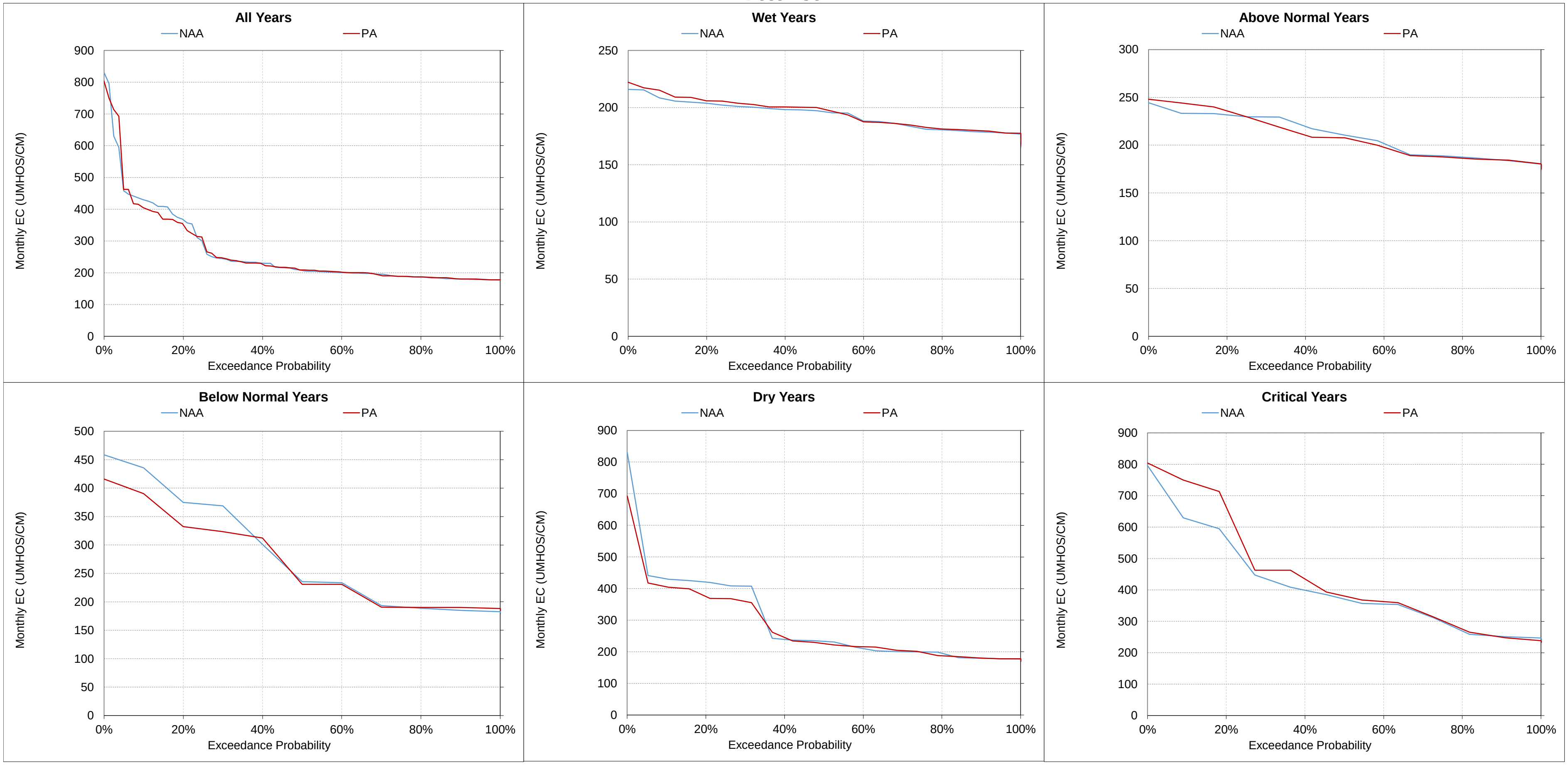
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-9. Sacramento River at Rio Vista Salinity, Monthly EC November



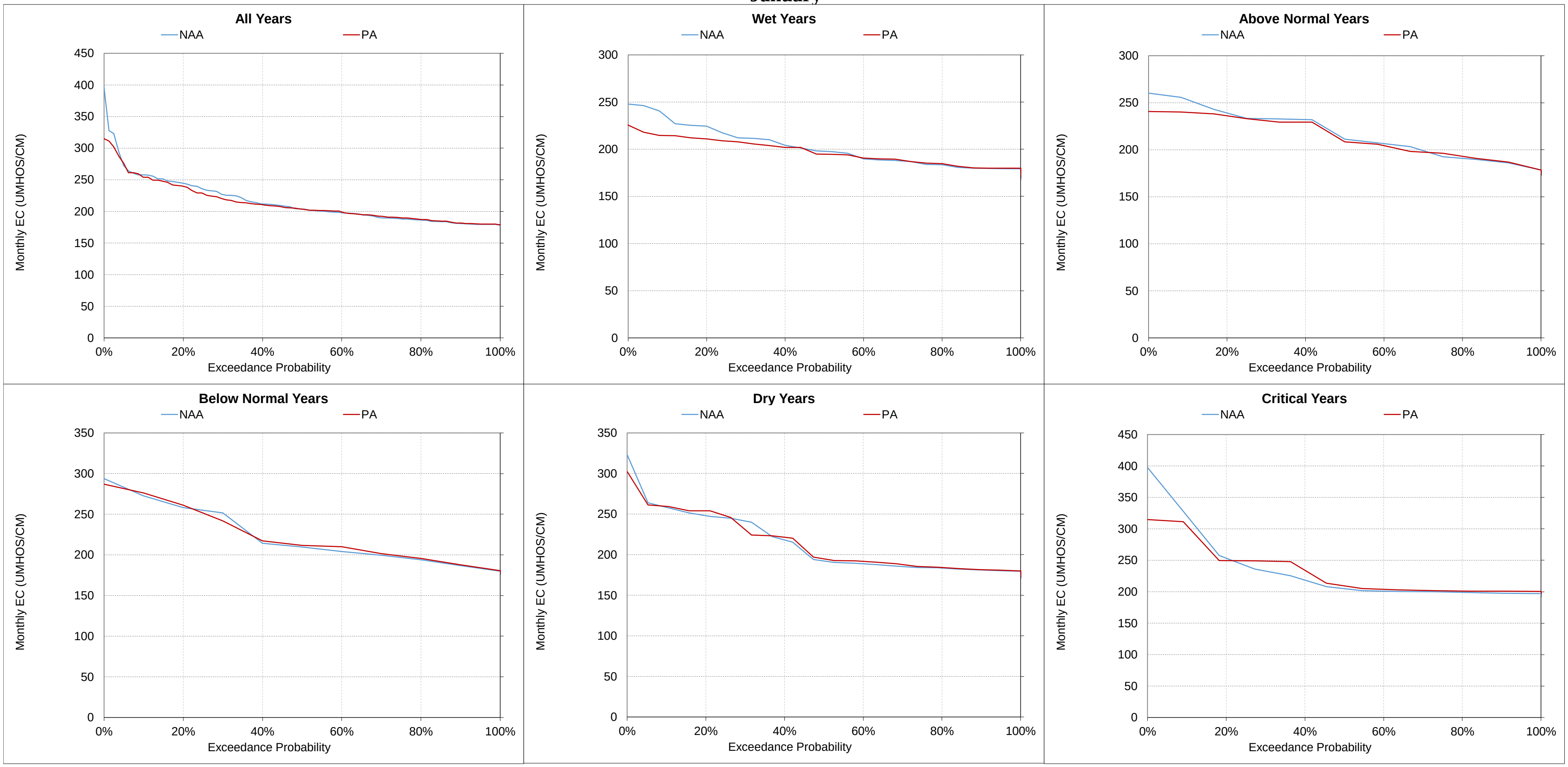
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-10. Sacramento River at Rio Vista Salinity, Monthly EC December



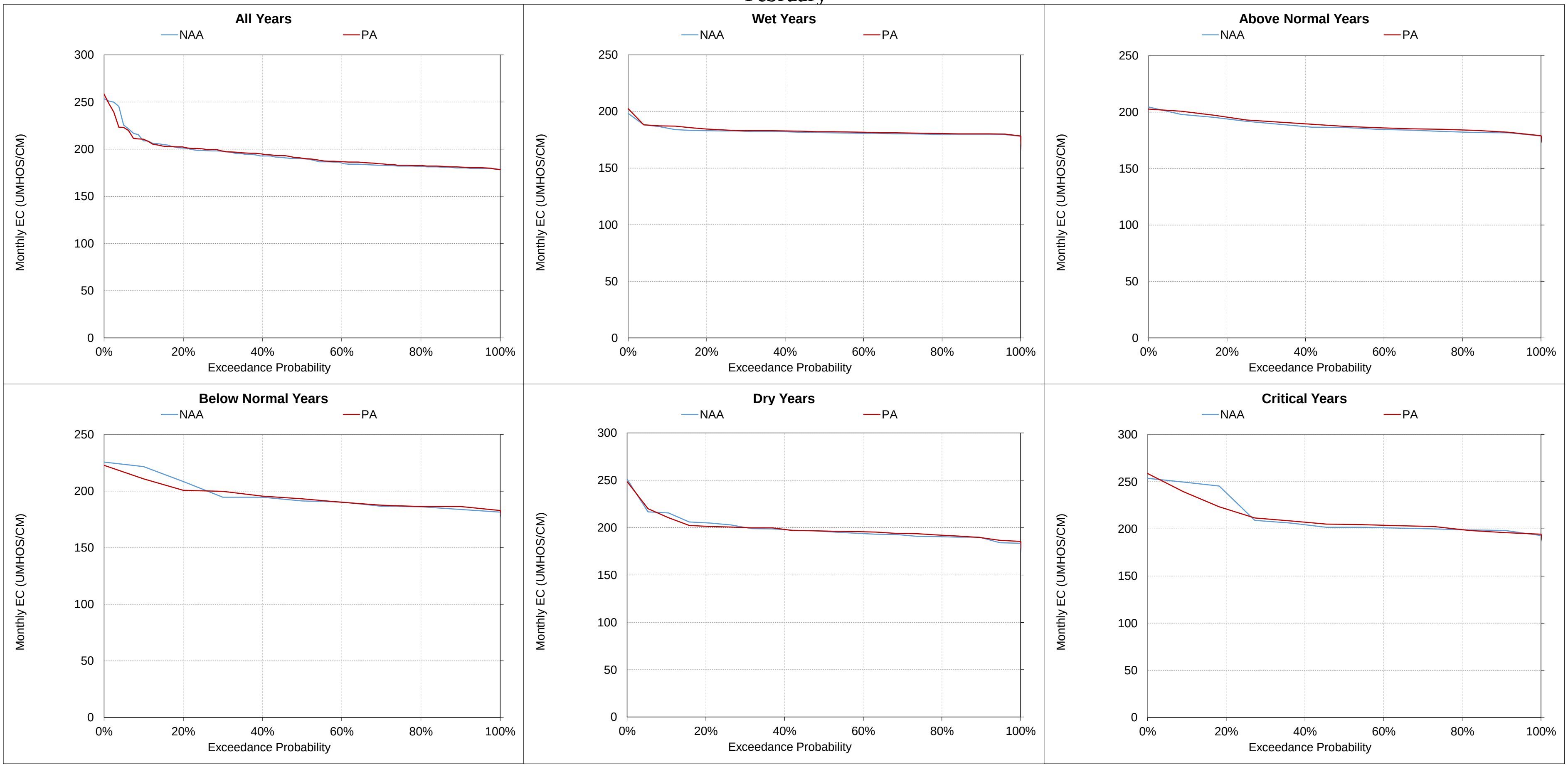
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-11. Sacramento River at Rio Vista Salinity, Monthly EC
January



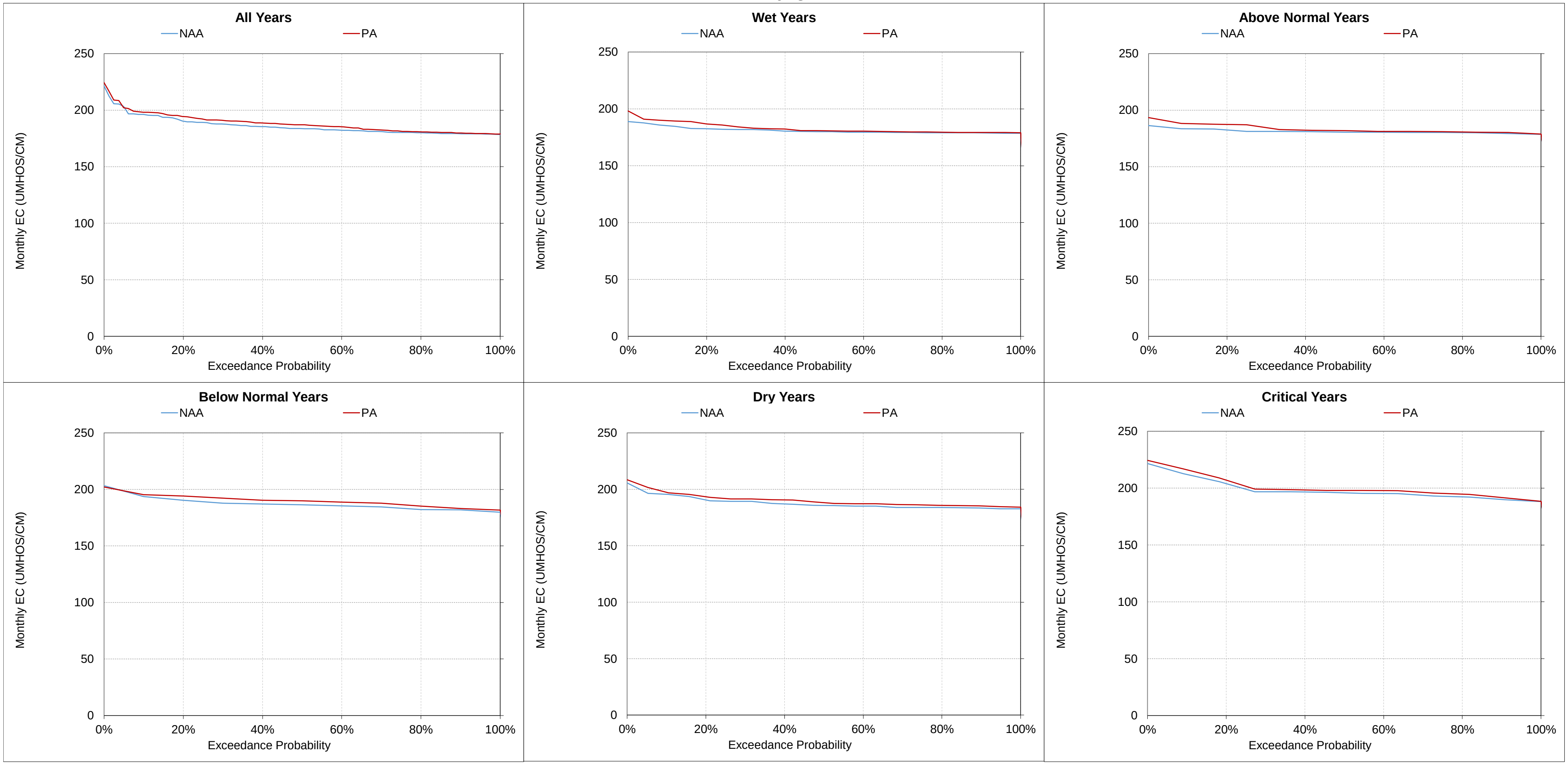
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-12. Sacramento River at Rio Vista Salinity, Monthly EC
February



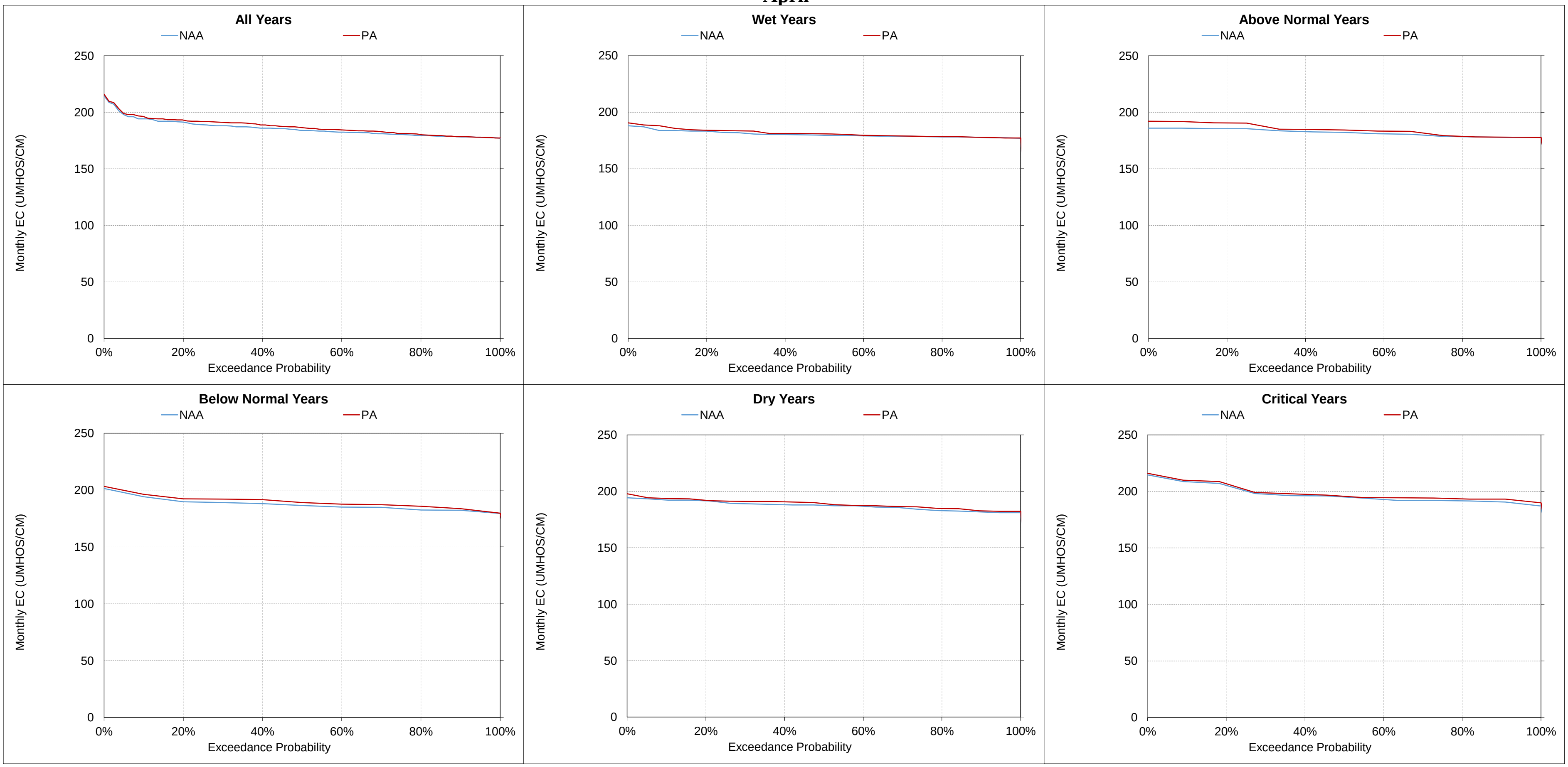
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-13. Sacramento River at Rio Vista Salinity, Monthly EC
March



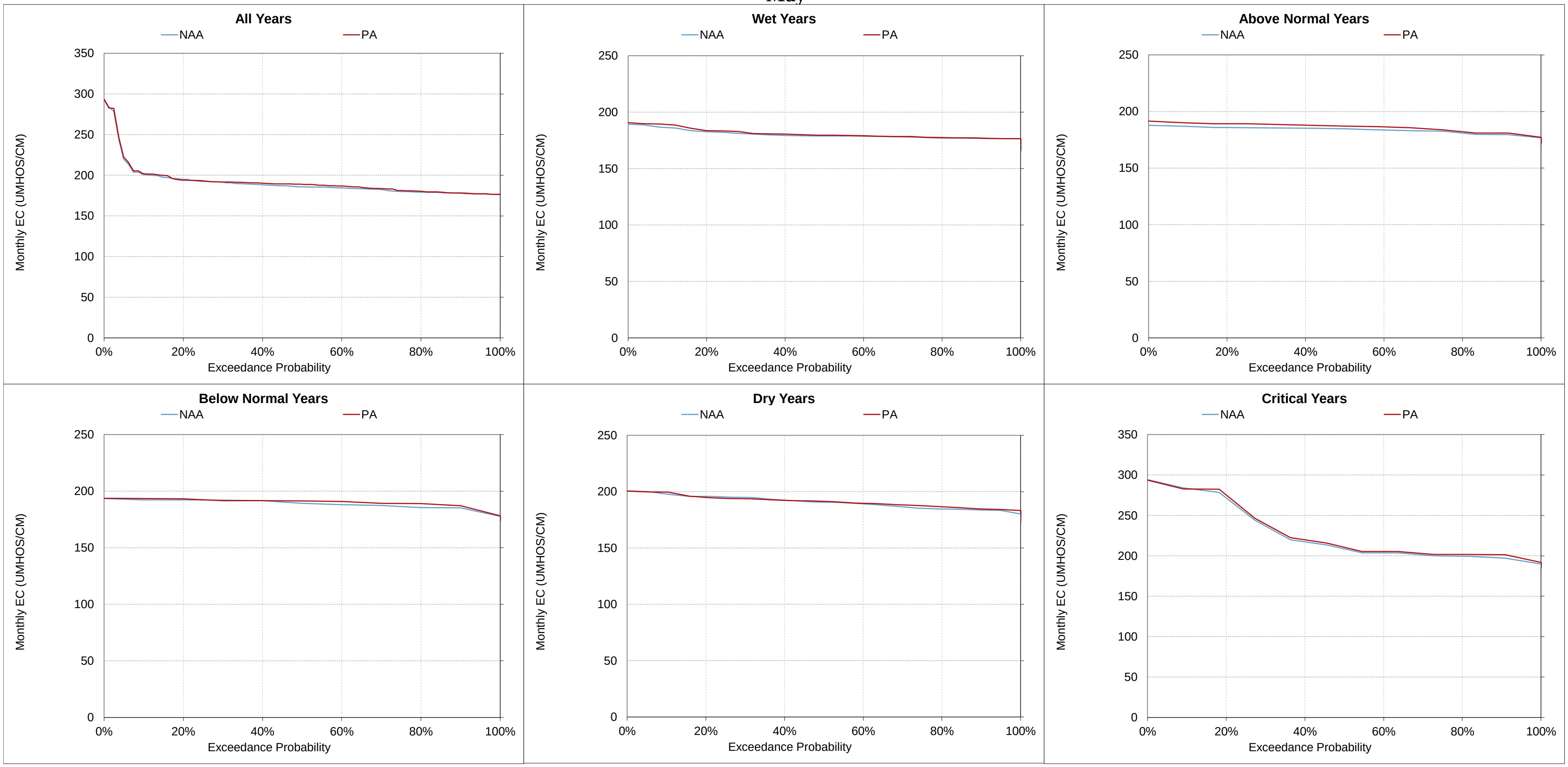
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-14. Sacramento River at Rio Vista Salinity, Monthly EC
April



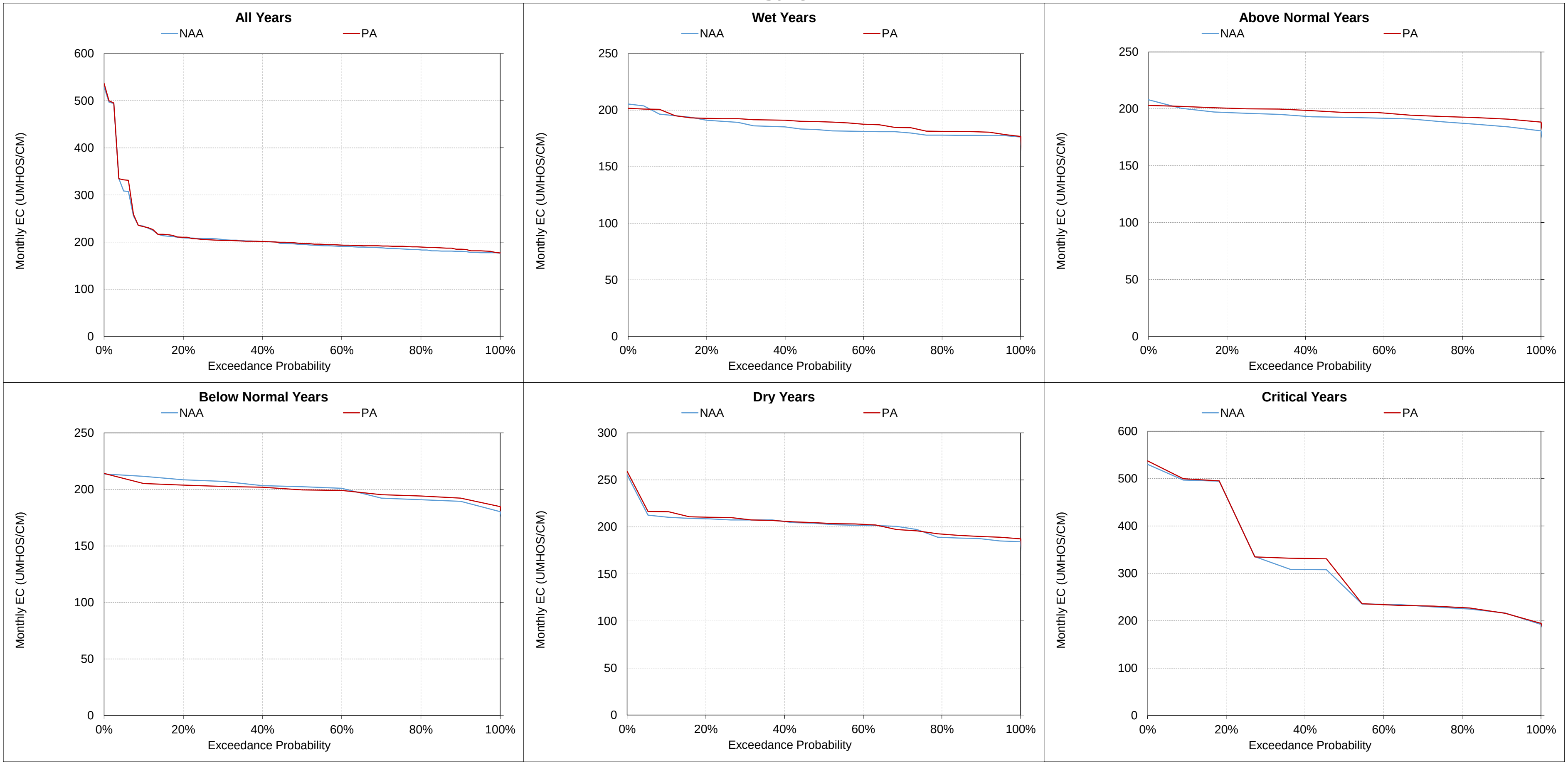
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-15. Sacramento River at Rio Vista Salinity, Monthly EC May



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-16. Sacramento River at Rio Vista Salinity, Monthly EC
June



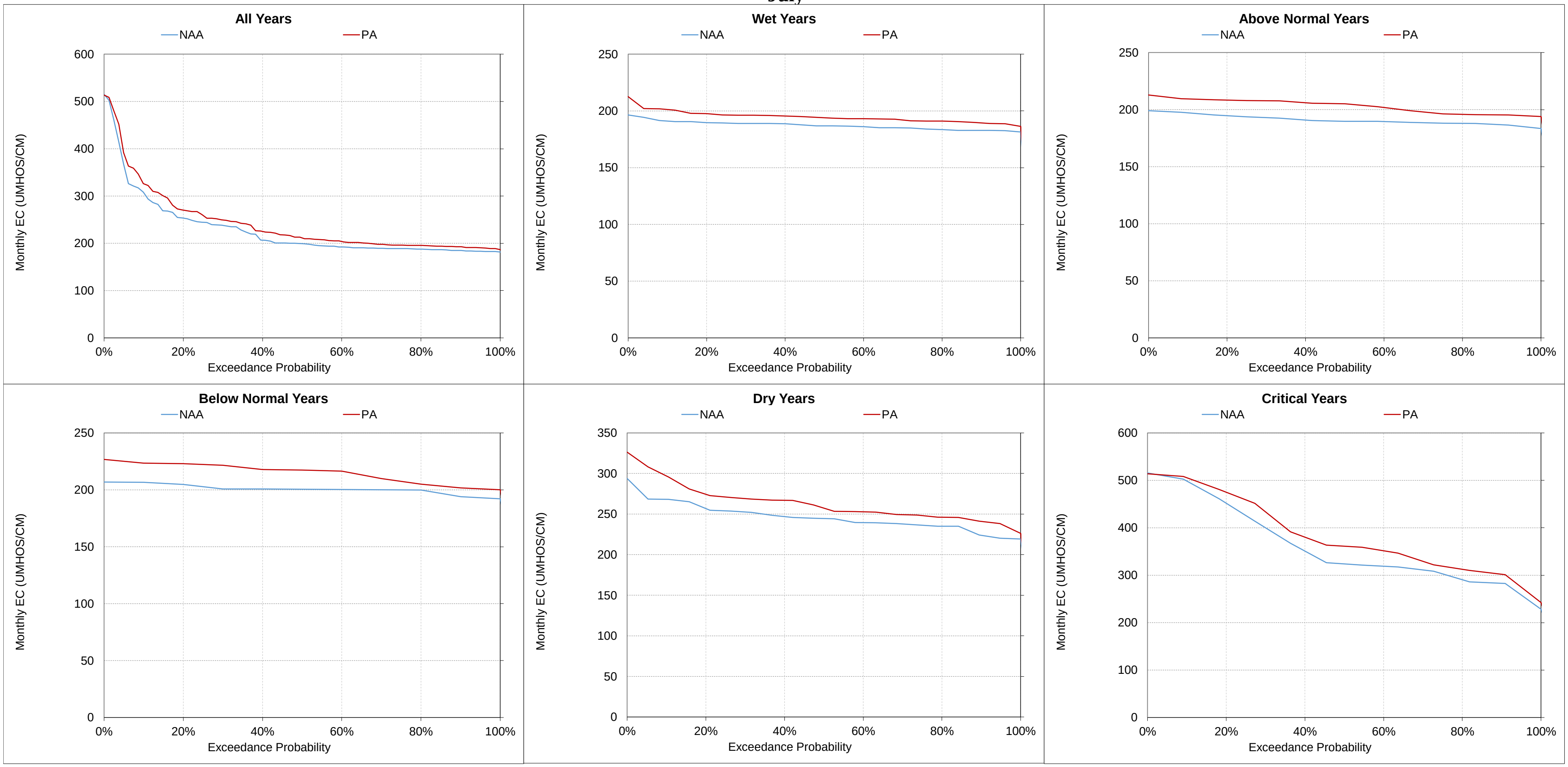
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

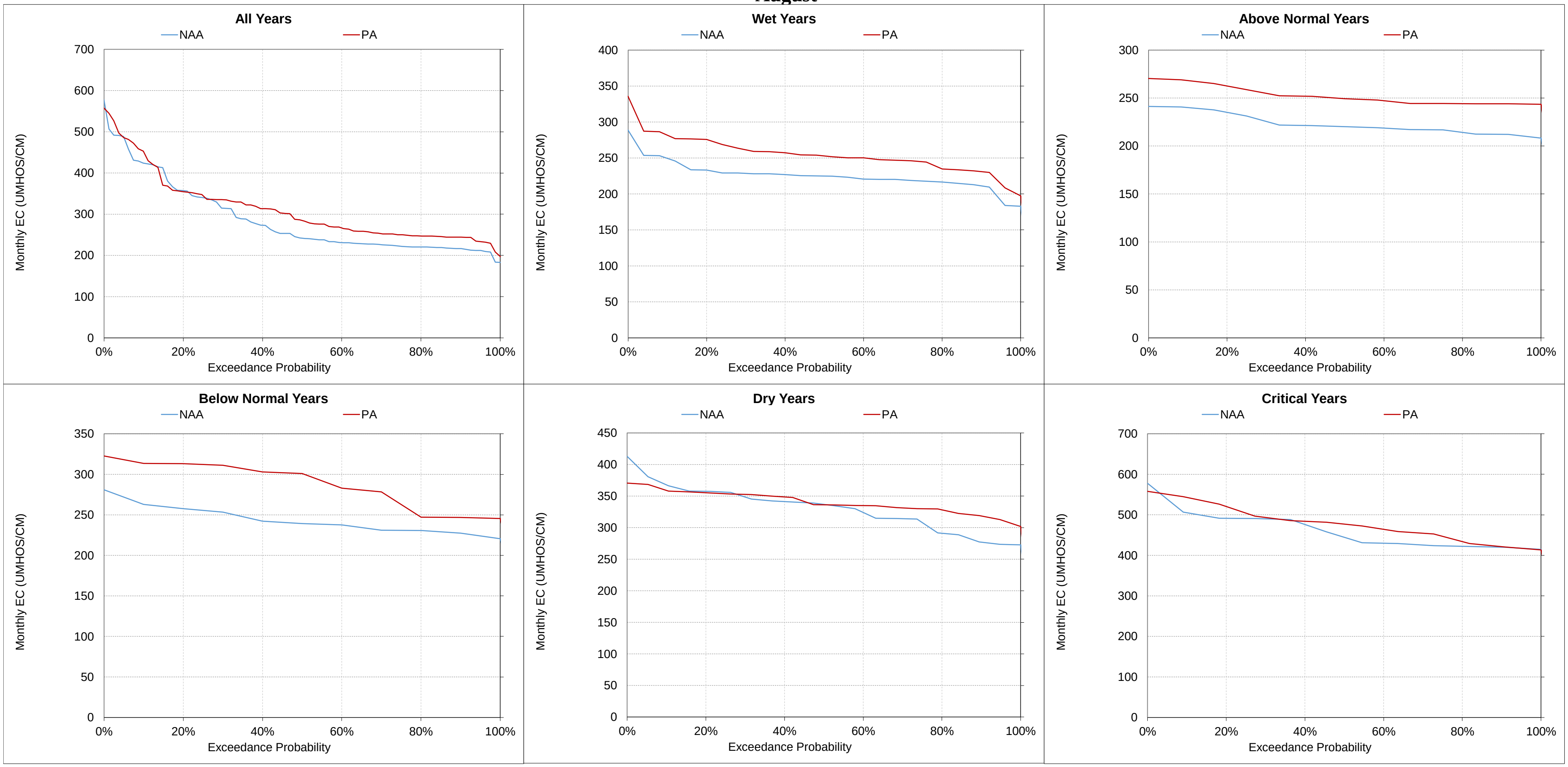
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-17. Sacramento River at Rio Vista Salinity, Monthly EC
July



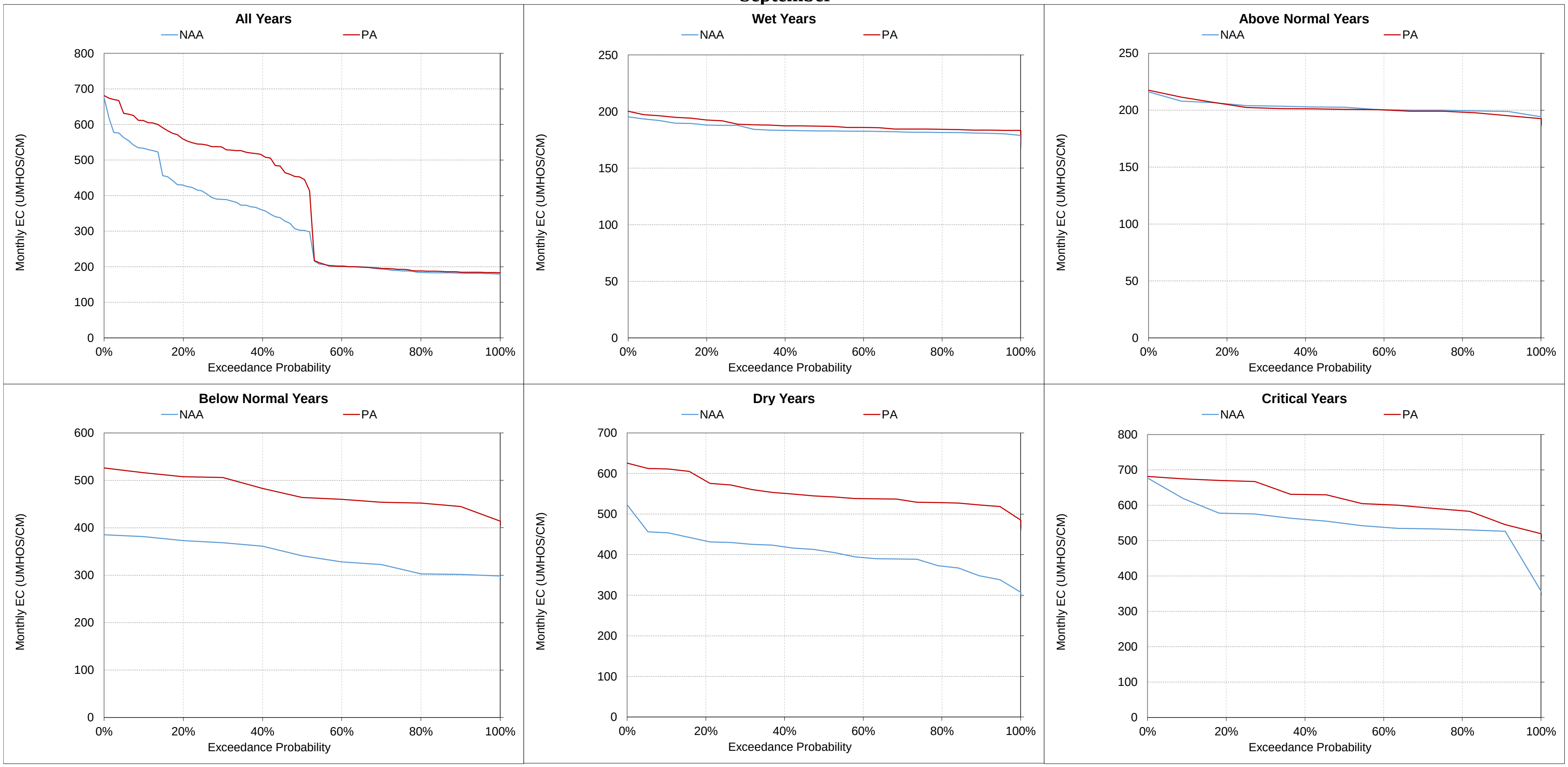
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-18. Sacramento River at Rio Vista Salinity, Monthly EC
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-11-19. Sacramento River at Rio Vista Salinity, Monthly EC
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-12. Sacramento River at Emmaton Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	4,366	3,611	-756	-17%	4,517	3,674	-843	-19%	2,743	2,532	-211	-8%	1,102	1,096	-6	-1%	428	383	-45	-11%	318	321	3	1%
20%	3,376	2,767	-610	-18%	3,152	2,579	-572	-18%	2,129	2,002	-127	-6%	945	835	-110	-12%	317	315	-2	-1%	247	254	7	3%
30%	3,195	2,661	-535	-17%	2,895	2,305	-591	-20%	929	1,033	104	11%	714	628	-87	-12%	252	254	2	1%	207	227	20	10%
40%	3,091	2,402	-689	-22%	2,136	1,888	-249	-12%	776	815	40	5%	465	408	-56	-12%	229	230	1	0%	200	217	17	8%
50%	2,233	2,179	-54	-2%	826	788	-38	-5%	601	640	39	6%	349	295	-54	-16%	204	213	9	4%	192	209	18	9%
60%	636	657	20	3%	569	600	31	5%	496	521	25	5%	245	257	12	5%	193	204	11	6%	188	199	12	6%
70%	320	323	3	1%	373	430	57	15%	329	334	4	1%	200	203	3	1%	186	191	5	3%	183	192	9	5%
80%	286	303	17	6%	270	307	38	14%	228	245	17	7%	191	194	3	2%	183	188	5	3%	183	188	6	3%
90%	274	286	12	4%	245	276	31	13%	186	188	2	1%	182	187	4	2%	182	184	3	1%	181	184	3	1%
Long Term Full Simulation Period[b]	1,999	1,723	-276	-14%	1,755	1,539	-216	-12%	1,043	1,058	14	1%	550	503	-47	-9%	286	274	-12	-4%	231	243	12	5%
Water Year Types[c]																								
Wet (32%)	285	298	13	4%	272	311	39	14%	393	412	19	5%	425	329	-96	-23%	186	190	3	2%	184	193	9	5%
Above Normal (16%)	612	604	-8	-1%	555	633	78	14%	580	612	32	5%	542	497	-44	-8%	212	209	-3	-2%	185	196	11	6%
Below Normal (13%)	2,782	2,353	-430	-15%	2,246	1,845	-401	-18%	1,338	1,277	-61	-5%	615	610	-5	-1%	313	284	-29	-9%	224	231	7	3%
Dry (24%)	3,177	2,623	-554	-17%	2,461	2,099	-363	-15%	1,329	1,269	-60	-5%	569	569	0	0%	319	298	-21	-7%	242	253	11	4%
Critical (15%)	4,536	3,949	-587	-13%	4,636	3,965	-671	-14%	2,209	2,386	177	8%	738	677	-61	-8%	502	479	-22	-4%	370	393	23	6%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	416	407	-8	-2%	597	586	-11	-2%	990	975	-16	-2%	1,760	1,977	217	12%	2,651	2,942	291	11%	3,623	3,908	285	8%
20%	277	294	17	6%	475	451	-24	-5%	721	705	-17	-2%	1,146	1,471	325	28%	2,099	2,233	134	6%	2,912	3,672	760	26%
30%	240	262	22	9%	379	379	0	0%	675	638	-37	-5%	1,019	1,246	227	22%	1,865	2,062	197	11%	2,664	3,521	857	32%
40%	211	226	16	7%	259	265	6	2%	553	551	-2	0%	664	977	313	47%	1,364	1,912	548	40%	2,310	3,296	986	43%
50%	200	214	14	7%	227	236	9	4%	473	440	-33	-7%	511	805	294	57%	1,069	1,560	491	46%	1,752	2,970	1,218	69%
60%	192	204	13	7%	211	221	10	5%	382	371	-11	-3%	440	657	217	49%	971	1,435	464	48%	562	649	87	15%
70%	188	195	7	4%	196	202	6	3%	309	321	12	4%	397	574	177	44%	872	1,289	417	48%	450	515	65	15%
80%	184	192	7	4%	188	193	5	3%	243	264	21	8%	362	477	115	32%	784	1,241	458	58%	359	386	27	8%
90%	181	183	2	1%	180	181	1	1%	190	201	11	6%	302	424	121	40%	744	1,174	430	58%	320	337	17	5%
Long Term Full Simulation Period[b]	252	260	8	3%	353	354	1	0%	607	607	0	0%	834	1,028	194	23%	1,447	1,804	357	25%	1,682	2,112	430	26%
Water Year Types[c]																								
Wet (32%)	187	193	5	3%	194	197	3	2%	283	281	-1	0%	345	445	100	29%	880	1,280	400	45%	349	383	33	9%
Above Normal (16%)	192	206	14	7%	212	221	9	4%	400	410	10	3%	423	655	232	55%	830	1,286	456	55%	580	669	89	15%
Below Normal (13%)	251	261	10	4%	311	312	1	0%	561	529	-32	-6%	554	851	297	54%	1,067	1,615	548	51%	2,090	3,132	1,042	50%
Dry (24%)	254	263	9	3%	371	358	-13	-3%	605	601	-4	-1%	1,121	1,374	253	23%	1,896	2,129	234	12%	2,743	3,616	873	32%
Critical (15%)	455	457	2	0%	858	868	10	1%	1,581	1,605	25	2%	2,118	2,280	163	8%	2,944	3,131	187	6%	3,617	3,980	363	10%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

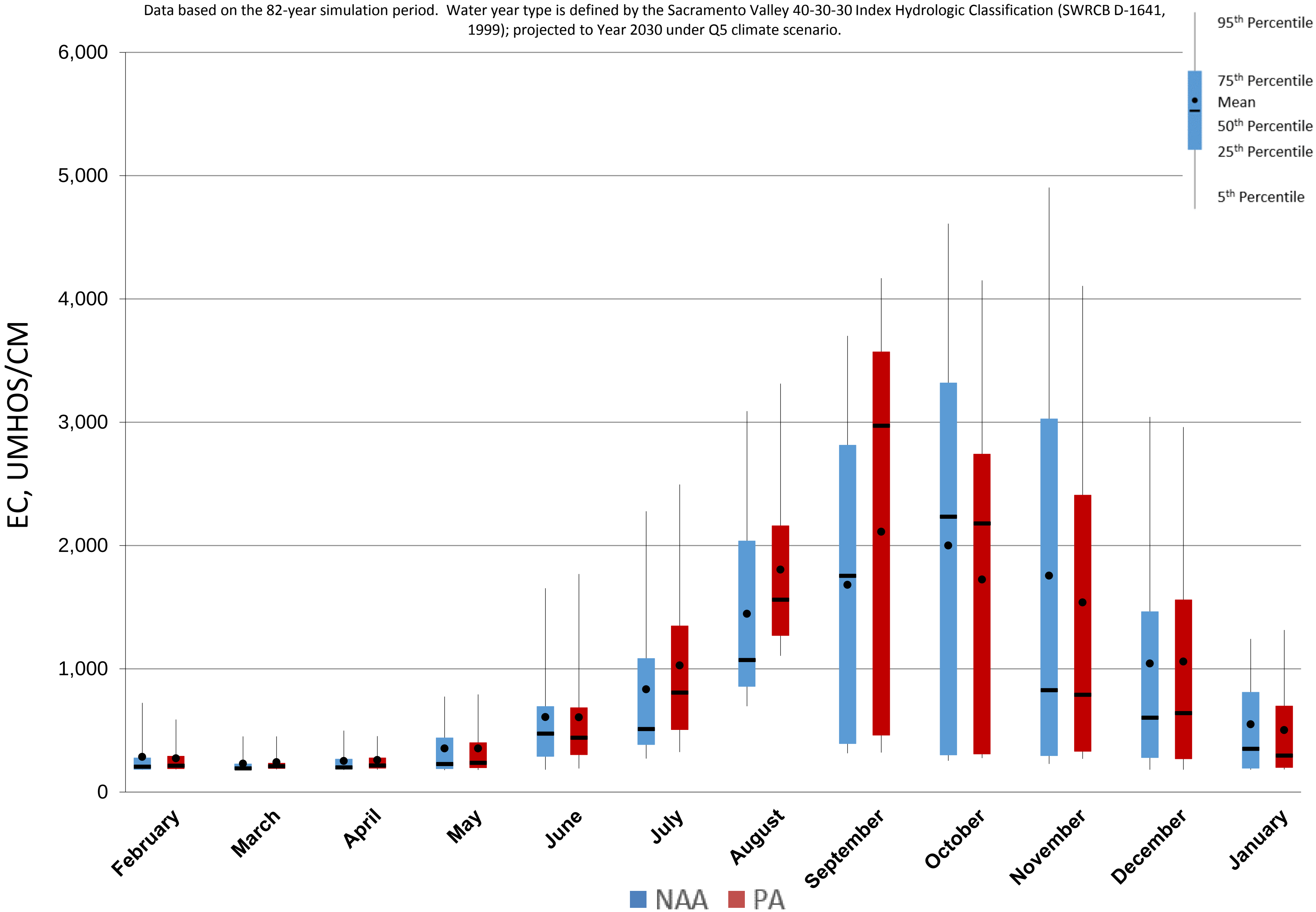
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-1. Monthly EC Ranges For Sacramento River at Emmaton Salinity, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.



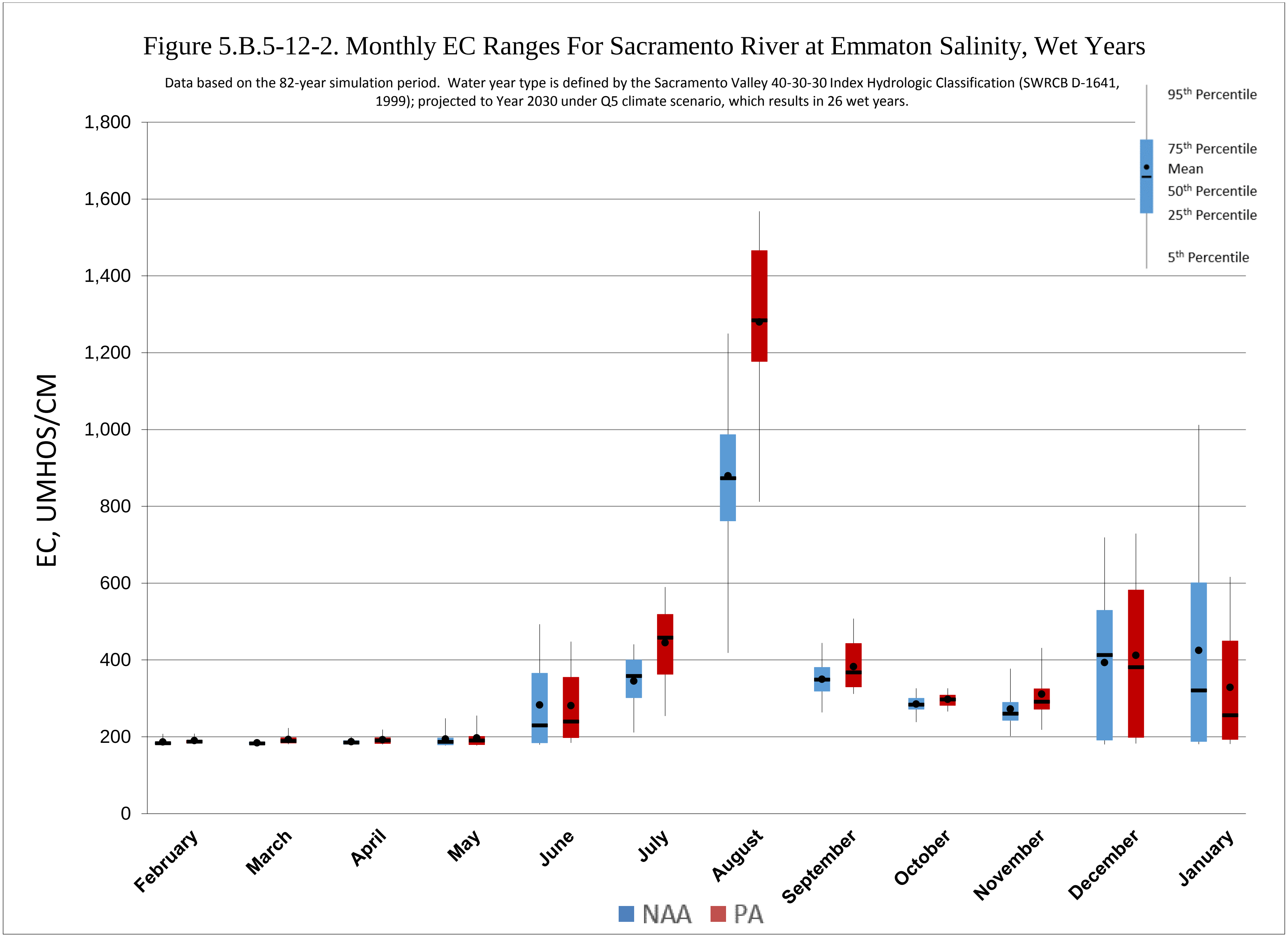


Figure 5.B.5-12-2. Monthly EC Ranges For Sacramento River at Emmaton Salinity, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
EC, UMHOS/CM
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-12-3. Monthly EC Ranges For Sacramento River at Emmaton Salinity, Above Normal Years

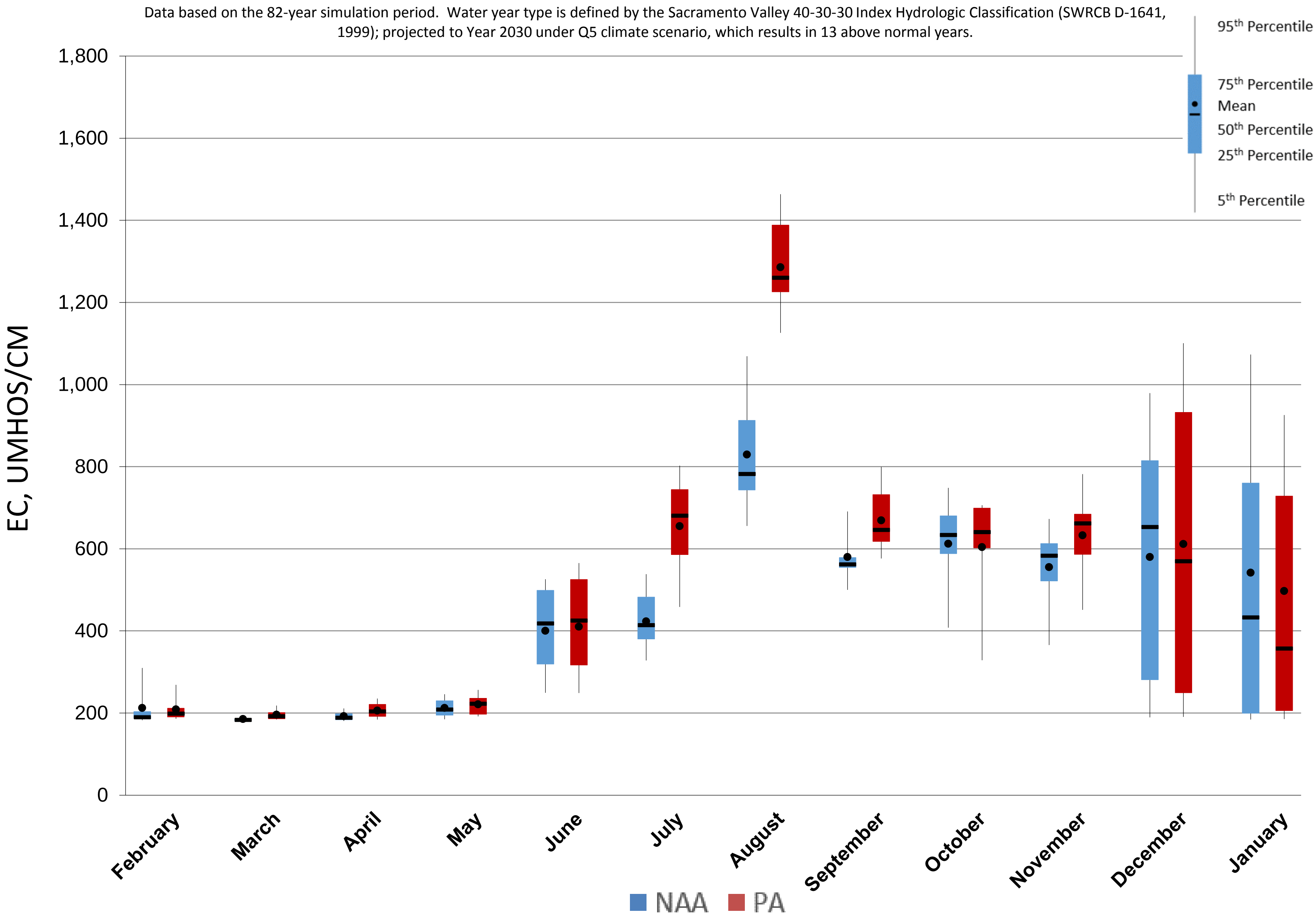
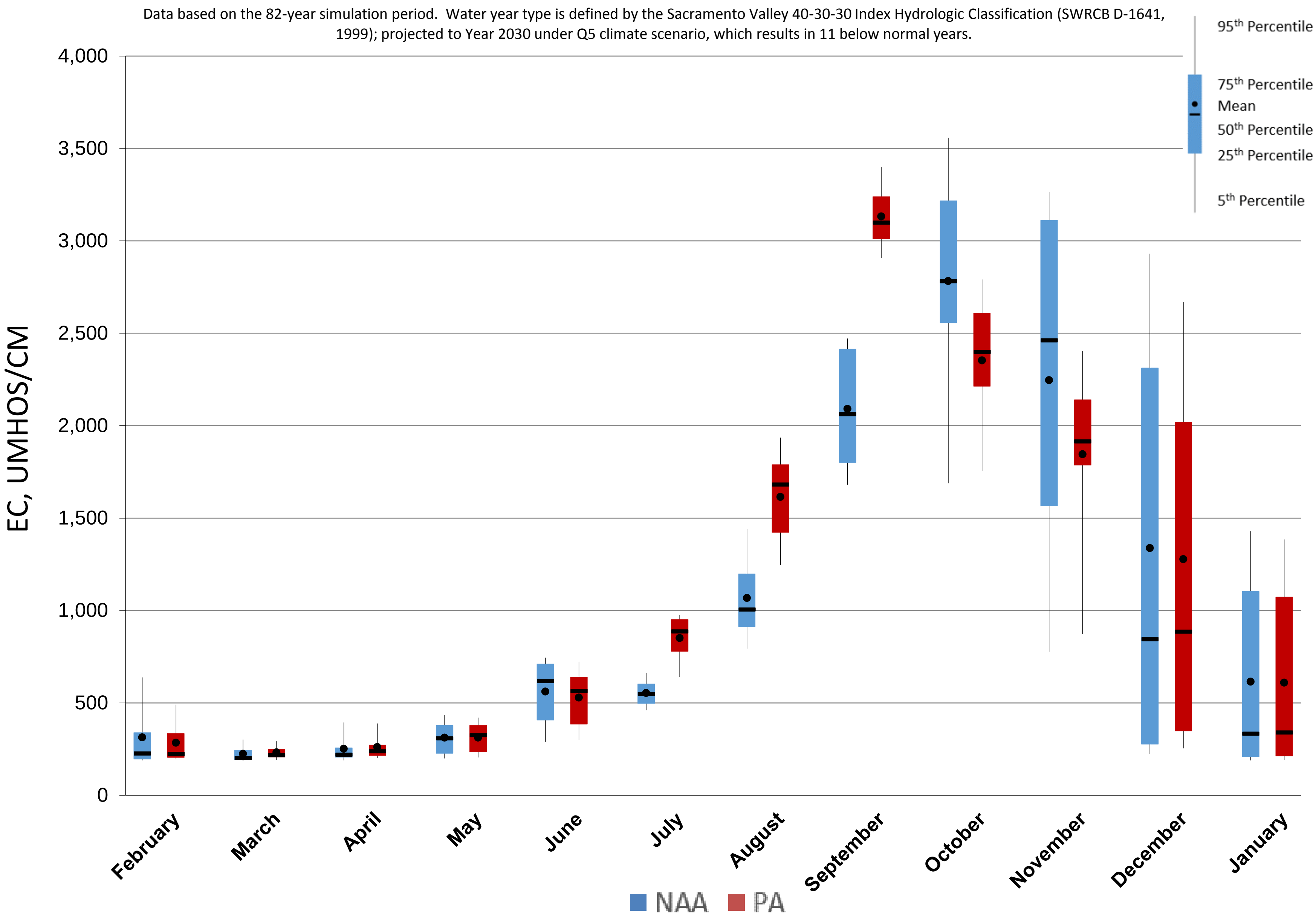


Figure 5.B.5-12-4. Monthly EC Ranges For Sacramento River at Emmaton Salinity, Below Normal Years



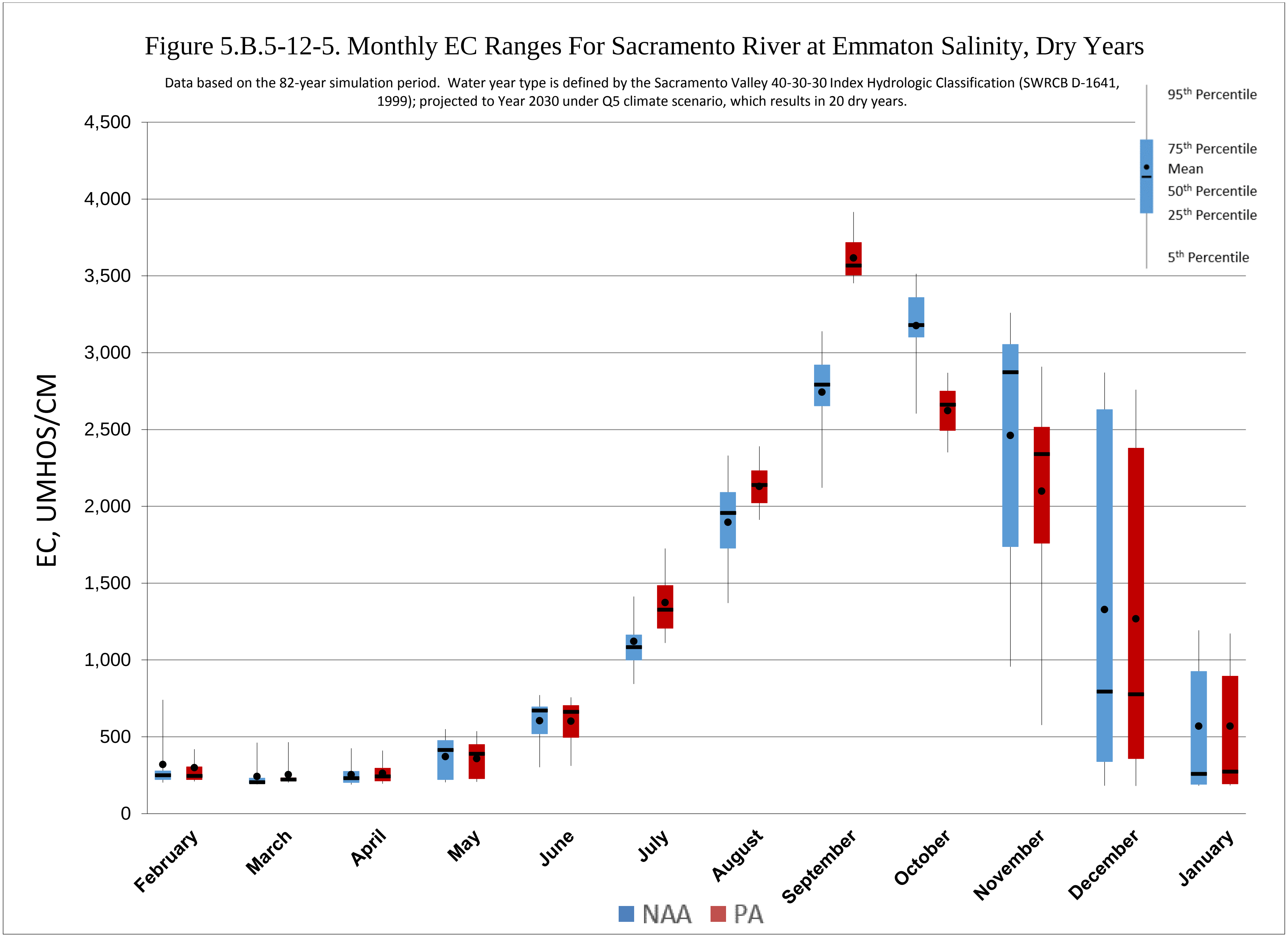


Figure 5.B.5-12-5. Monthly EC Ranges For Sacramento River at Emmaton Salinity, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
EC, UMHOS/CM
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

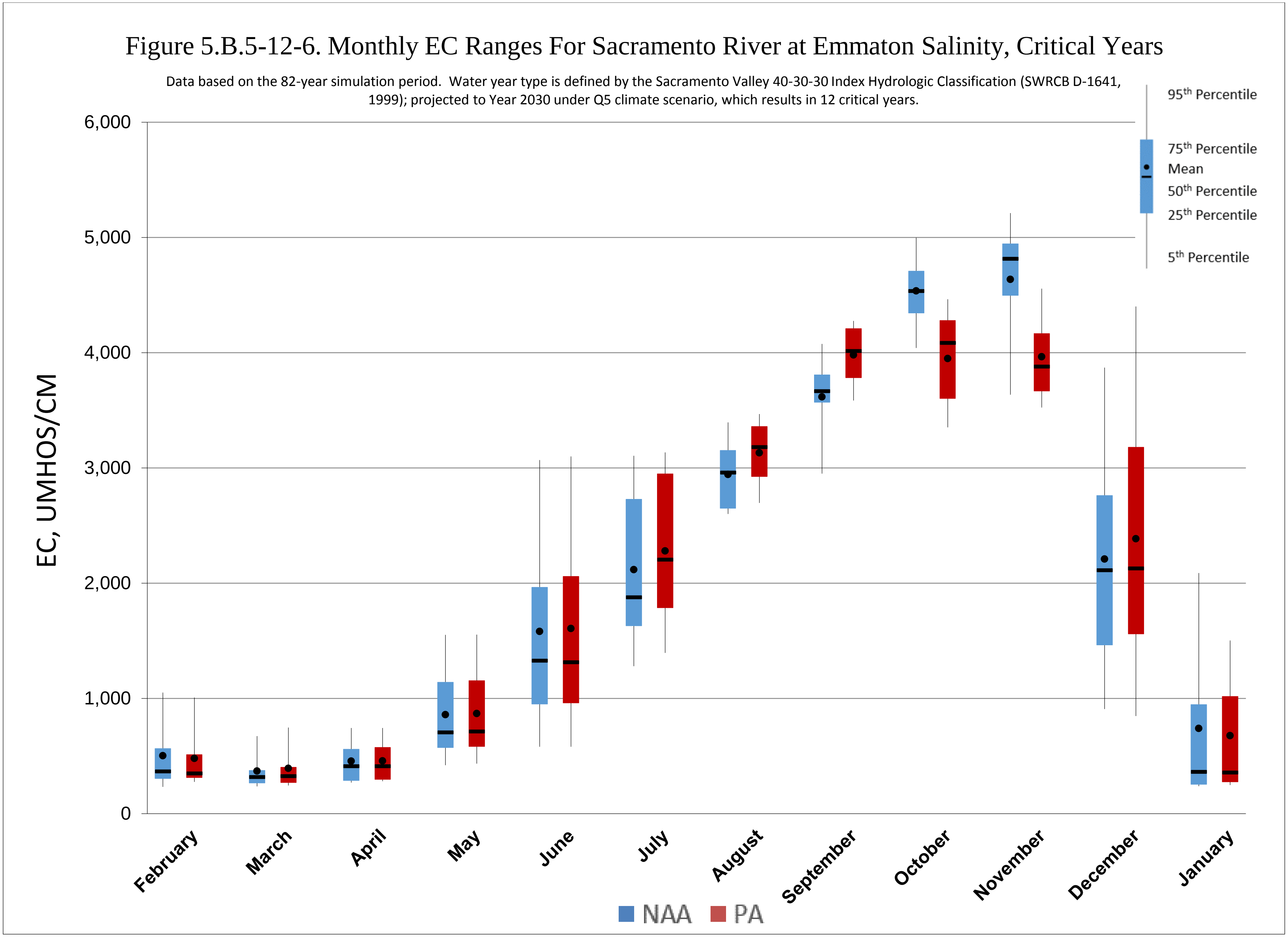
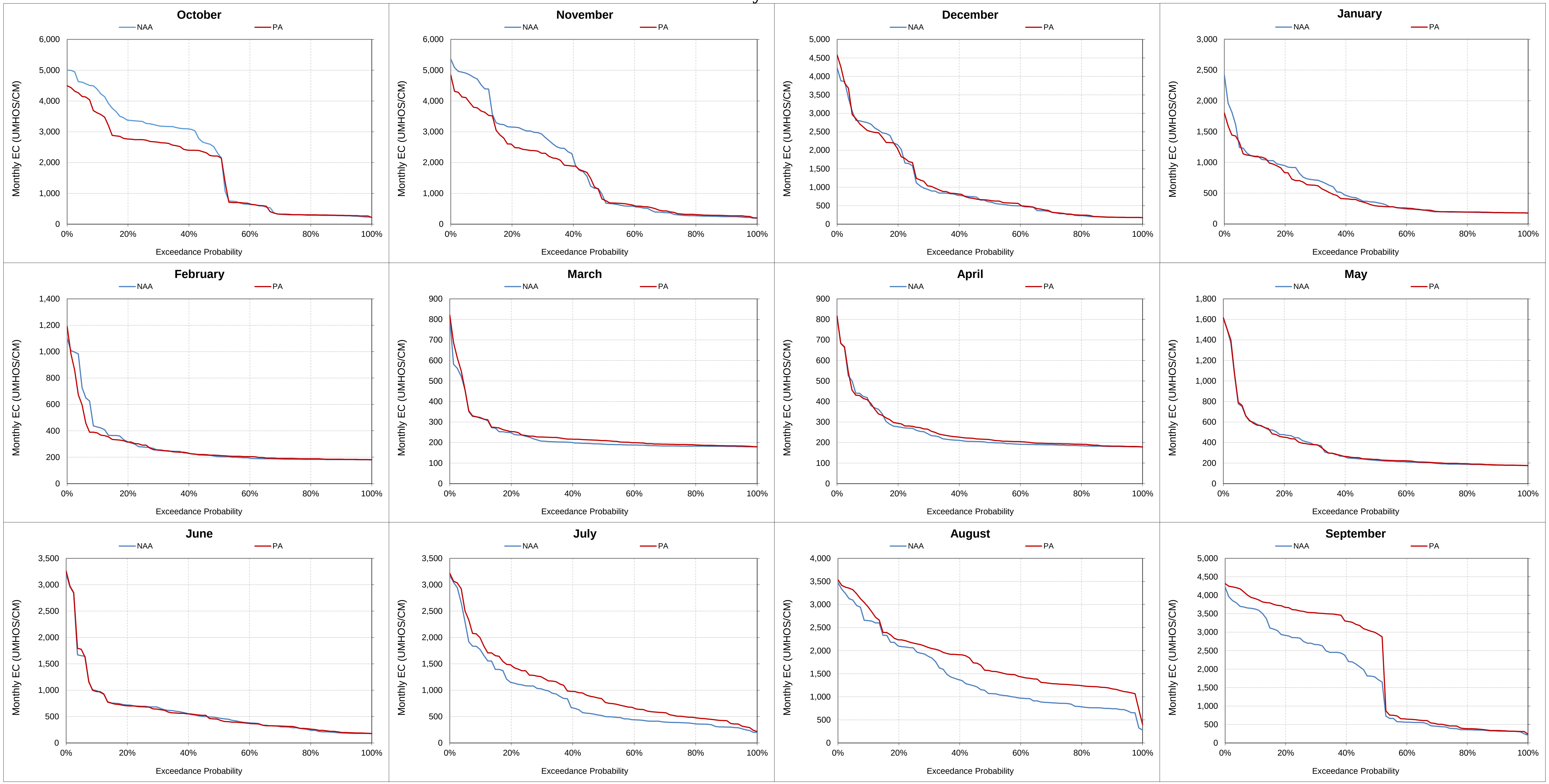


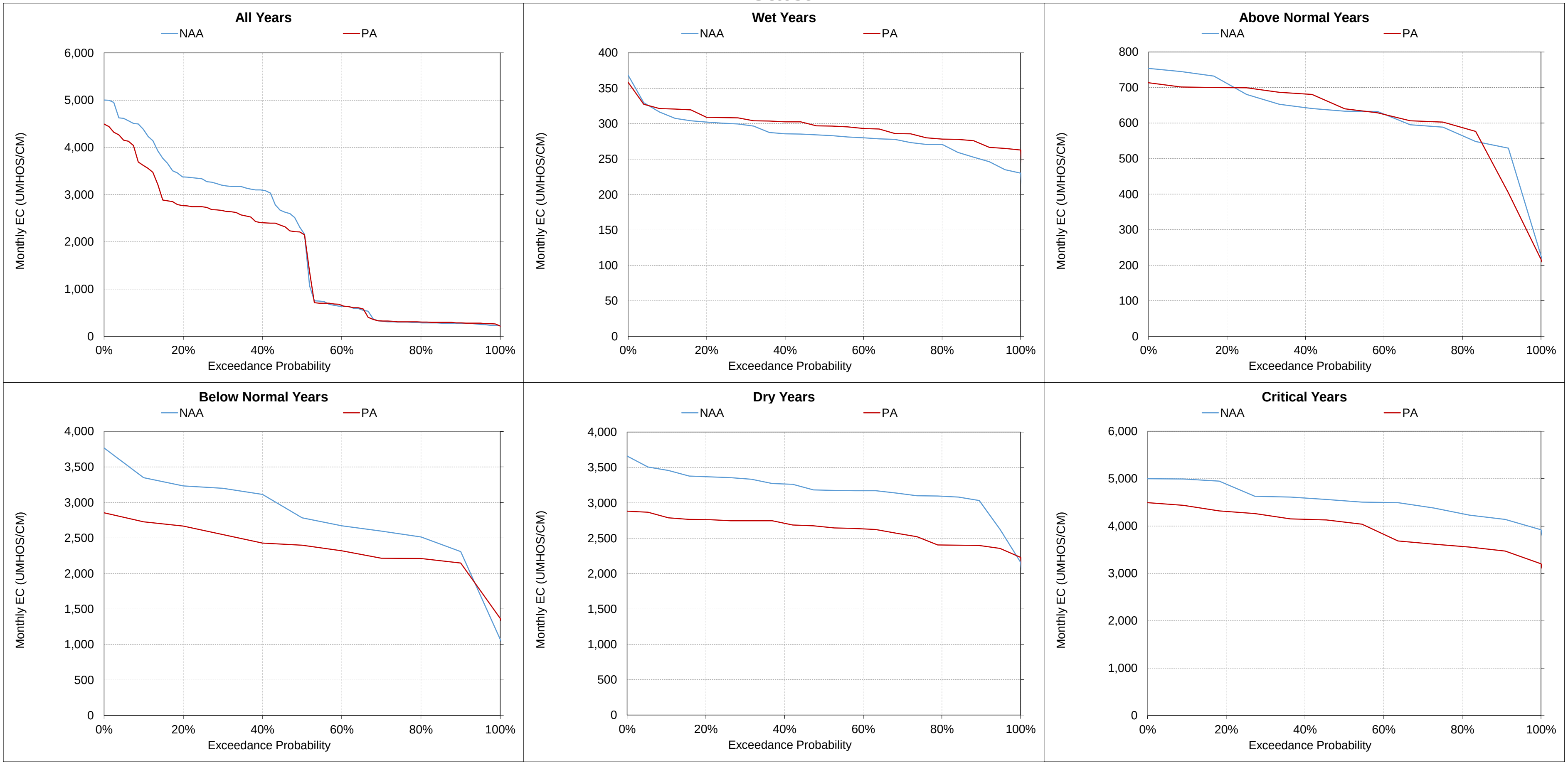
Figure 5.B.5-12-6. Monthly EC Ranges For Sacramento River at Emmaton Salinity, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
EC, UMHOS/CM
6,000
5,000
4,000
3,000
2,000
1,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-12-7. Sacramento River at Emmaton Salinity, Monthly EC Probability of Exceedance



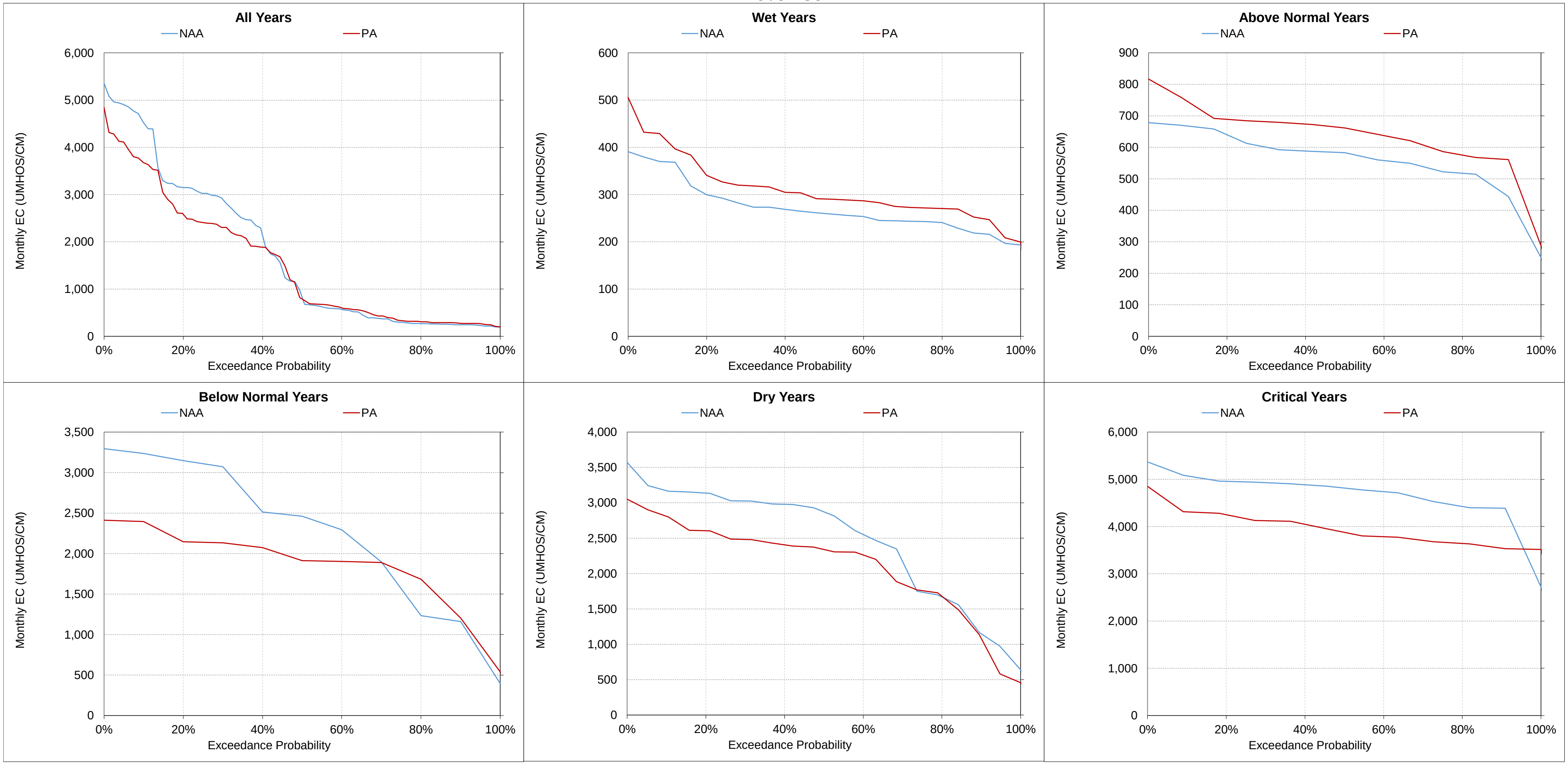
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-8. Sacramento River at Emmaton Salinity, Monthly EC
October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-9. Sacramento River at Emmaton Salinity, Monthly EC November



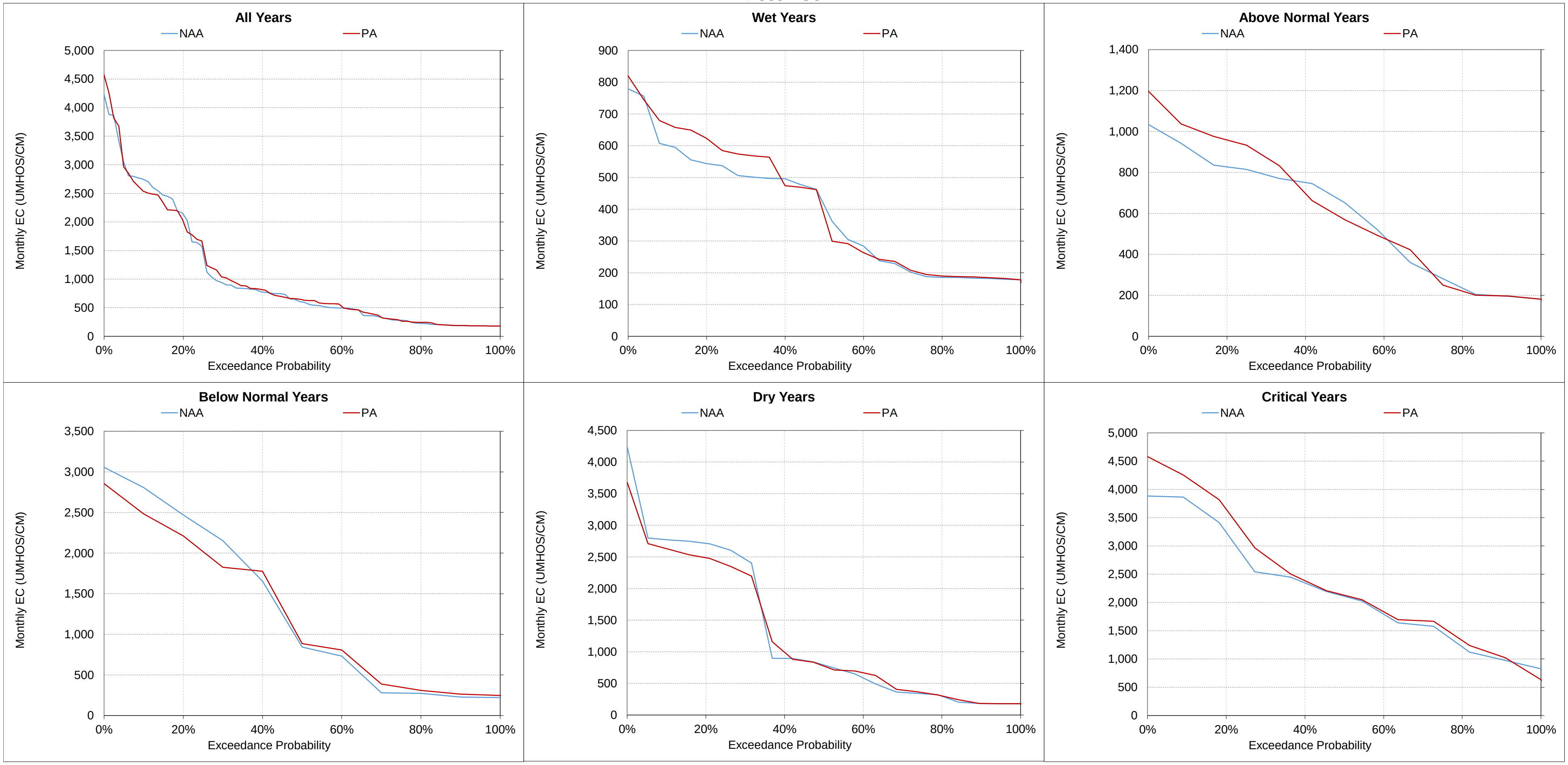
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

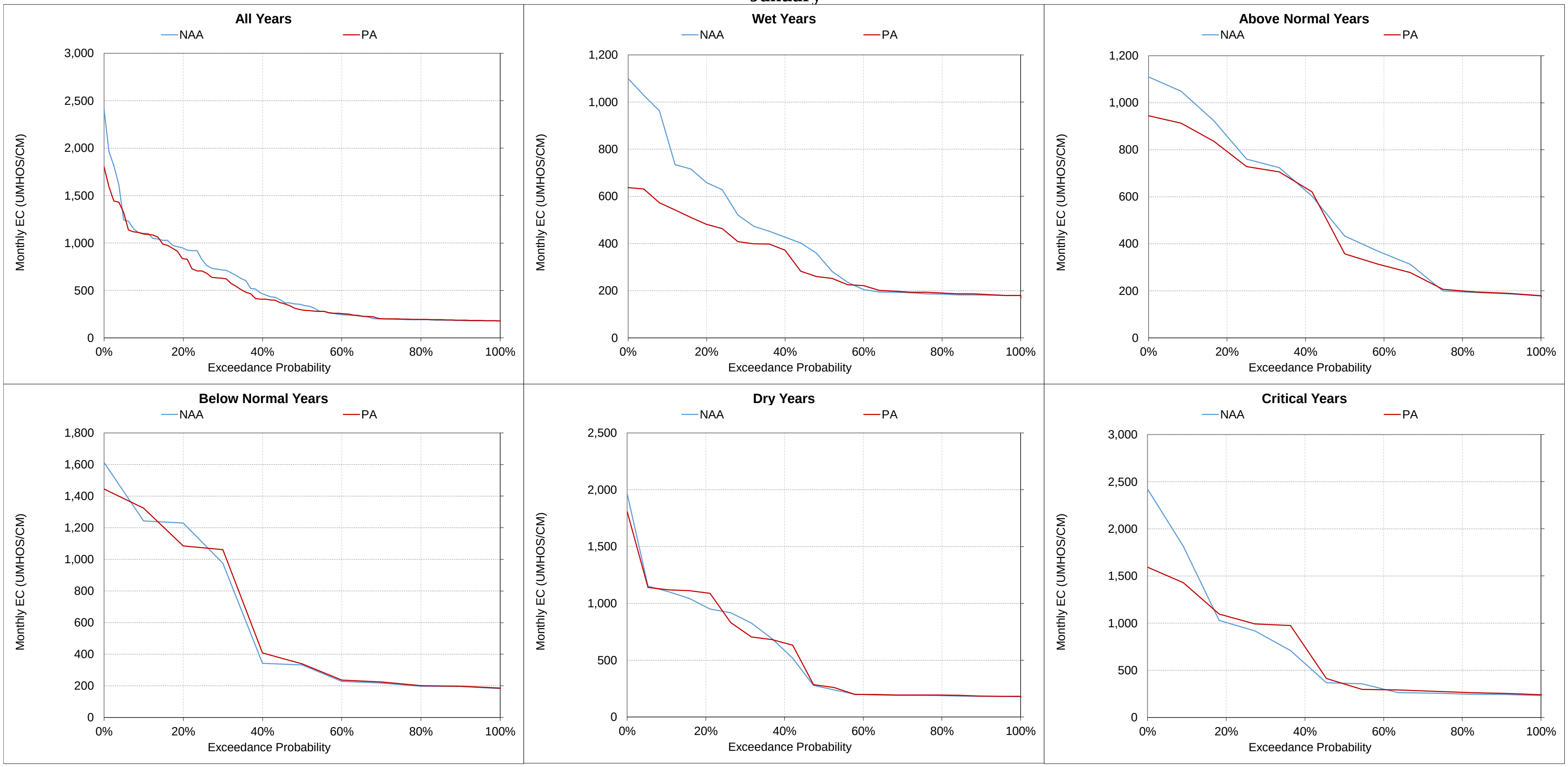
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-10. Sacramento River at Emmaton Salinity, Monthly EC December



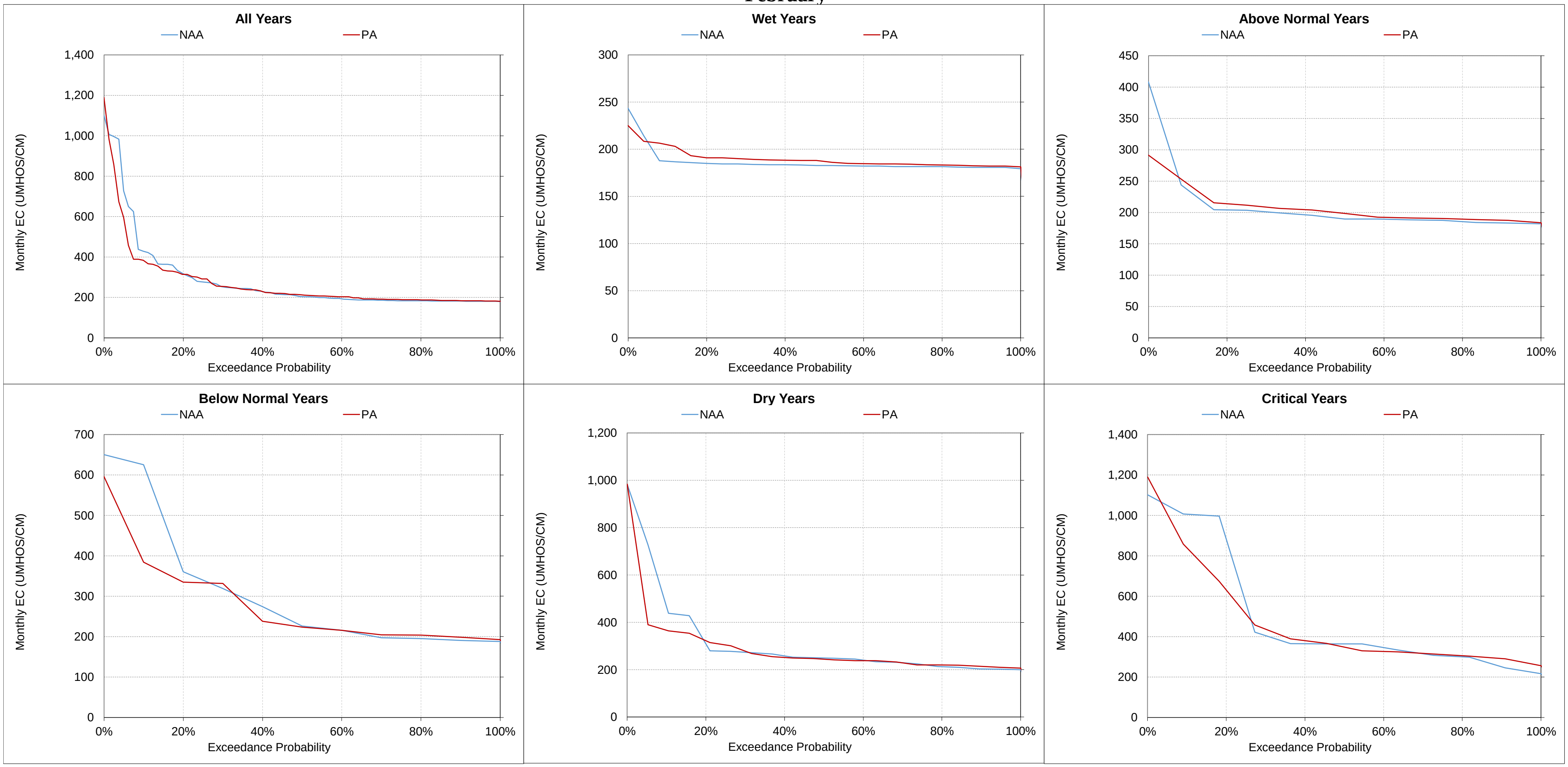
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-11. Sacramento River at Emmaton Salinity, Monthly EC
January



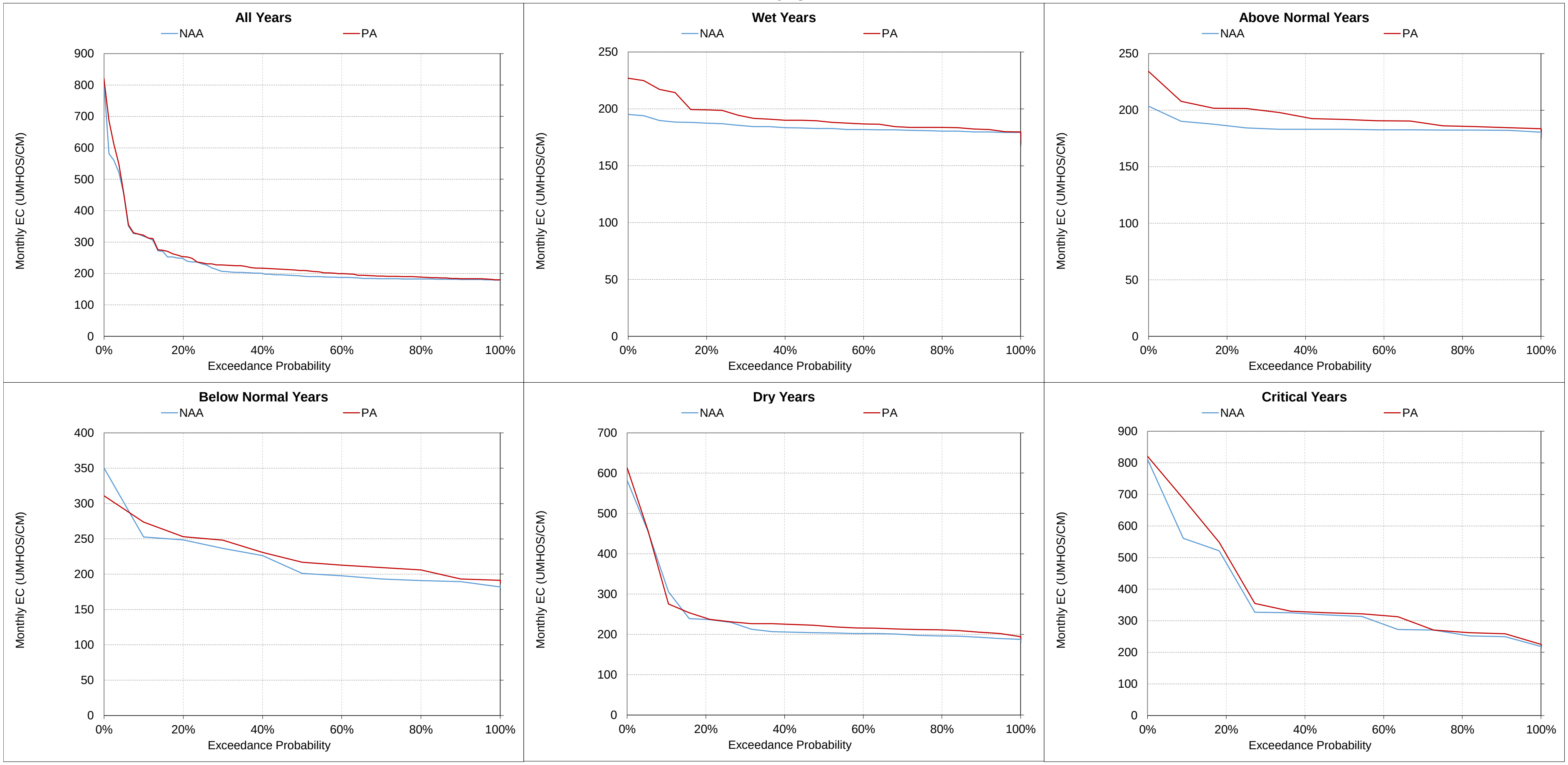
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-12. Sacramento River at Emmaton Salinity, Monthly EC February



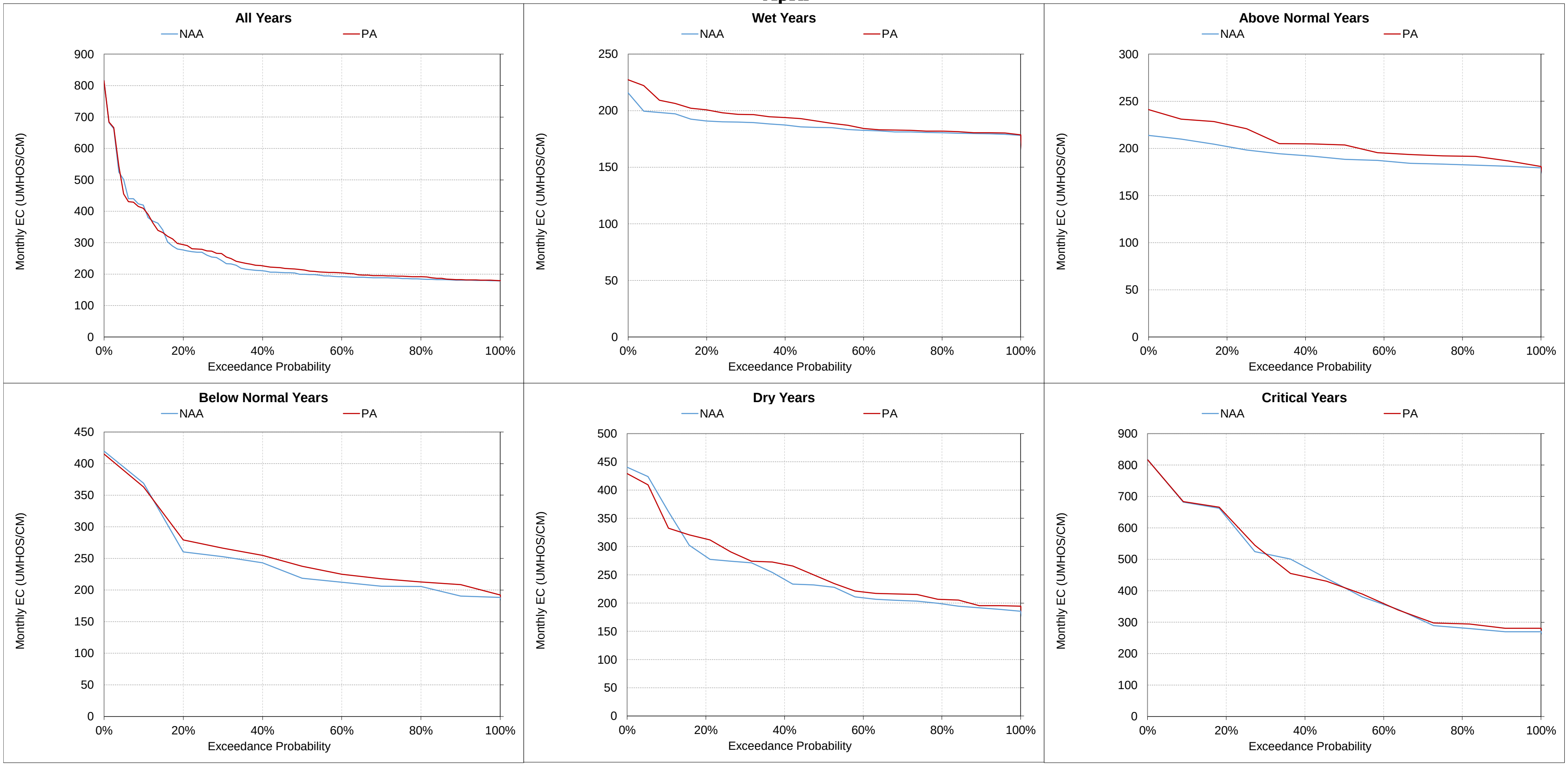
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-13. Sacramento River at Emmaton Salinity, Monthly EC March



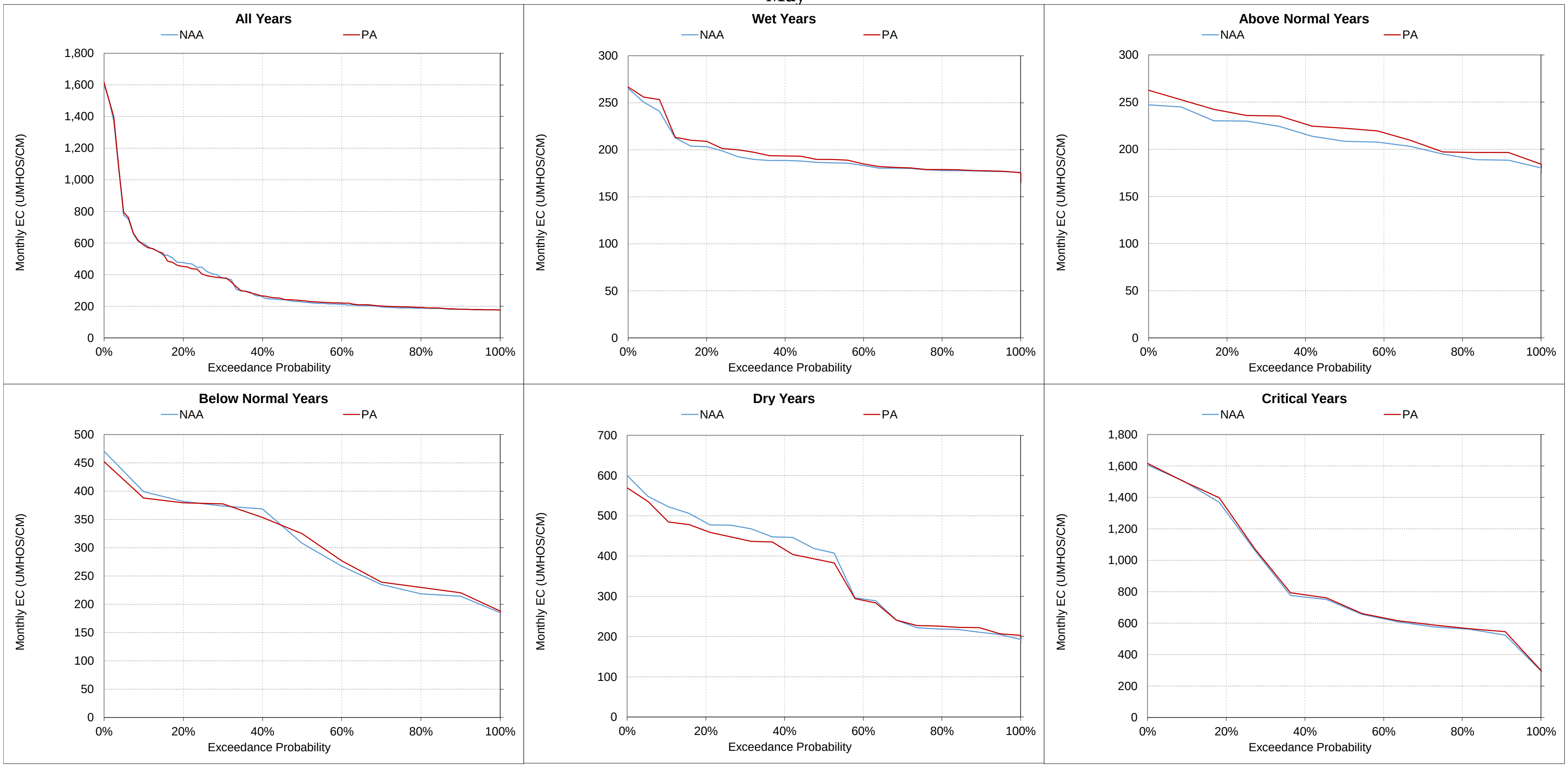
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-14. Sacramento River at Emmaton Salinity, Monthly EC
April



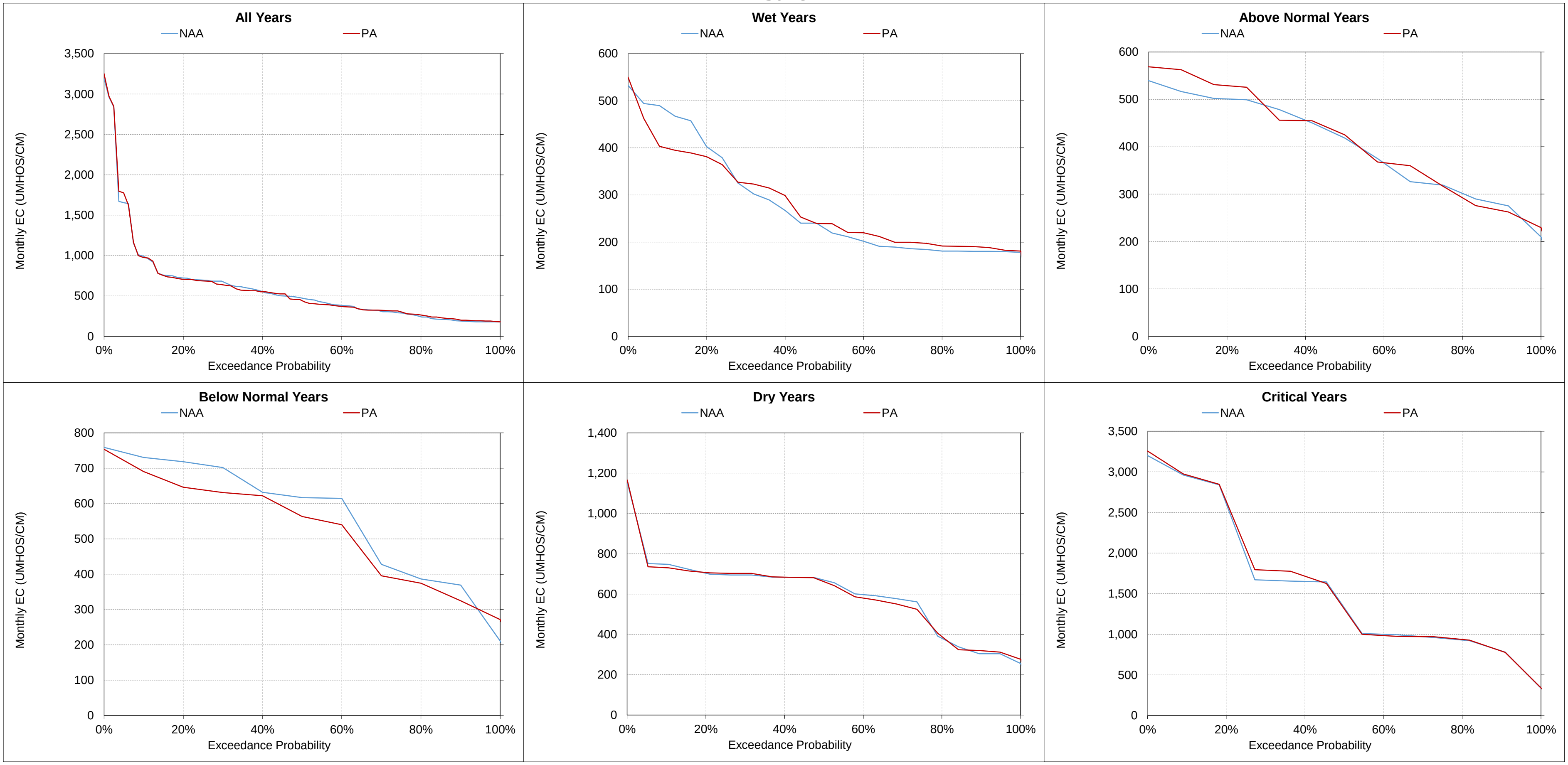
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-15. Sacramento River at Emmaton Salinity, Monthly EC
May



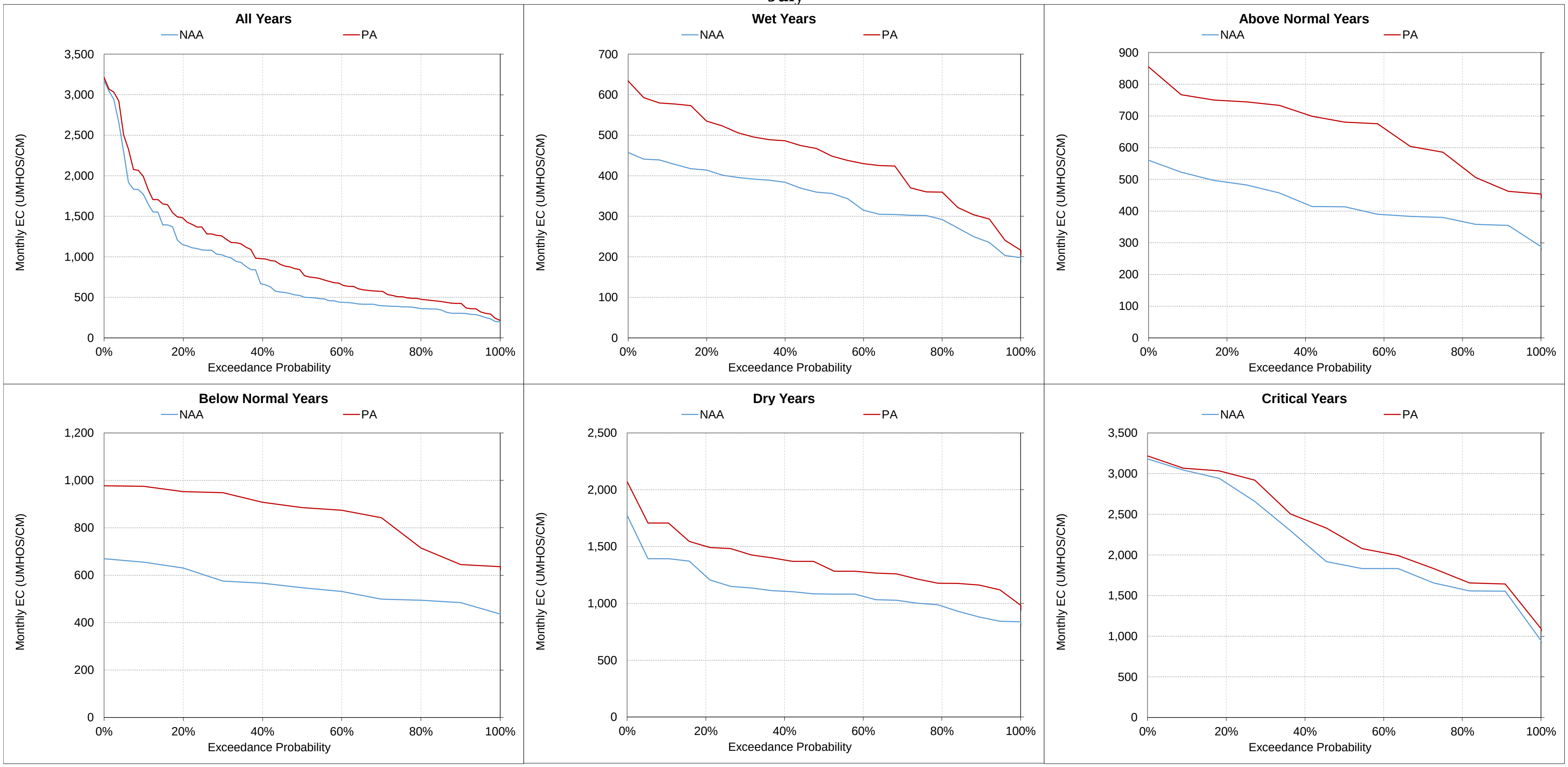
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-16. Sacramento River at Emmaton Salinity, Monthly EC
June



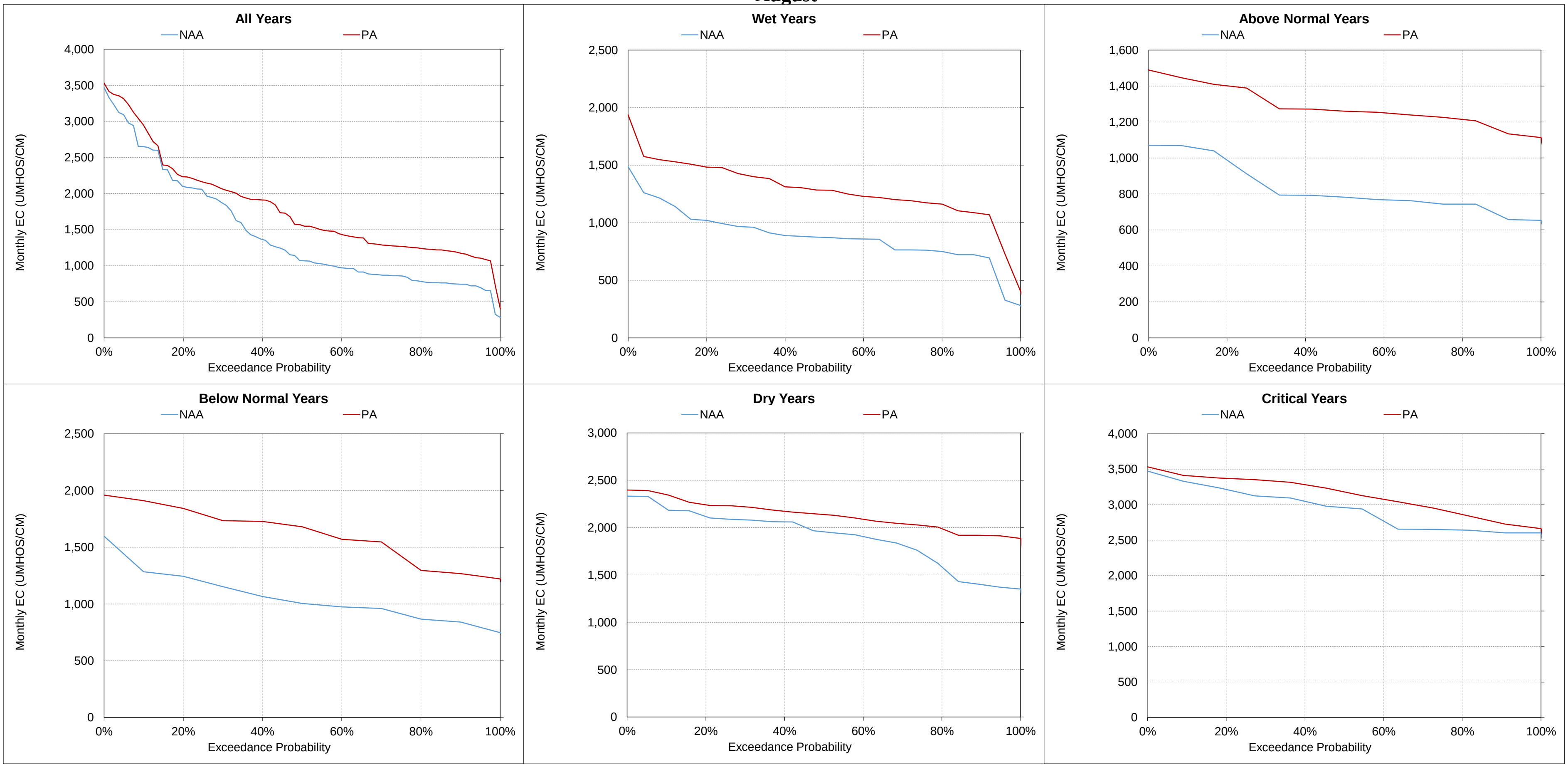
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-17. Sacramento River at Emmaton Salinity, Monthly EC July



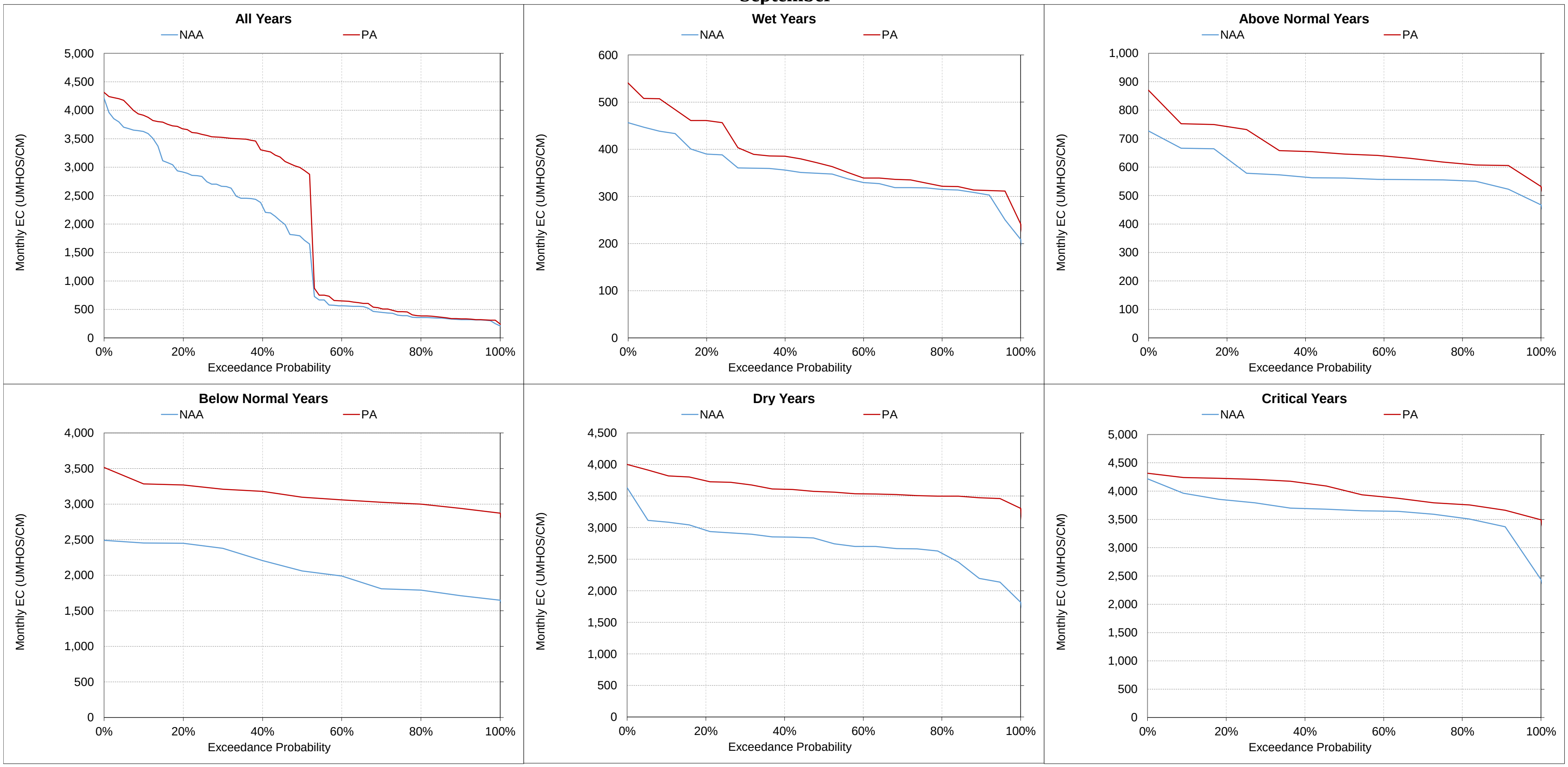
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-18. Sacramento River at Emmaton Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-12-19. Sacramento River at Emmaton Salinity, Monthly EC
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-13. San Joaquin River at Jersey Point Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	2,866	2,014	-853	-30%	3,439	2,515	-924	-27%	2,555	2,314	-242	-9%	1,519	1,396	-123	-8%	625	491	-134	-22%	330	331	0	0%
20%	2,643	1,582	-1,061	-40%	2,995	1,850	-1,145	-38%	2,180	2,021	-159	-7%	1,278	1,069	-209	-16%	474	408	-66	-14%	284	309	25	9%
30%	2,465	1,476	-989	-40%	2,616	1,521	-1,095	-42%	1,680	1,480	-201	-12%	1,106	753	-353	-32%	343	331	-13	-4%	260	298	38	15%
40%	2,348	1,309	-1,038	-44%	2,194	1,236	-958	-44%	1,284	1,133	-151	-12%	870	597	-273	-31%	297	307	10	3%	242	278	36	15%
50%	2,137	1,134	-1,003	-47%	1,359	555	-804	-59%	888	830	-58	-7%	608	464	-144	-24%	286	297	11	4%	233	270	38	16%
60%	541	298	-242	-45%	674	341	-333	-49%	751	676	-75	-10%	405	350	-55	-14%	261	287	26	10%	225	264	40	18%
70%	325	239	-87	-27%	469	314	-155	-33%	609	533	-76	-13%	274	291	16	6%	240	277	37	16%	219	257	38	17%
80%	298	232	-66	-22%	331	275	-56	-17%	339	331	-8	-2%	234	263	29	12%	223	263	40	18%	211	249	37	18%
90%	279	225	-54	-19%	276	262	-13	-5%	230	230	0	0%	221	237	16	7%	214	249	35	16%	203	237	34	17%
Long Term Full Simulation Period[b]	1,544	991	-553	-36%	1,665	1,106	-559	-34%	1,252	1,150	-103	-8%	763	644	-119	-16%	366	344	-21	-6%	255	287	31	12%
Water Year Types[c]																								
Wet (32%)	292	230	-62	-21%	337	276	-61	-18%	514	482	-32	-6%	589	400	-189	-32%	236	273	37	16%	221	266	46	21%
Above Normal (16%)	532	292	-240	-45%	787	341	-446	-57%	899	734	-165	-18%	810	623	-187	-23%	265	282	17	6%	219	280	61	28%
Below Normal (13%)	2,492	1,323	-1,170	-47%	2,240	1,258	-982	-44%	1,544	1,383	-160	-10%	863	788	-75	-9%	397	359	-38	-10%	251	274	23	9%
Dry (24%)	2,427	1,469	-958	-39%	2,564	1,523	-1,041	-41%	1,562	1,371	-191	-12%	781	743	-38	-5%	437	372	-65	-15%	275	287	12	4%
Critical (15%)	3,015	2,297	-718	-24%	3,471	2,899	-572	-16%	2,453	2,463	10	0%	968	900	-68	-7%	609	509	-101	-17%	341	350	9	3%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	326	325	-1	0%	426	419	-7	-2%	542	543	0	0%	1,781	1,266	-515	-29%	1,929	2,066	137	7%	2,670	2,624	-46	-2%
20%	258	296	38	15%	360	345	-15	-4%	481	473	-8	-2%	1,453	1,037	-417	-29%	1,702	1,783	81	5%	2,511	2,367	-144	-6%
30%	246	290	44	18%	302	308	5	2%	428	400	-28	-7%	1,179	856	-323	-27%	1,619	1,498	-120	-7%	2,358	2,219	-139	-6%
40%	234	282	48	21%	257	277	20	8%	374	362	-13	-3%	998	718	-281	-28%	1,519	1,179	-340	-22%	2,232	1,998	-234	-11%
50%	229	270	41	18%	246	265	18	7%	326	317	-9	-3%	860	609	-251	-29%	1,360	954	-406	-30%	1,948	1,729	-219	-11%
60%	224	257	33	15%	237	258	22	9%	296	282	-14	-5%	717	489	-228	-32%	1,255	889	-365	-29%	1,181	475	-706	-60%
70%	219	246	27	12%	231	245	14	6%	264	269	5	2%	582	430	-152	-26%	1,183	821	-361	-31%	1,094	429	-664	-61%
80%	215	236	20	9%	226	238	12	5%	230	254	24	10%	484	377	-107	-22%	1,086	767	-319	-29%	996	381	-615	-62%
90%	210	227	16	8%	196	197	0	0%	206	221	15	7%	375	303	-72	-19%	1,015	688	-327	-32%	909	330	-579	-64%
Long Term Full Simulation Period[b]	250	277	26	11%	298	306	8	3%	409	406	-3	-1%	968	737	-232	-24%	1,413	1,215	-198	-14%	1,755	1,396	-359	-20%
Water Year Types[c]																								
Wet (32%)	220	243	23	11%	215	223	8	4%	243	252	9	4%	463	361	-102	-22%	1,160	785	-374	-32%	958	363	-595	-62%
Above Normal (16%)	223	280	57	25%	237	259	22	9%	311	314	3	1%	638	463	-175	-27%	1,129	800	-330	-29%	1,095	481	-614	-56%
Below Normal (13%)	246	272	26	10%	281	290	10	3%	380	364	-15	-4%	949	659	-290	-31%	1,379	970	-409	-30%	2,342	1,878	-464	-20%
Dry (24%)	248	270	22	9%	309	307	-2	-1%	409	388	-20	-5%	1,441	988	-454	-31%	1,572	1,566	-5	0%	2,446	2,319	-127	-5%
Critical (15%)	355	363	8	2%	541	547	6	1%	905	907	2	0%	1,649	1,499	-150	-9%	2,037	2,235	198	10%	2,507	2,647	140	6%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

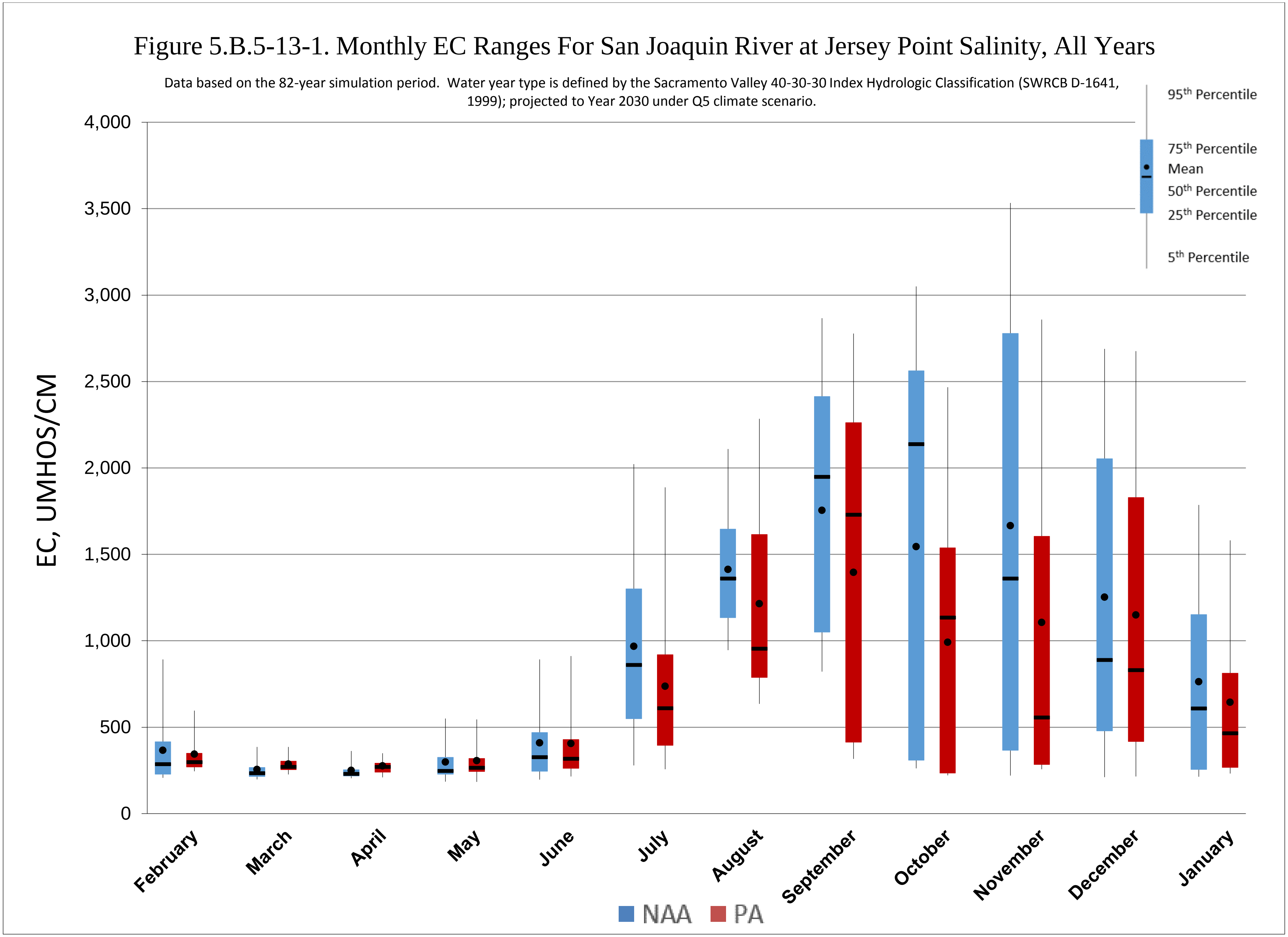


Figure 5.B.5-13-1. Monthly EC Ranges For San Joaquin River at Jersey Point Salinity, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
EC, UMHOS/CM
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-13-2. Monthly EC Ranges For San Joaquin River at Jersey Point Salinity, Wet Years

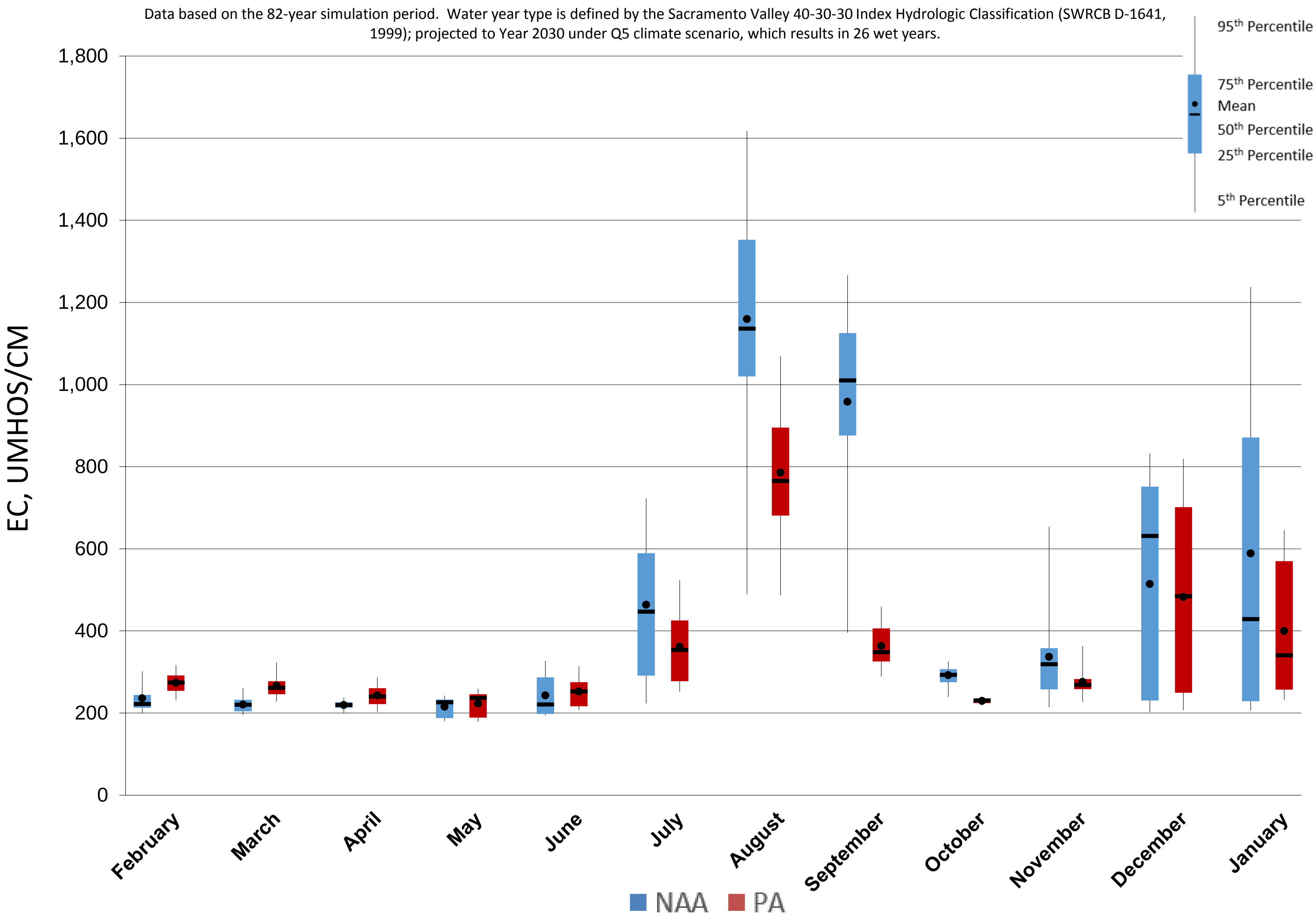


Figure 5.B.5-13-3. Monthly EC Ranges For San Joaquin River at Jersey Point Salinity, Above Normal Years

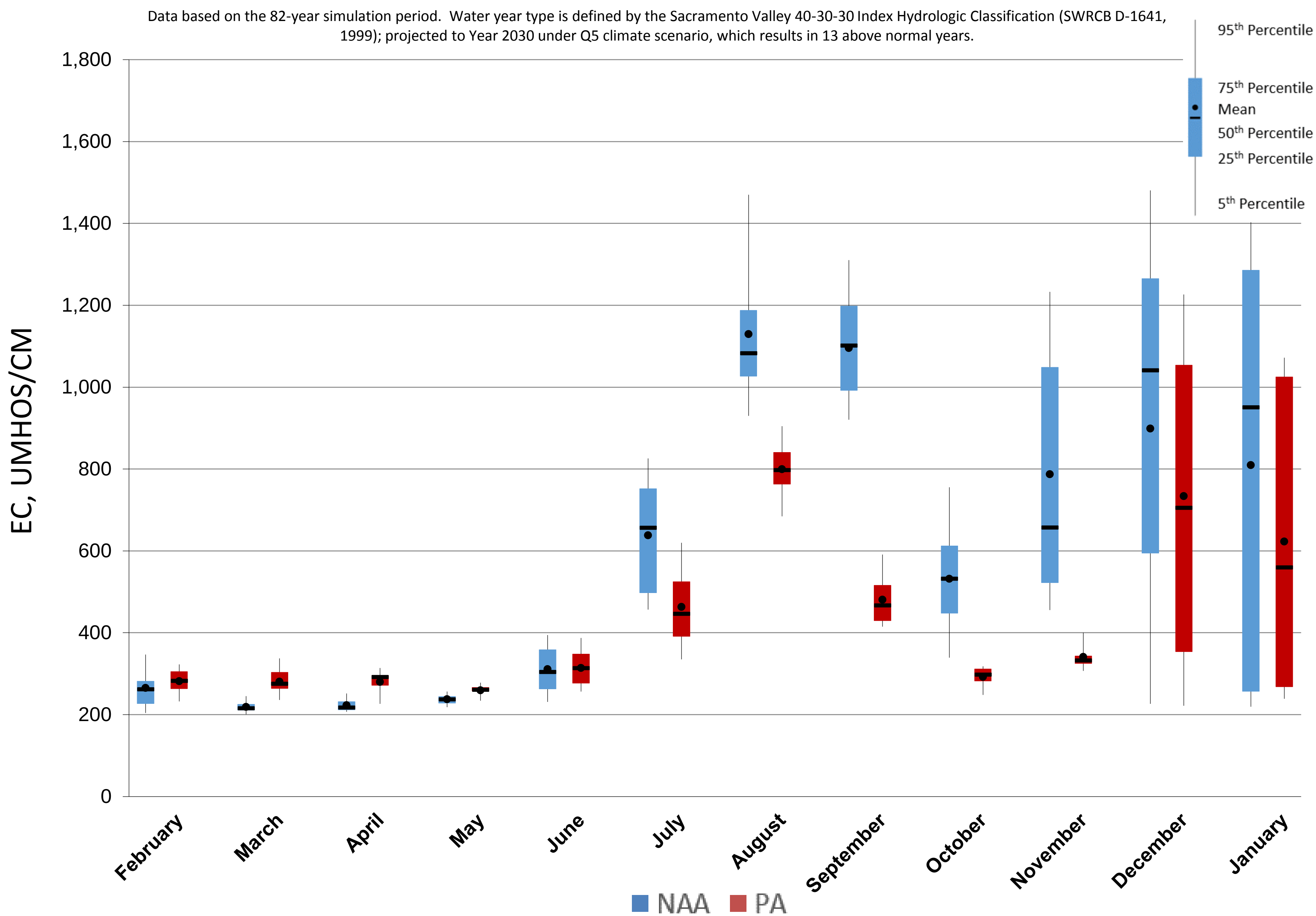


Figure 5.B.5-13-4. Monthly EC Ranges For San Joaquin River at Jersey Point Salinity, Below Normal Years

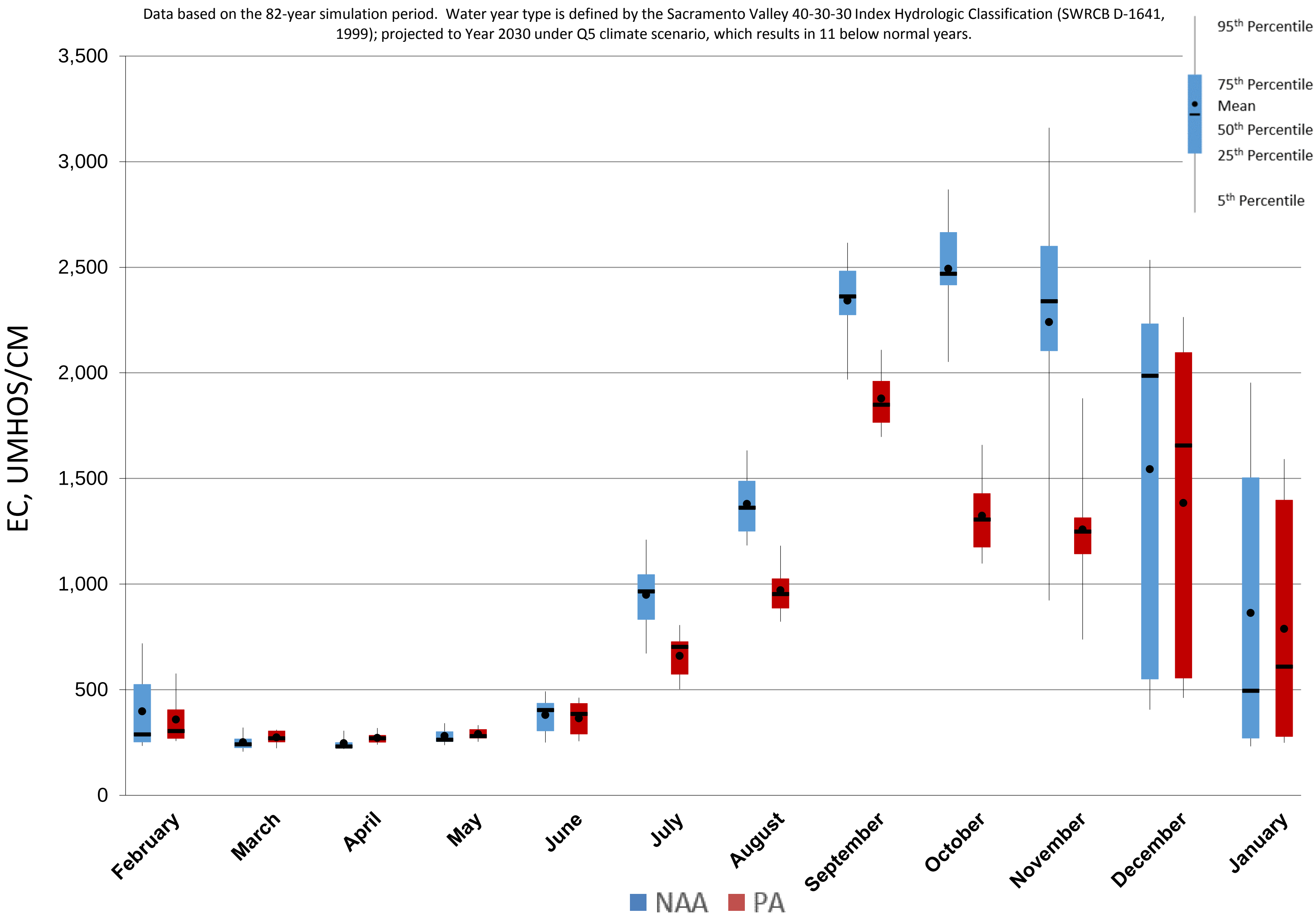


Figure 5.B.5-13-5. Monthly EC Ranges For San Joaquin River at Jersey Point Salinity, Dry Years

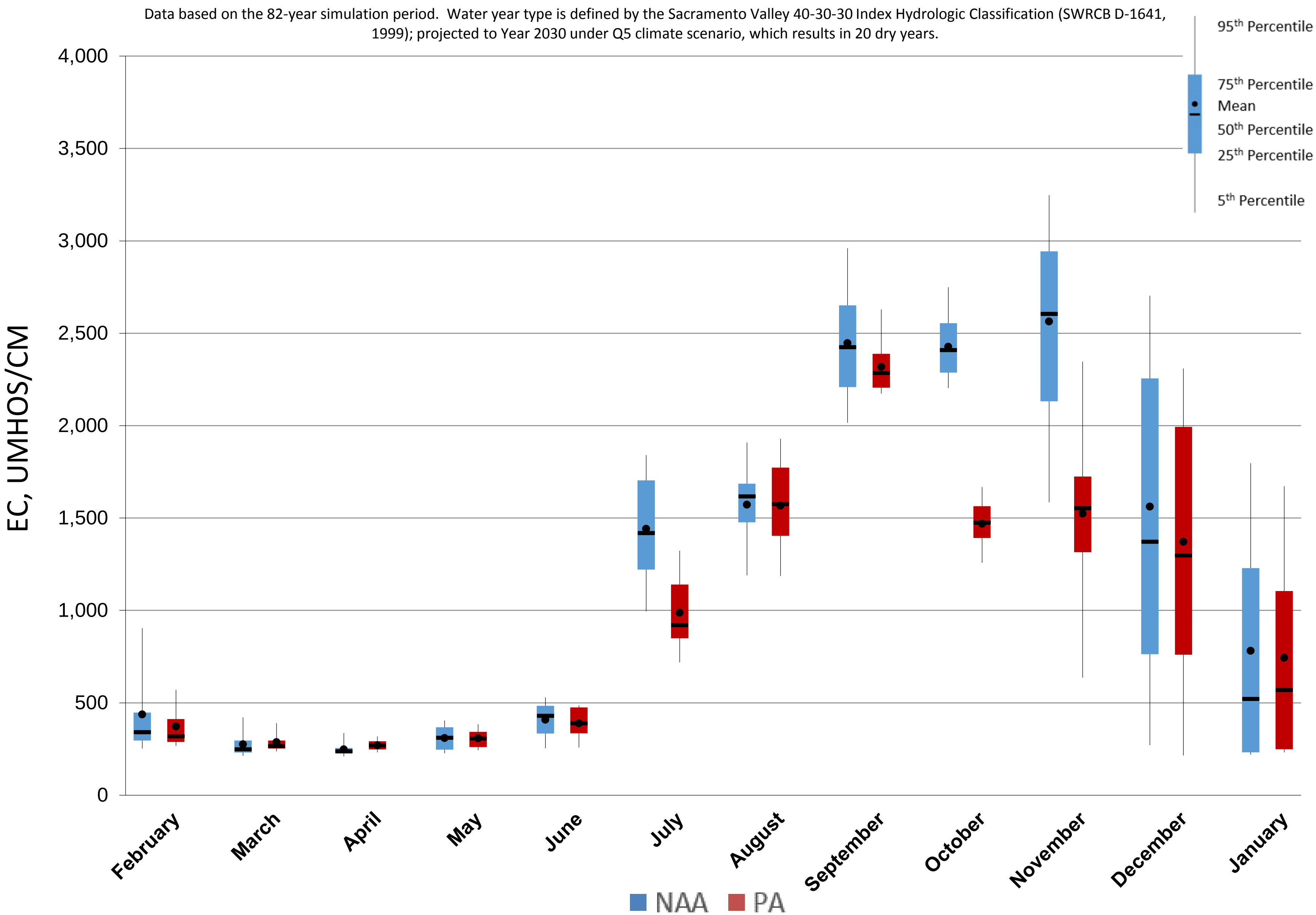


Figure 5.B.5-13-6. Monthly EC Ranges For San Joaquin River at Jersey Point Salinity, Critical Years

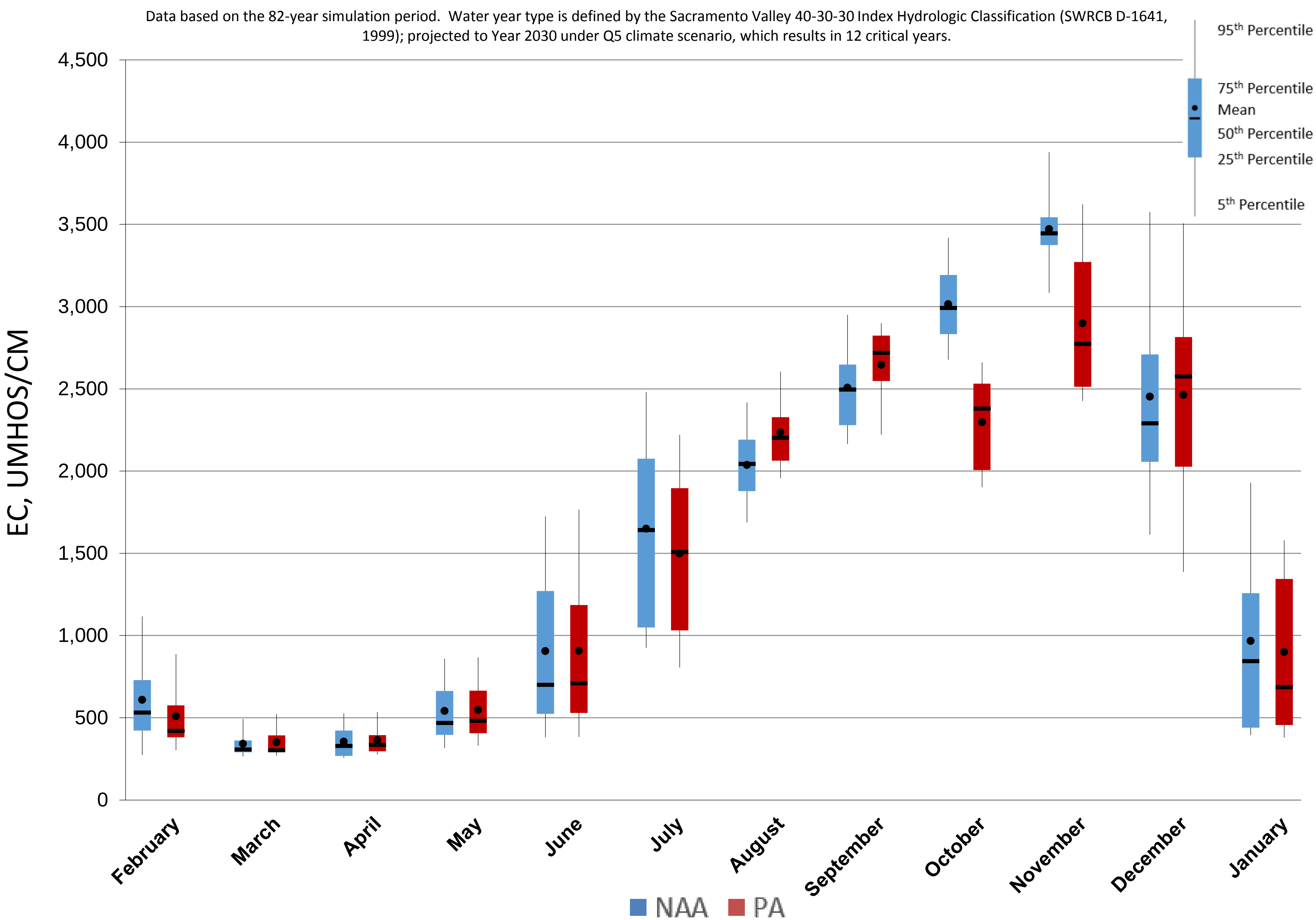
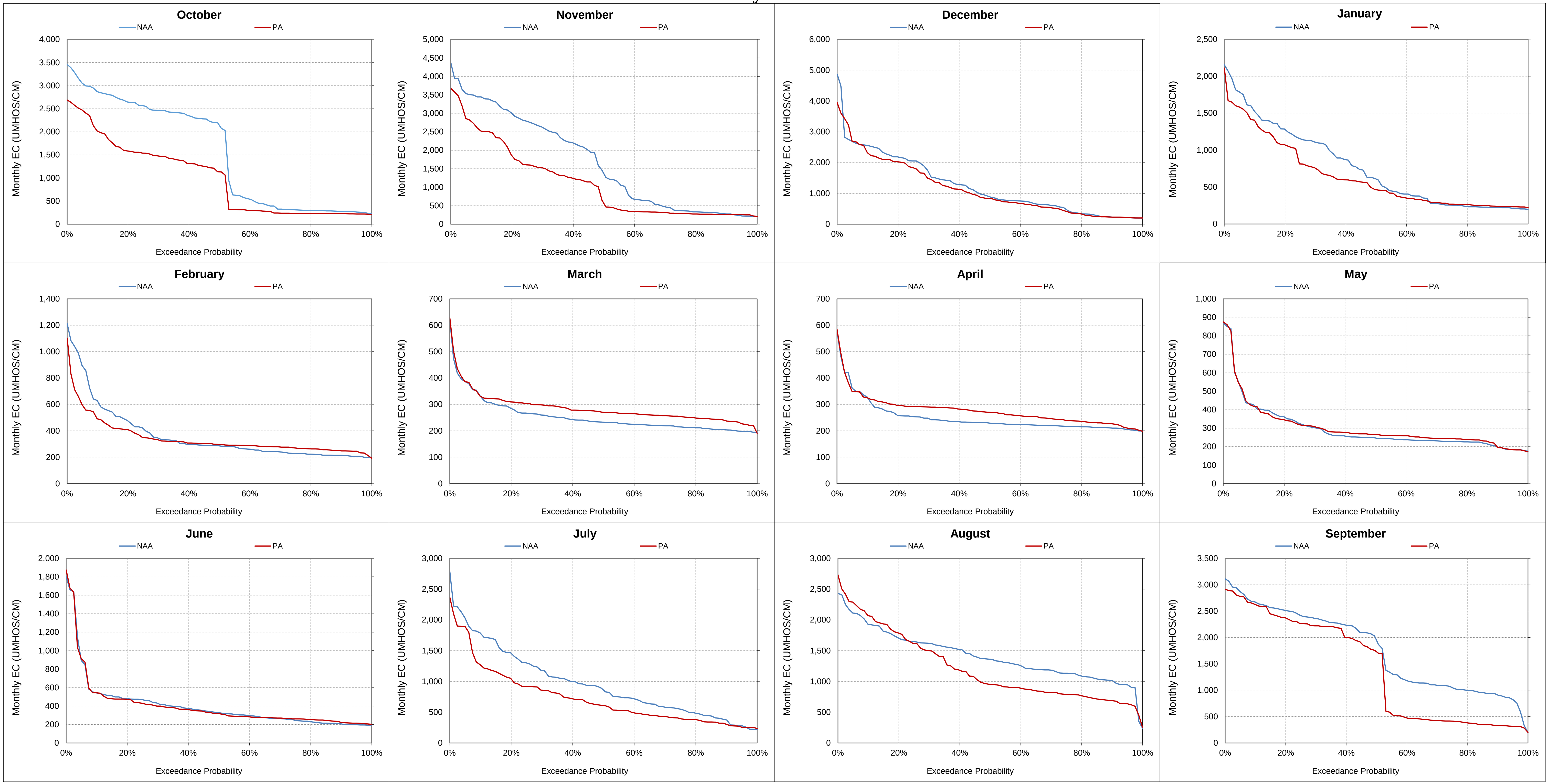
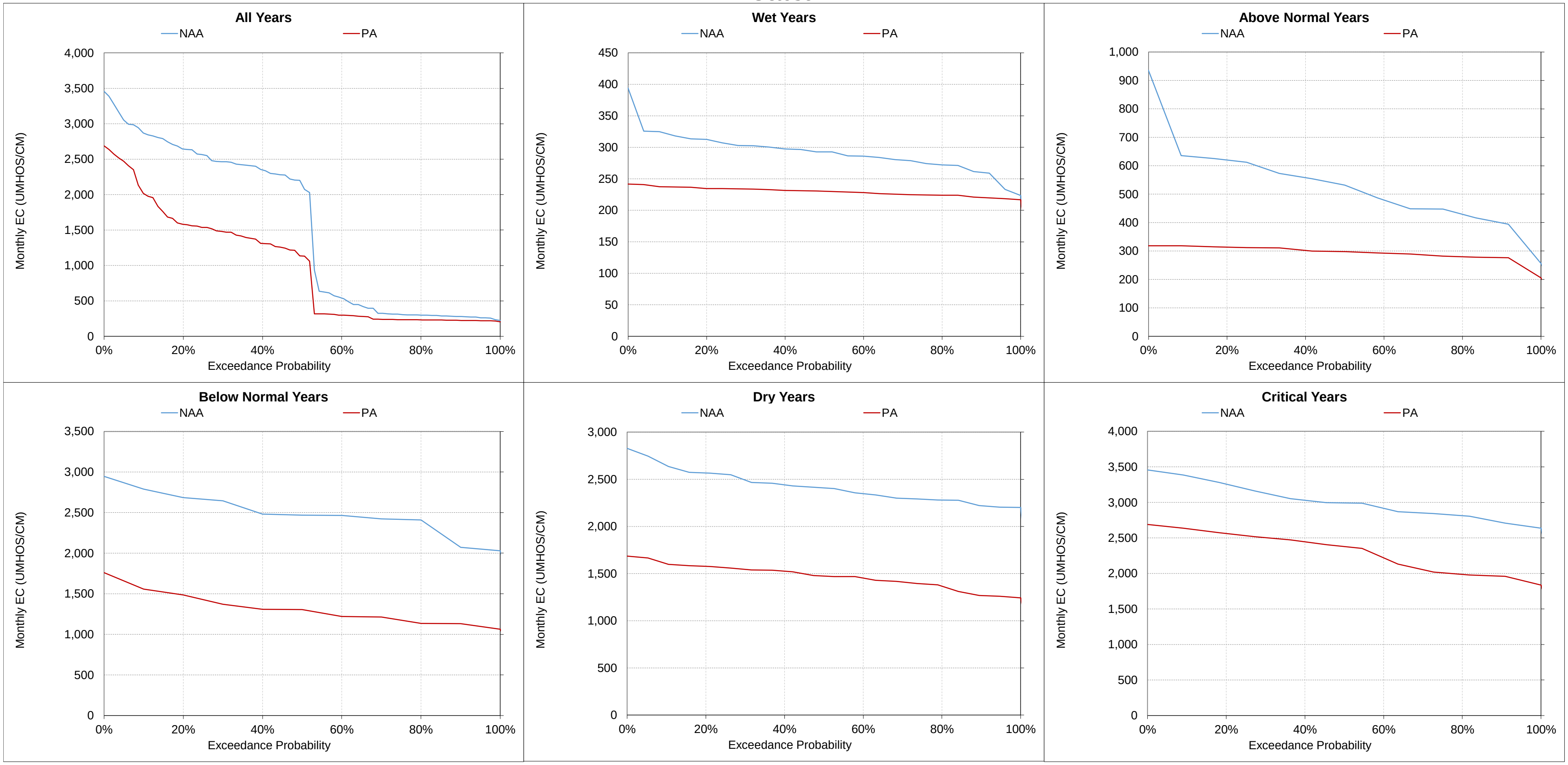


Figure 5.B.5-13-7. San Joaquin River at Jersey Point Salinity, Monthly EC Probability of Exceedance



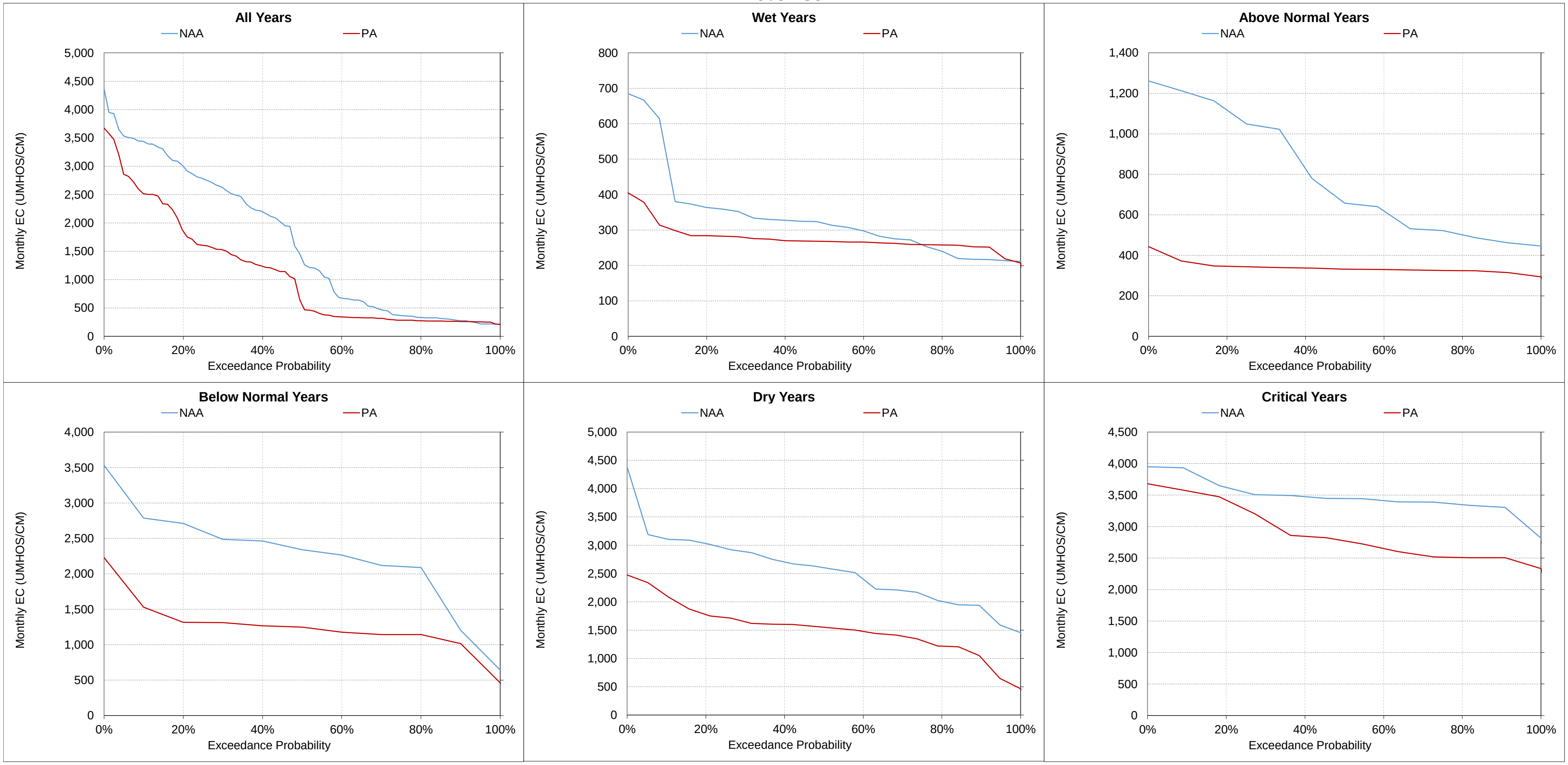
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-8. San Joaquin River at Jersey Point Salinity, Monthly EC
October



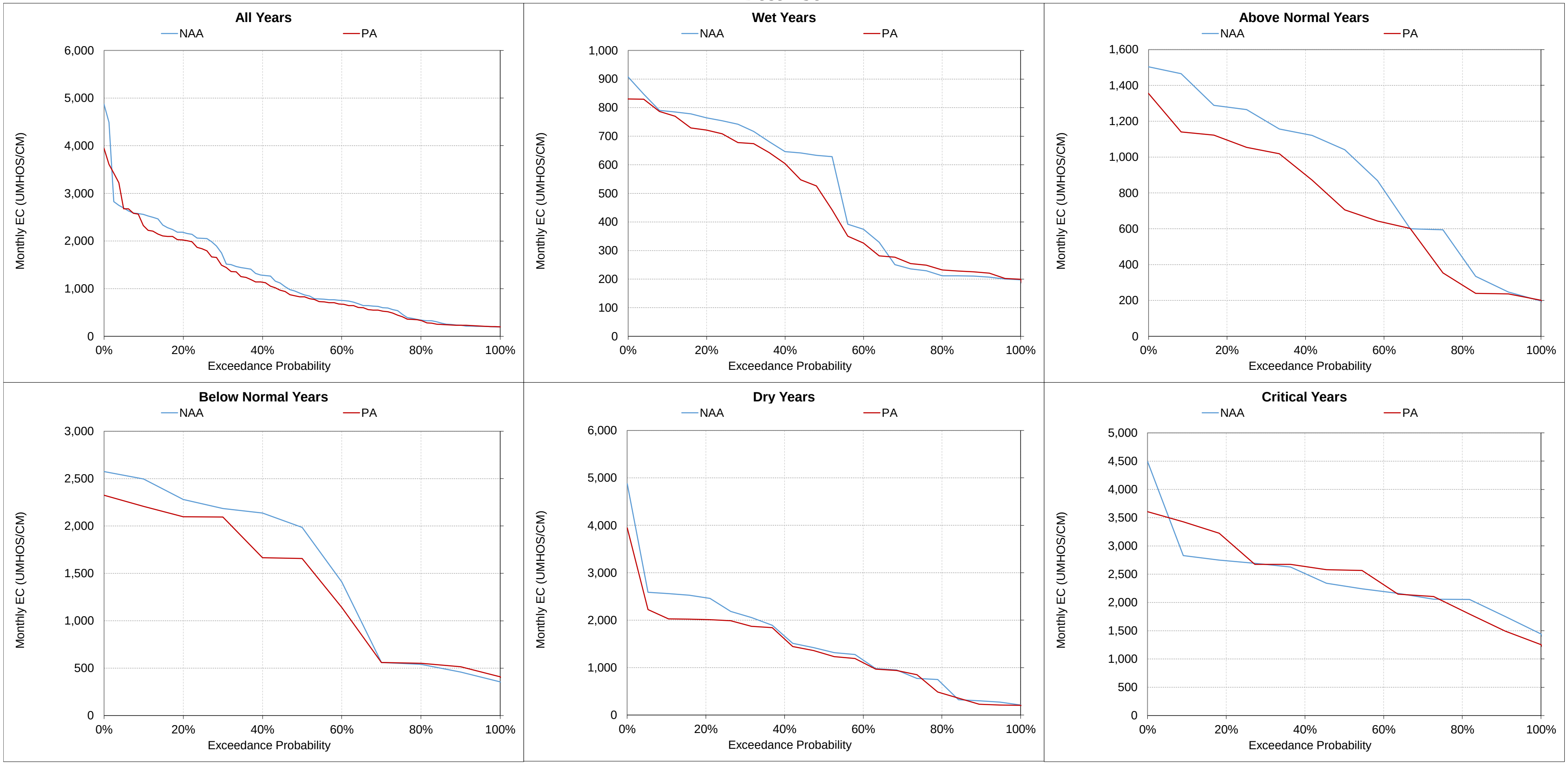
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-9. San Joaquin River at Jersey Point Salinity, Monthly EC
November



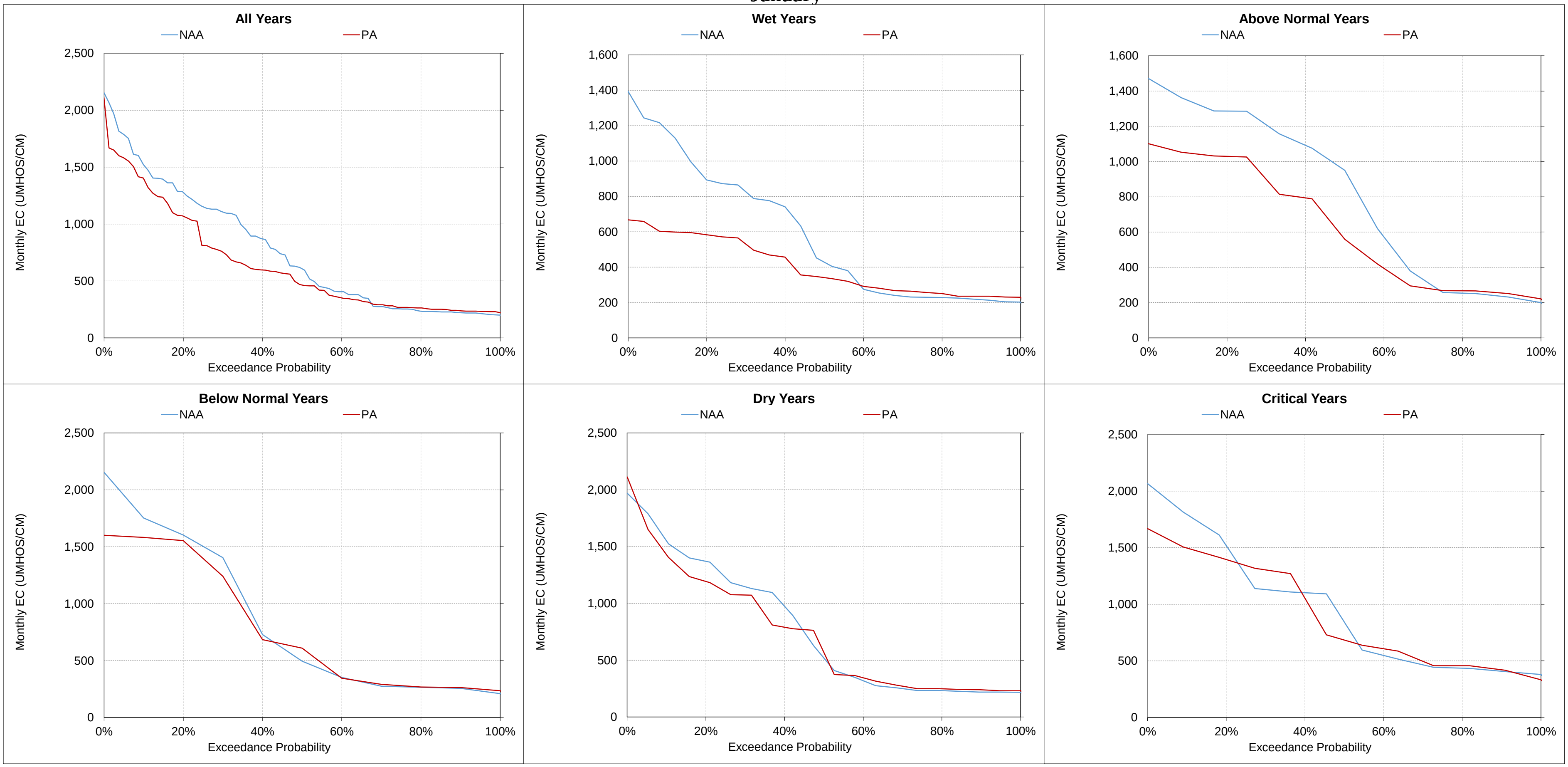
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-10. San Joaquin River at Jersey Point Salinity, Monthly EC
December



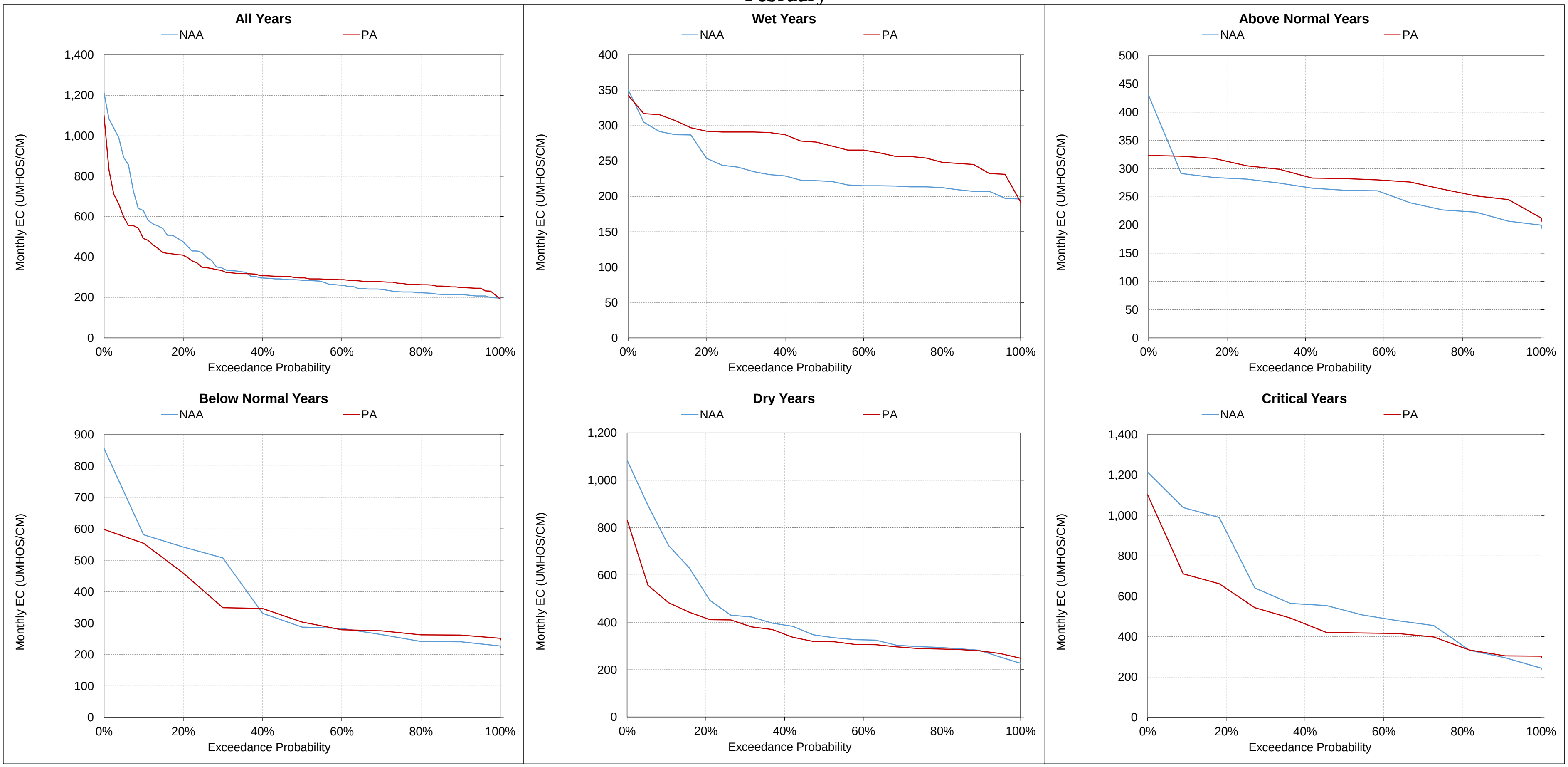
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-11. San Joaquin River at Jersey Point Salinity, Monthly EC January



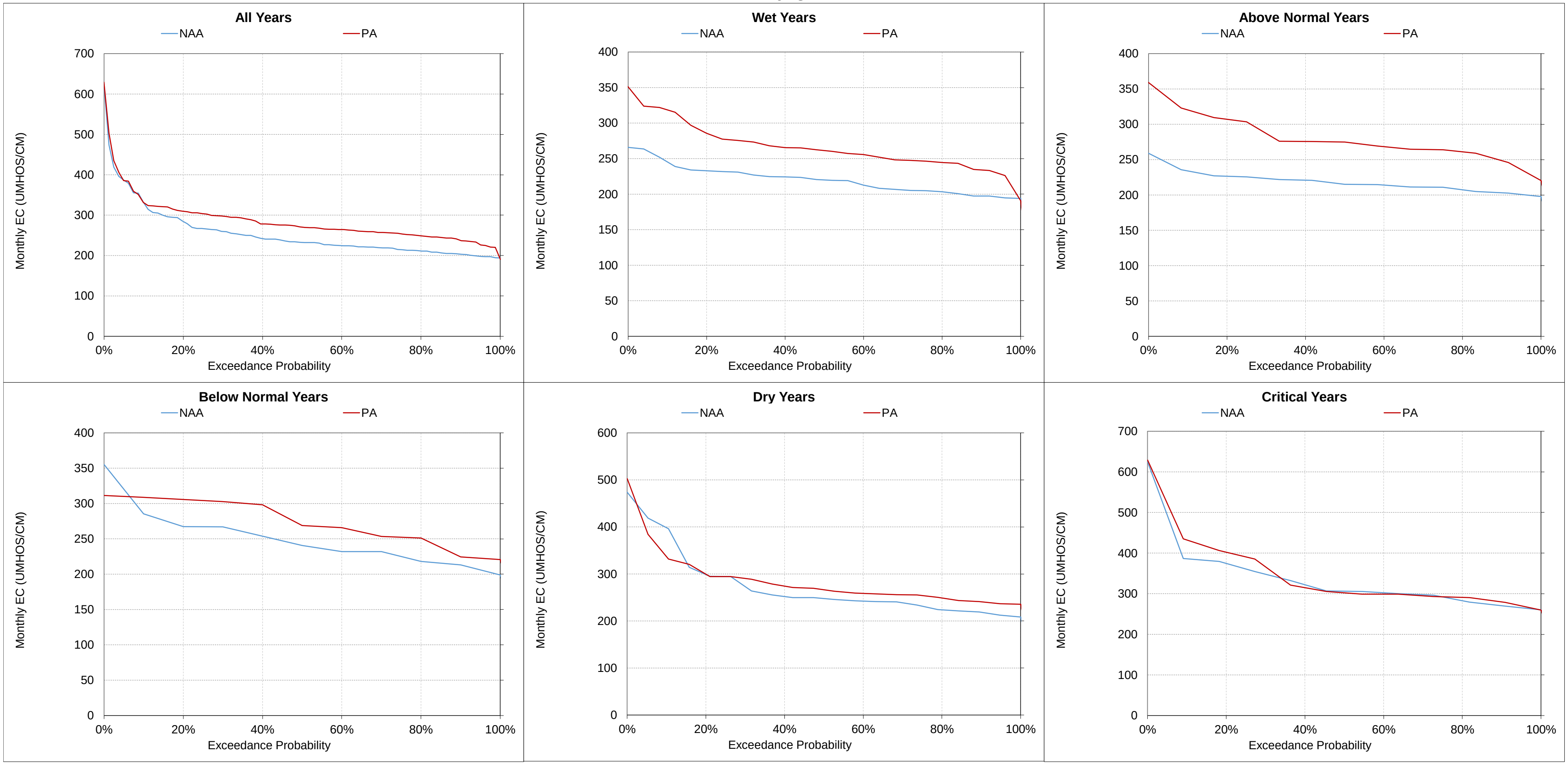
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-12. San Joaquin River at Jersey Point Salinity, Monthly EC February



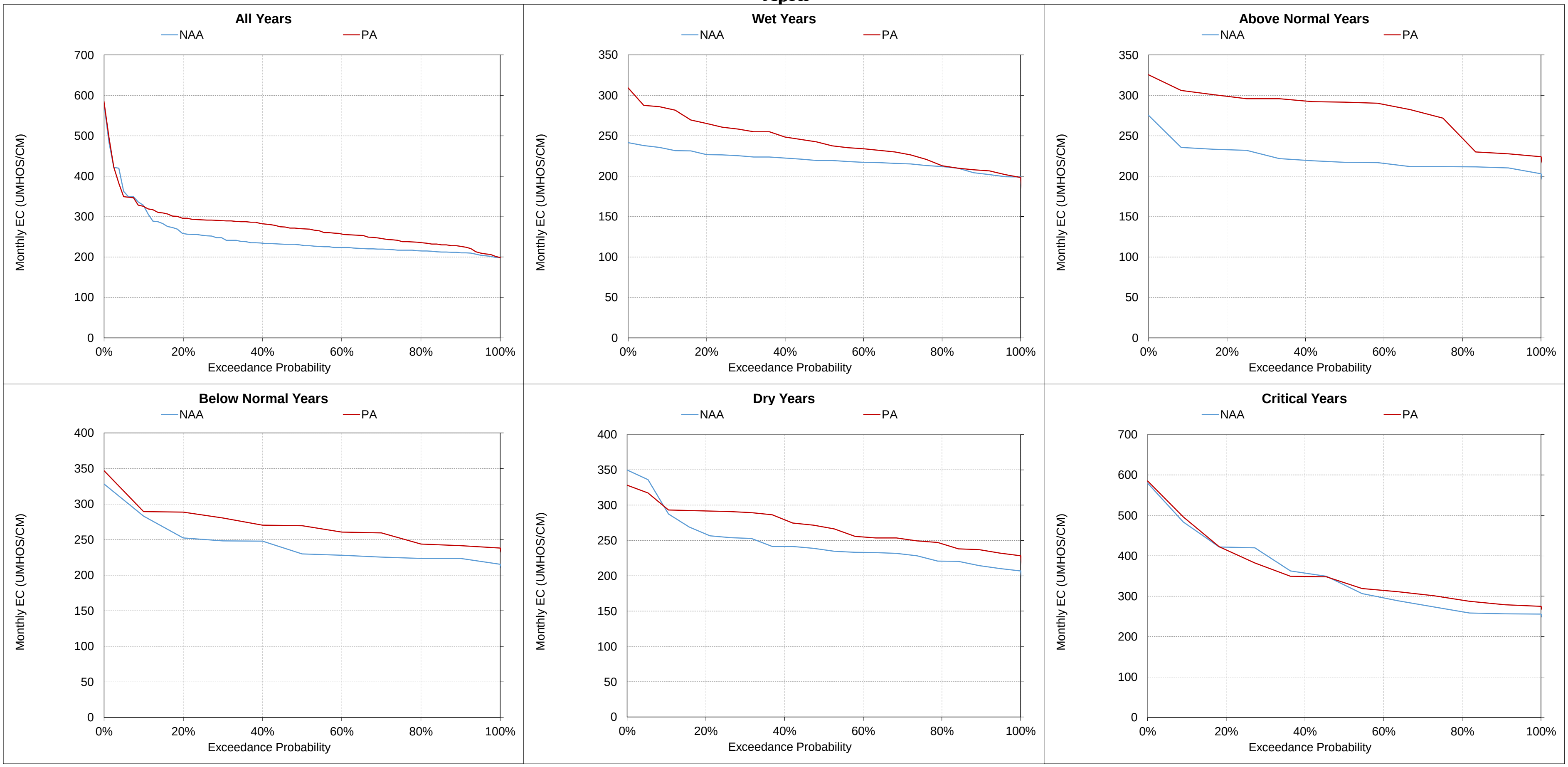
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-13. San Joaquin River at Jersey Point Salinity, Monthly EC March



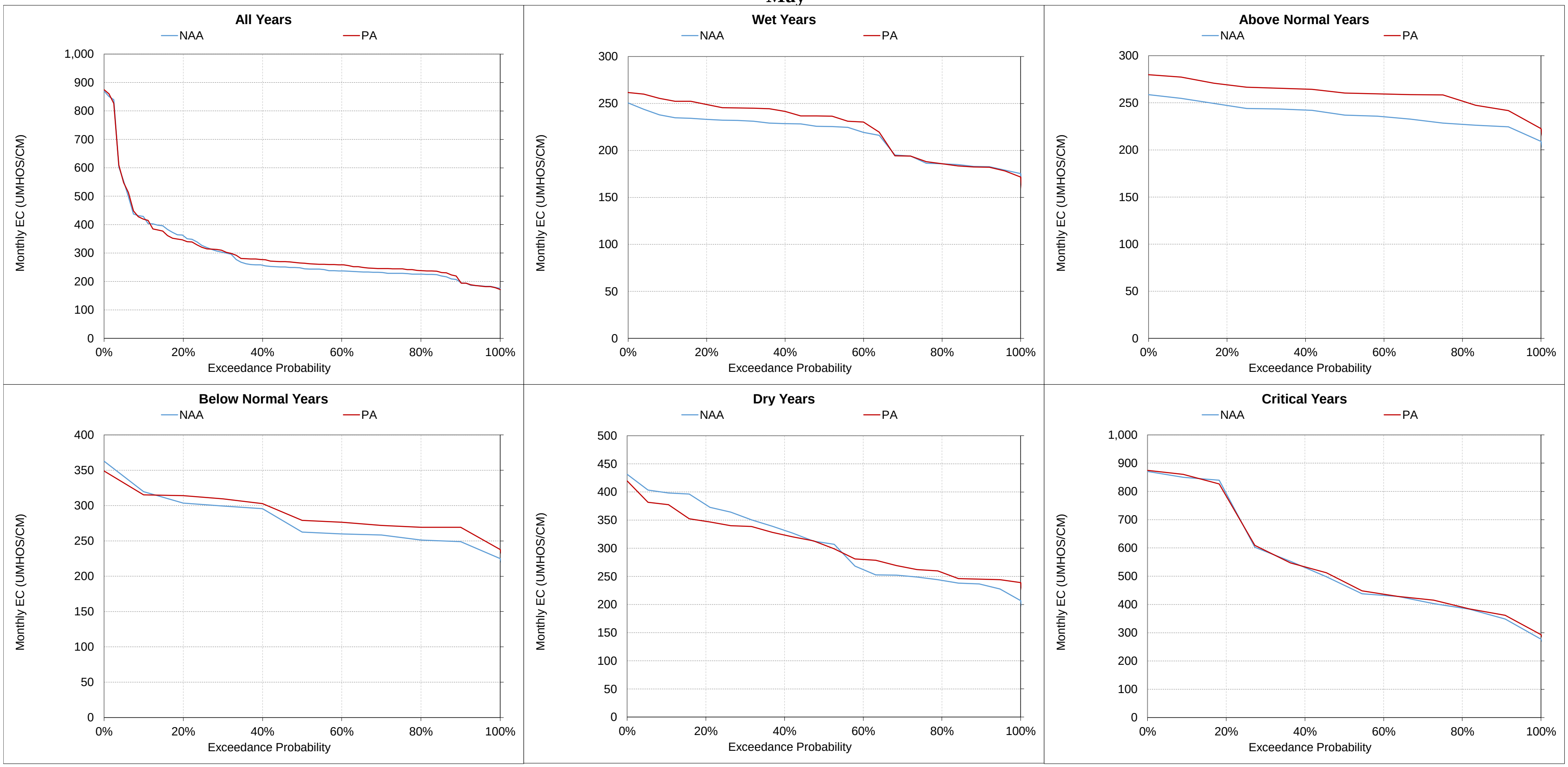
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-14. San Joaquin River at Jersey Point Salinity, Monthly EC
April



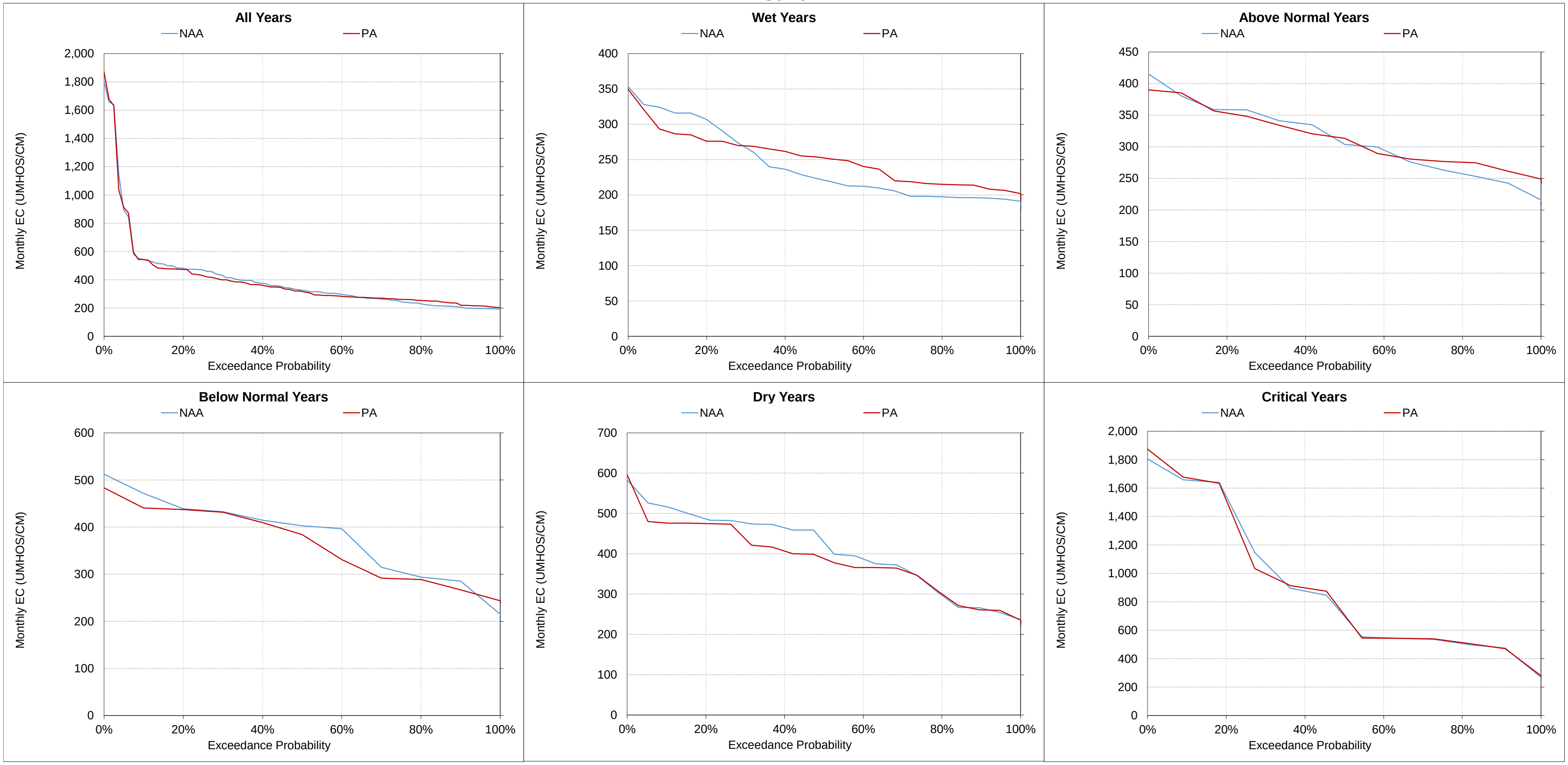
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-15. San Joaquin River at Jersey Point Salinity, Monthly EC
May



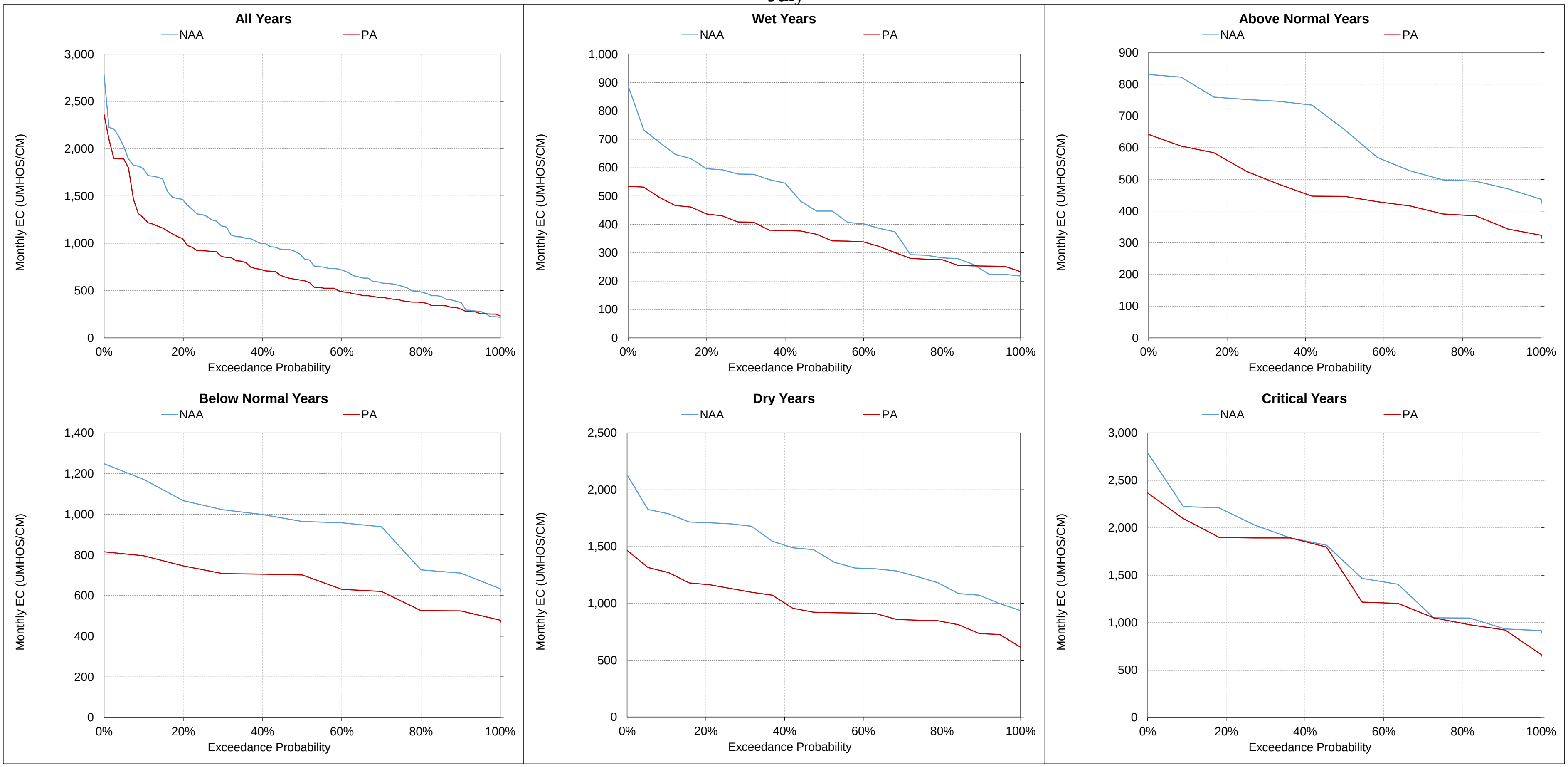
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-16. San Joaquin River at Jersey Point Salinity, Monthly EC
June



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-17. San Joaquin River at Jersey Point Salinity, Monthly EC
July



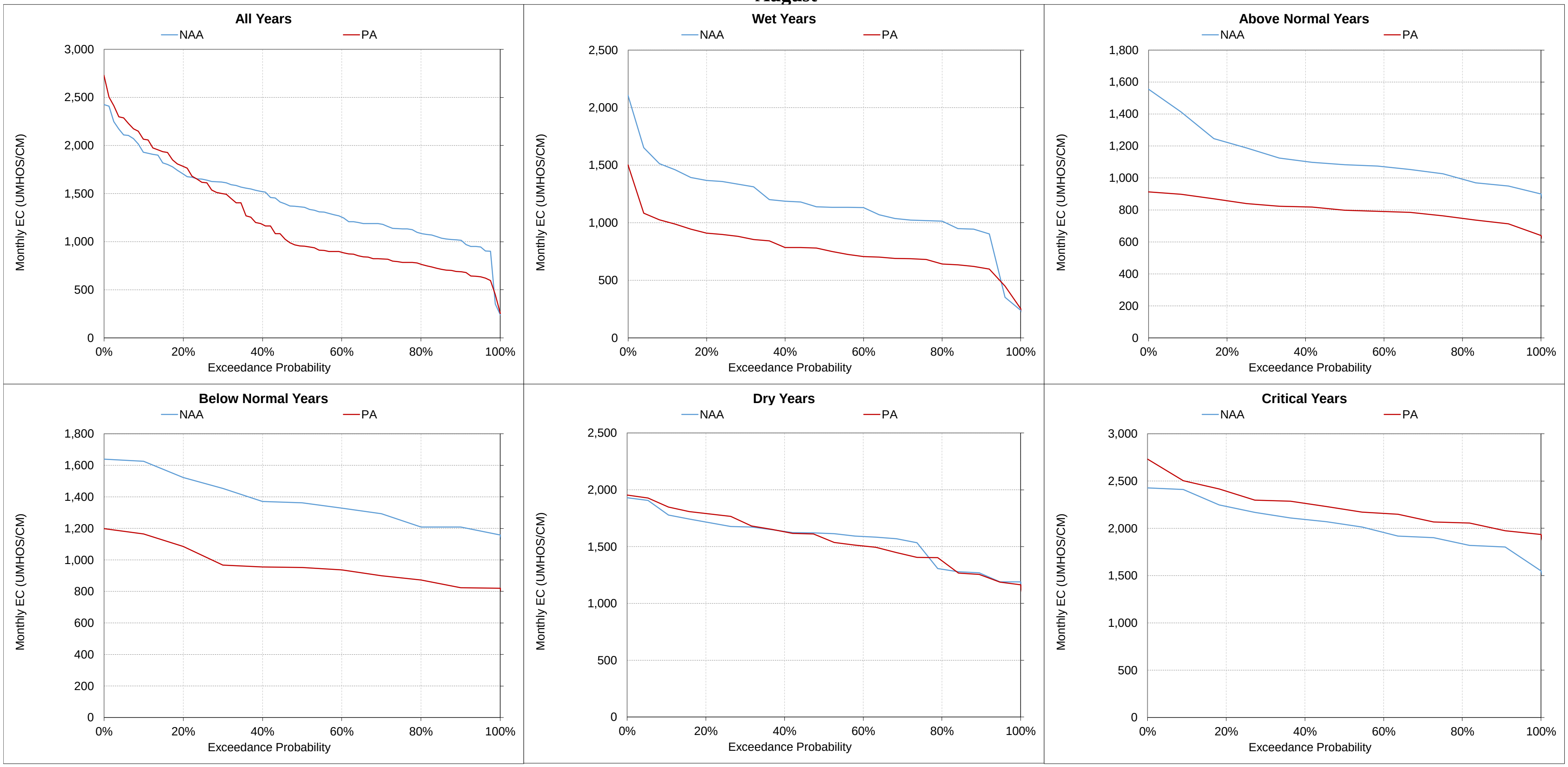
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

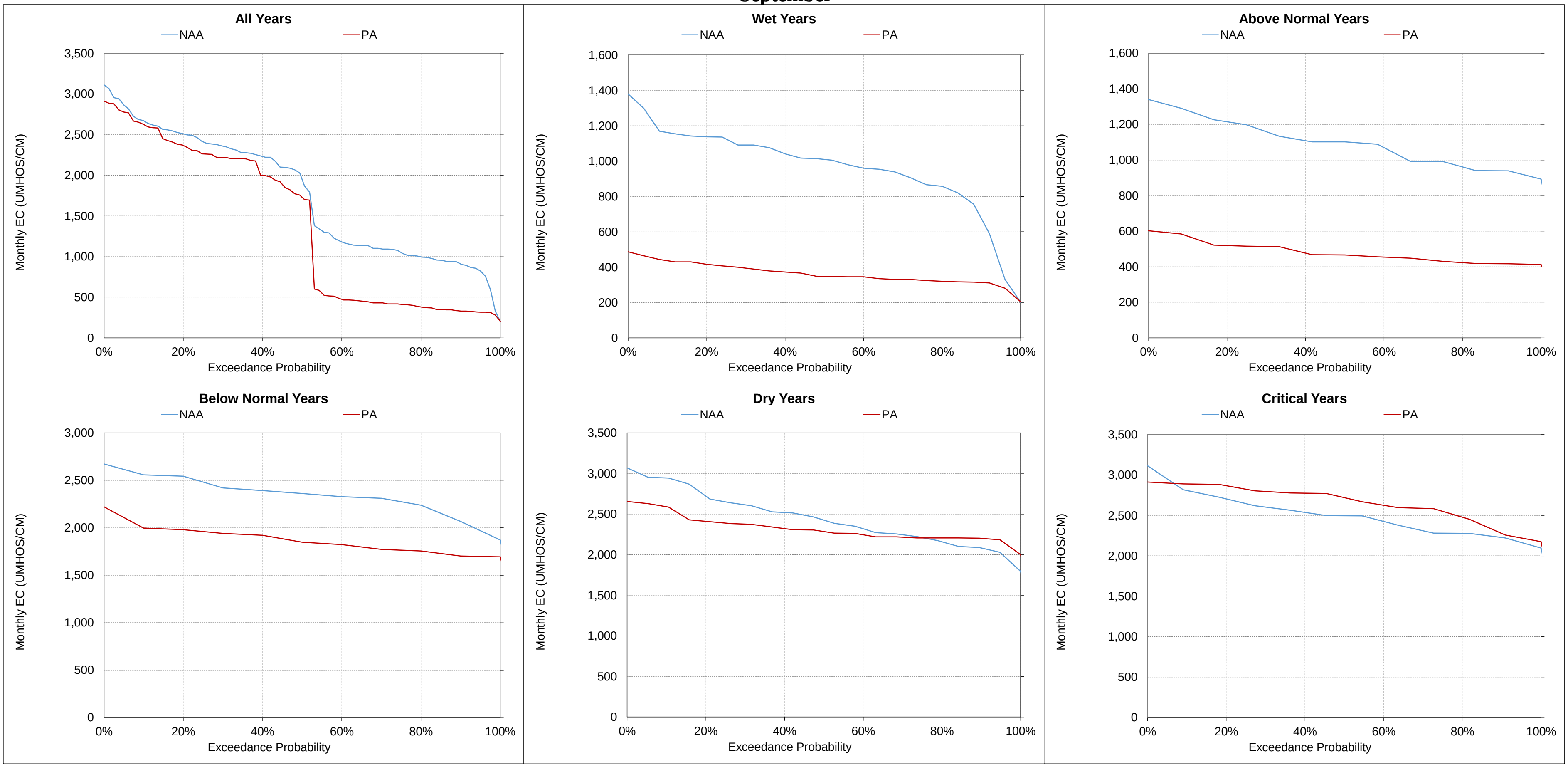
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-18. San Joaquin River at Jersey Point Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-13-19. San Joaquin River at Jersey Point Salinity, Monthly EC
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-14. Sacramento River at Collinsville Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	11,506	10,307	-1,199	-10%	12,262	10,861	-1,401	-11%	9,360	8,966	-394	-4%	5,300	5,300	0	0%	2,282	2,107	-176	-8%	1,544	1,458	-86	-6%
20%	10,221	8,979	-1,242	-12%	10,130	8,901	-1,229	-12%	7,487	7,641	154	2%	4,764	4,070	-694	-15%	1,375	1,418	42	3%	947	1,007	60	6%
30%	10,002	8,583	-1,419	-14%	9,737	8,167	-1,571	-16%	4,768	5,124	356	7%	3,647	3,013	-634	-17%	904	884	-21	-2%	508	597	89	17%
40%	9,866	8,174	-1,692	-17%	7,760	7,315	-445	-6%	4,001	3,998	-3	0%	2,258	1,960	-298	-13%	591	655	64	11%	403	486	83	21%
50%	8,460	7,540	-920	-11%	4,334	3,866	-468	-11%	3,266	3,451	184	6%	1,427	1,175	-252	-18%	378	381	3	1%	274	328	55	20%
60%	3,490	3,249	-241	-7%	3,338	3,197	-140	-4%	2,858	3,006	148	5%	691	817	126	18%	221	249	28	13%	214	255	40	19%
70%	1,520	1,445	-75	-5%	1,957	1,977	21	1%	1,409	1,408	-1	0%	247	273	26	11%	201	211	10	5%	198	217	19	10%
80%	1,377	1,350	-27	-2%	1,464	1,430	-33	-2%	788	1,074	286	36%	211	220	10	5%	191	205	14	7%	190	205	14	8%
90%	1,291	1,285	-6	0%	1,256	1,245	-11	-1%	241	276	35	15%	190	197	7	4%	188	196	8	4%	188	199	10	5%
Long Term																								
Full Simulation Period[b]	6,297	5,614	-683	-11%	5,897	5,355	-543	-9%	4,037	4,106	69	2%	2,297	2,062	-235	-10%	929	860	-69	-7%	615	659	43	7%
Water Year Types[c]																								
Wet (32%)	1,345	1,323	-22	-2%	1,387	1,401	14	1%	1,917	1,958	41	2%	1,784	1,185	-599	-34%	220	217	-3	-1%	211	230	19	9%
Above Normal (16%)	3,286	3,004	-281	-9%	3,269	3,186	-83	-3%	2,939	3,047	108	4%	2,398	2,177	-222	-9%	403	360	-43	-11%	235	251	17	7%
Below Normal (13%)	8,974	7,740	-1,234	-14%	7,989	6,928	-1,062	-13%	5,043	5,066	23	0%	2,529	2,514	-15	-1%	1,155	951	-204	-18%	675	675	0	0%
Dry (24%)	9,954	8,631	-1,323	-13%	8,535	7,509	-1,026	-12%	4,732	4,703	-29	-1%	2,277	2,313	36	2%	1,238	1,117	-122	-10%	725	805	80	11%
Critical (15%)	11,740	10,760	-981	-8%	12,204	11,237	-967	-8%	7,737	8,032	295	4%	3,121	3,006	-114	-4%	2,312	2,285	-28	-1%	1,665	1,770	105	6%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	2,151	2,171	20	1%	3,079	3,043	-35	-1%	4,482	4,448	-35	-1%	6,753	6,854	100	1%	8,485	9,117	632	7%	9,950	10,307	357	4%
20%	1,256	1,341	85	7%	2,643	2,460	-182	-7%	3,626	3,532	-94	-3%	5,492	5,922	430	8%	7,236	7,719	484	7%	8,934	9,809	875	10%
30%	889	991	102	11%	2,059	2,023	-36	-2%	3,356	3,302	-55	-2%	4,974	5,216	242	5%	6,701	7,099	399	6%	8,667	9,574	907	10%
40%	573	578	5	1%	1,120	1,115	-5	0%	2,898	2,819	-79	-3%	3,740	4,565	825	22%	5,784	6,711	927	16%	7,934	9,188	1,254	16%
50%	392	398	5	1%	754	733	-21	-3%	2,245	2,095	-150	-7%	3,068	3,931	863	28%	5,057	5,754	697	14%	6,983	8,606	1,623	23%
60%	263	295	31	12%	456	445	-11	-2%	1,945	1,772	-173	-9%	2,571	3,398	827	32%	4,658	5,432	775	17%	3,107	3,295	188	6%
70%	235	252	18	8%	331	329	-2	-1%	1,409	1,474	65	5%	2,309	3,041	733	32%	4,424	5,243	819	19%	2,127	2,314	188	9%
80%	198	216	18	9%	220	230	10	4%	919	893	-26	-3%	2,065	2,600	535	26%	3,995	5,087	1,092	27%	1,597	1,724	127	8%
90%	188	195	8	4%	188	189	1	1%	295	331	36	12%	1,662	1,797	135	8%	3,828	4,801	973	25%	1,342	1,492	150	11%
Long Term																								
Full Simulation Period[b]	807	828	21	3%	1,374	1,351	-24	-2%	2,558	2,502	-56	-2%	3,749	4,238	489	13%	5,599	6,345	746	13%	5,577	6,147	571	10%
Water Year Types[c]																								
Wet (32%)	246	256	11	4%	339	340	1	0%	1,036	986	-50	-5%	1,800	2,208	409	23%	4,236	4,972	736	17%	1,522	1,698	176	12%
Above Normal (16%)	295	312	17	6%	524	527	2	0%	1,903	1,863	-40	-2%	2,426	3,330	904	37%	4,125	5,170	1,045	25%	3,152	3,345	193	6%
Below Normal (13%)	899	928	29	3%	1,420	1,392	-27	-2%	2,800	2,662	-138	-5%	3,272	4,184	912	28%	4,947	5,997	1,050	21%	7,518	8,854	1,336	18%
Dry (24%)	909	962	52	6%	1,788	1,696	-91	-5%	3,019	2,942	-78	-3%	5,256	5,546	289	6%	6,760	7,356	596	9%	8,741	9,711	970	11%
Critical (15%)	2,326	2,314	-12	-1%	3,809	3,819	11	0%	5,574	5,597	23	0%	7,328	7,488	161	2%	8,814	9,227	413	5%	9,934	10,402	468	5%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

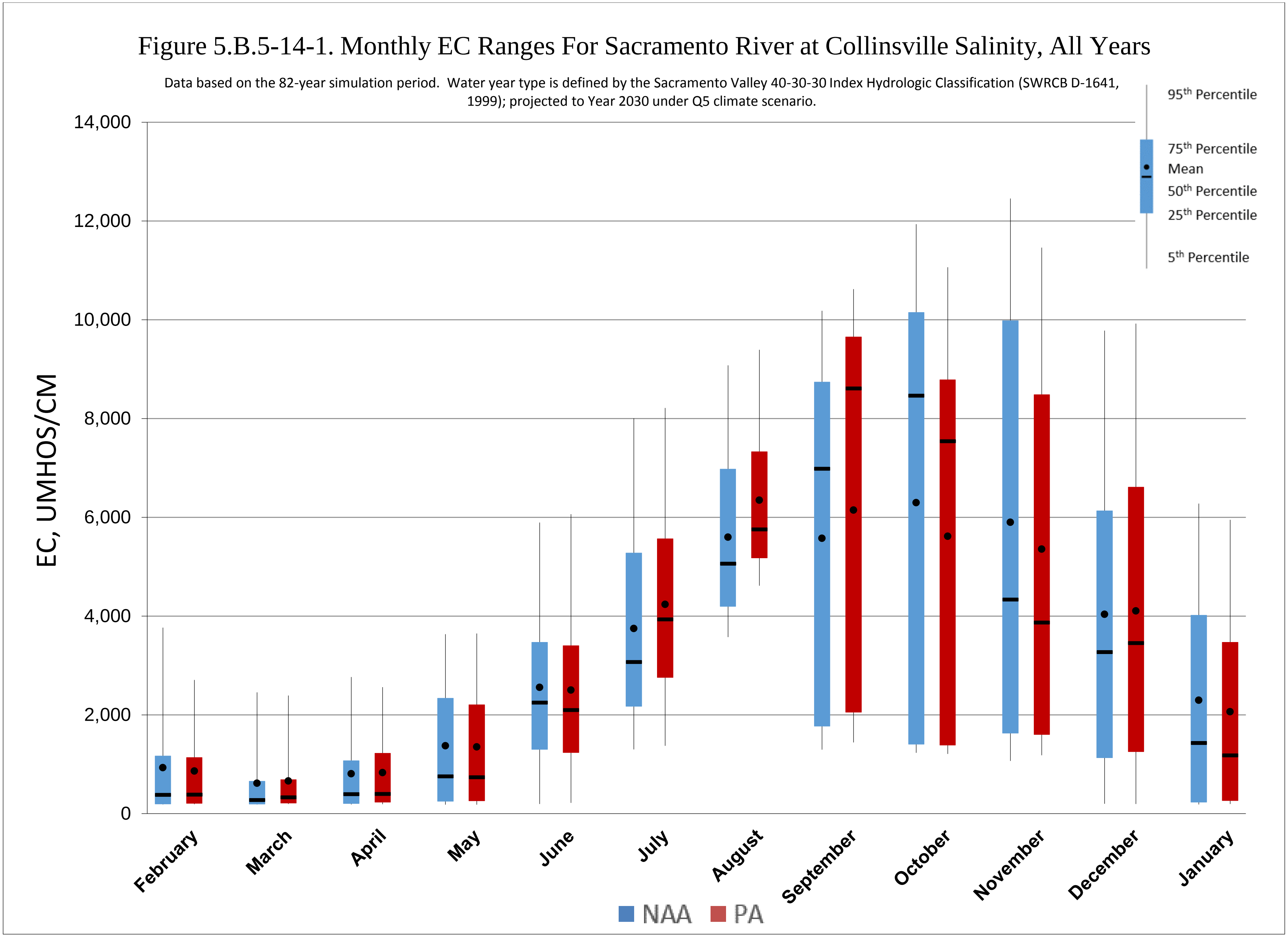


Figure 5.B.5-14-1. Monthly EC Ranges For Sacramento River at Collinsville Salinity, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
EC, UMHOS/CM
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-14-2. Monthly EC Ranges For Sacramento River at Collinsville Salinity, Wet Years

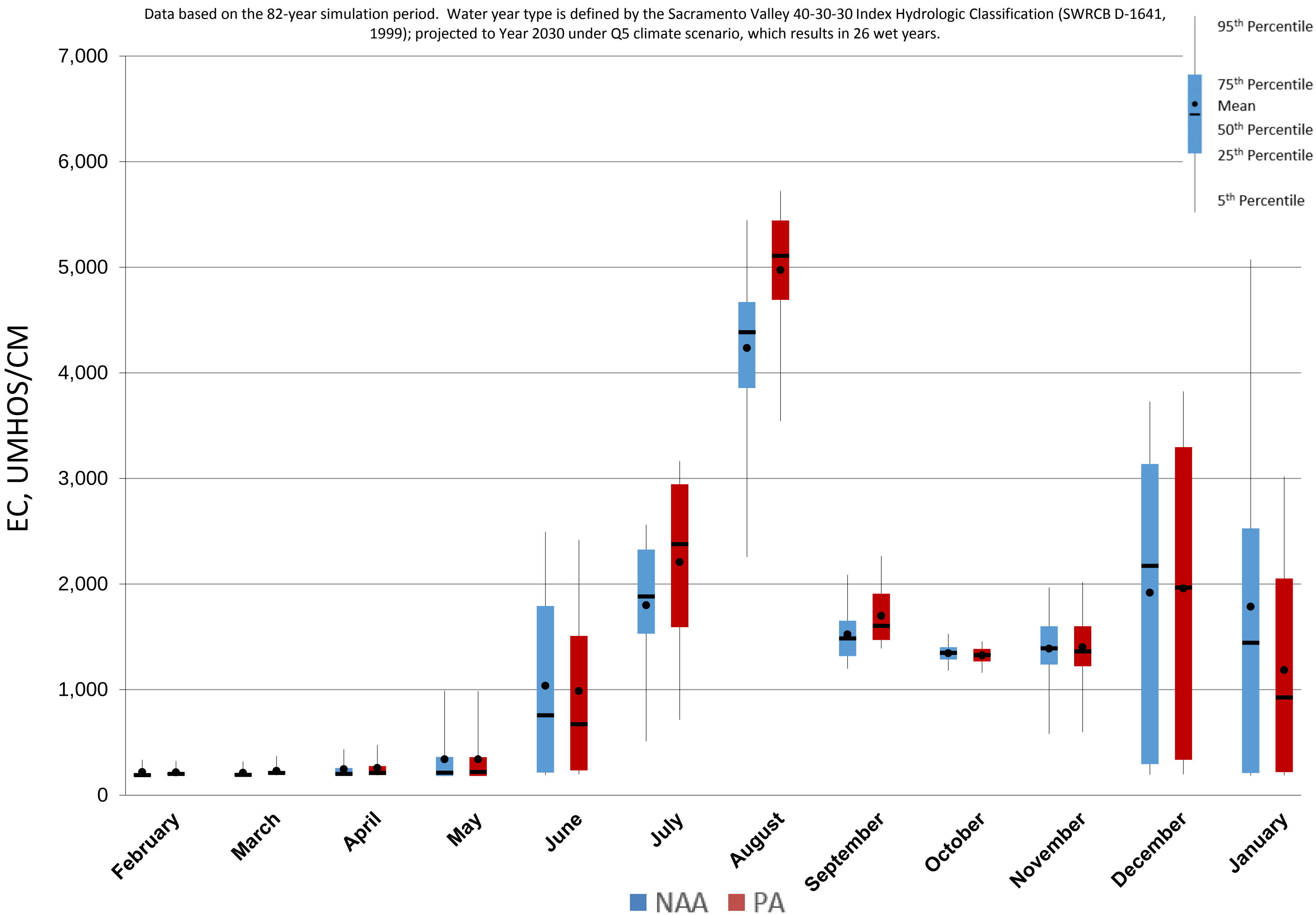
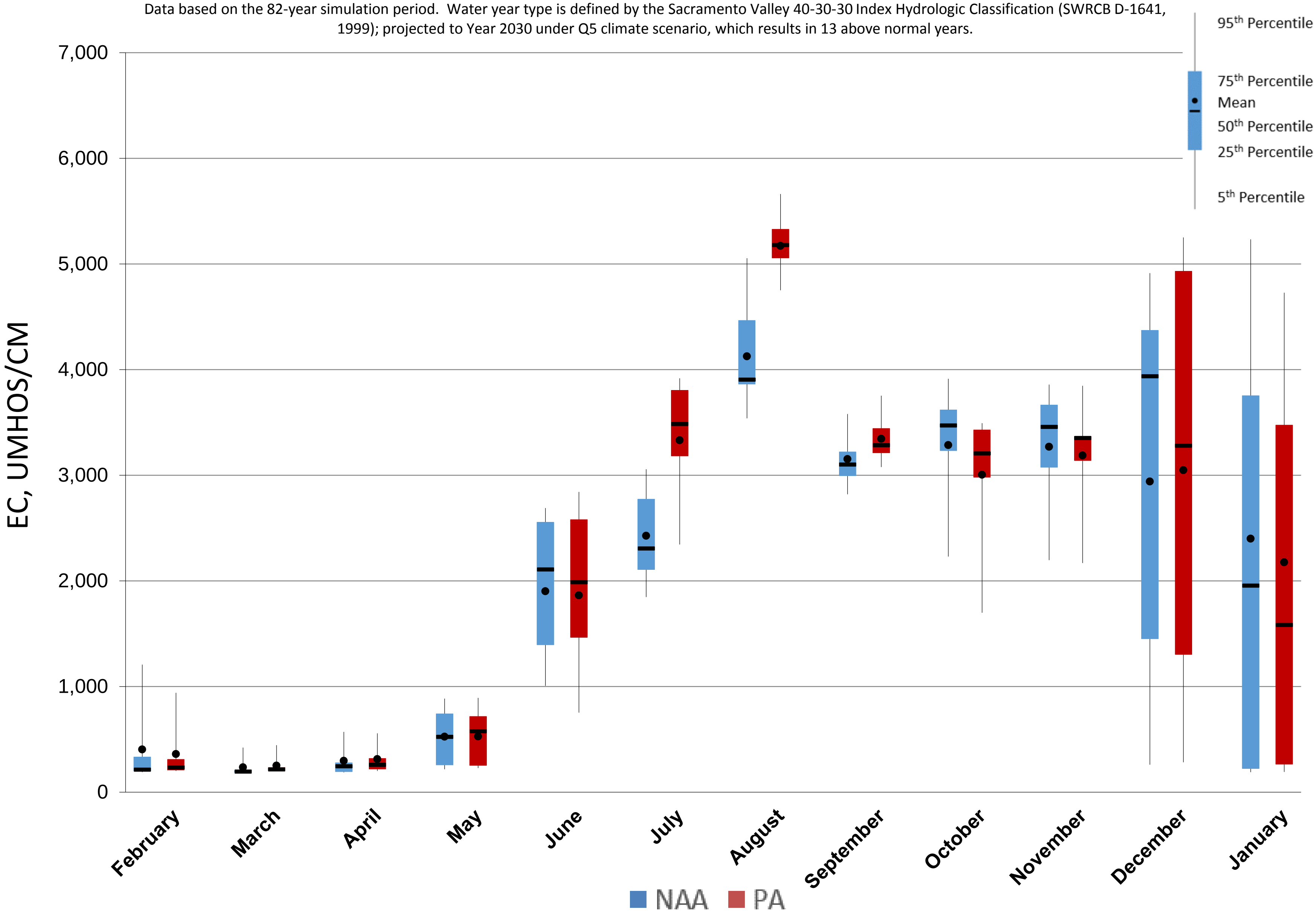


Figure 5.B.5-14-3. Monthly EC Ranges For Sacramento River at Collinsville Salinity, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.



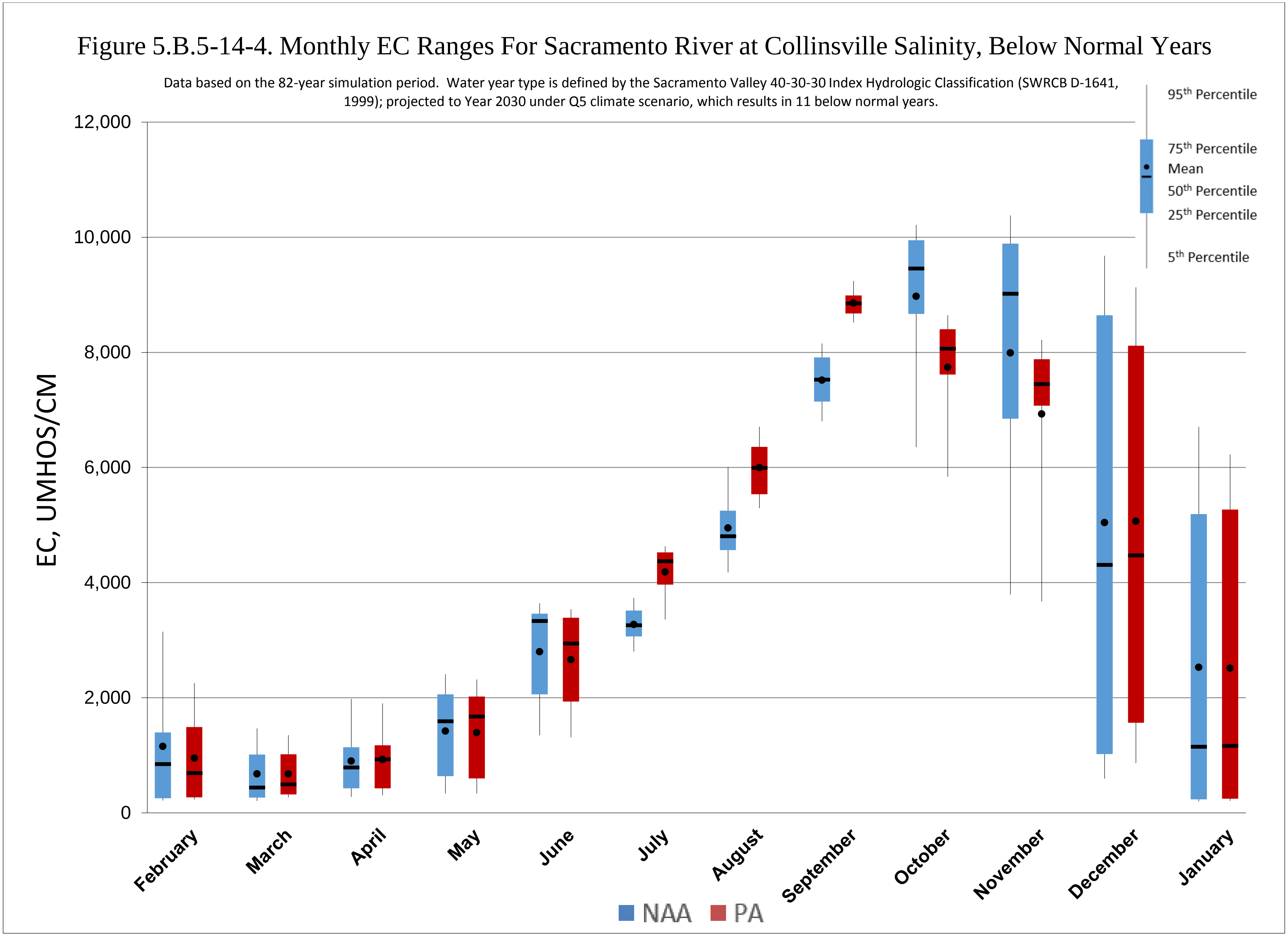
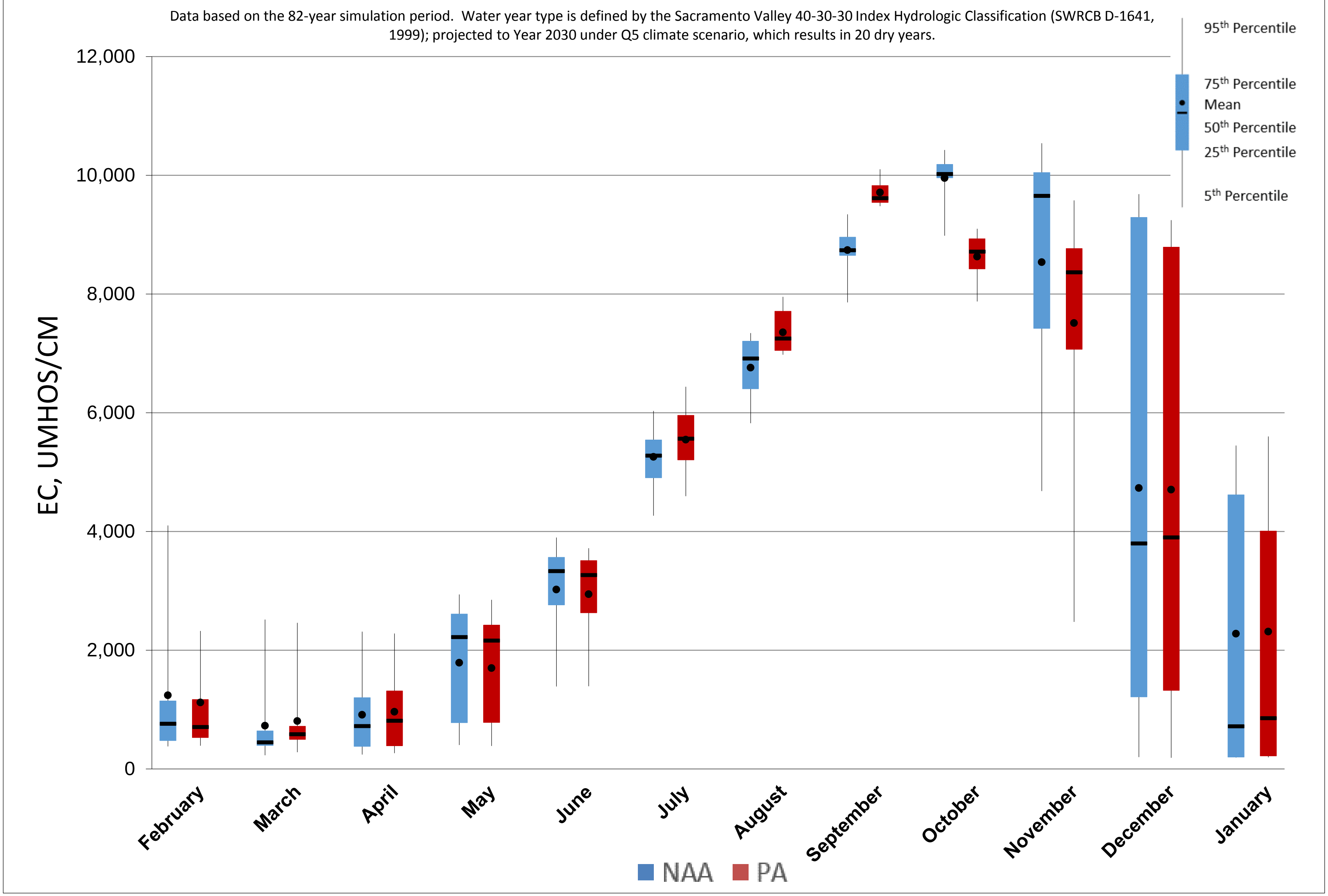


Figure 5.B.5-14-4. Monthly EC Ranges For Sacramento River at Collinsville Salinity, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
EC, UMHOS/CM
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile

Figure 5.B.5-14-5. Monthly EC Ranges For Sacramento River at Collinsville Salinity, Dry Years



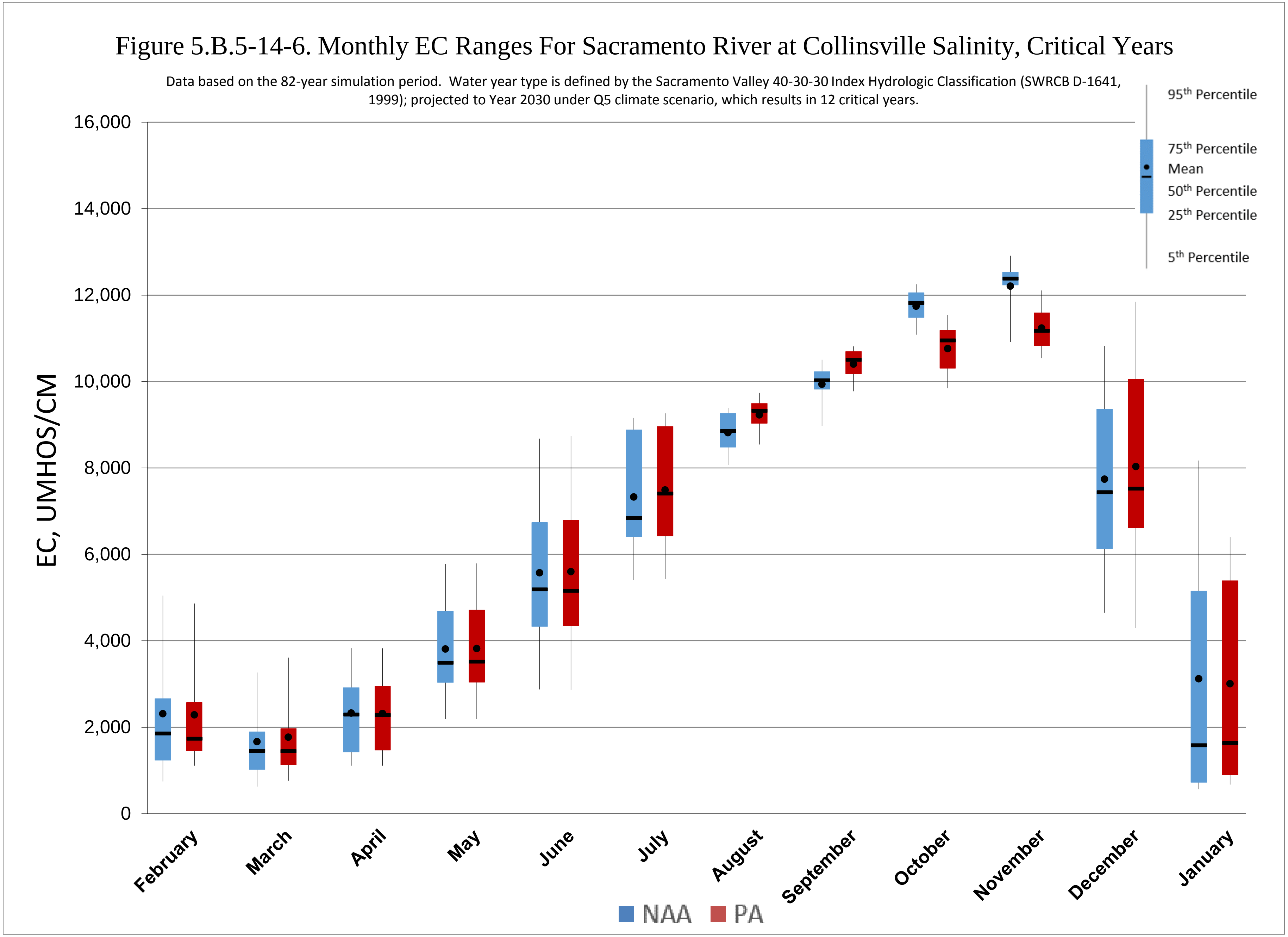
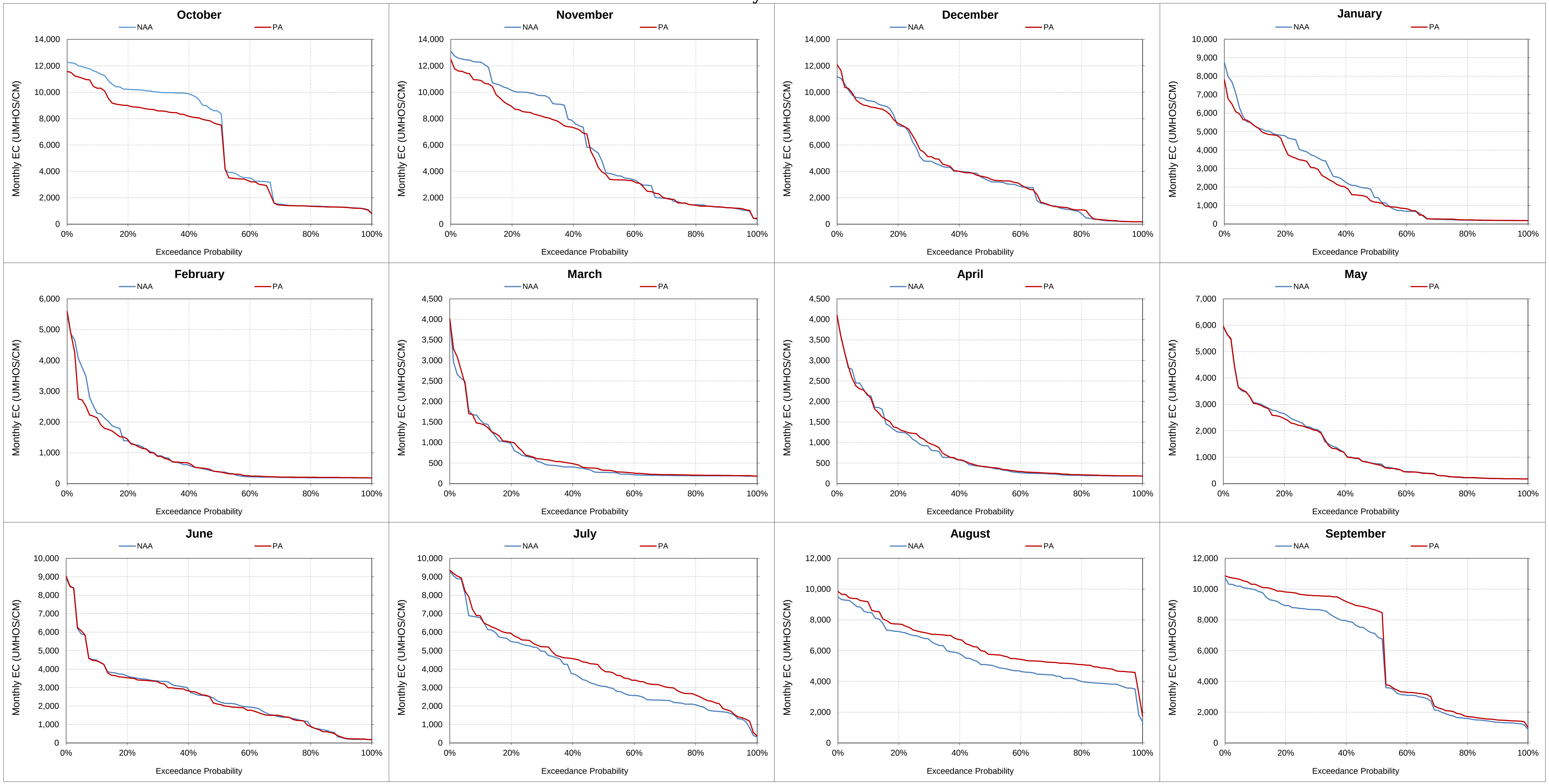


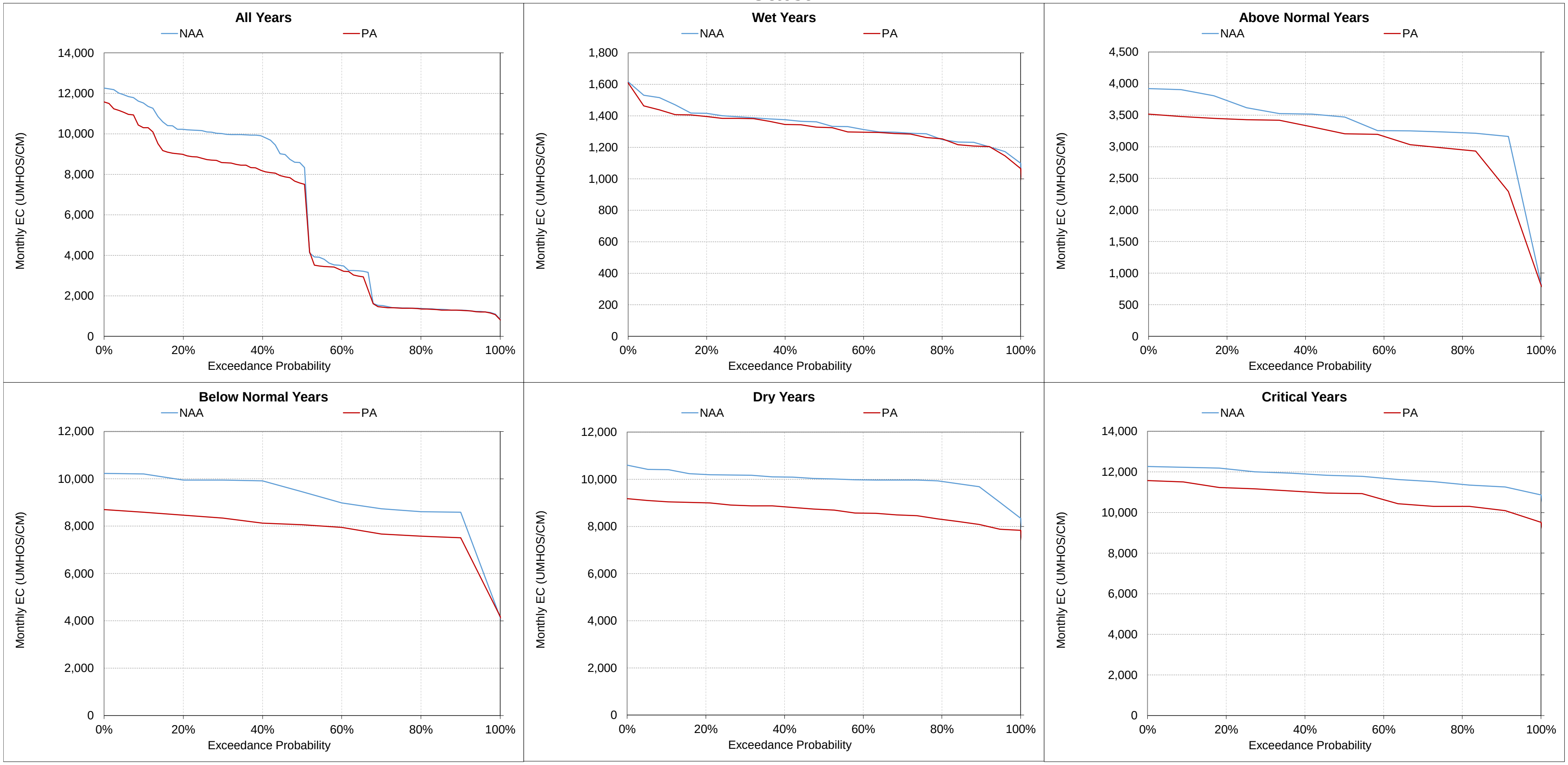
Figure 5.B.5-14-6. Monthly EC Ranges For Sacramento River at Collinsville Salinity, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
EC, UMHOS/CM
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-14-7. Sacramento River at Collinsville Salinity, Monthly EC Probability of Exceedance



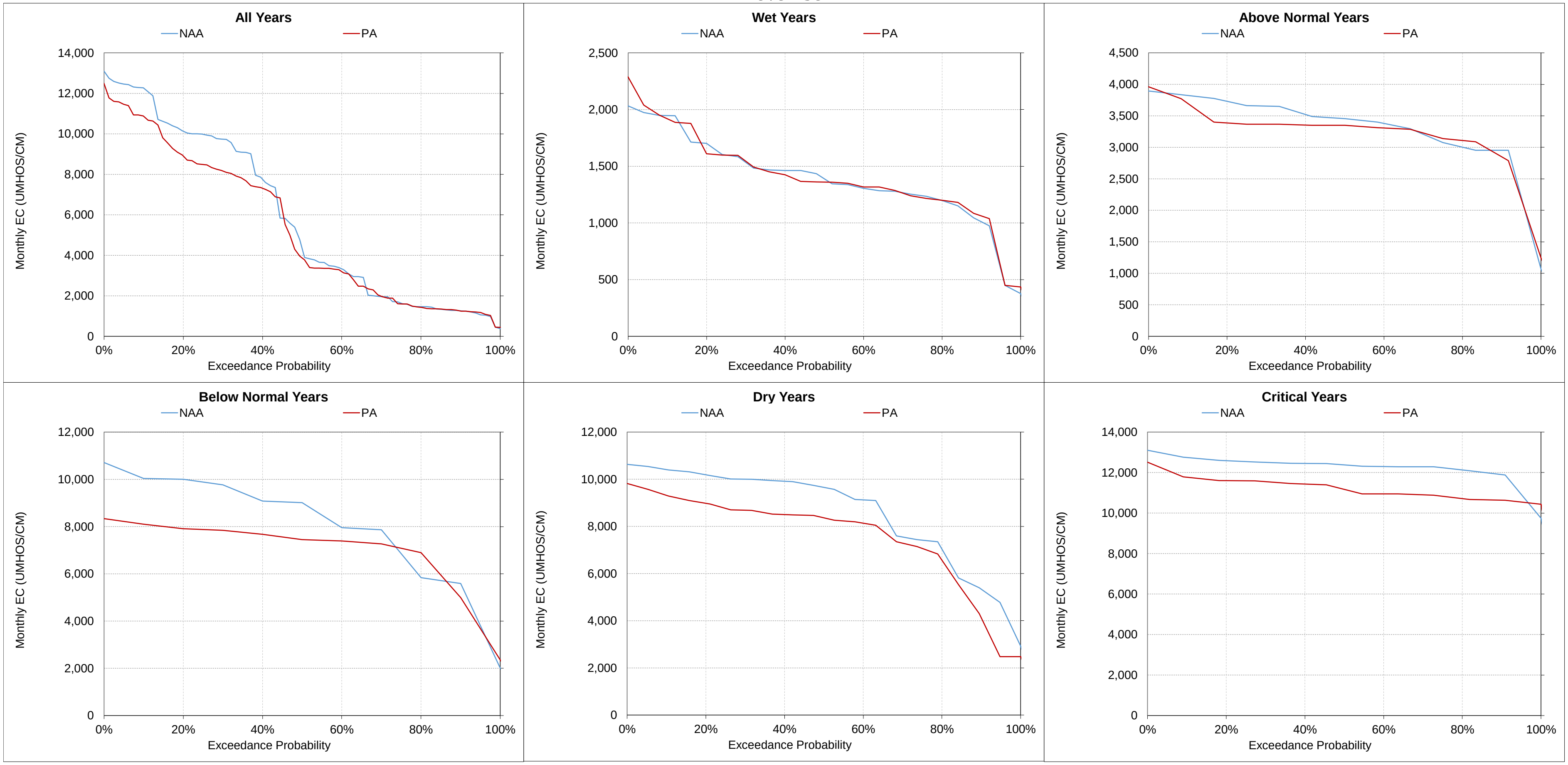
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-8. Sacramento River at Collinsville Salinity, Monthly EC
October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-9. Sacramento River at Collinsville Salinity, Monthly EC November



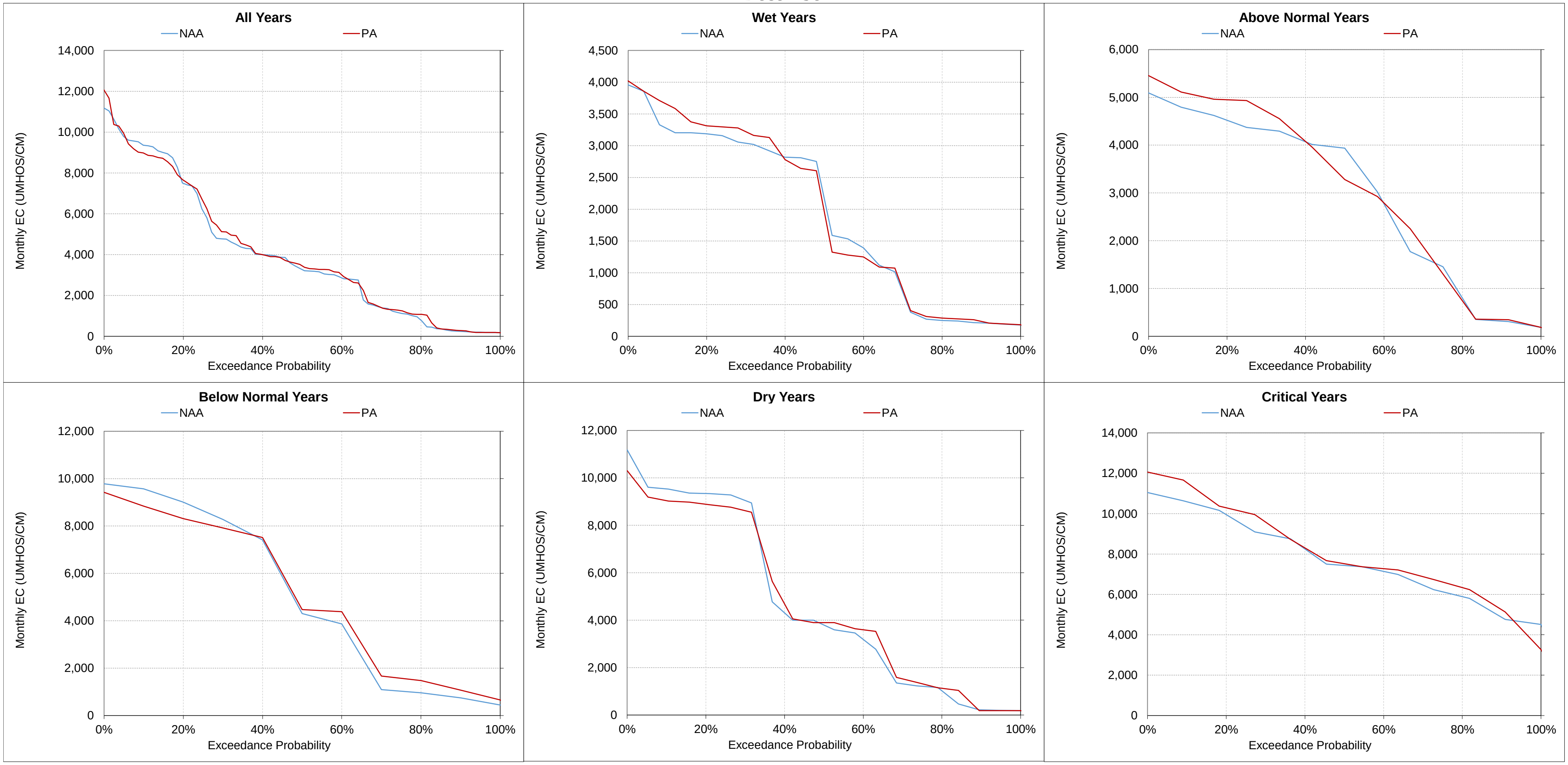
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

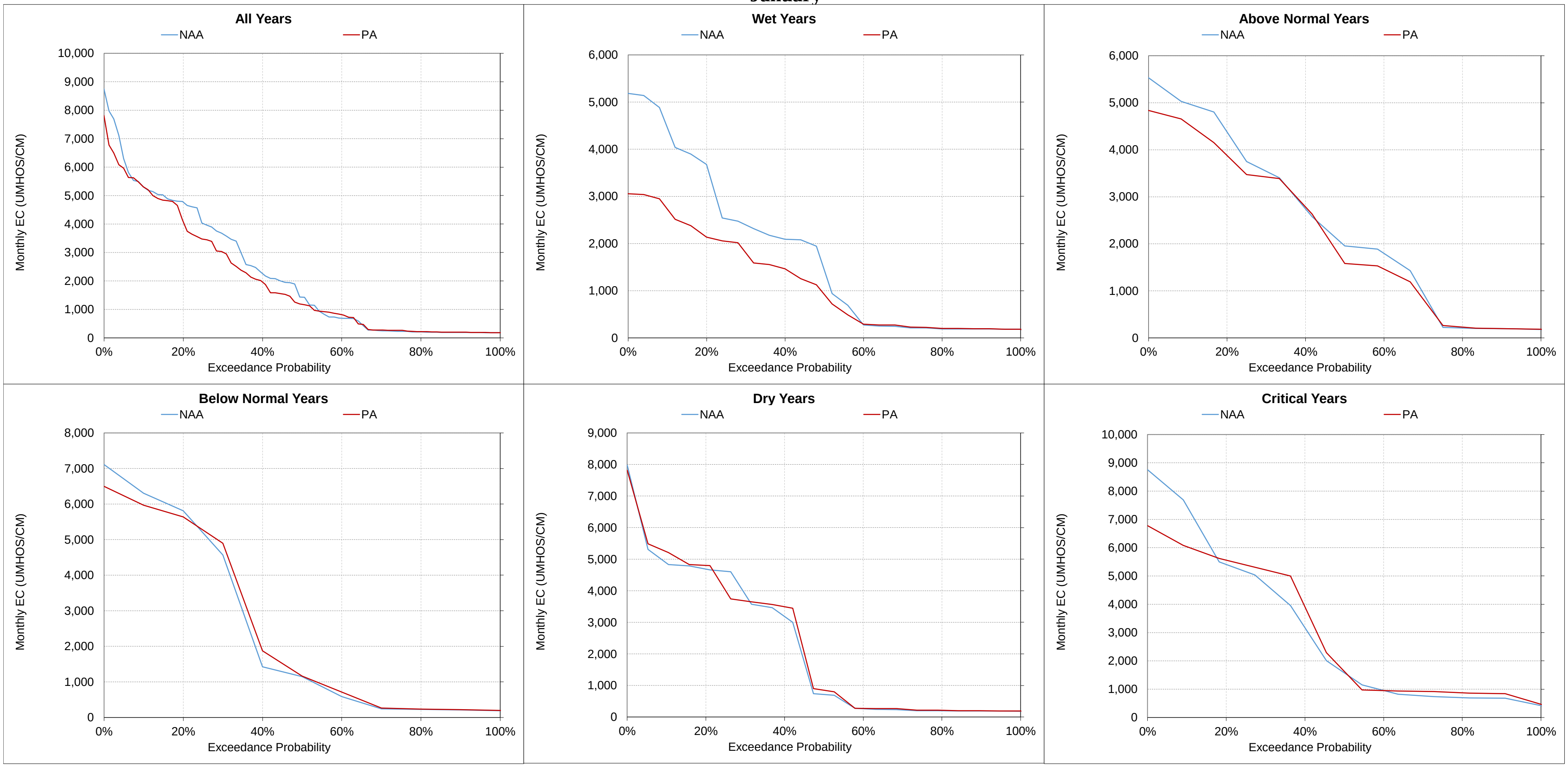
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-10. Sacramento River at Collinsville Salinity, Monthly EC
December



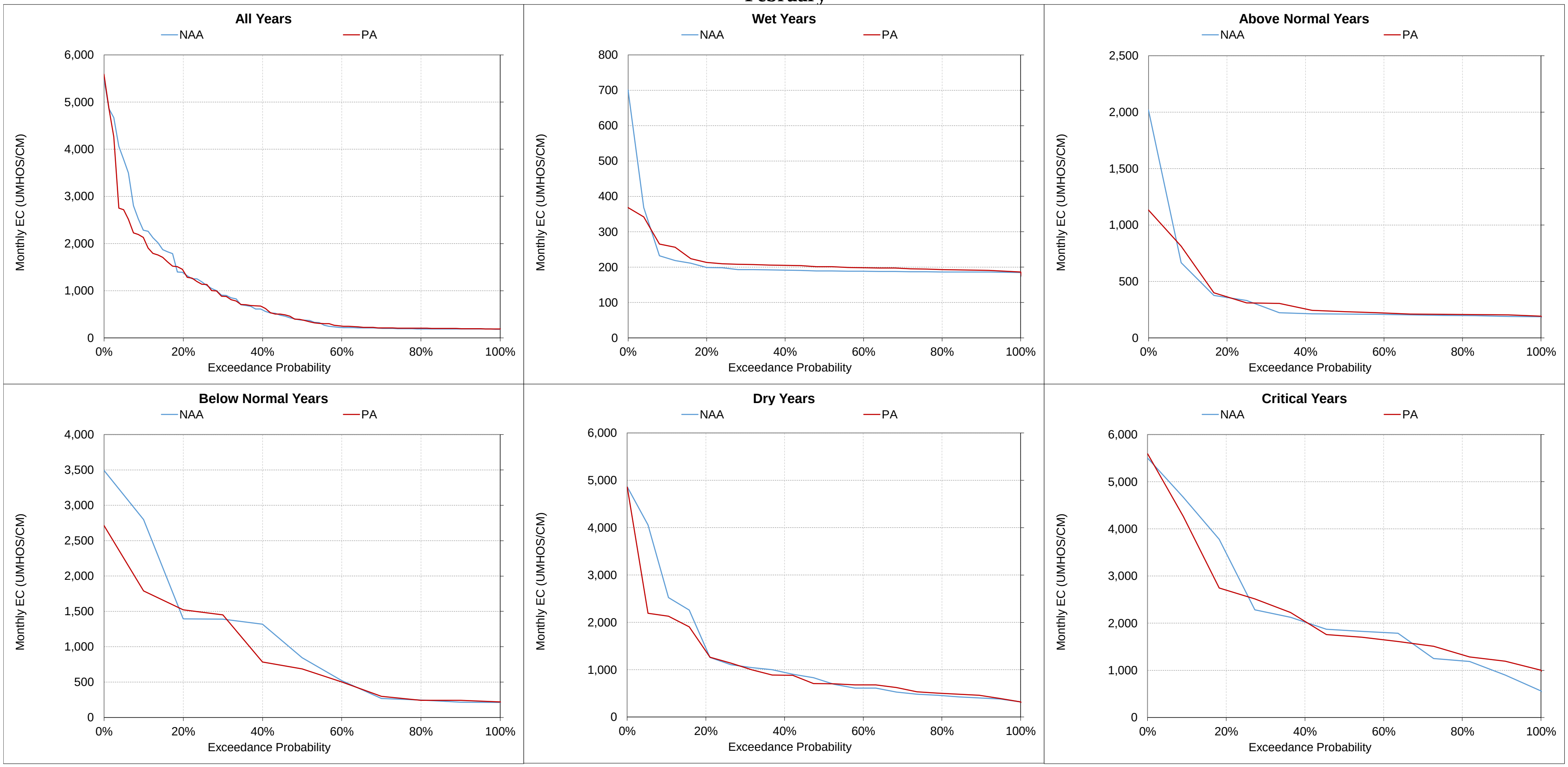
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-11. Sacramento River at Collinsville Salinity, Monthly EC January



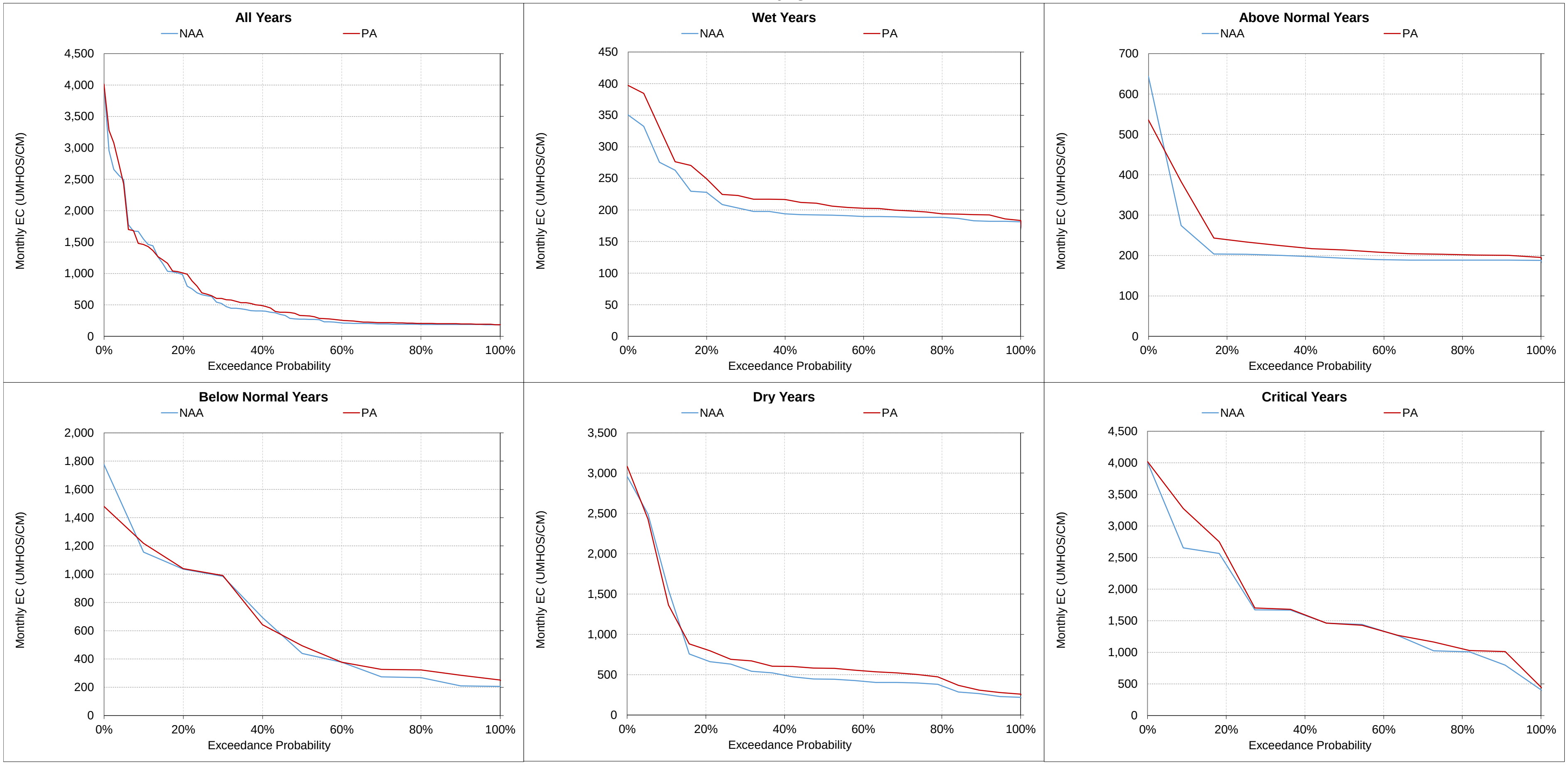
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-12. Sacramento River at Collinsville Salinity, Monthly EC
February



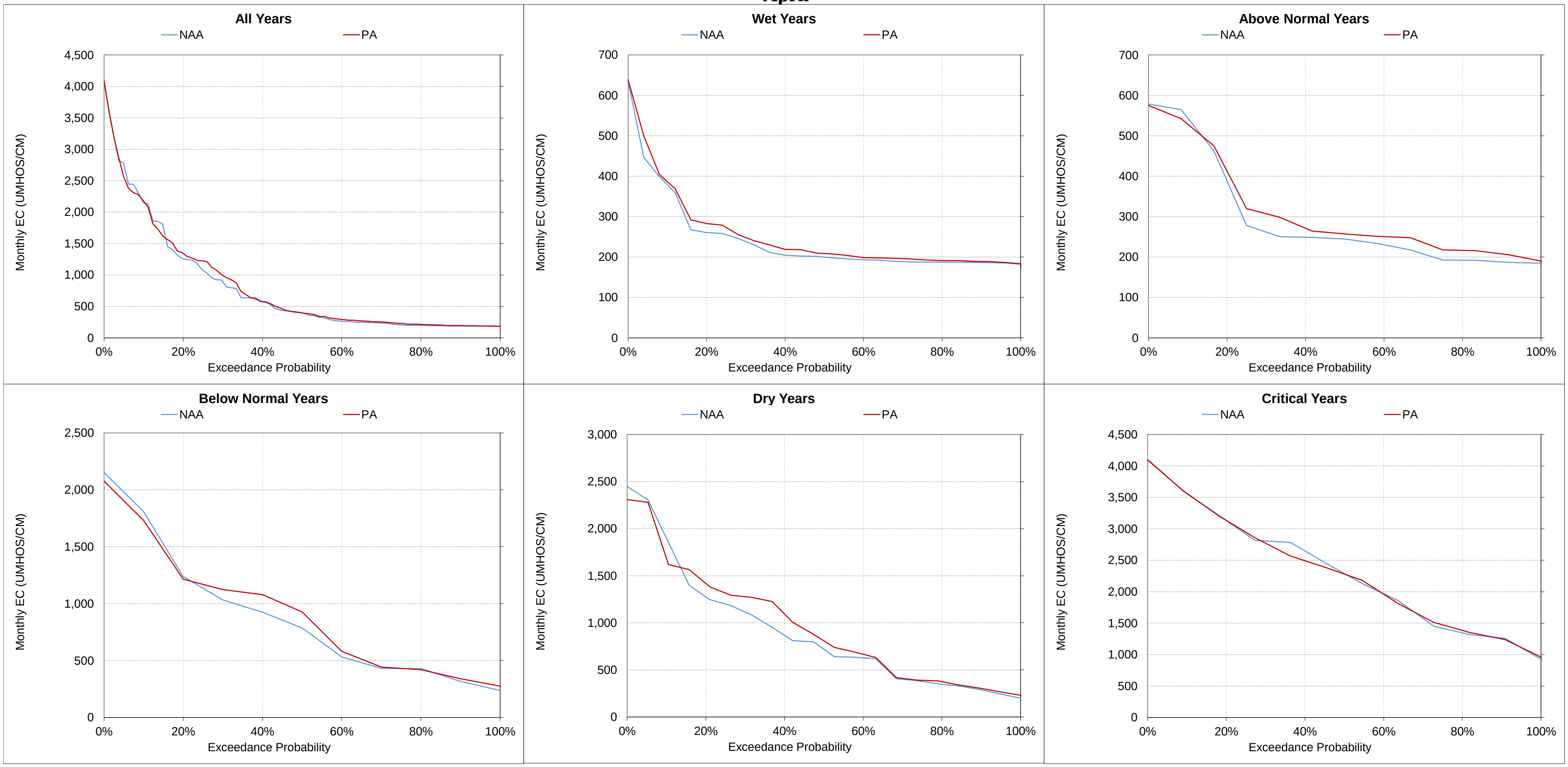
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-13. Sacramento River at Collinsville Salinity, Monthly EC March



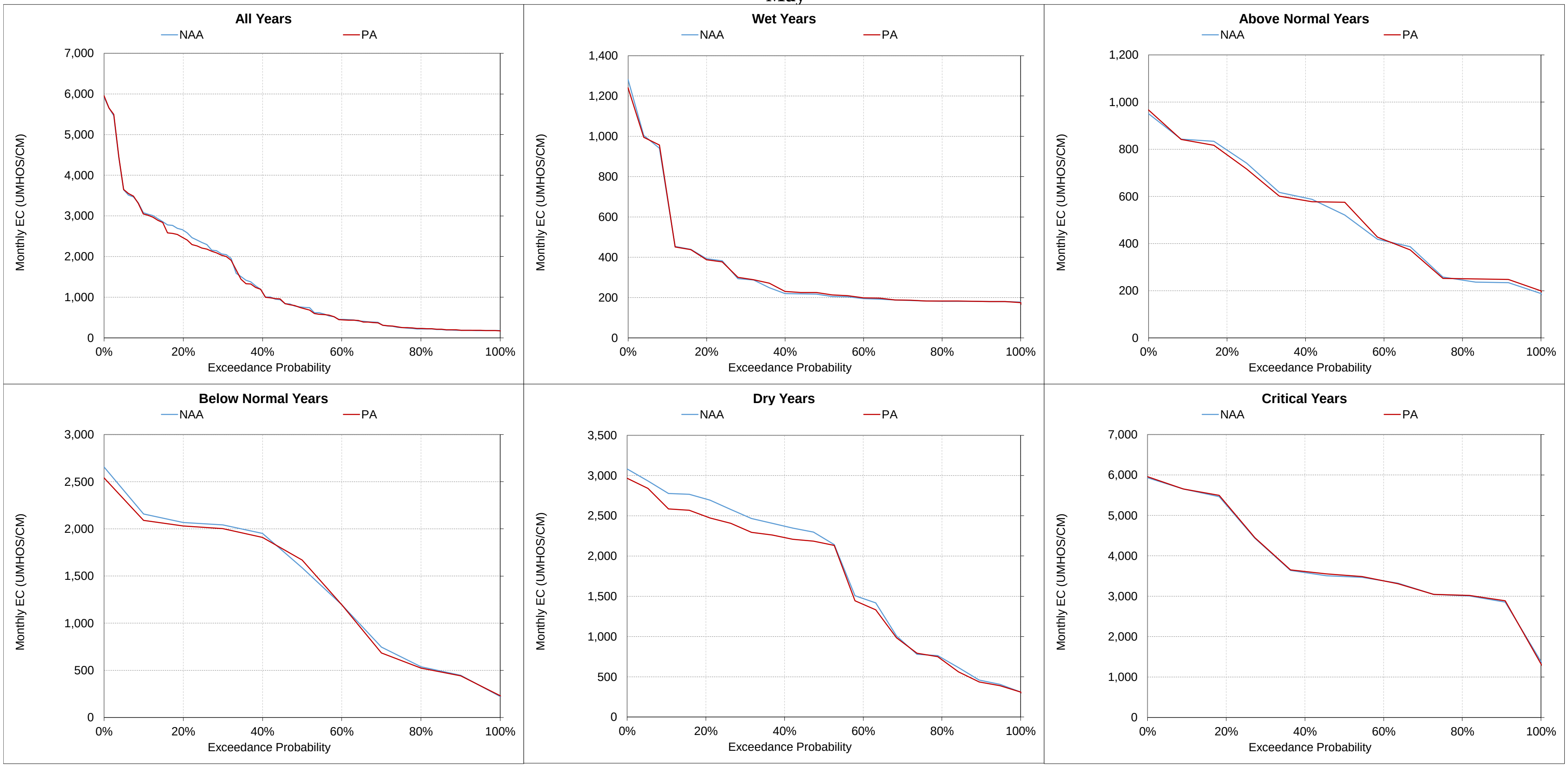
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-14. Sacramento River at Collinsville Salinity, Monthly EC
April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-15. Sacramento River at Collinsville Salinity, Monthly EC May



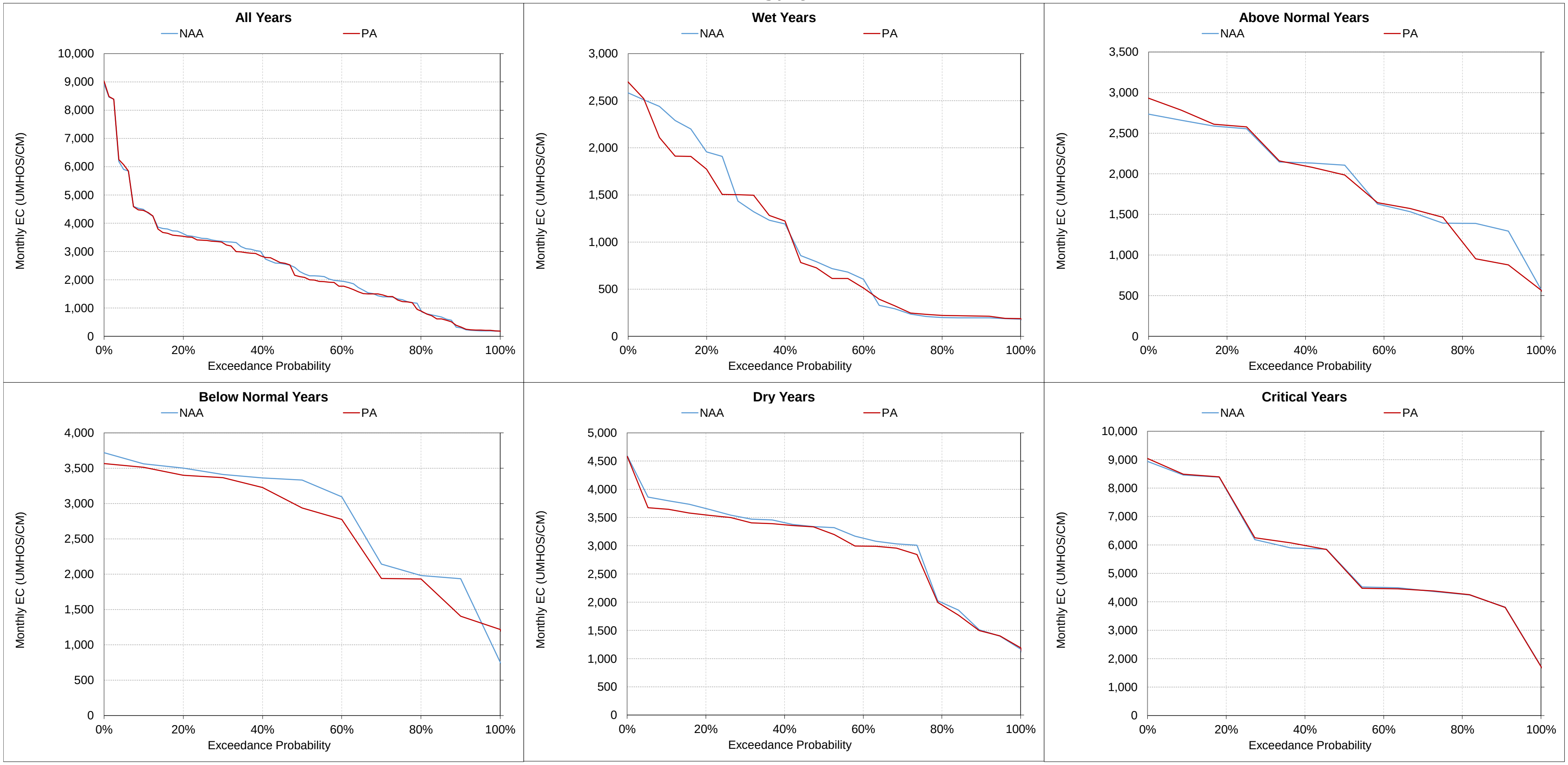
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

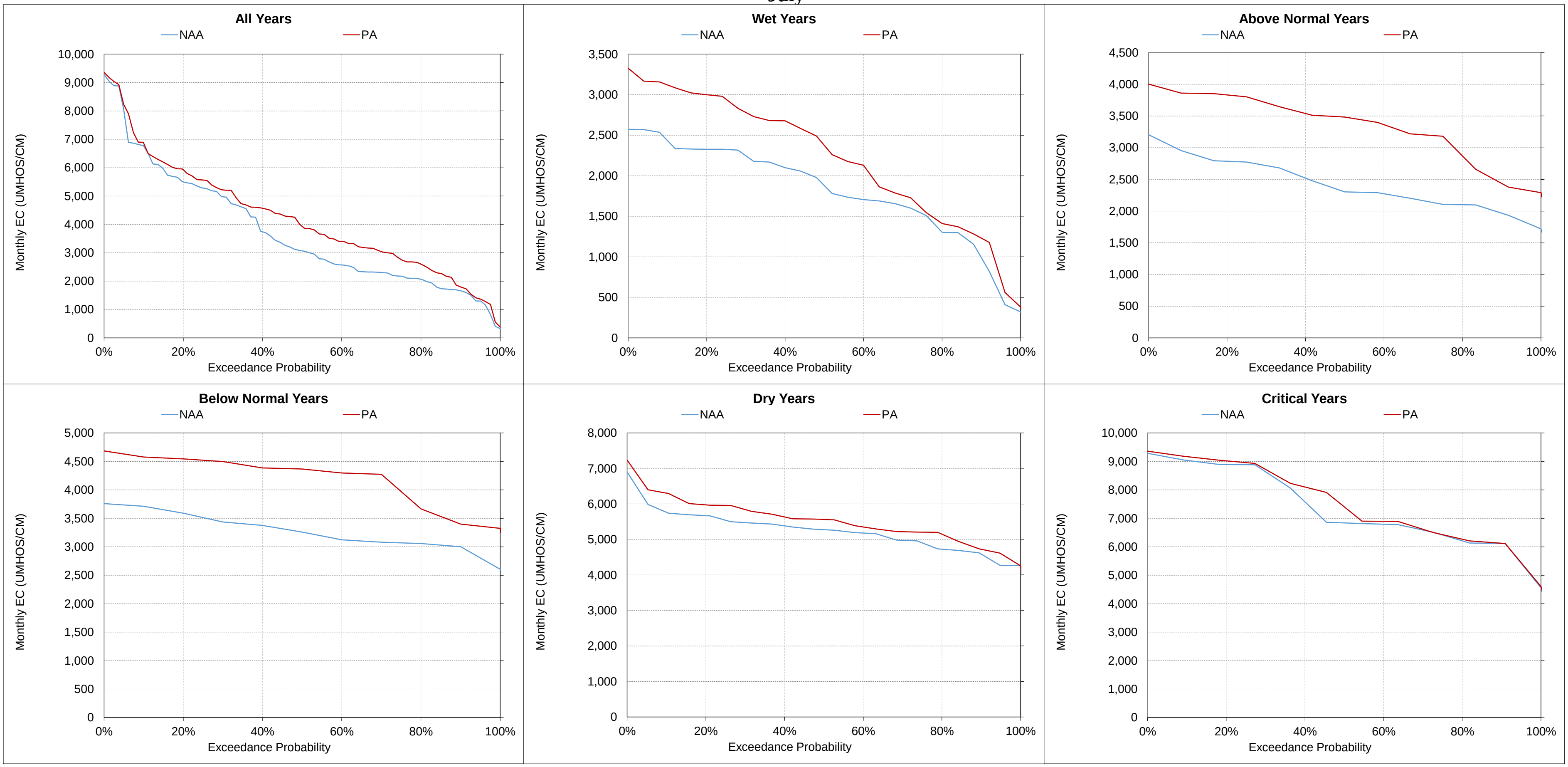
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-16. Sacramento River at Collinsville Salinity, Monthly EC
June



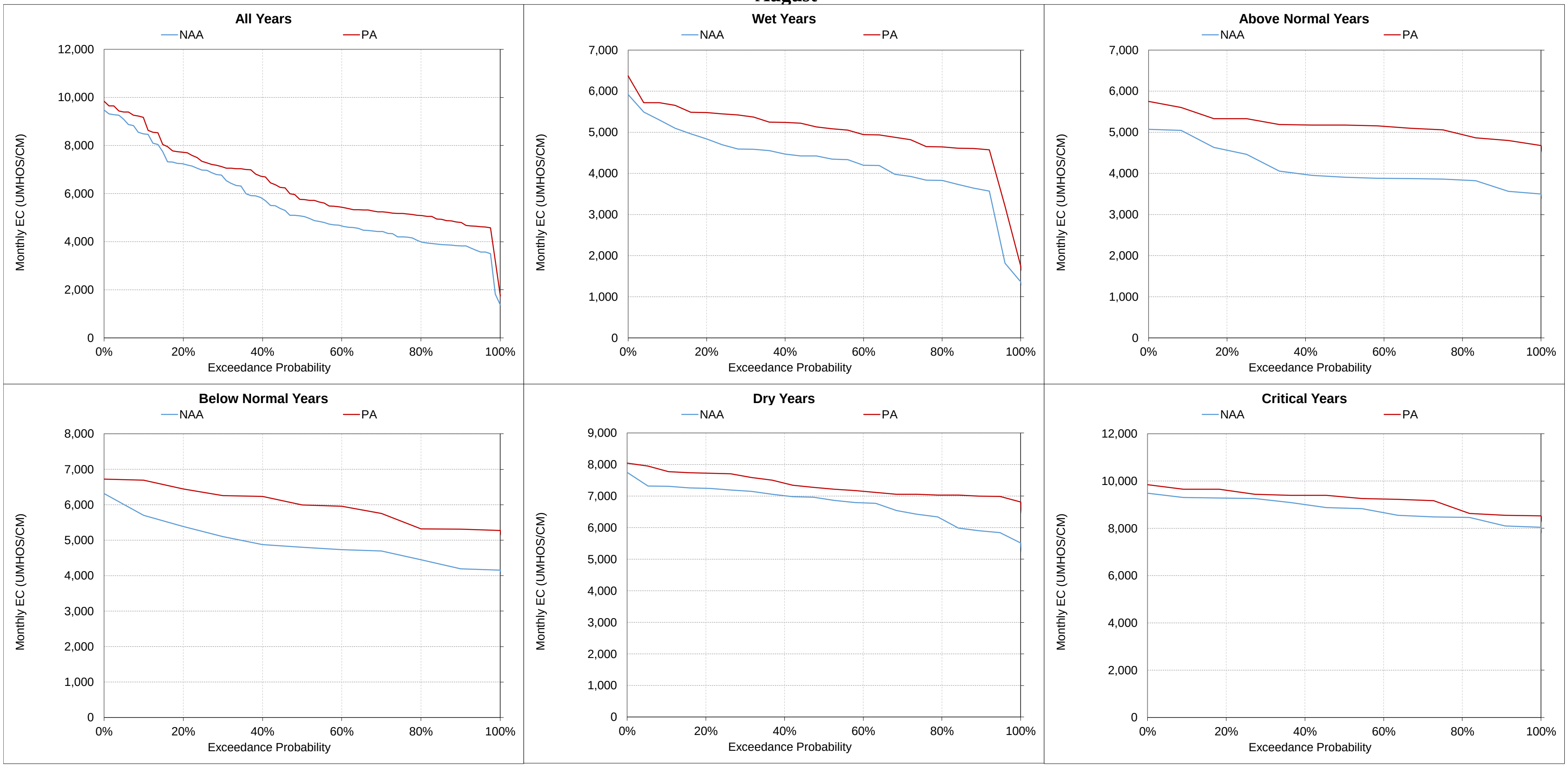
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-17. Sacramento River at Collinsville Salinity, Monthly EC July



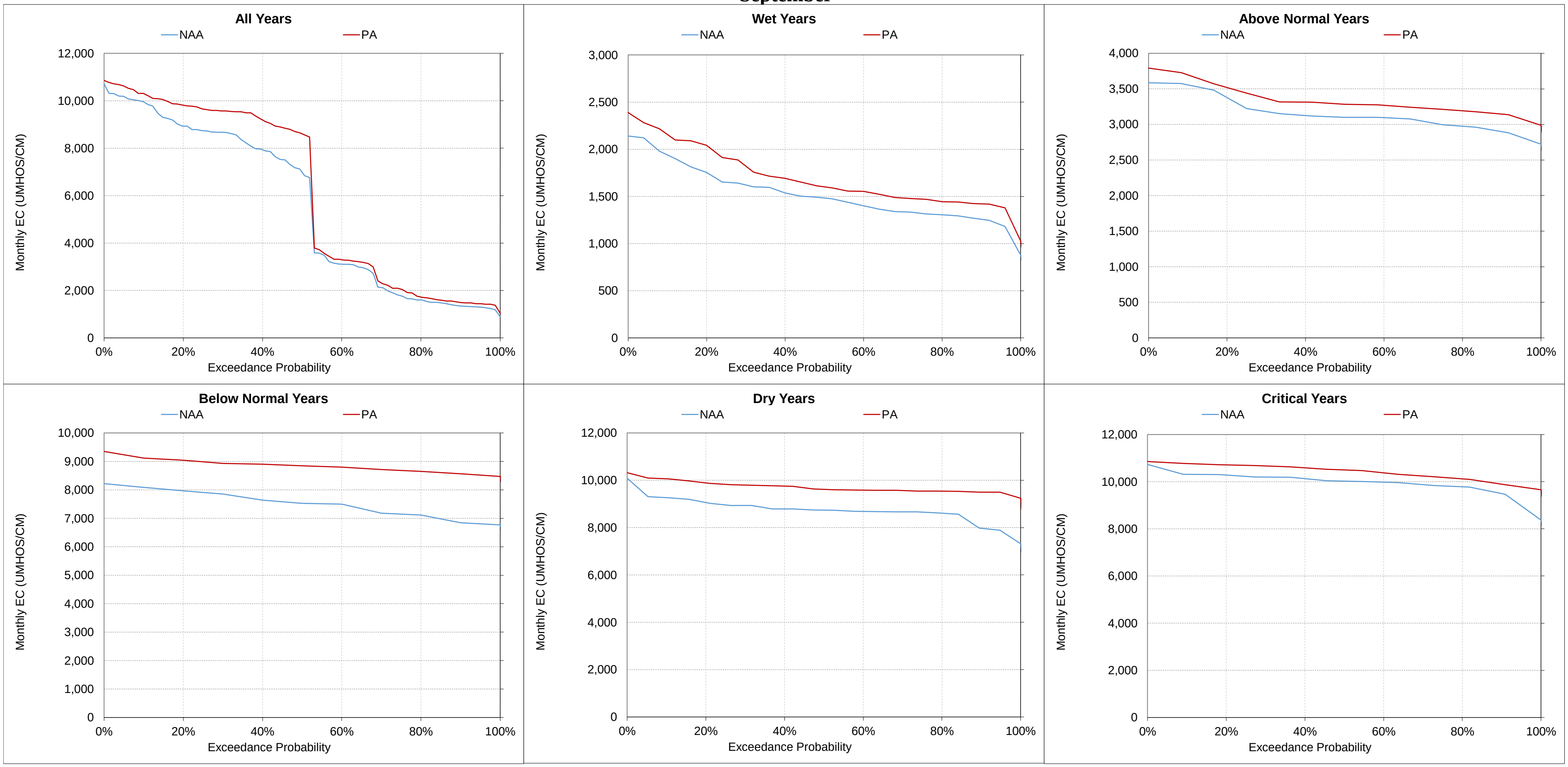
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-18. Sacramento River at Collinsville Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-14-19. Sacramento River at Collinsville Salinity, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-15. Sacramento River at Port Chicago Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	19,679	19,040	-639	-3%	20,093	19,086	-1,007	-5%	18,310	17,814	-496	-3%	14,356	14,788	432	3%	9,851	8,915	-936	-10%	8,385	8,260	-125	-1%
20%	18,761	17,938	-823	-4%	18,746	17,502	-1,243	-7%	16,752	16,783	31	0%	13,274	12,571	-703	-5%	7,120	6,628	-491	-7%	6,770	6,845	75	1%
30%	18,639	17,626	-1,013	-5%	18,299	16,876	-1,424	-8%	13,630	13,918	288	2%	11,905	10,136	-1,769	-15%	4,579	5,443	864	19%	3,789	4,521	732	19%
40%	18,404	17,219	-1,185	-6%	16,386	16,261	-125	-1%	12,798	12,640	-157	-1%	8,922	7,701	-1,221	-14%	3,317	3,714	397	12%	3,455	3,976	520	15%
50%	17,415	16,636	-779	-4%	12,115	11,836	-279	-2%	11,355	11,634	279	2%	6,755	6,334	-421	-6%	2,433	2,774	342	14%	2,129	2,649	519	24%
60%	11,715	11,470	-245	-2%	11,505	11,293	-212	-2%	10,529	10,492	-37	0%	3,846	4,030	184	5%	1,332	1,173	-159	-12%	1,365	1,403	38	3%
70%	7,739	7,750	11	0%	8,117	8,086	-31	0%	6,897	7,033	136	2%	1,553	1,807	254	16%	413	470	57	14%	612	658	47	8%
80%	7,564	7,543	-21	0%	7,738	7,747	9	0%	3,019	3,569	550	18%	541	614	73	13%	256	277	22	8%	297	300	4	1%
90%	7,405	7,390	-15	0%	7,388	7,330	-58	-1%	1,493	1,752	259	17%	267	291	24	9%	234	246	12	5%	236	253	17	7%
Long Term																								
Full Simulation Period[b]	13,911	13,396	-515	-4%	13,218	12,704	-514	-4%	10,515	10,591	76	1%	6,995	6,666	-329	-5%	3,724	3,668	-56	-2%	3,255	3,461	206	6%
Water Year Types[c]																								
Wet (32%)	7,491	7,467	-24	0%	7,230	7,262	32	0%	7,165	7,234	68	1%	5,885	4,705	-1,180	-20%	581	572	-9	-2%	826	861	34	4%
Above Normal (16%)	11,338	10,954	-384	-3%	11,004	10,858	-147	-1%	9,481	9,578	97	1%	7,428	7,148	-280	-4%	1,547	1,589	42	3%	1,169	1,195	26	2%
Below Normal (13%)	17,176	16,199	-976	-6%	16,396	15,407	-988	-6%	11,957	12,148	191	2%	7,181	7,330	149	2%	4,732	4,266	-467	-10%	4,644	4,759	116	2%
Dry (24%)	18,595	17,661	-934	-5%	16,601	15,517	-1,084	-7%	10,918	10,930	12	0%	6,650	6,880	230	3%	5,553	5,479	-74	-1%	4,162	4,719	557	13%
Critical (15%)	19,807	19,210	-597	-3%	20,040	19,329	-711	-4%	16,897	16,971	74	0%	9,336	9,425	89	1%	8,919	9,061	142	2%	7,993	8,266	273	3%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	9,661	9,658	-3	0%	11,126	11,176	50	0%	13,069	13,058	-11	0%	15,502	15,510	9	0%	17,605	17,801	196	1%	18,632	18,987	356	2%
20%	7,541	7,719	179	2%	10,369	10,039	-330	-3%	12,046	11,848	-198	-2%	14,537	14,665	127	1%	16,331	16,736	405	2%	17,897	18,488	592	3%
30%	5,721	6,542	821	14%	9,269	9,296	26	0%	11,513	11,257	-256	-2%	14,036	14,148	112	1%	15,956	16,424	468	3%	17,663	18,286	623	4%
40%	4,617	4,605	-12	0%	6,913	6,850	-63	-1%	10,871	10,597	-275	-3%	12,418	13,297	879	7%	15,060	15,626	566	4%	17,058	17,783	725	4%
50%	3,638	3,753	115	3%	5,833	5,652	-181	-3%	9,397	9,190	-207	-2%	11,646	12,296	649	6%	14,050	14,734	684	5%	16,376	17,531	1,155	7%
60%	2,356	2,450	94	4%	4,015	3,913	-102	-3%	8,926	8,530	-396	-4%	10,286	11,765	1,479	14%	13,661	14,214	553	4%	11,823	12,064	241	2%
70%	1,550	1,547	-3	0%	3,211	3,093	-118	-4%	7,594	7,628	34	0%	9,833	11,169	1,336	14%	13,243	14,075	832	6%	8,643	8,771	128	1%
80%	618	615	-3	-1%	1,741	1,710	-31	-2%	5,617	5,802	185	3%	9,298	10,100	802	9%	12,723	13,862	1,139	9%	7,956	8,171	215	3%
90%	291	293	2	1%	515	507	-8	-1%	2,759	3,017	258	9%	8,117	8,294	177	2%	12,418	13,597	1,179	9%	7,707	7,866	159	2%
Long Term																								
Full Simulation Period[b]	4,234	4,314	81	2%	5,950	5,889	-61	-1%	9,066	8,963	-103	-1%	11,676	12,274	598	5%	14,471	15,227	756	5%	13,671	14,075	404	3%
Water Year Types[c]																								
Wet (32%)	1,270	1,276	6	0%	2,046	2,036	-10	0%	5,106	5,053	-53	-1%	8,320	9,048	727	9%	12,714	13,504	790	6%	7,864	8,020	156	2%
Above Normal (16%)	2,131	2,088	-43	-2%	3,932	3,891	-41	-1%	8,404	8,252	-152	-2%	10,101	11,435	1,334	13%	12,842	14,109	1,267	10%	11,804	11,991	187	2%
Below Normal (13%)	5,580	5,704	124	2%	7,201	7,131	-70	-1%	10,363	10,153	-210	-2%	11,904	12,846	942	8%	14,126	15,161	1,034	7%	16,717	17,616	900	5%
Dry (24%)	5,465	5,742	277	5%	8,026	7,853	-173	-2%	10,889	10,741	-148	-1%	14,155	14,233	78	1%	16,017	16,511	494	3%	17,730	18,367	637	4%
Critical (15%)	9,646	9,658	12	0%	11,985	11,986	1	0%	14,138	14,153	15	0%	16,311	16,380	69	0%	17,784	18,092	308	2%	18,717	19,052	334	2%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

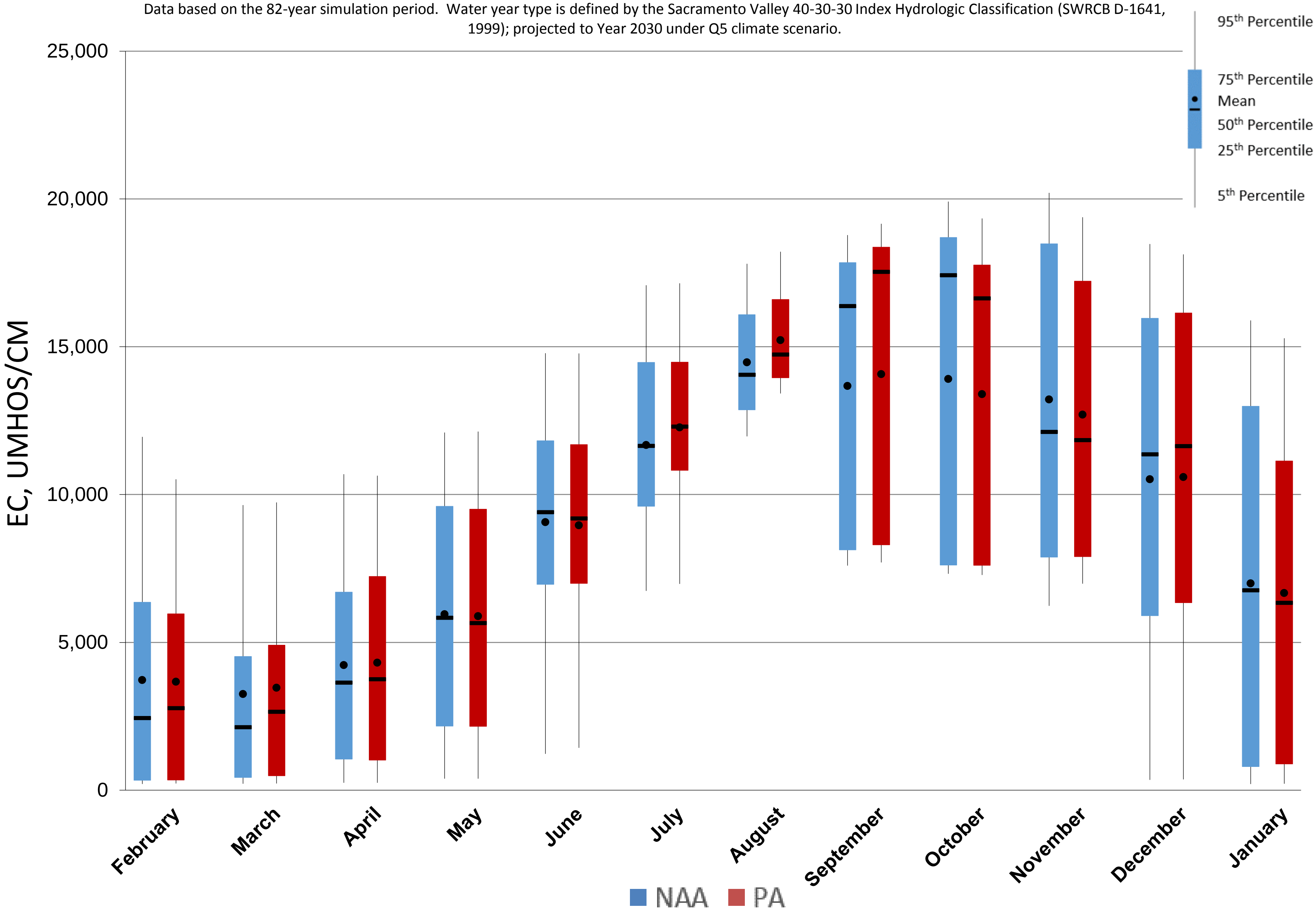
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-1. Monthly EC Ranges For Sacramento River at Port Chicago Salinity, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.



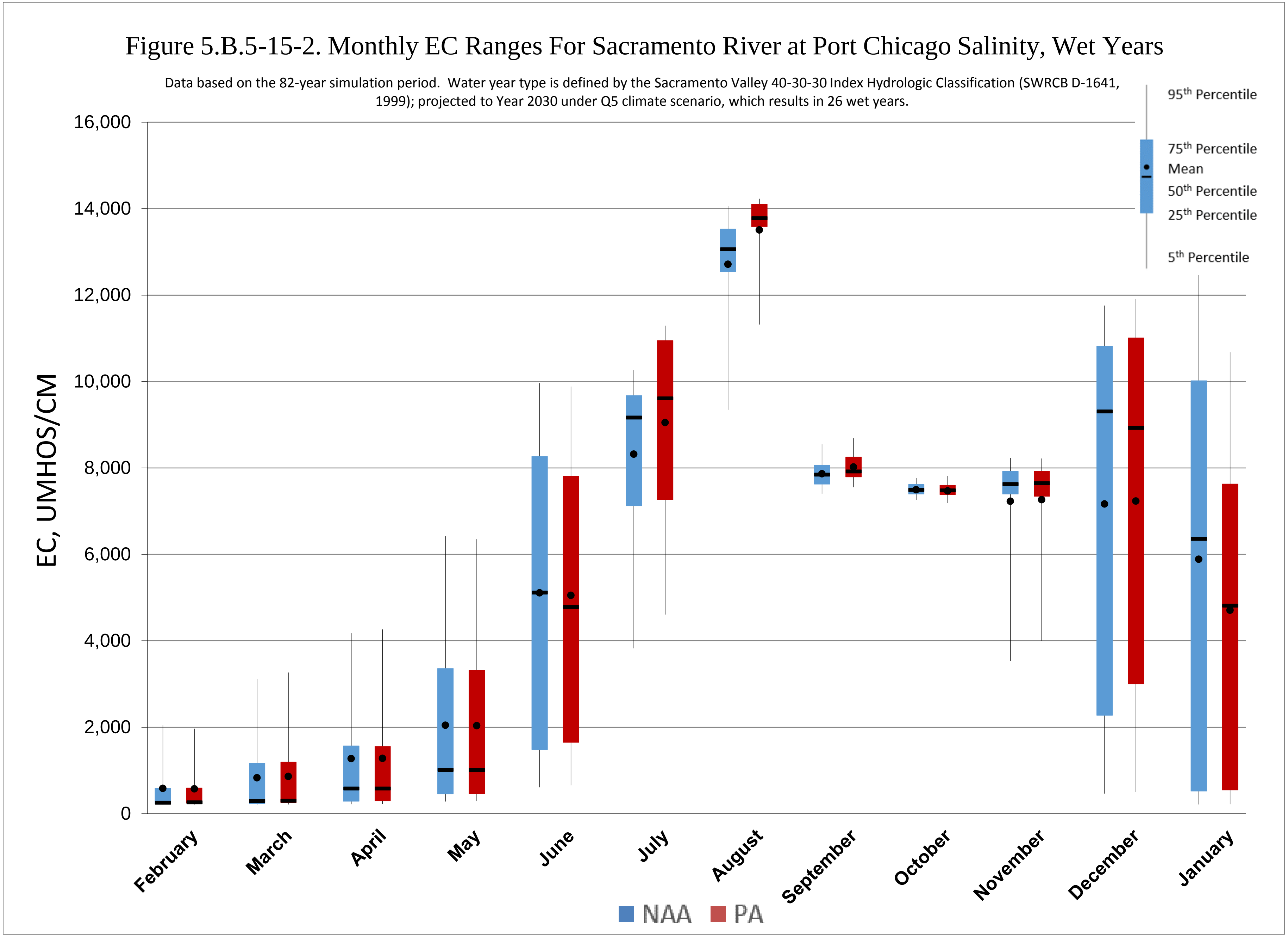
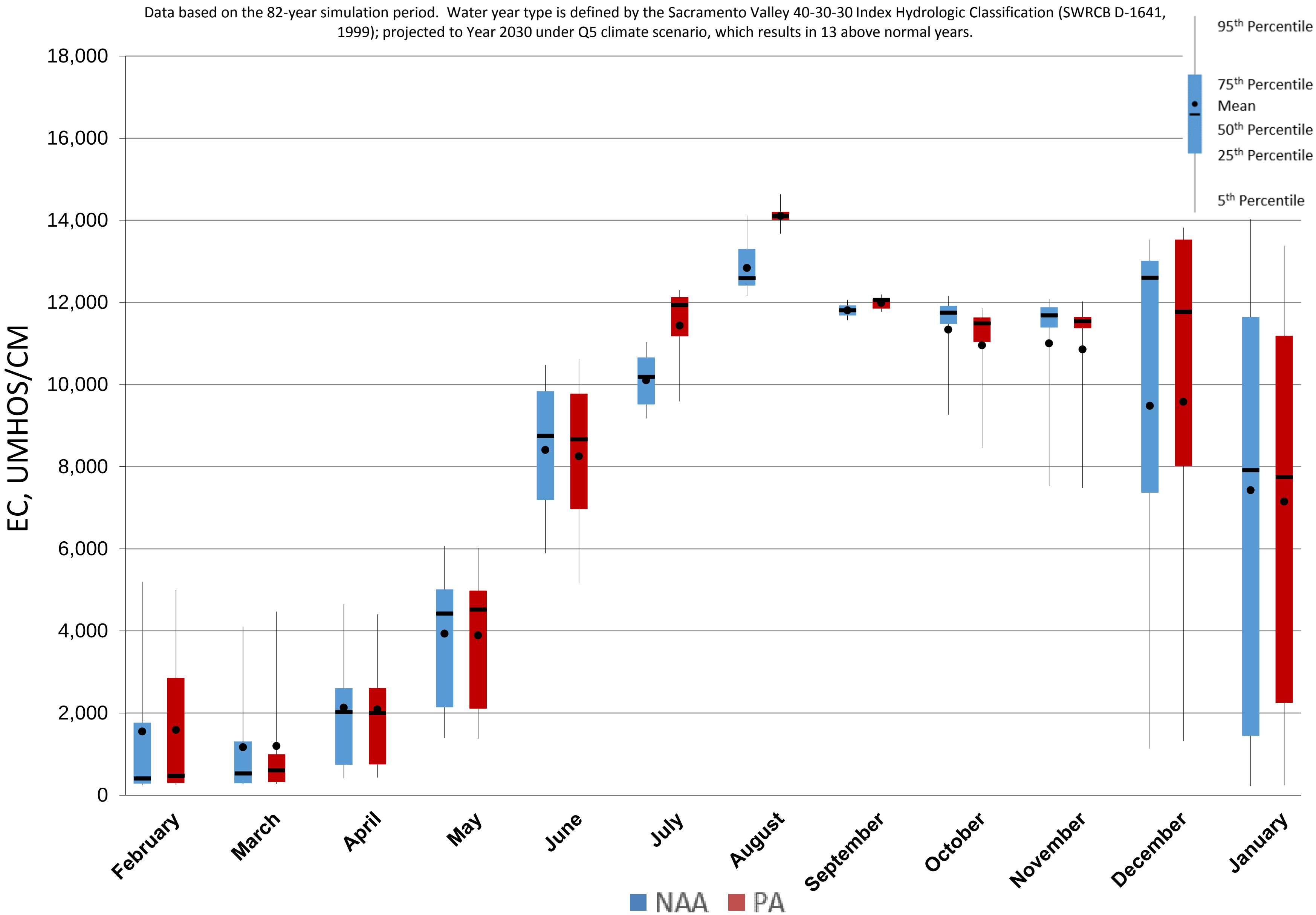


Figure 5.B.5-15-2. Monthly EC Ranges For Sacramento River at Port Chicago Salinity, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-15-3. Monthly EC Ranges For Sacramento River at Port Chicago Salinity, Above Normal Years



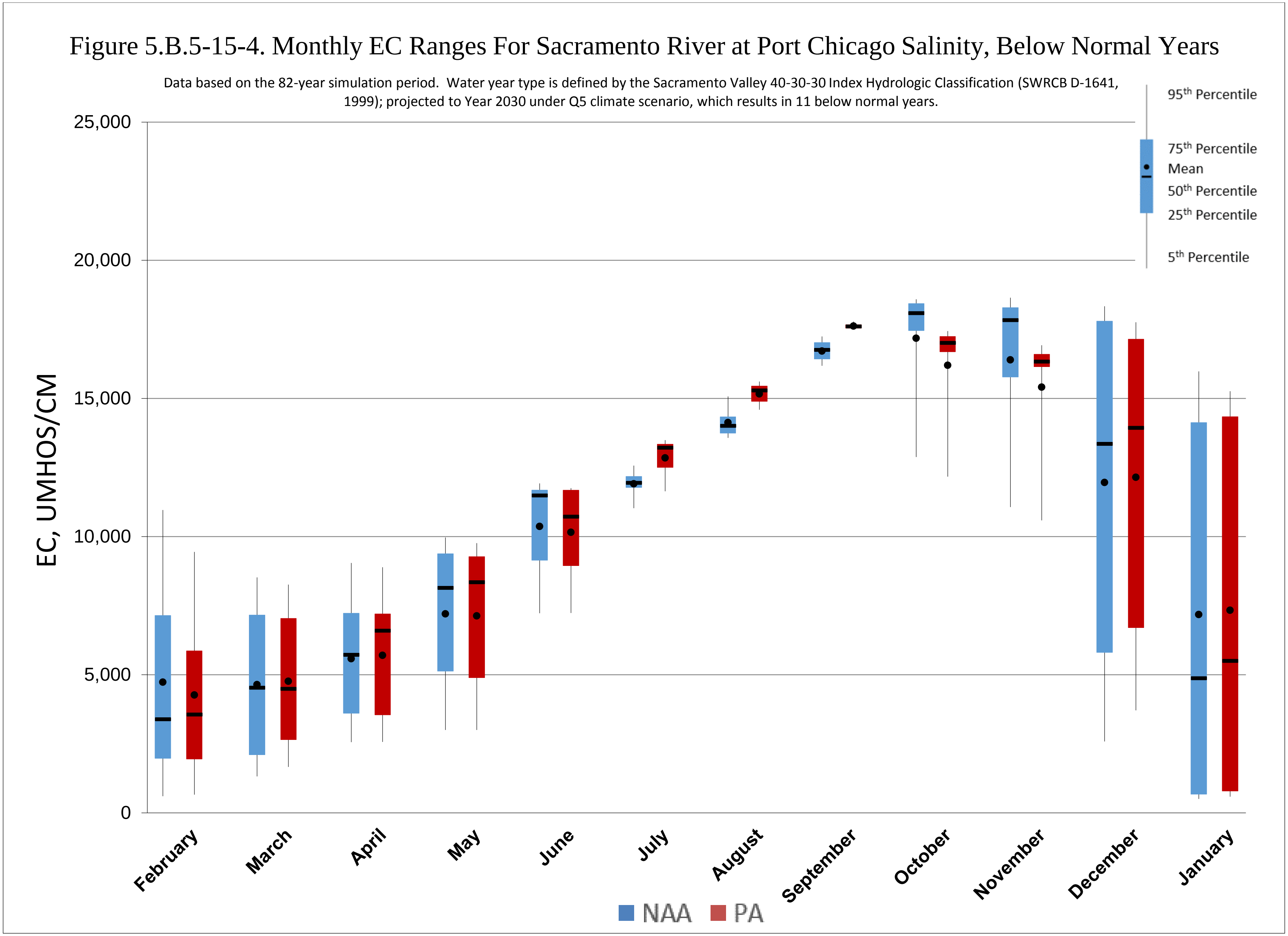


Figure 5.B.5-15-4. Monthly EC Ranges For Sacramento River at Port Chicago Salinity, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
EC, UMHOS/CM
25,000
20,000
15,000
10,000
5,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-15-5. Monthly EC Ranges For Sacramento River at Port Chicago Salinity, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.

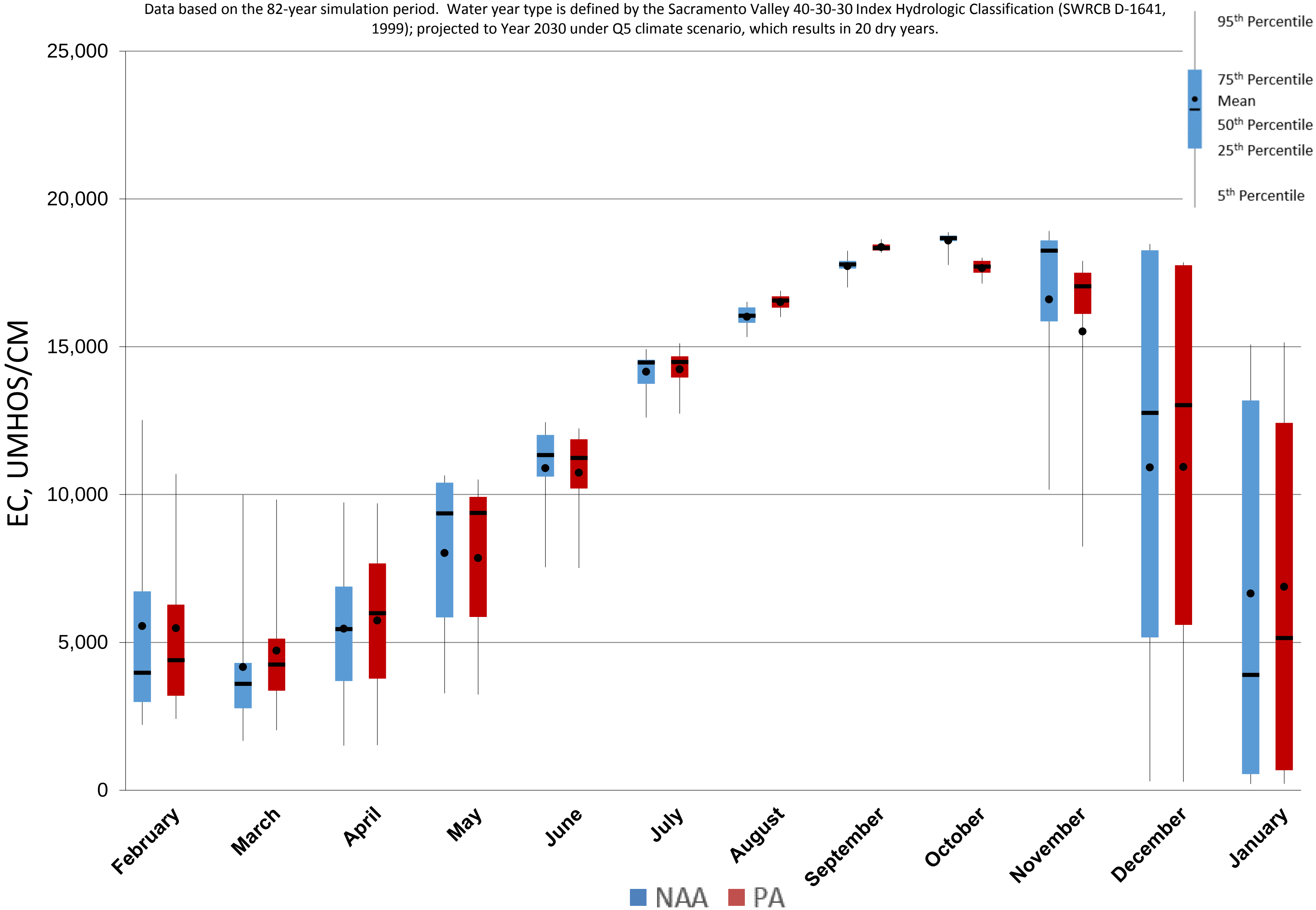


Figure 5.B.5-15-6. Monthly EC Ranges For Sacramento River at Port Chicago Salinity, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

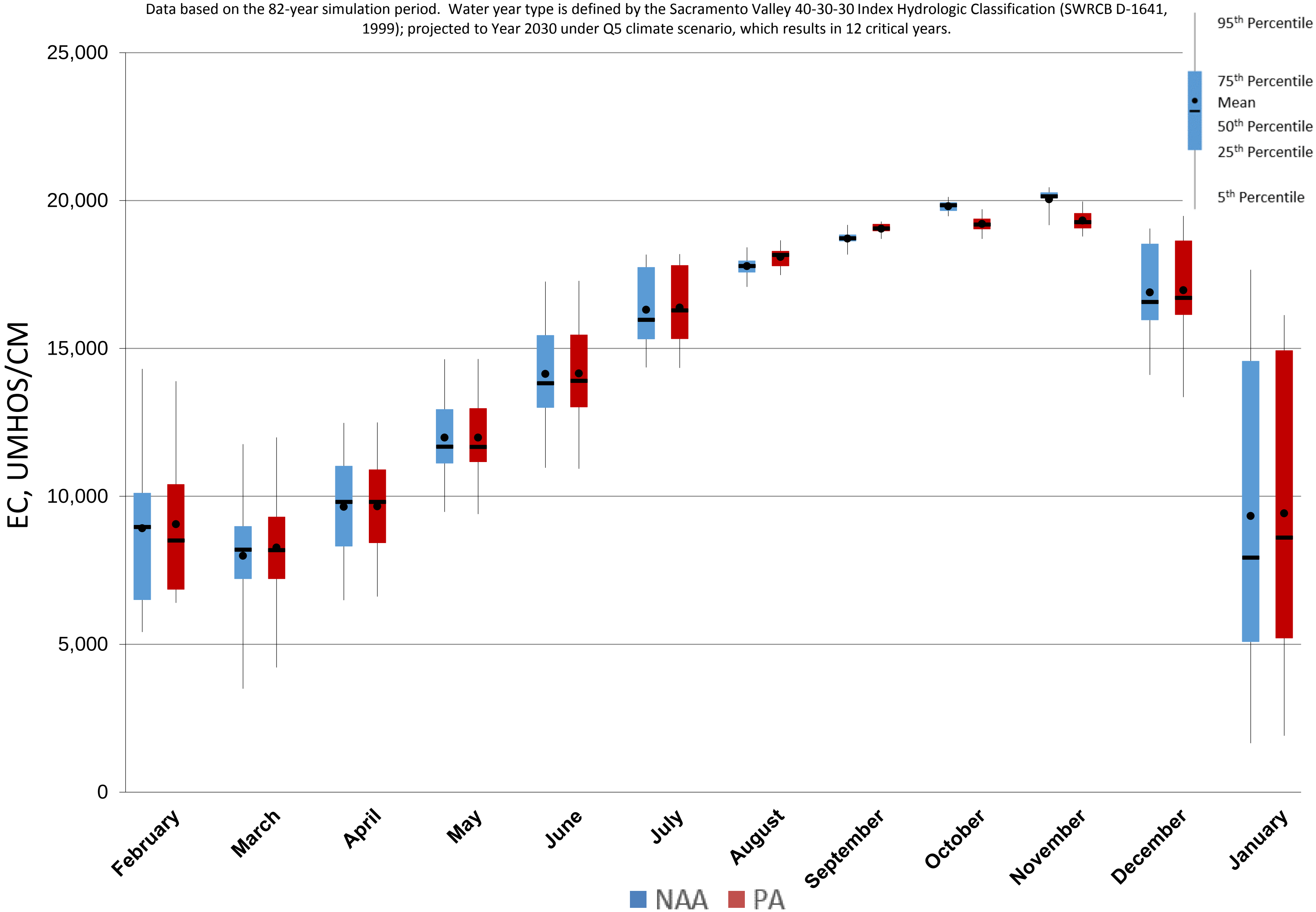
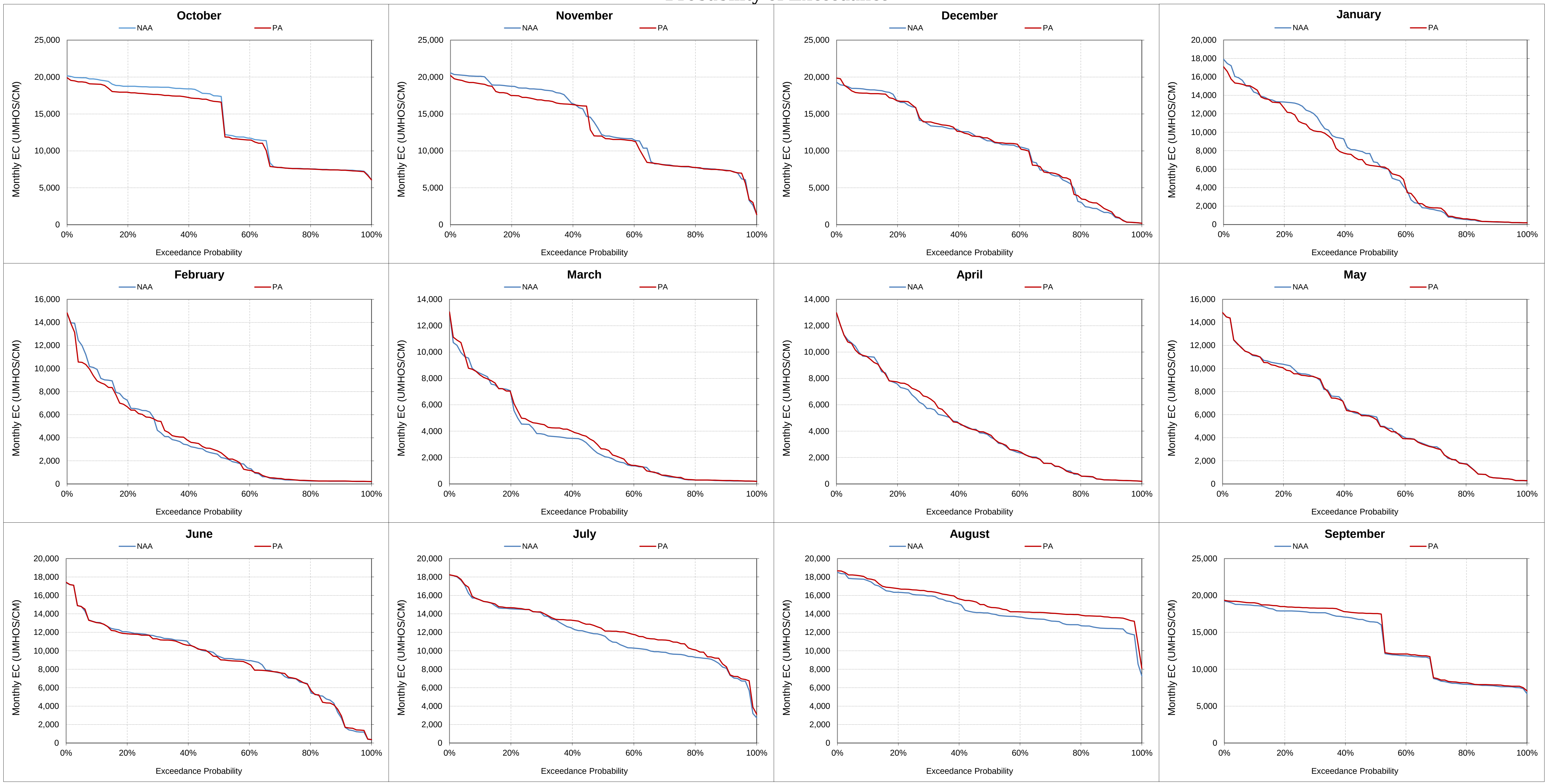
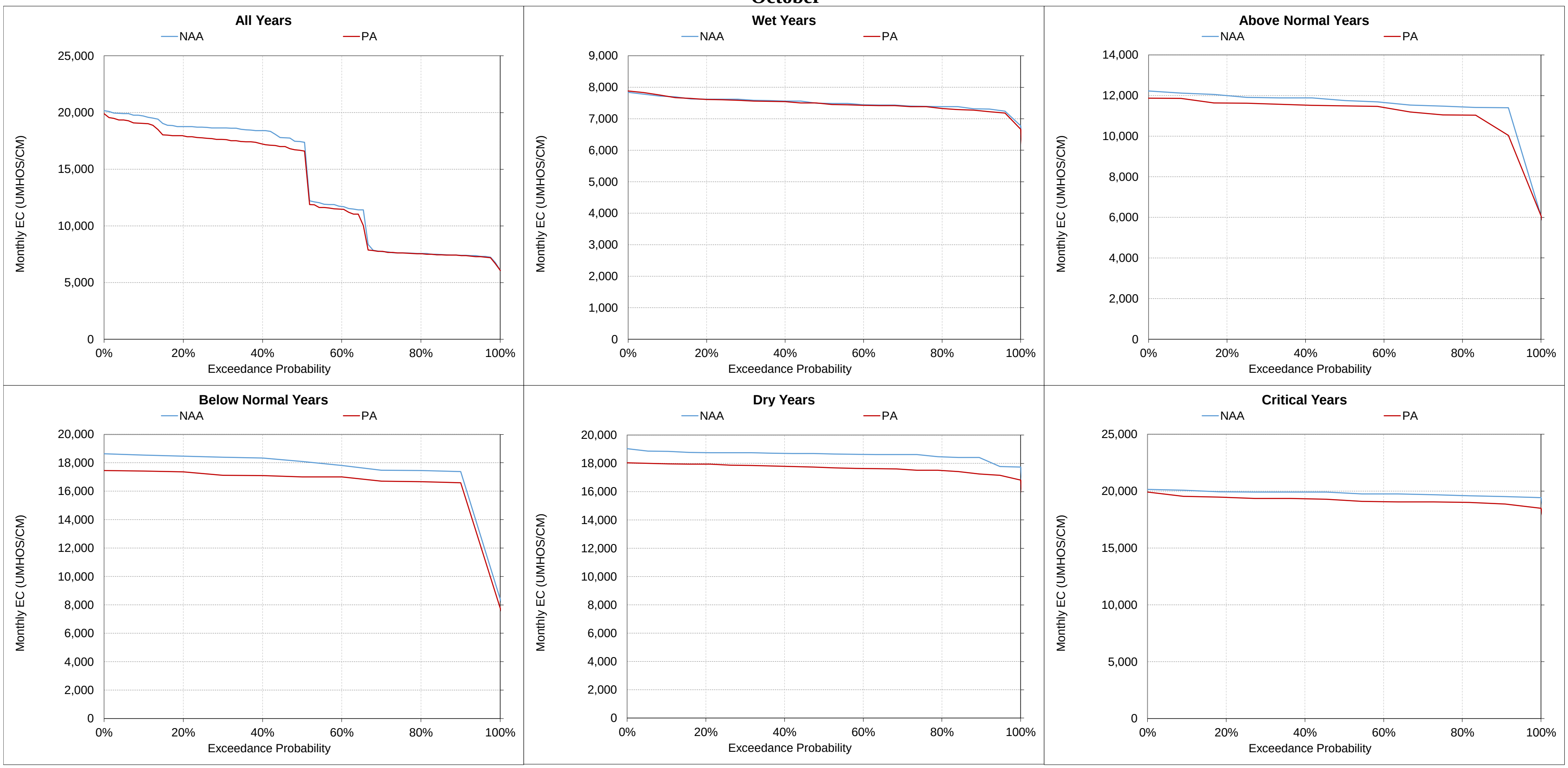


Figure 5.B.5-15-7. Sacramento River at Port Chicago Salinity, Monthly EC Probability of Exceedance



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-8. Sacramento River at Port Chicago Salinity, Monthly EC October



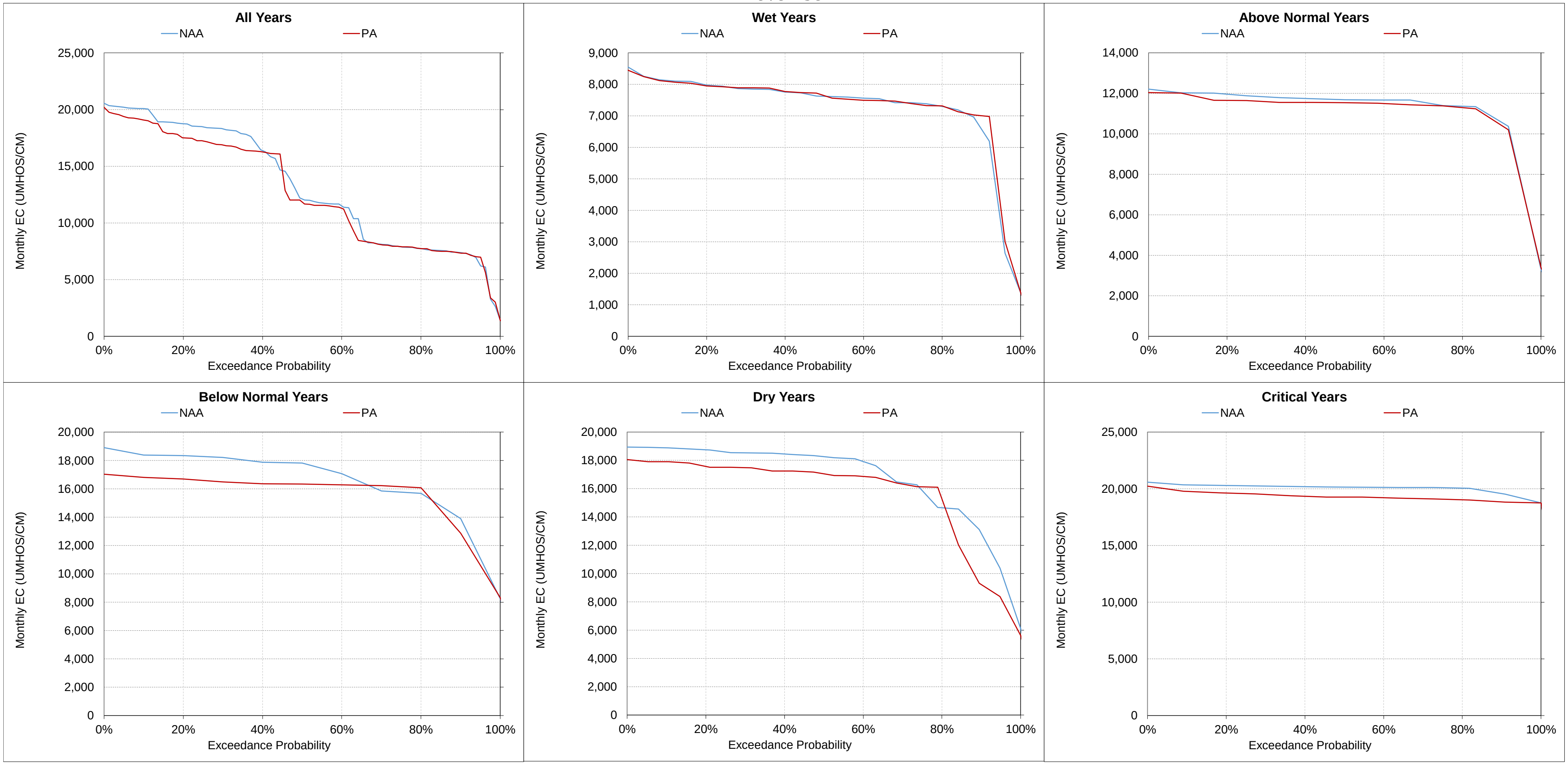
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

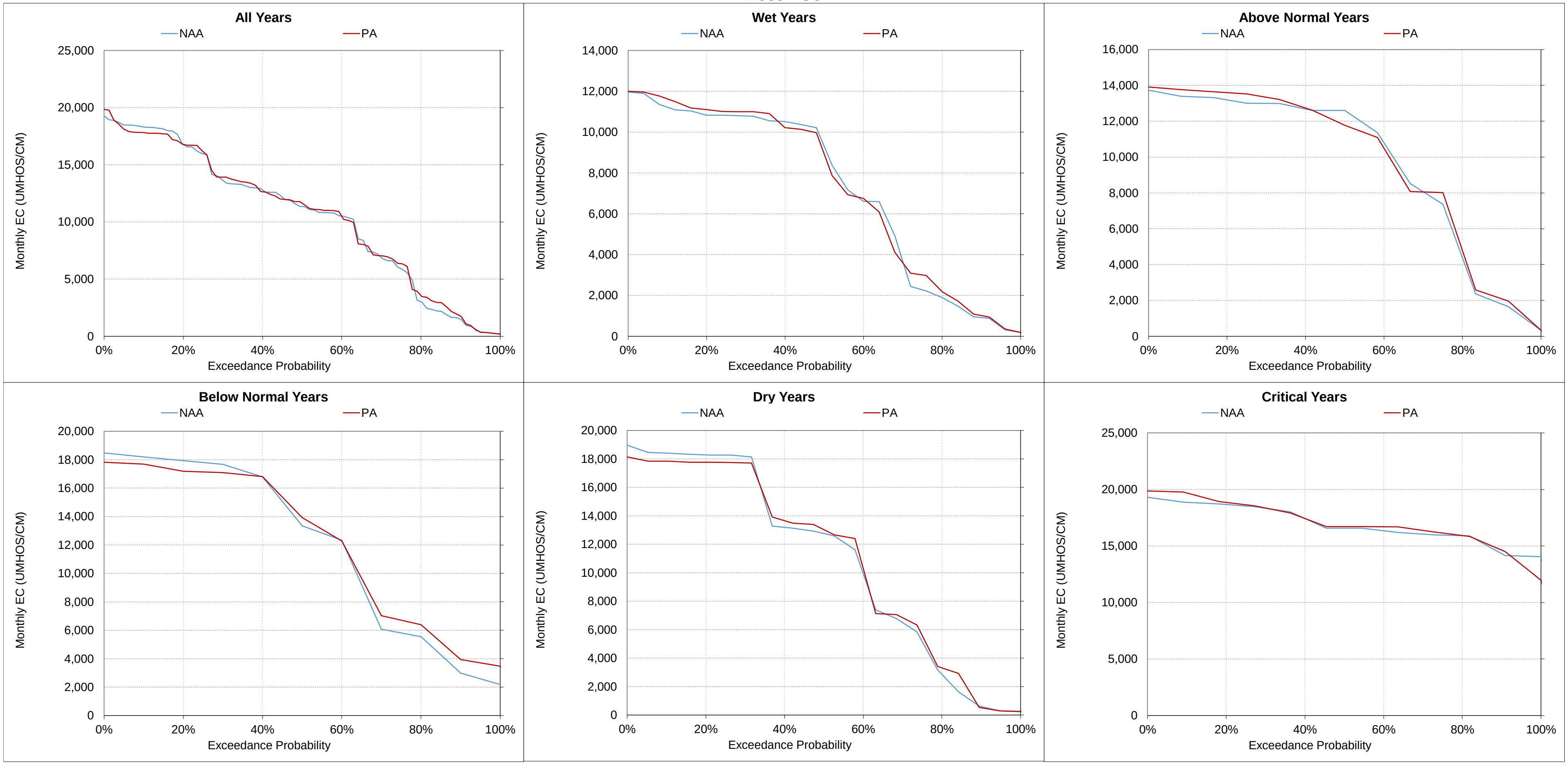
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-9. Sacramento River at Port Chicago Salinity, Monthly EC
November



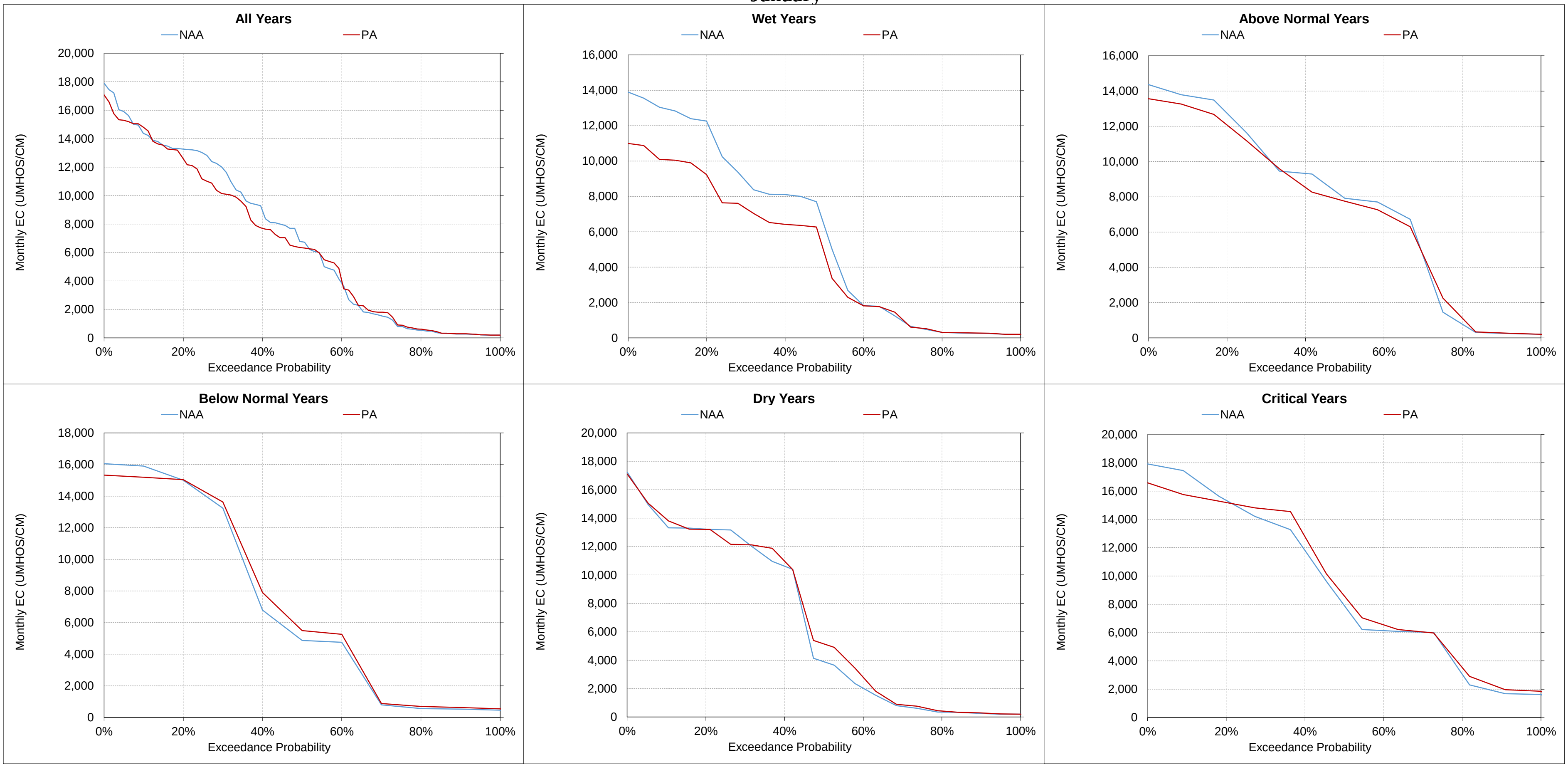
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-10. Sacramento River at Port Chicago Salinity, Monthly EC
December



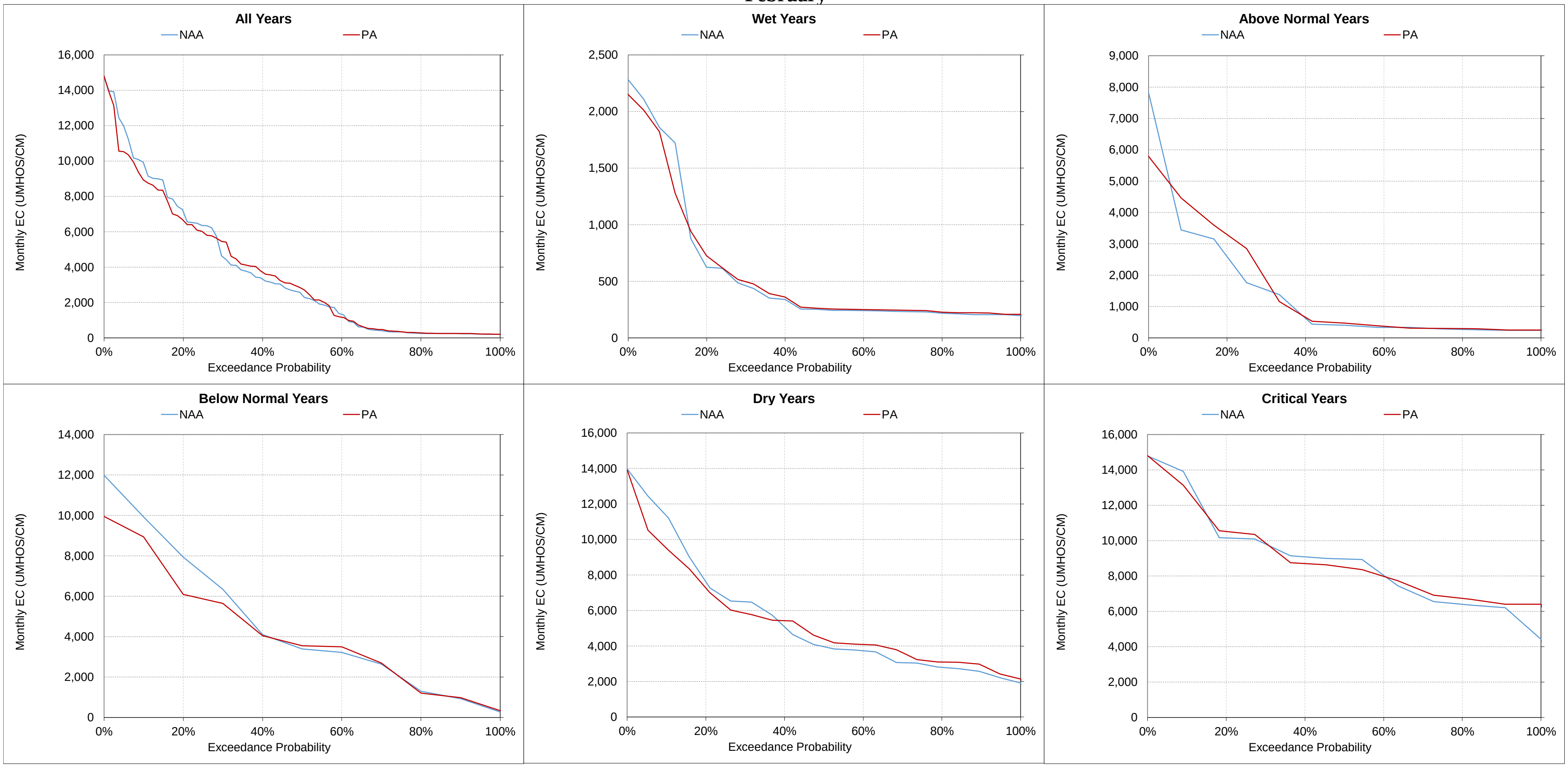
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-11. Sacramento River at Port Chicago Salinity, Monthly EC
January



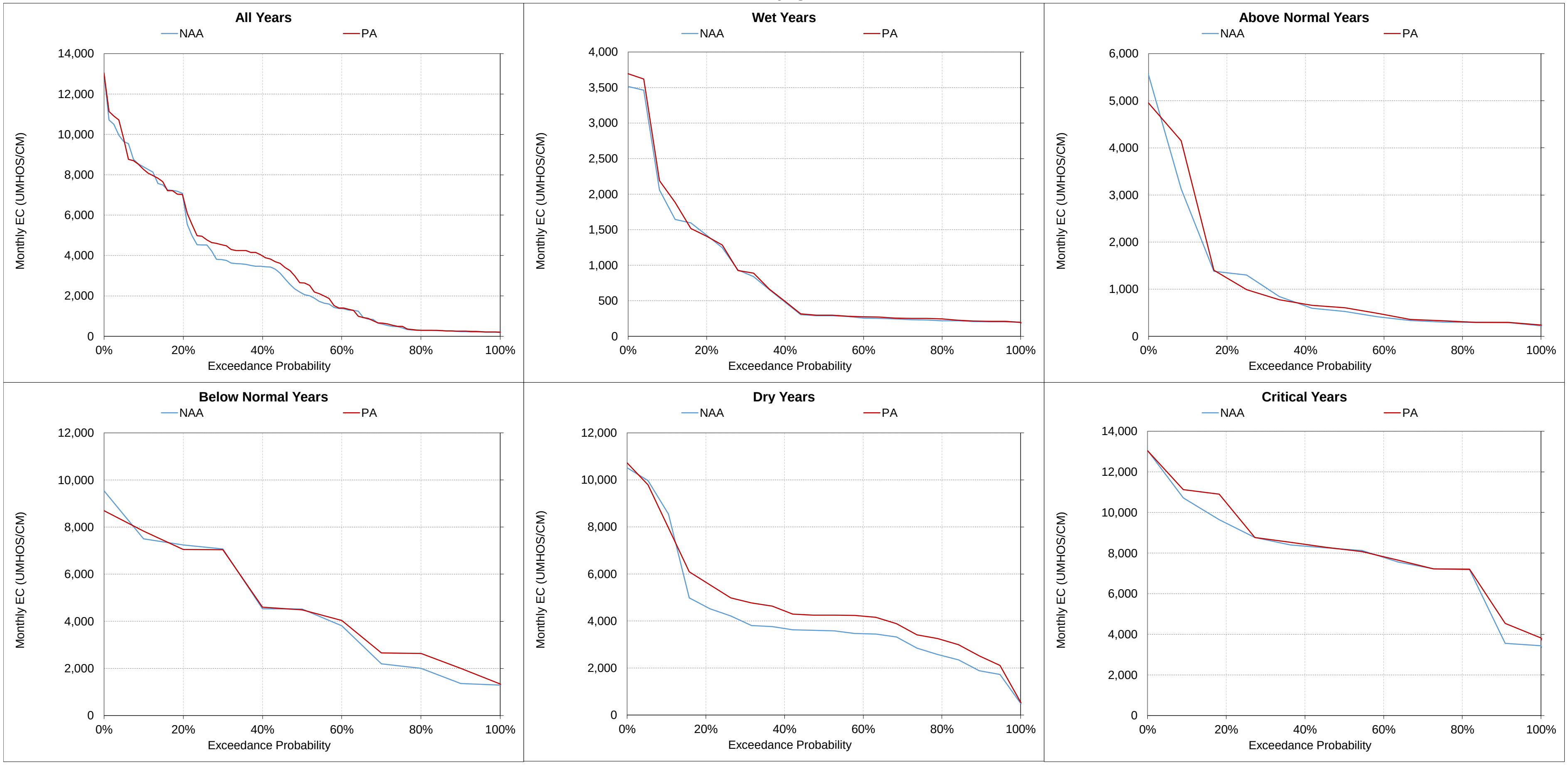
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-12. Sacramento River at Port Chicago Salinity, Monthly EC February



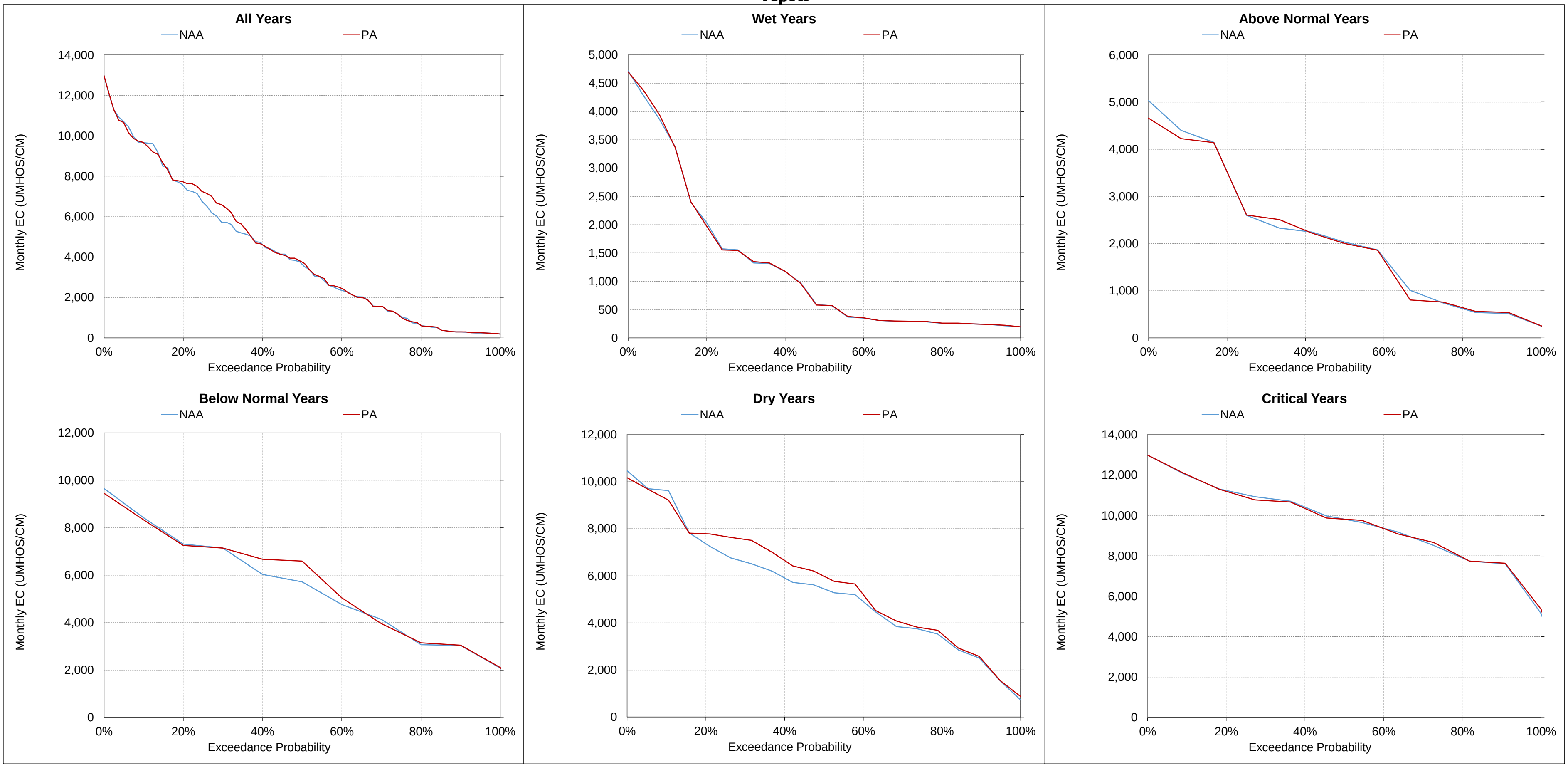
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-13. Sacramento River at Port Chicago Salinity, Monthly EC
March



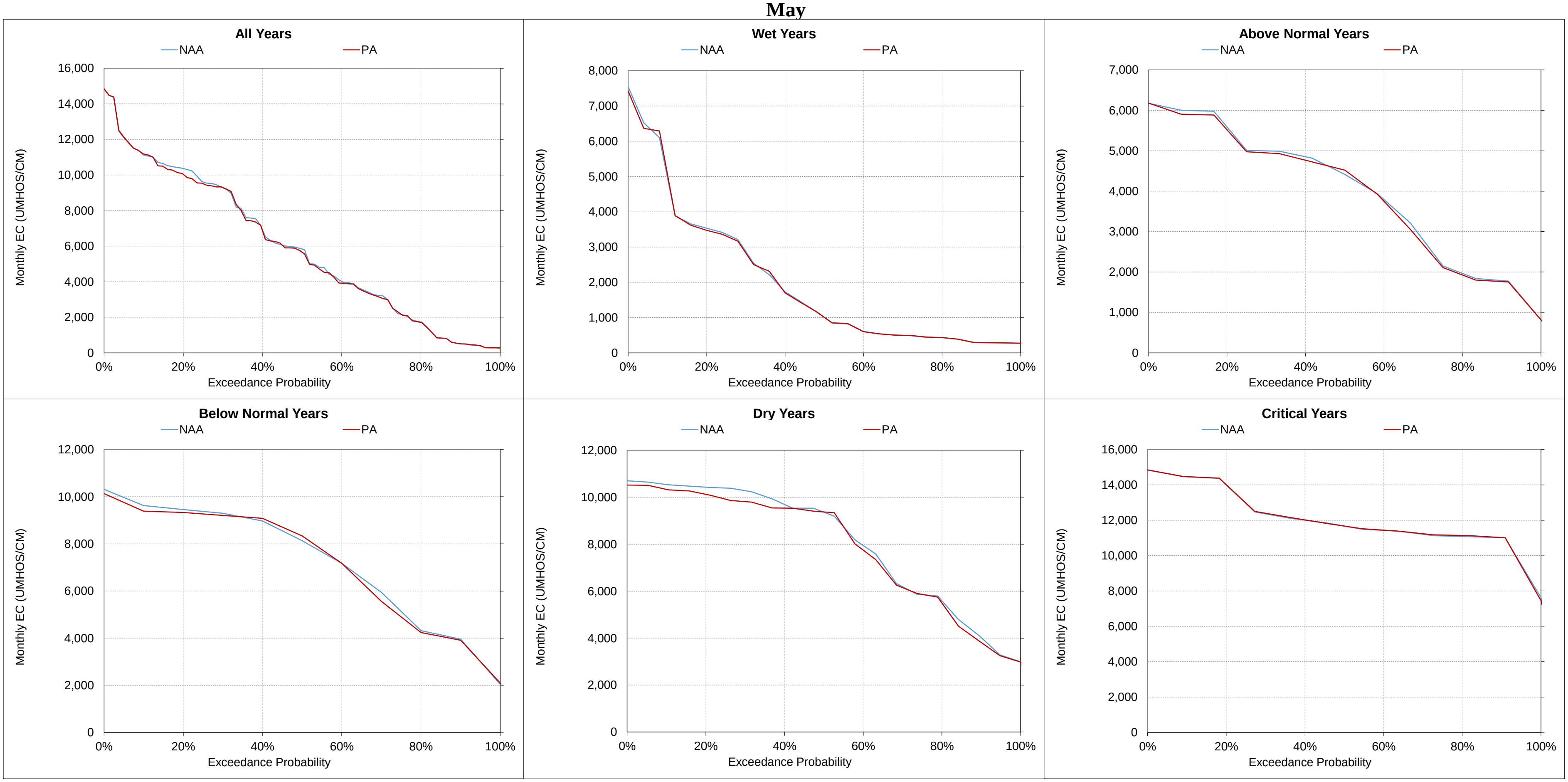
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-14. Sacramento River at Port Chicago Salinity, Monthly EC
April



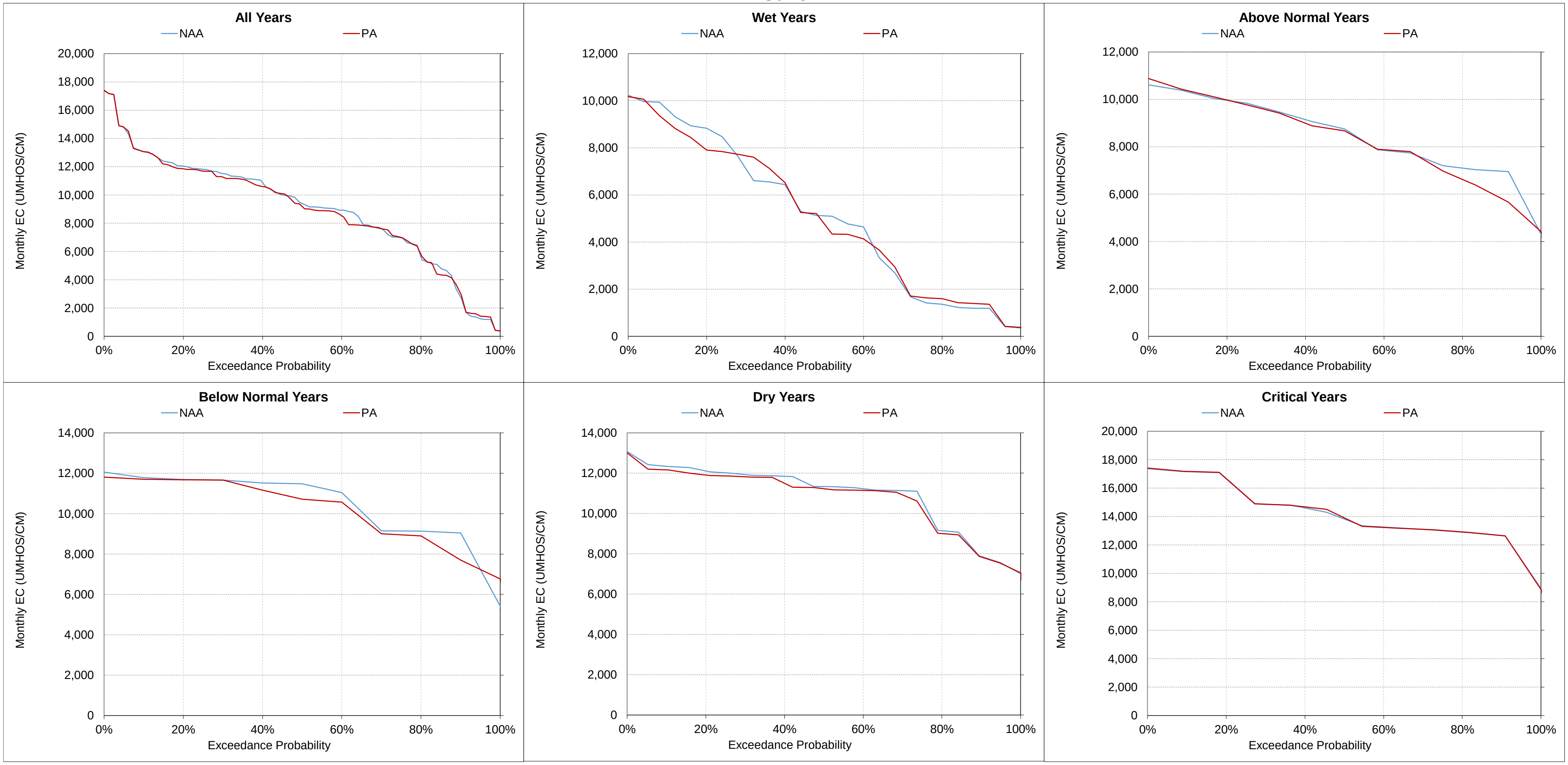
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-15. Sacramento River at Port Chicago Salinity, Monthly EC May



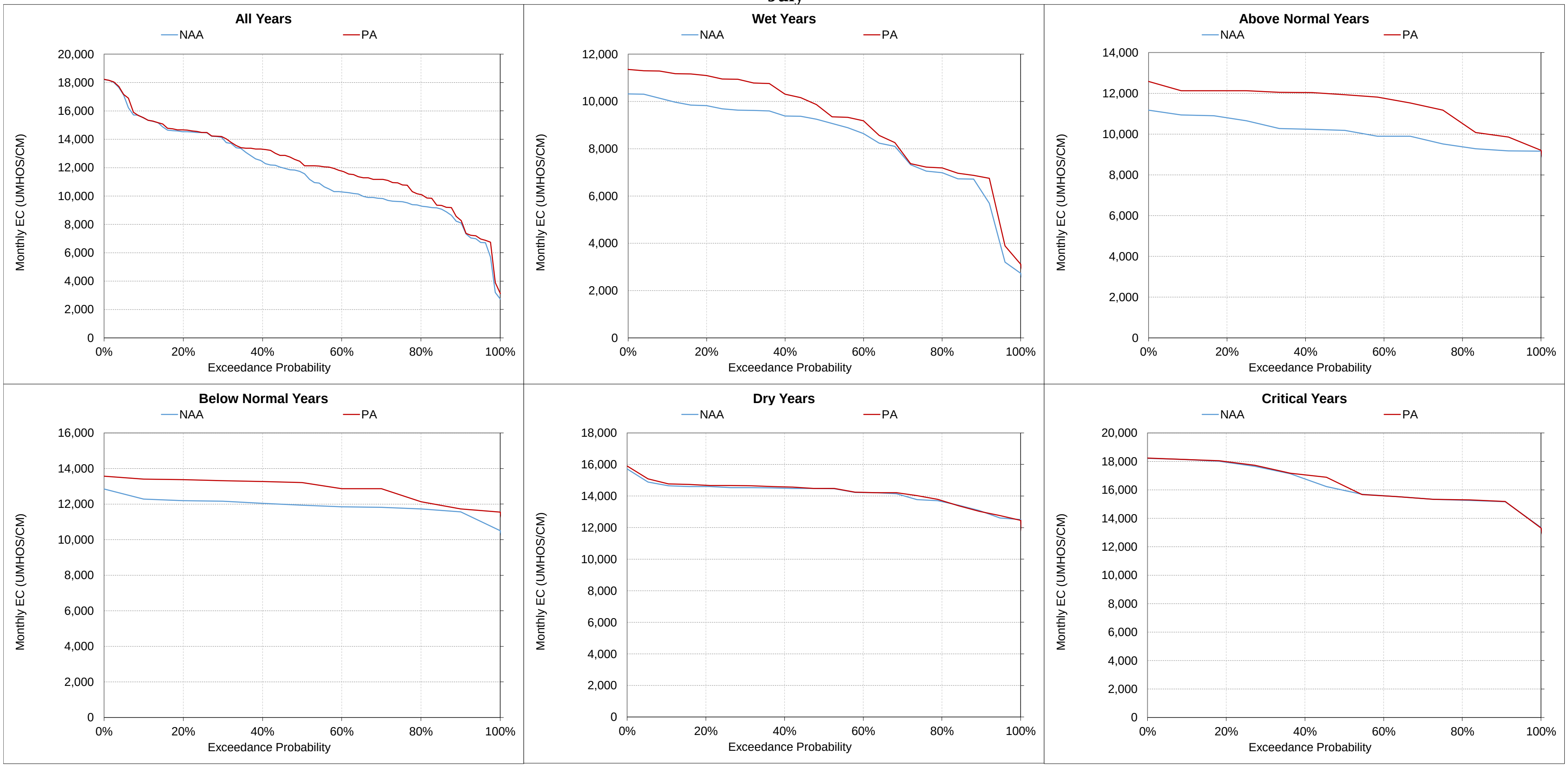
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-16. Sacramento River at Port Chicago Salinity, Monthly EC
June



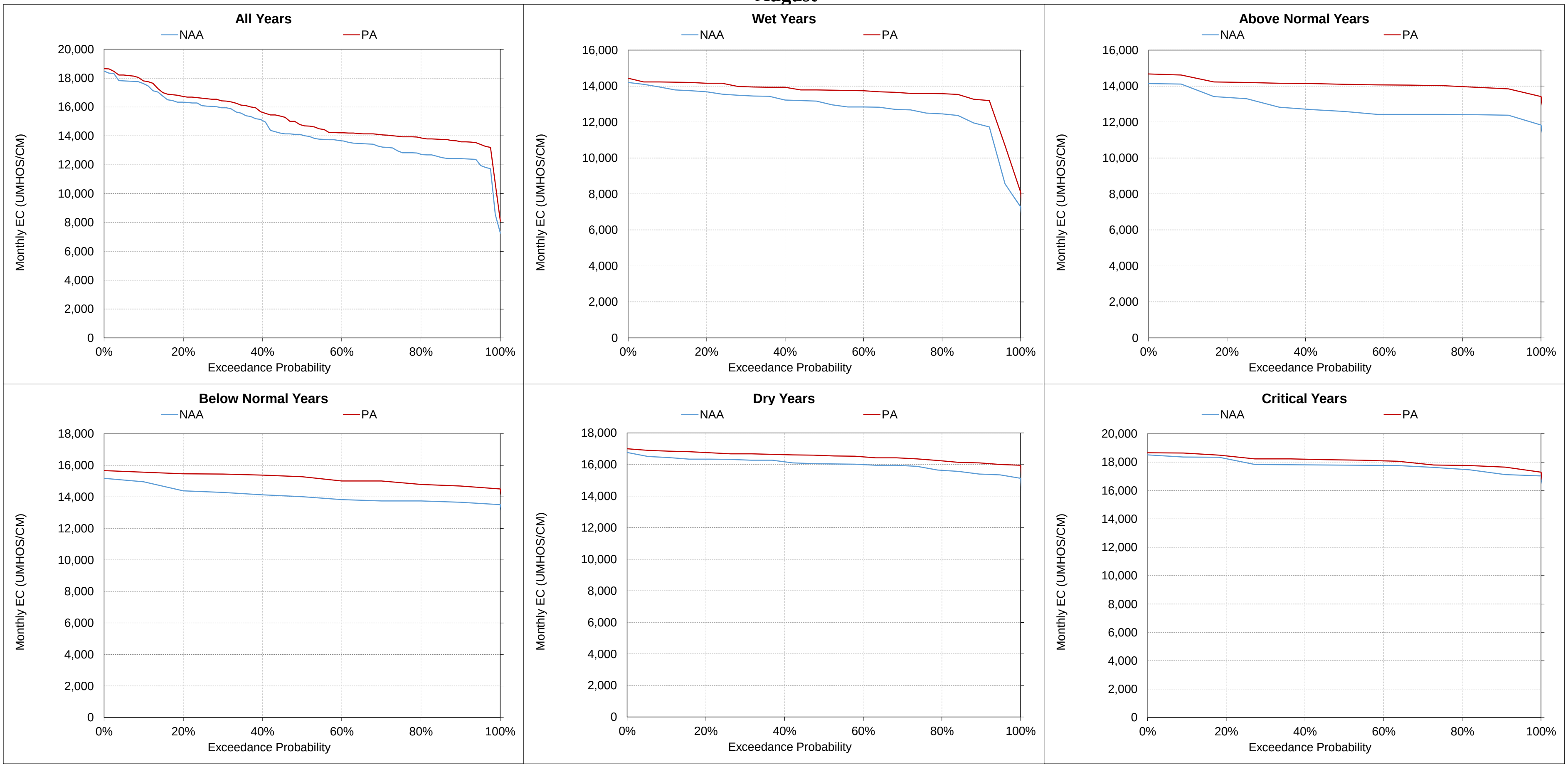
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-17. Sacramento River at Port Chicago Salinity, Monthly EC
July



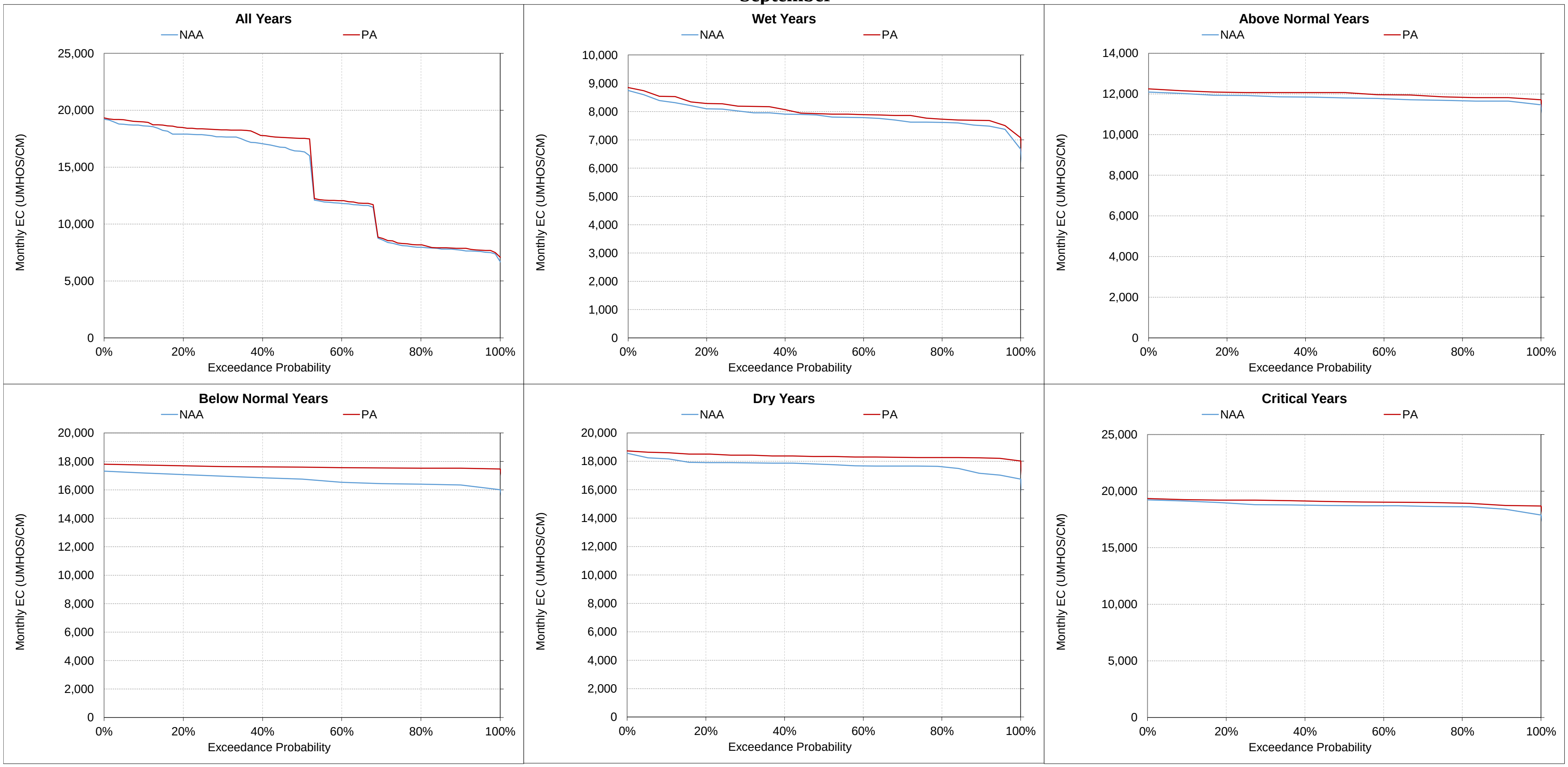
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-18. Sacramento River at Port Chicago Salinity, Monthly EC
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-15-19. Sacramento River at Port Chicago Salinity, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-16. San Joaquin River at Antioch Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	8,132	6,841	-1,290	-16%	9,000	7,569	-1,431	-16%	6,472	6,266	-206	-3%	3,691	3,622	-69	-2%	1,477	1,194	-284	-19%	829	738	-91	-11%
20%	7,296	5,696	-1,600	-22%	7,479	5,986	-1,493	-20%	5,844	5,607	-237	-4%	3,278	2,561	-717	-22%	1,041	894	-147	-14%	510	506	-4	-1%
30%	7,105	5,428	-1,678	-24%	6,857	5,210	-1,647	-24%	3,386	3,381	-5	0%	2,561	1,748	-813	-32%	669	552	-117	-17%	317	374	58	18%
40%	6,928	4,952	-1,976	-29%	5,904	4,528	-1,376	-23%	2,839	2,872	33	1%	1,593	1,241	-352	-22%	436	408	-28	-6%	288	337	50	17%
50%	6,003	4,458	-1,545	-26%	3,230	1,944	-1,287	-40%	2,064	2,225	162	8%	1,217	923	-294	-24%	315	332	17	6%	252	302	50	20%
60%	1,954	1,493	-462	-24%	2,156	1,515	-642	-30%	1,867	1,832	-34	-2%	596	553	-43	-7%	278	294	17	6%	236	279	43	18%
70%	837	636	-201	-24%	1,289	1,104	-185	-14%	992	1,134	142	14%	274	303	29	10%	239	278	39	16%	225	264	39	17%
80%	707	578	-129	-18%	841	643	-198	-24%	592	629	38	6%	240	258	18	8%	226	264	38	17%	218	254	36	16%
90%	641	537	-104	-16%	709	574	-135	-19%	254	248	-6	-2%	220	238	18	8%	213	248	35	17%	202	243	41	20%
Long Term																								
Full Simulation Period[b]	4,341	3,425	-916	-21%	4,211	3,444	-767	-18%	2,861	2,856	-5	0%	1,650	1,426	-224	-14%	663	592	-71	-11%	409	442	33	8%
Water Year Types[c]																								
Wet (32%)	696	566	-130	-19%	805	662	-143	-18%	1,204	1,202	-3	0%	1,255	775	-480	-38%	249	270	21	8%	223	263	39	18%
Above Normal (16%)	1,853	1,390	-462	-25%	2,064	1,514	-550	-27%	1,961	1,945	-16	-1%	1,726	1,469	-257	-15%	341	325	-16	-5%	229	273	44	19%
Below Normal (13%)	6,530	4,832	-1,699	-26%	5,757	4,431	-1,325	-23%	3,635	3,567	-68	-2%	1,874	1,802	-72	-4%	791	635	-155	-20%	400	401	1	0%
Dry (24%)	7,027	5,388	-1,639	-23%	6,307	5,004	-1,303	-21%	3,500	3,390	-110	-3%	1,674	1,666	-8	0%	846	707	-139	-16%	477	502	25	5%
Critical (15%)	8,452	7,262	-1,190	-14%	9,006	8,054	-952	-11%	5,651	5,883	233	4%	2,180	2,047	-133	-6%	1,488	1,348	-139	-9%	900	951	51	6%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	1,060	1,082	23	2%	1,675	1,601	-73	-4%	2,404	2,366	-38	-2%	4,509	4,332	-177	-4%	5,977	6,295	319	5%	7,021	7,441	420	6%
20%	597	650	54	9%	1,362	1,229	-133	-10%	1,999	1,849	-150	-7%	3,717	3,719	2	0%	4,886	5,427	541	11%	6,544	6,990	446	7%
30%	437	504	66	15%	992	977	-15	-1%	1,778	1,707	-70	-4%	3,429	3,296	-134	-4%	4,483	4,767	284	6%	6,263	6,766	503	8%
40%	314	341	27	9%	536	532	-4	-1%	1,495	1,453	-42	-3%	2,473	2,762	289	12%	4,015	4,420	405	10%	5,885	6,423	538	9%
50%	266	296	30	11%	374	373	-1	0%	1,168	1,042	-127	-11%	2,009	2,334	325	16%	3,490	3,681	191	5%	5,207	5,893	687	13%
60%	239	277	38	16%	291	299	8	3%	954	843	-111	-12%	1,604	1,882	279	17%	3,148	3,377	229	7%	2,310	1,844	-466	-20%
70%	223	260	37	17%	253	258	5	2%	707	691	-16	-2%	1,412	1,708	296	21%	2,963	3,216	253	9%	1,806	1,434	-372	-21%
80%	215	243	28	13%	224	236	13	6%	456	428	-28	-6%	1,307	1,402	95	7%	2,701	3,103	401	15%	1,453	1,086	-366	-25%
90%	210	227	17	8%	198	199	0	0%	217	251	34	16%	1,016	1,003	-13	-1%	2,506	2,815	309	12%	1,317	935	-382	-29%
Long Term																								
Full Simulation Period[b]	470	492	22	5%	760	748	-12	-2%	1,409	1,362	-47	-3%	2,490	2,585	95	4%	3,819	4,149	330	9%	4,159	4,238	79	2%
Water Year Types[c]																								
Wet (32%)	226	247	21	9%	249	254	4	2%	559	523	-36	-6%	1,103	1,200	97	9%	2,882	3,052	170	6%	1,360	1,044	-316	-23%
Above Normal (16%)	235	281	45	19%	311	324	13	4%	981	947	-34	-3%	1,558	1,835	277	18%	2,765	3,157	392	14%	2,333	1,887	-446	-19%
Below Normal (13%)	473	494	21	4%	713	702	-11	-2%	1,469	1,370	-99	-7%	2,159	2,489	330	15%	3,380	3,745	365	11%	5,565	6,130	565	10%
Dry (24%)	491	521	30	6%	931	873	-58	-6%	1,601	1,525	-76	-5%	3,606	3,510	-96	-3%	4,581	5,003	422	9%	6,418	6,913	494	8%
Critical (15%)	1,214	1,200	-14	-1%	2,115	2,115	1	0%	3,343	3,351	8	0%	4,946	4,941	-4	0%	6,125	6,548	423	7%	7,147	7,512	365	5%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

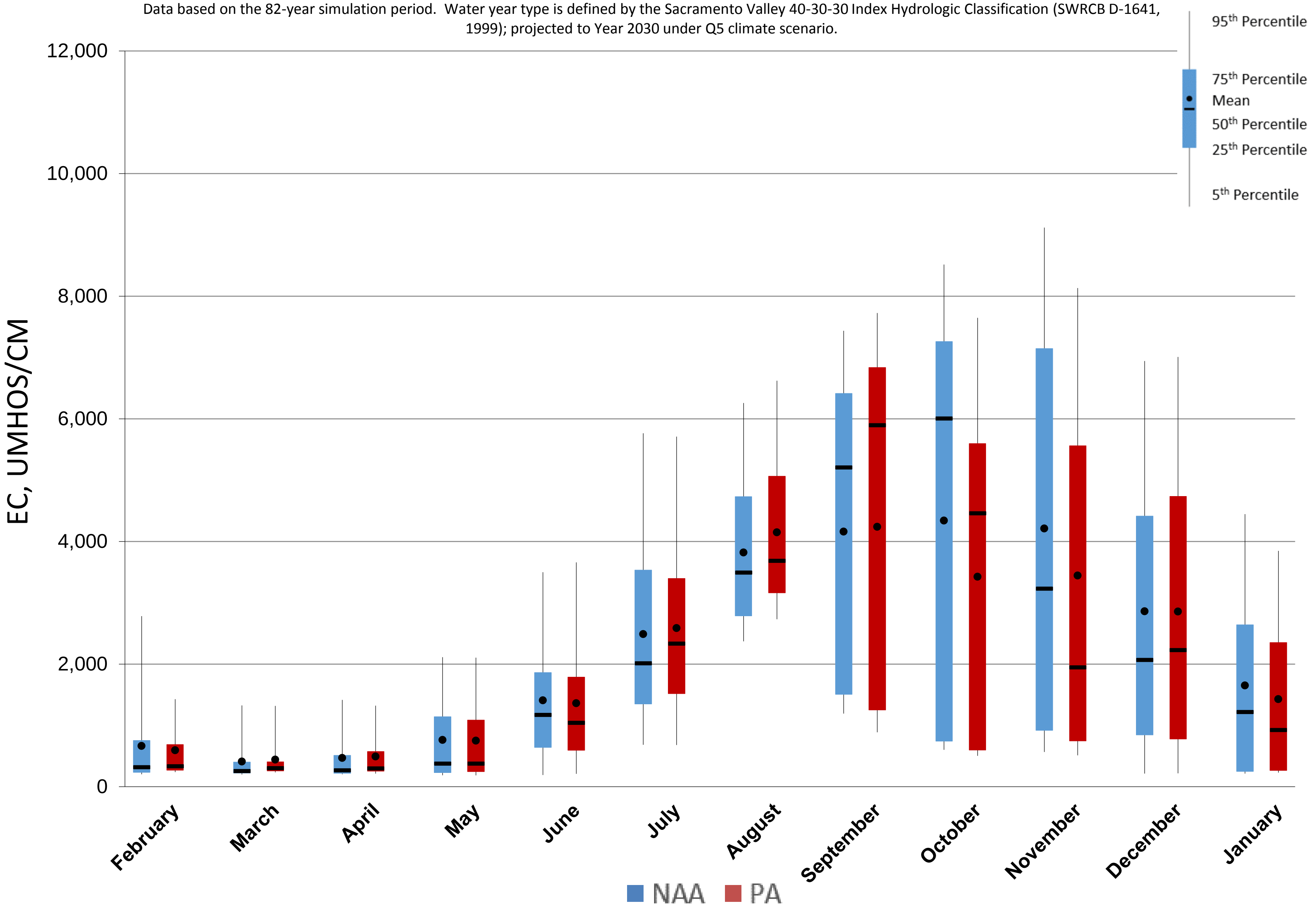
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-1. Monthly EC Ranges For San Joaquin River at Antioch Salinity, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.



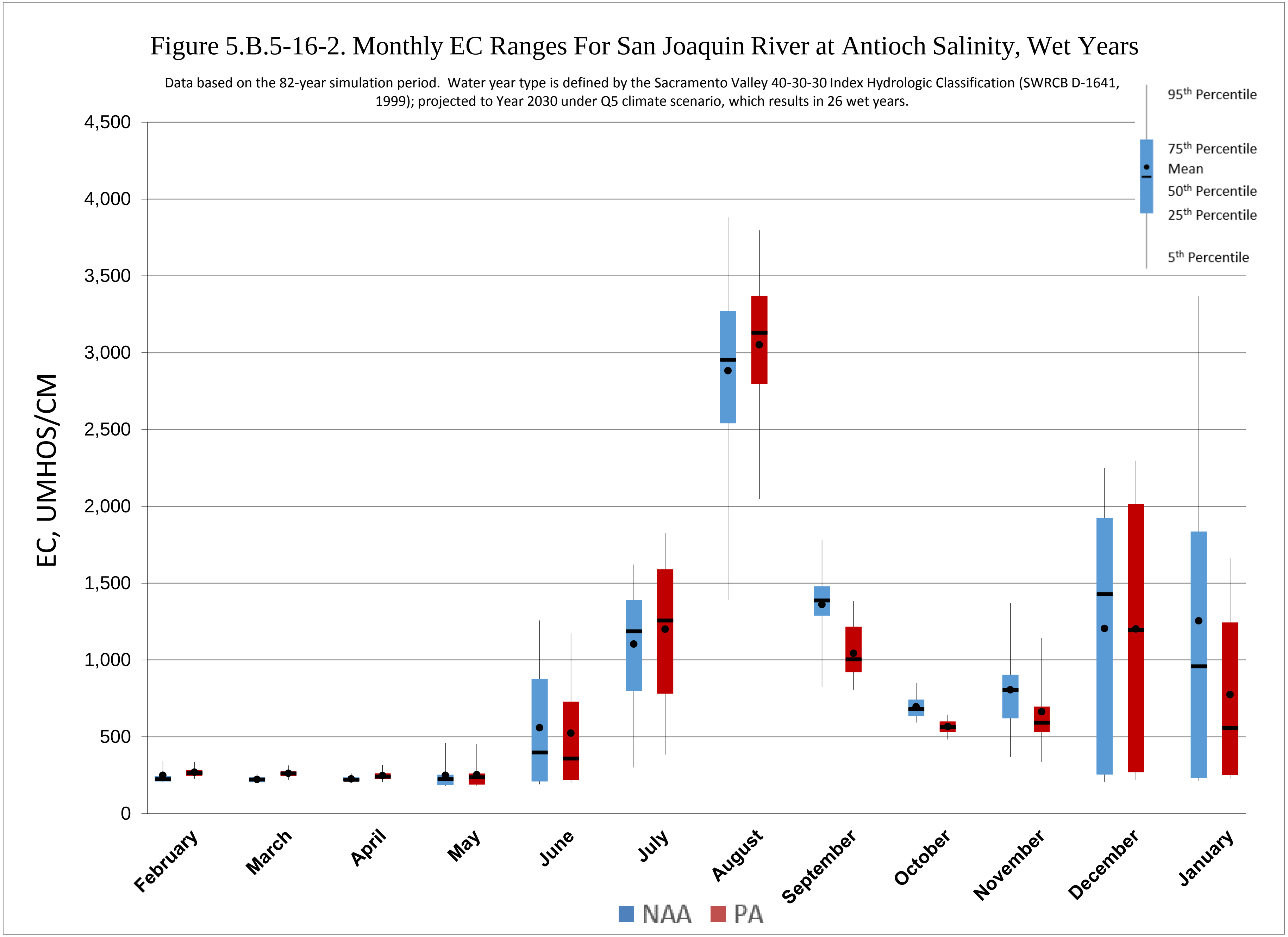


Figure 5.B.5-16-2. Monthly EC Ranges For San Joaquin River at Antioch Salinity, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

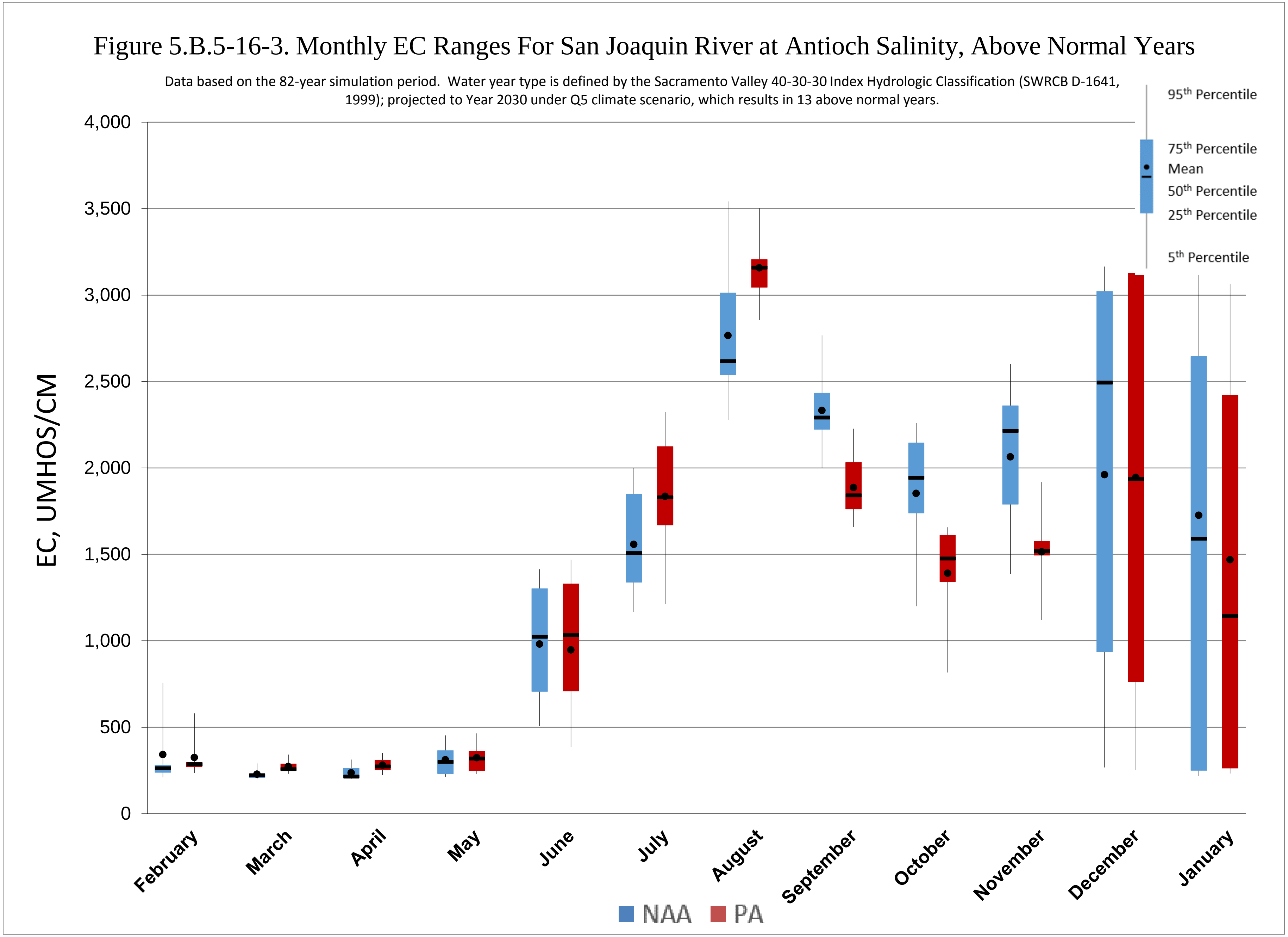


Figure 5.B.5-16-3. Monthly EC Ranges For San Joaquin River at Antioch Salinity, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
EC, UMHOS/CM
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-16-4. Monthly EC Ranges For San Joaquin River at Antioch Salinity, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

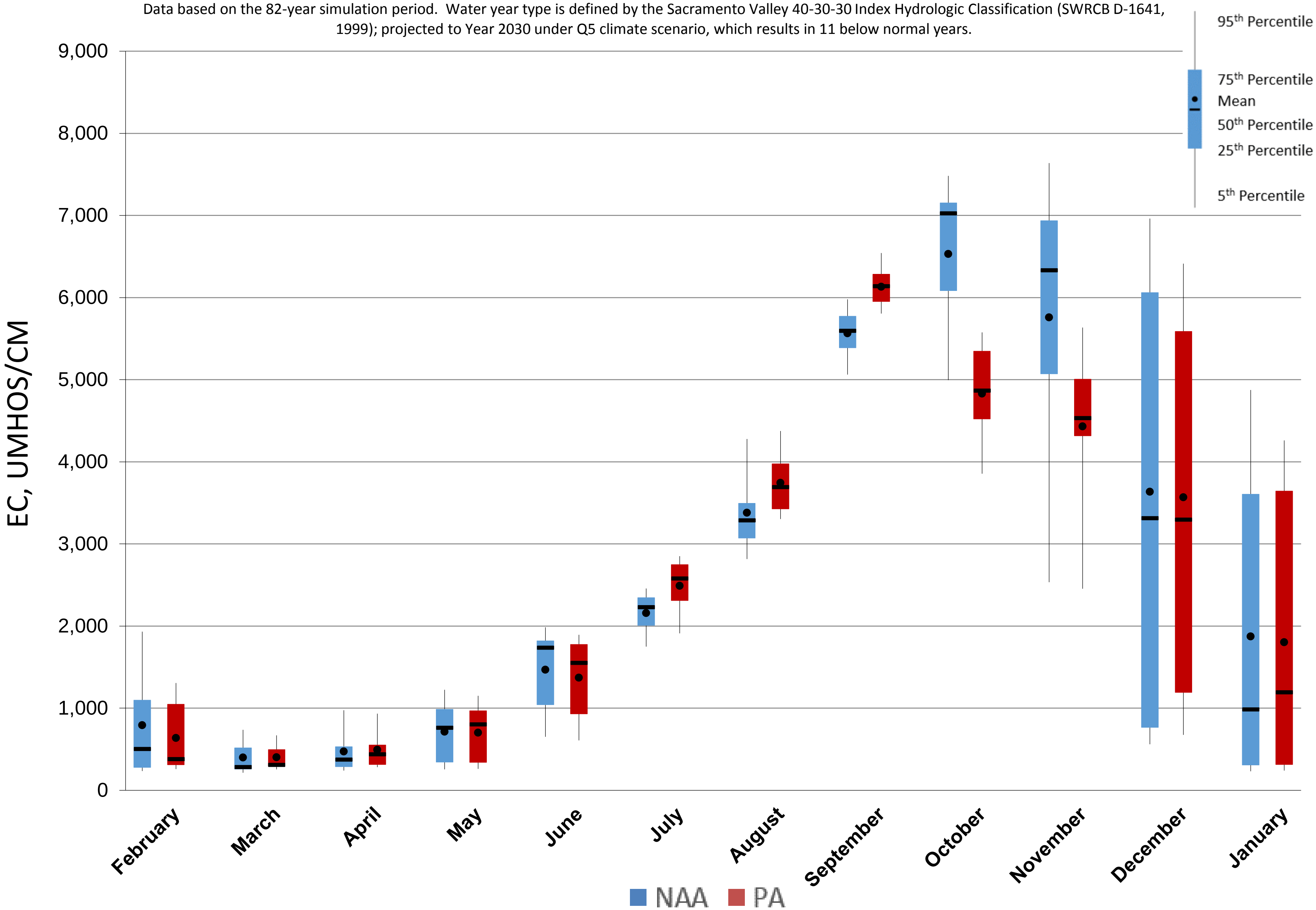


Figure 5.B.5-16-5. Monthly EC Ranges For San Joaquin River at Antioch Salinity, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.

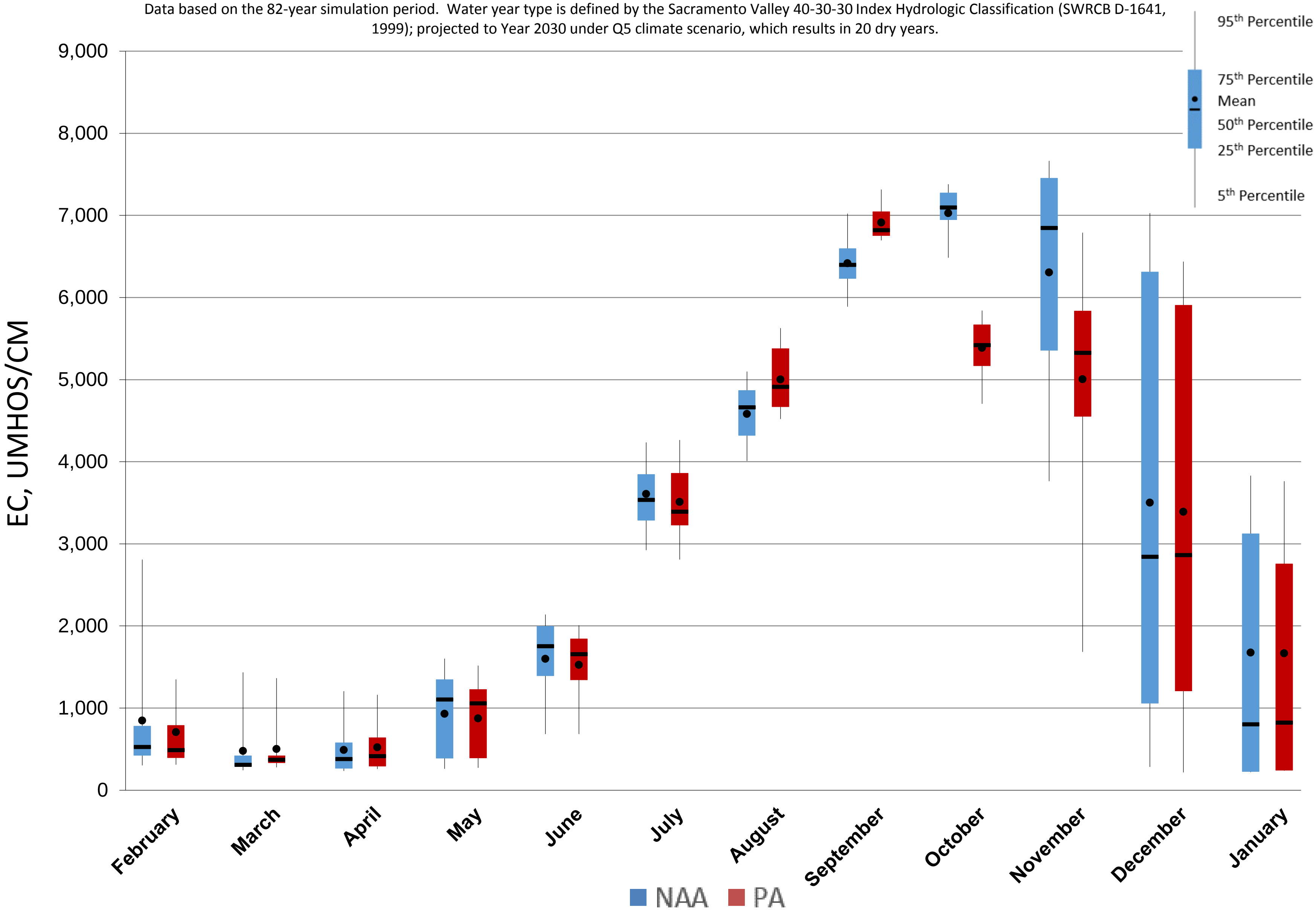


Figure 5.B.5-16-6. Monthly EC Ranges For San Joaquin River at Antioch Salinity, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

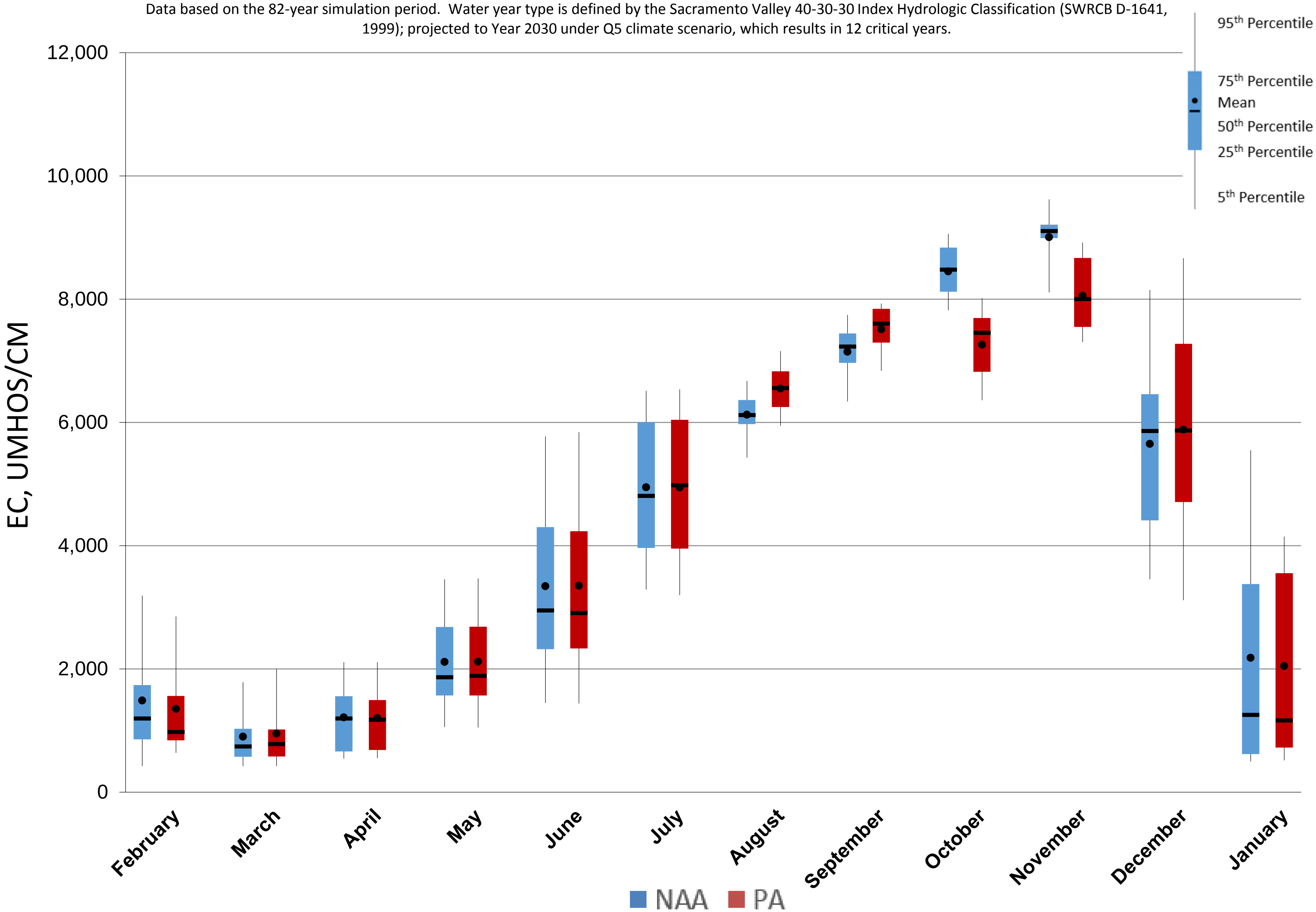
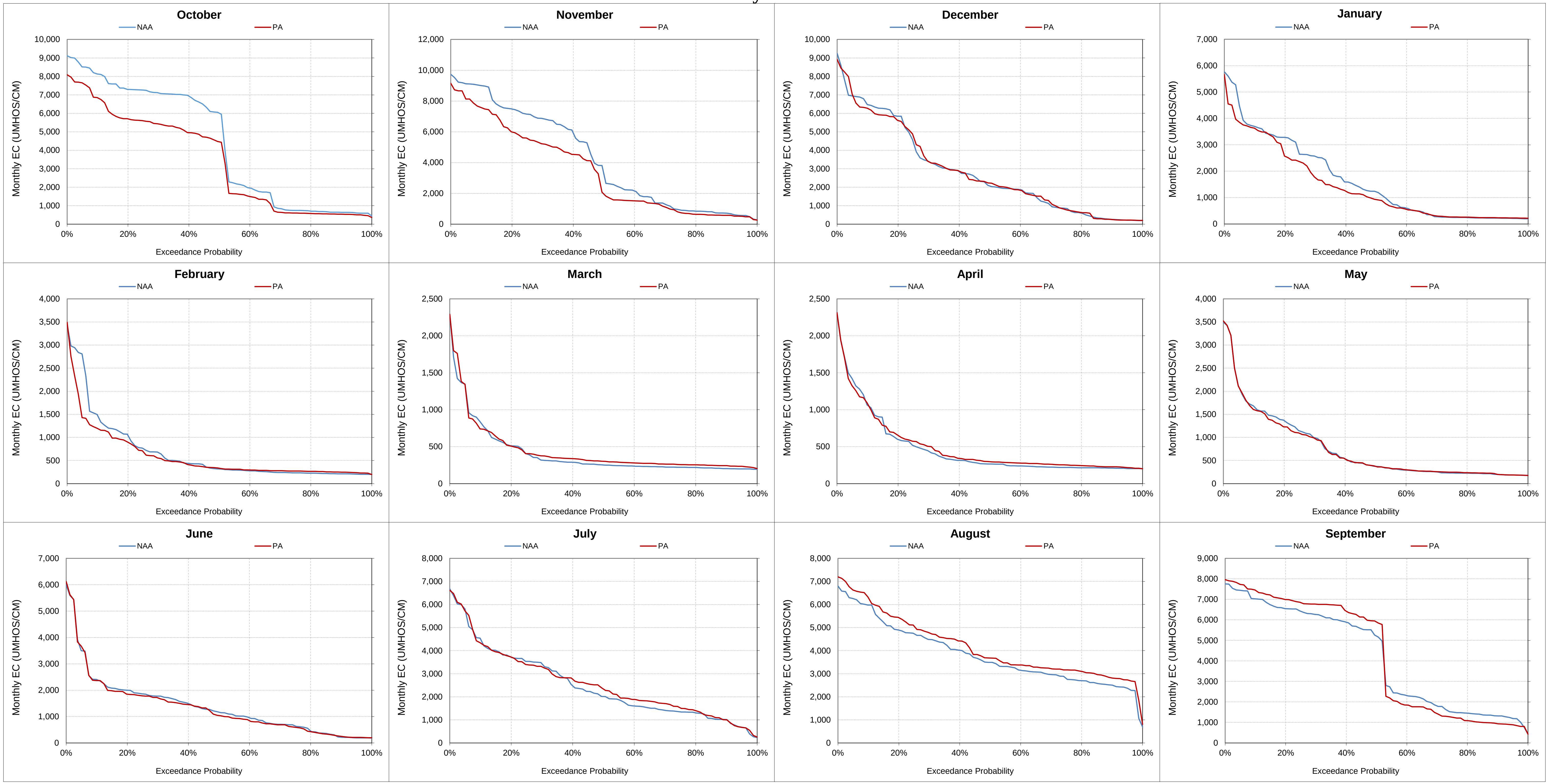
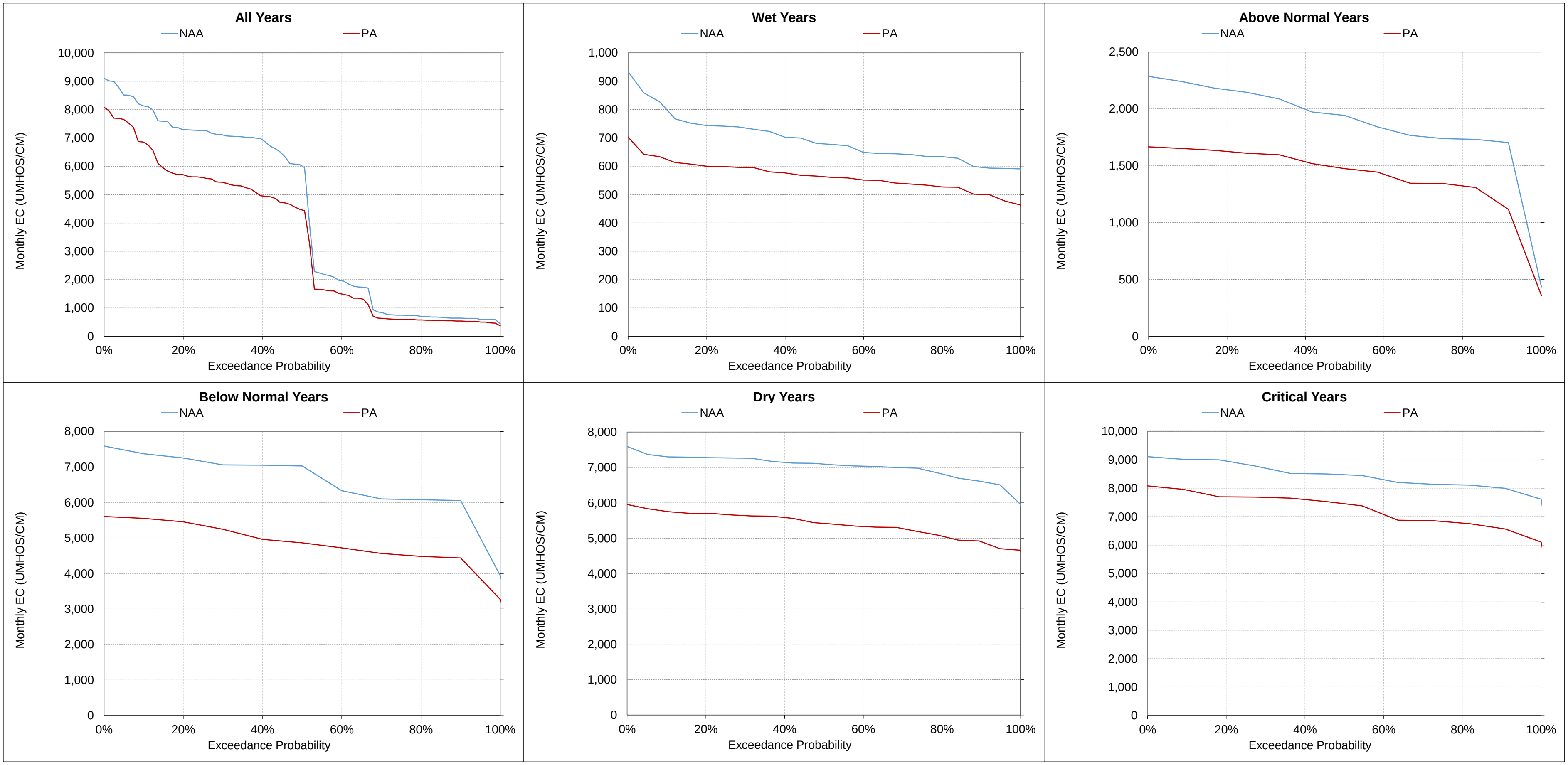


Figure 5.B.5-16-7. San Joaquin River at Antioch Salinity, Monthly EC Probability of Exceedance



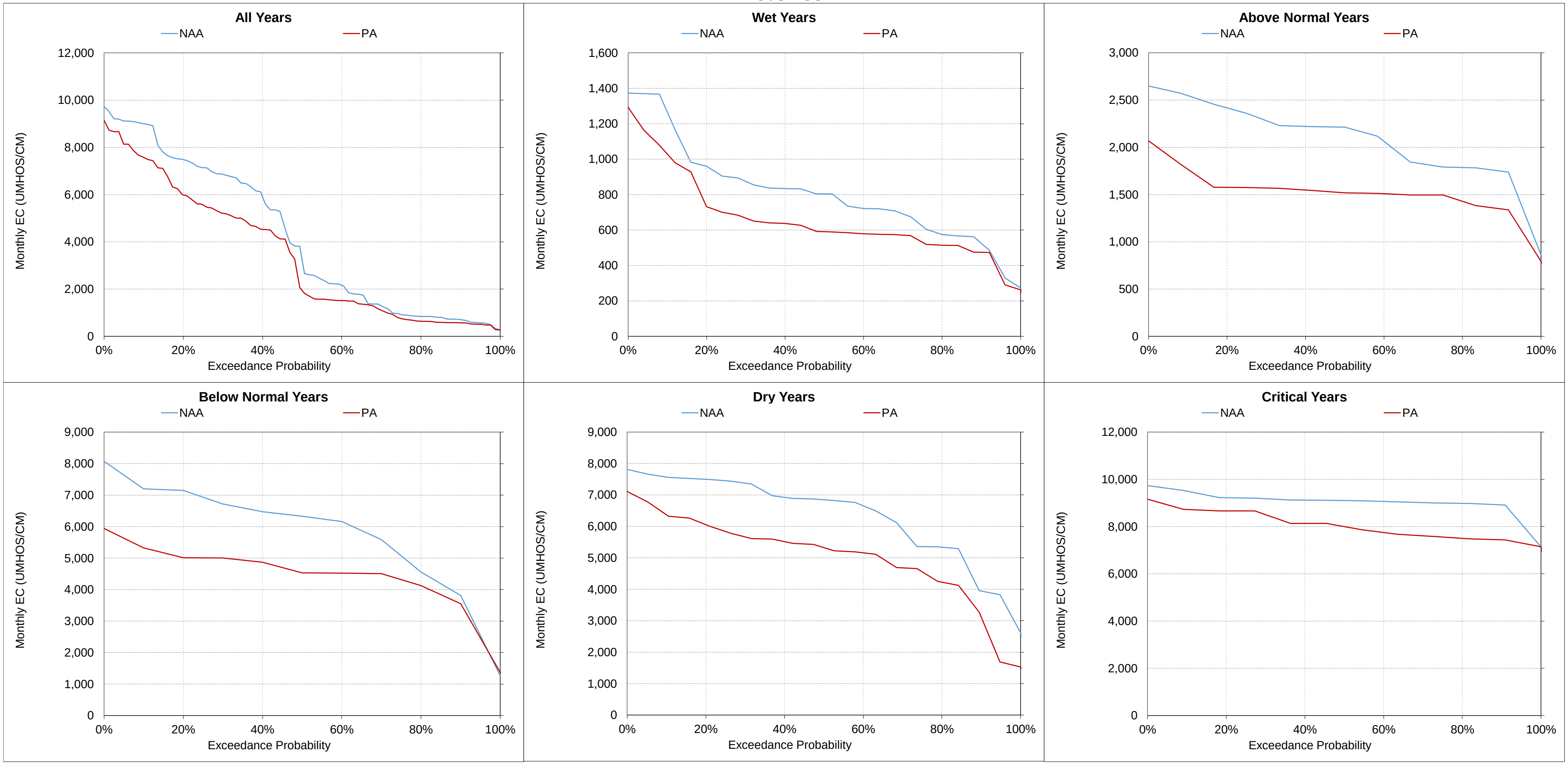
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-8. San Joaquin River at Antioch Salinity, Monthly EC
October



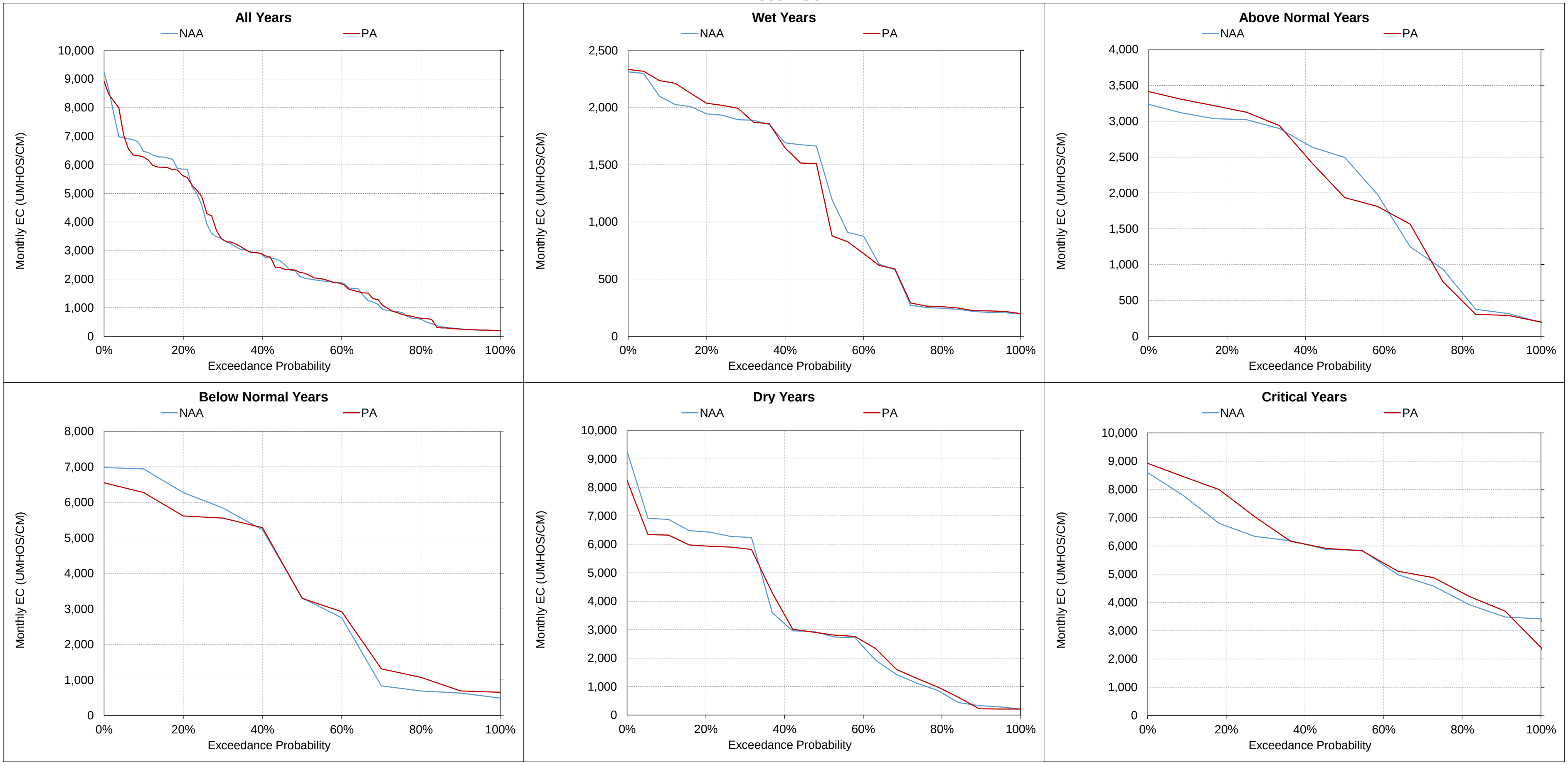
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-9. San Joaquin River at Antioch Salinity, Monthly EC November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-10. San Joaquin River at Antioch Salinity, Monthly EC December



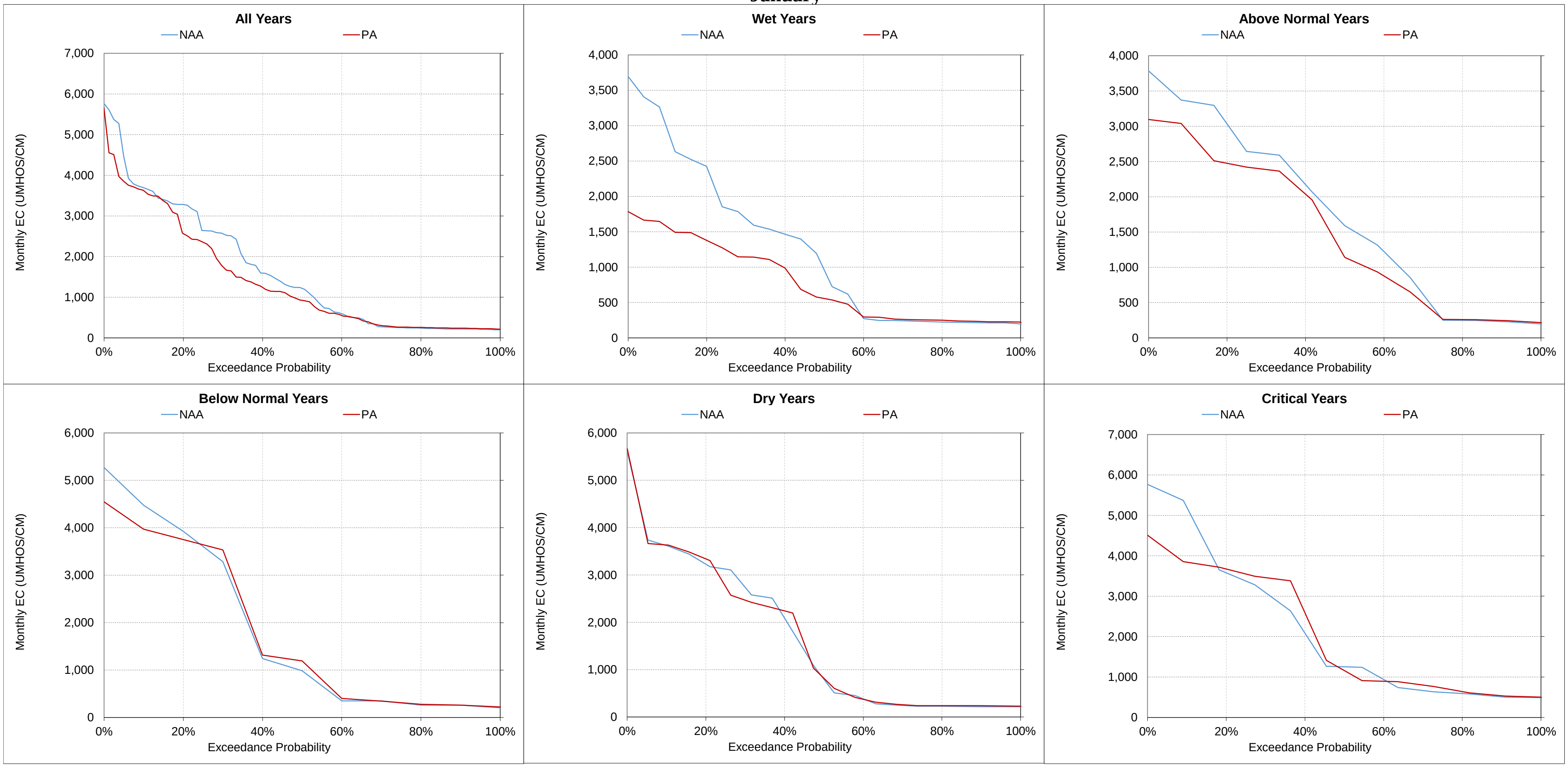
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

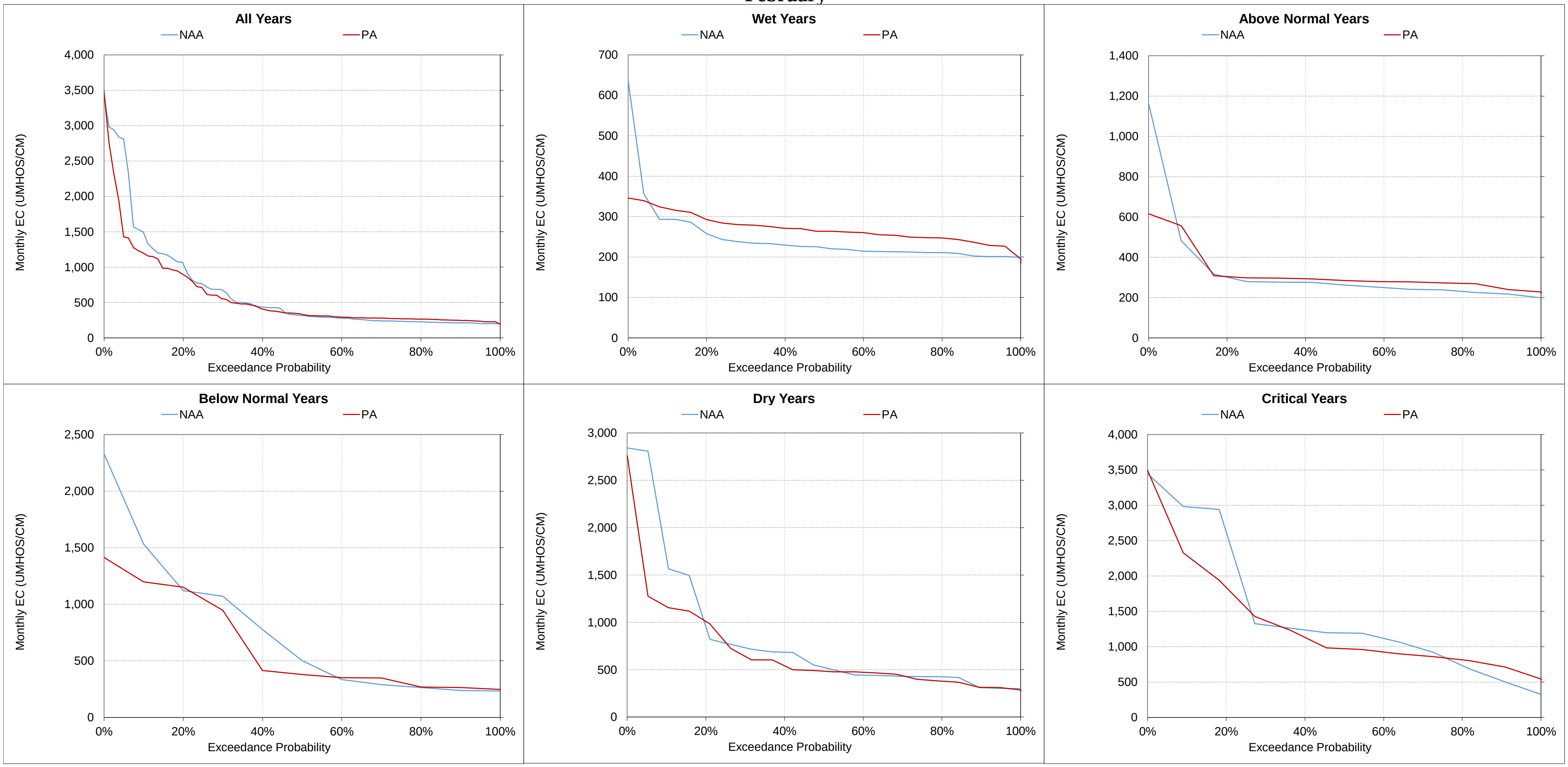
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-11. San Joaquin River at Antioch Salinity, Monthly EC January



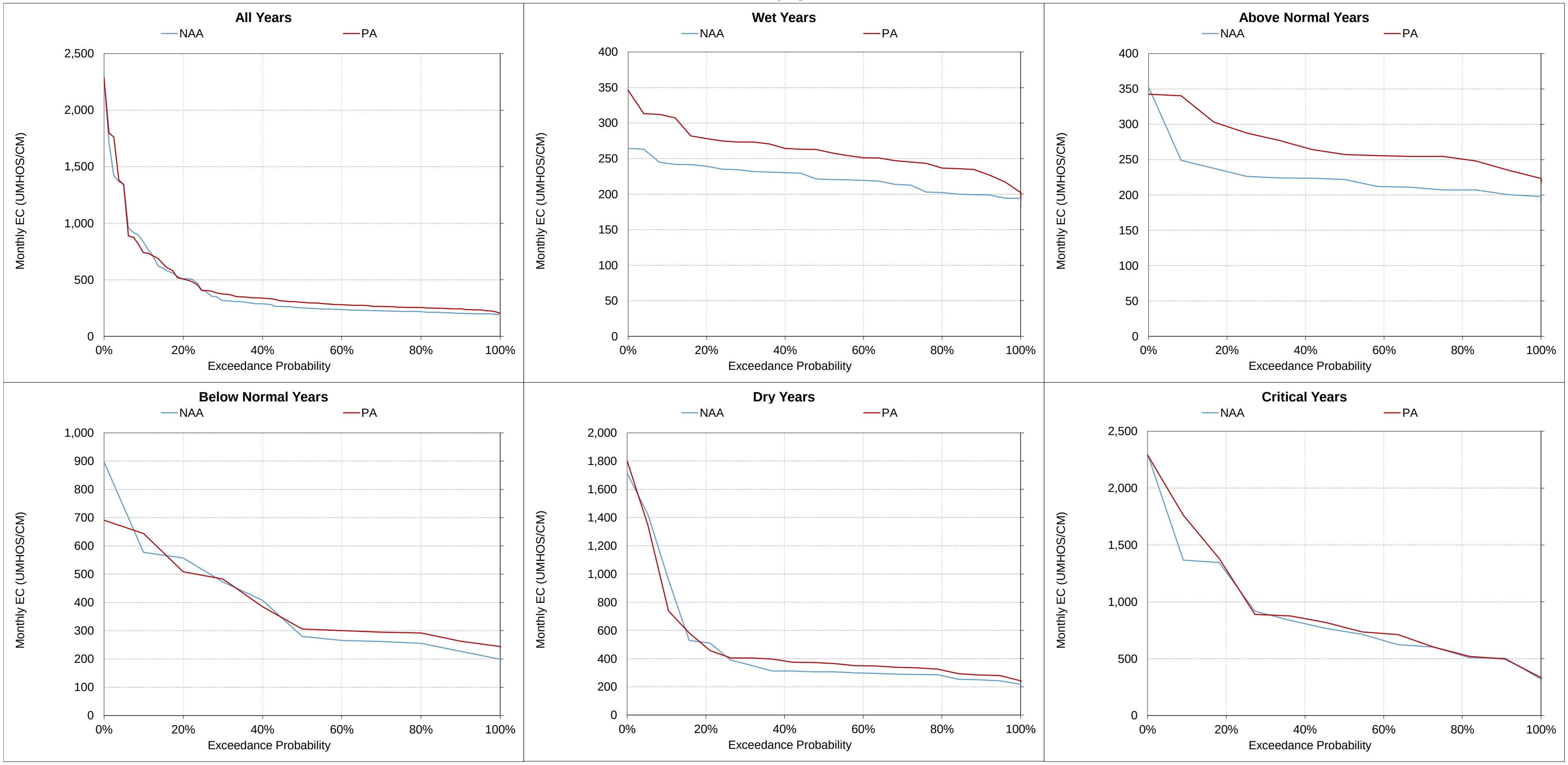
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-12. San Joaquin River at Antioch Salinity, Monthly EC February



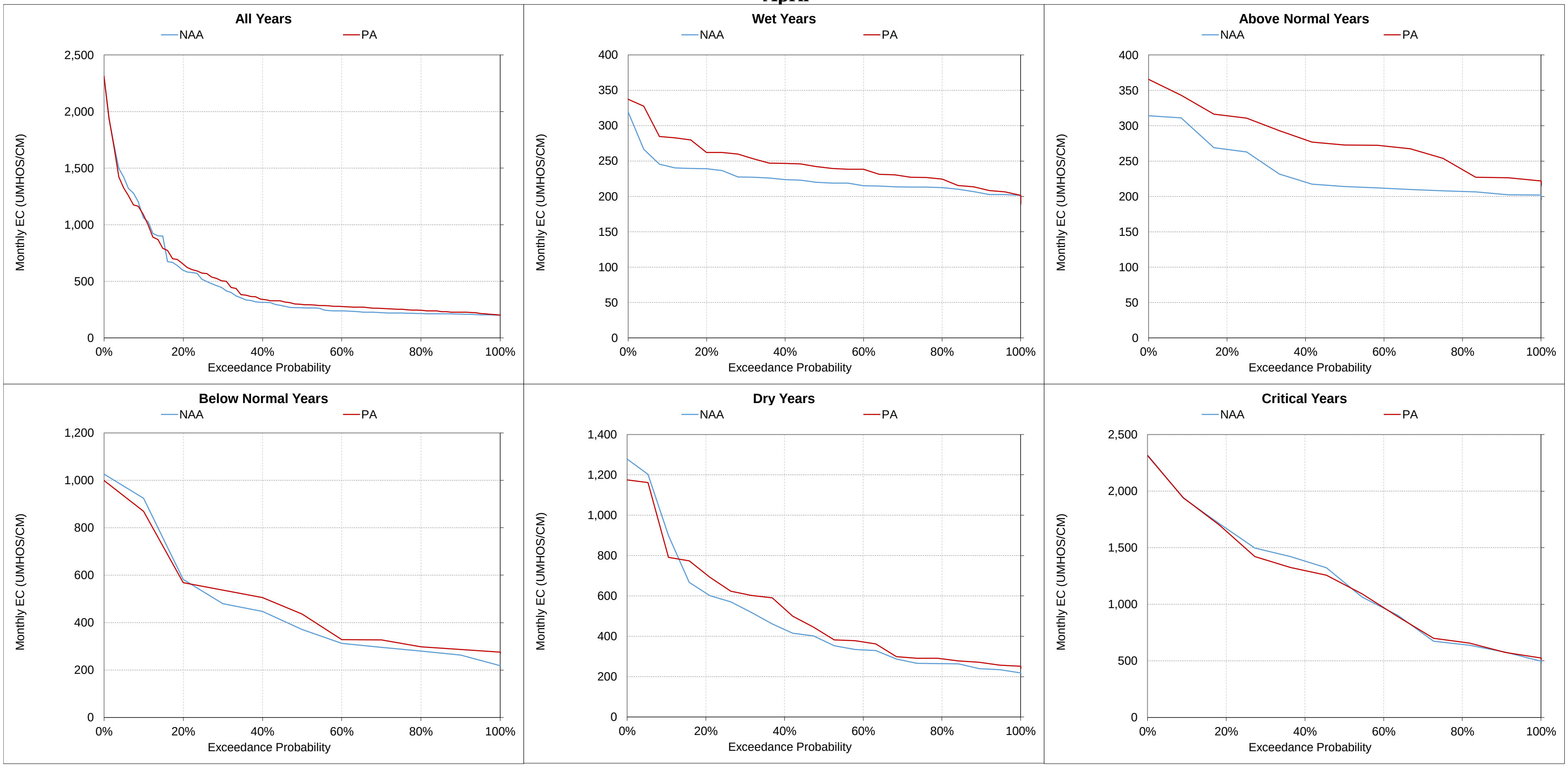
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-13. San Joaquin River at Antioch Salinity, Monthly EC March



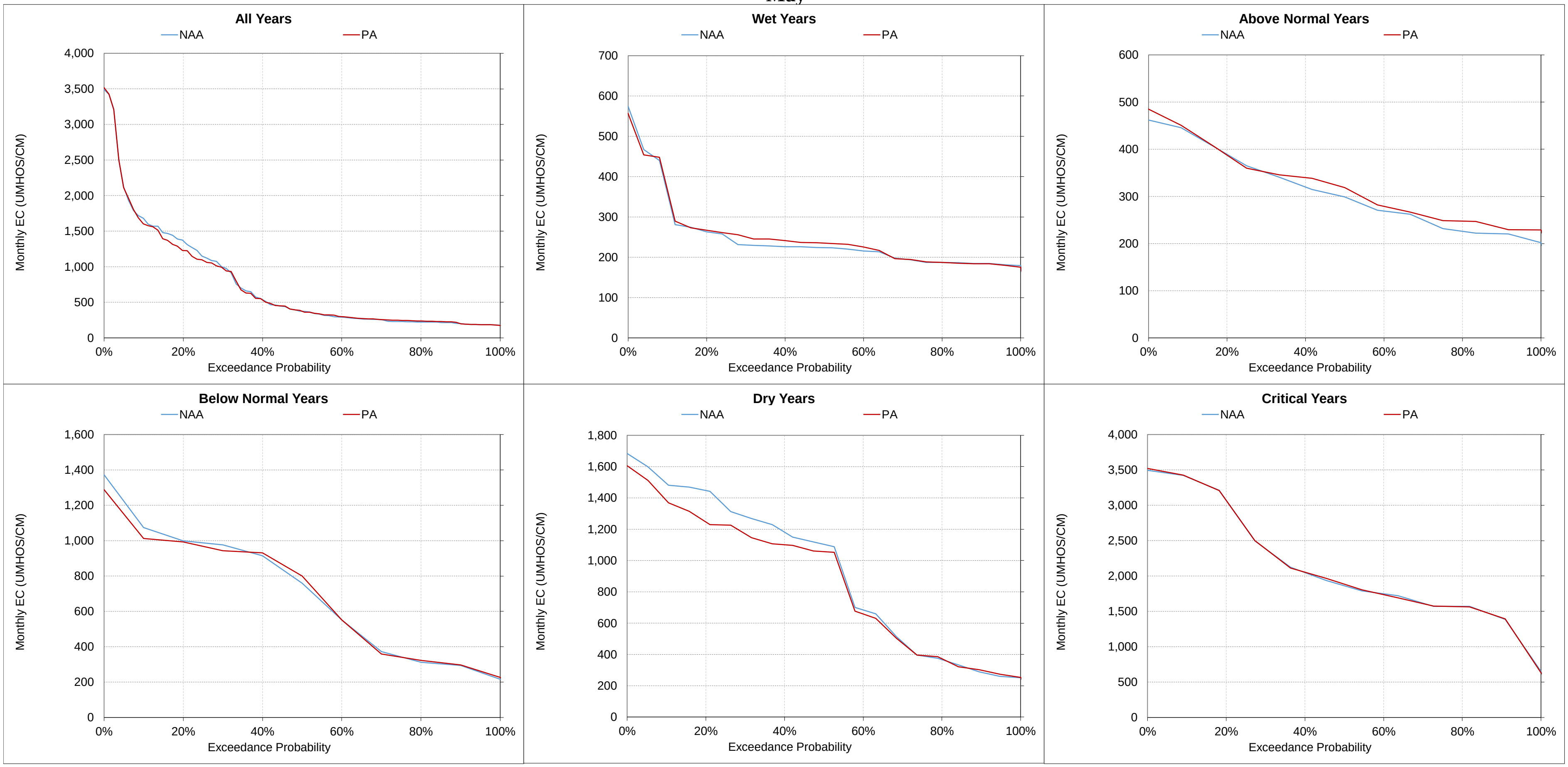
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-14. San Joaquin River at Antioch Salinity, Monthly EC April



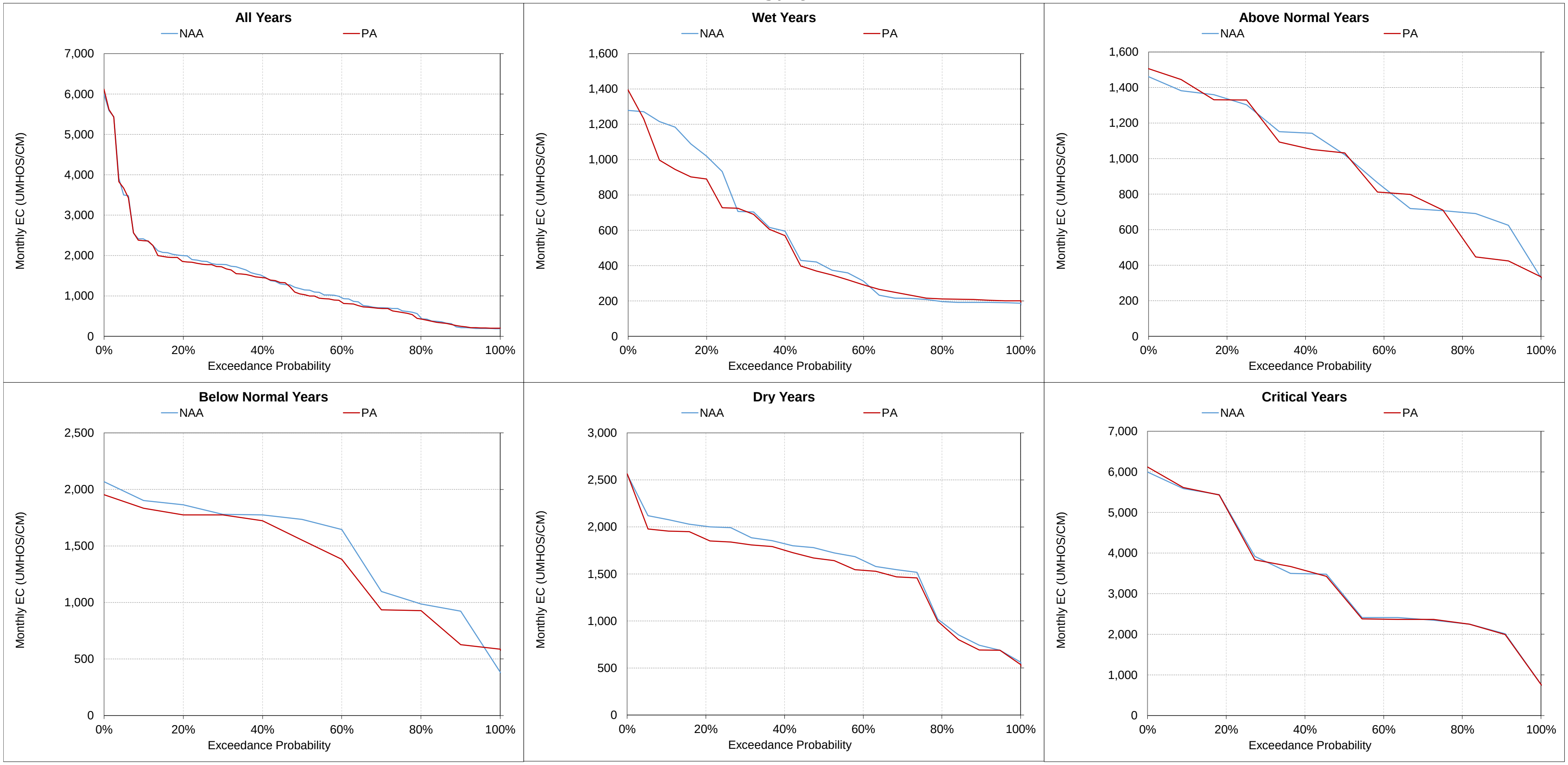
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-15. San Joaquin River at Antioch Salinity, Monthly EC
May



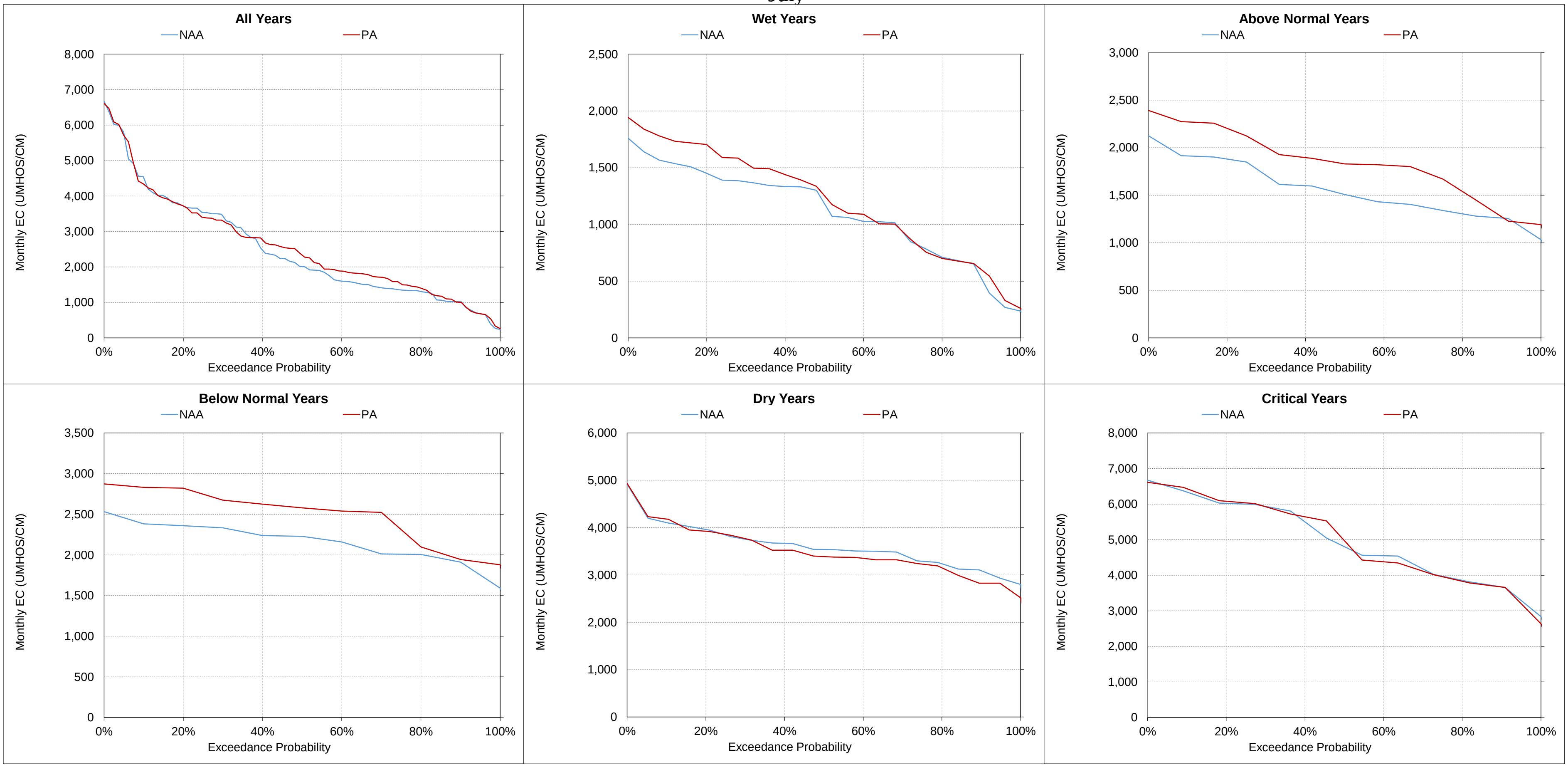
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-16. San Joaquin River at Antioch Salinity, Monthly EC
June



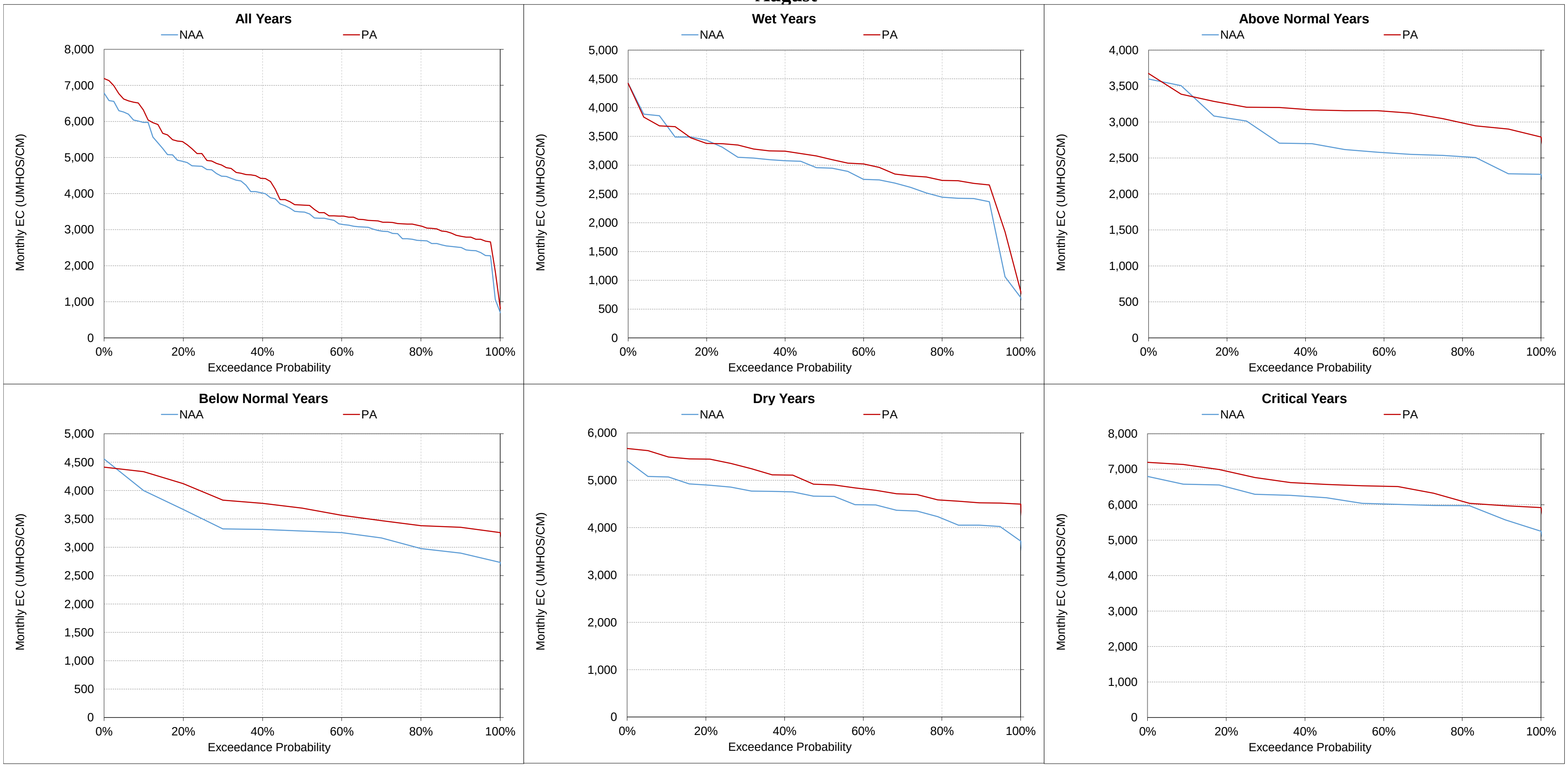
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-17. San Joaquin River at Antioch Salinity, Monthly EC
July



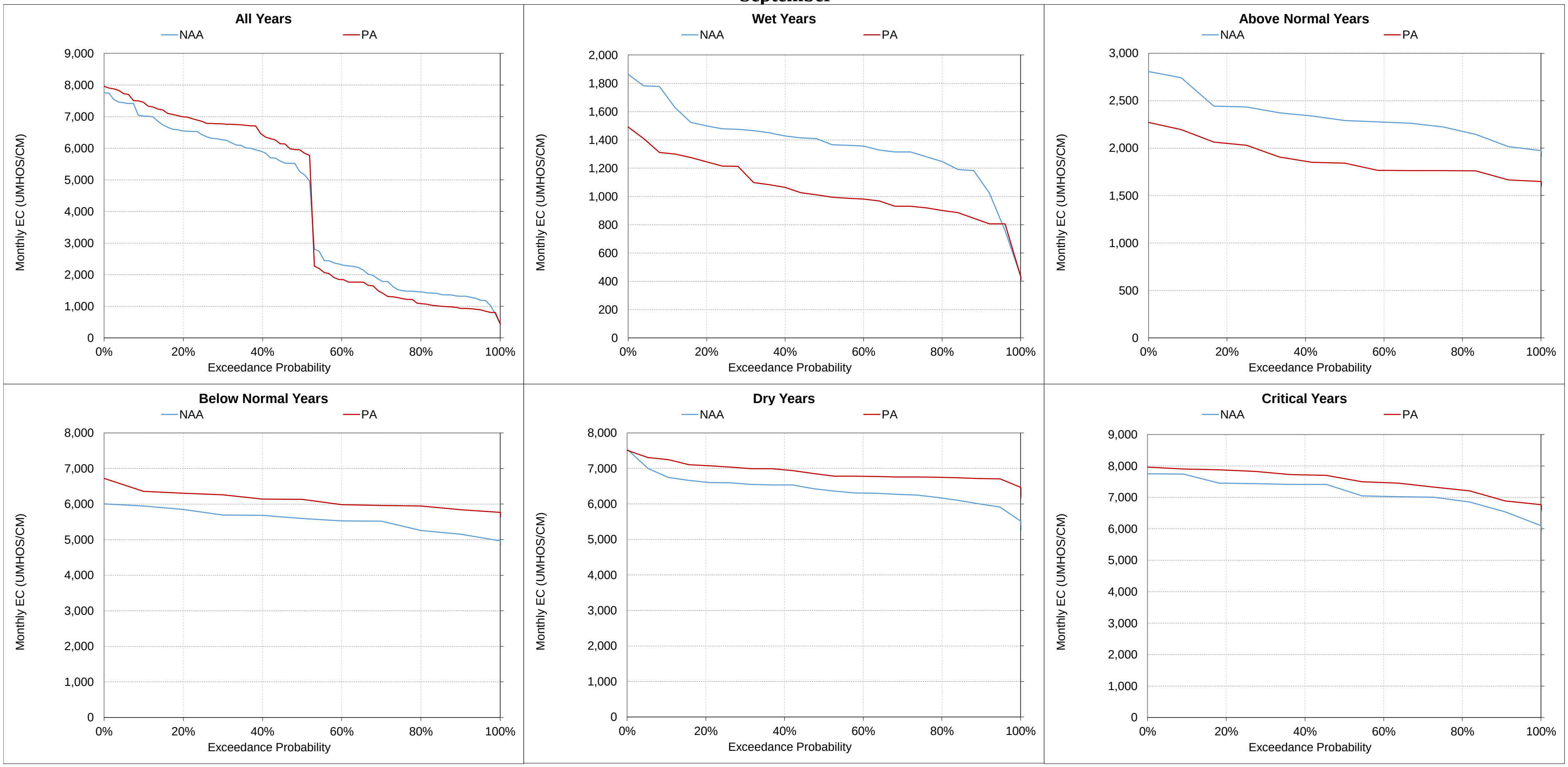
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-18. San Joaquin River at Antioch Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-16-19. San Joaquin River at Antioch Salinity, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-17. Chipps Island South Channel Salinity, Monthly EC

Statistic	October				November				December				January				February				March			
	Monthly EC (UMHOS/CM)																							
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	14,758	13,855	-902	-6%	15,503	14,105	-1,399	-9%	12,757	12,312	-445	-3%	8,469	8,523	53	1%	4,320	4,026	-294	-7%	3,155	2,938	-218	-7%
20%	13,642	12,524	-1,118	-8%	13,695	12,292	-1,403	-10%	10,877	10,981	104	1%	7,587	6,720	-867	-11%	2,422	2,530	108	4%	1,963	2,094	131	7%
30%	13,491	12,153	-1,338	-10%	13,220	11,351	-1,869	-14%	7,757	8,048	291	4%	6,237	5,320	-918	-15%	1,911	1,714	-197	-10%	960	1,160	201	21%
40%	13,243	11,702	-1,541	-12%	11,039	10,516	-523	-5%	6,517	6,728	211	3%	4,028	3,482	-546	-14%	1,091	1,294	203	19%	770	981	211	27%
50%	11,848	11,025	-823	-7%	7,248	6,267	-981	-14%	5,350	5,659	309	6%	2,717	2,311	-407	-15%	743	716	-27	-4%	449	549	100	22%
60%	5,883	5,564	-320	-5%	5,785	5,511	-274	-5%	5,004	5,085	81	2%	1,363	1,583	220	16%	303	353	50	16%	266	309	43	16%
70%	2,843	2,768	-75	-3%	3,474	3,584	110	3%	2,571	2,743	173	7%	354	436	82	23%	217	236	19	9%	210	242	32	15%
80%	2,618	2,588	-30	-1%	2,981	2,897	-84	-3%	1,552	2,098	545	35%	223	258	36	16%	200	216	16	8%	200	216	16	8%
90%	2,531	2,504	-27	-1%	2,630	2,594	-37	-1%	399	515	116	29%	193	204	12	6%	192	207	15	8%	194	209	15	8%
Long Term Full Simulation Period[b]	8,812	8,162	-650	-7%	8,426	7,770	-656	-8%	6,064	6,149	85	1%	3,722	3,410	-313	-8%	1,620	1,509	-111	-7%	1,090	1,169	79	7%
Water Year Types[c]																								
Wet (32%)	2,599	2,566	-32	-1%	2,752	2,749	-3	0%	3,179	3,220	41	1%	2,982	2,106	-876	-29%	277	262	-15	-5%	265	288	23	9%
Above Normal (16%)	5,573	5,201	-372	-7%	5,670	5,452	-218	-4%	4,798	4,932	134	3%	3,974	3,674	-299	-8%	633	561	-72	-11%	323	343	20	6%
Below Normal (13%)	12,214	11,035	-1,179	-10%	11,171	9,905	-1,266	-11%	7,381	7,479	98	1%	4,015	4,033	19	0%	2,084	1,726	-358	-17%	1,321	1,325	4	0%
Dry (24%)	13,394	12,170	-1,224	-9%	11,834	10,569	-1,265	-11%	6,876	6,890	14	0%	3,602	3,667	65	2%	2,258	2,080	-177	-8%	1,340	1,511	171	13%
Critical (15%)	15,025	14,177	-849	-6%	15,511	14,540	-971	-6%	11,128	11,360	232	2%	4,988	4,947	-40	-1%	4,111	4,088	-24	-1%	3,080	3,262	182	6%

Statistic	April				May				June				July				August				September			
	Monthly EC (UMHOS/CM)																							
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	4,047	3,971	-76	-2%	5,113	5,113	0	0%	6,949	6,902	-46	-1%	9,592	9,605	13	0%	11,729	12,277	549	5%	13,134	13,563	430	3%
20%	2,497	2,581	84	3%	4,566	4,343	-224	-5%	5,933	5,763	-170	-3%	8,356	8,676	320	4%	10,266	10,835	569	6%	12,226	13,036	810	7%
30%	1,602	1,865	263	16%	3,759	3,675	-85	-2%	5,459	5,330	-129	-2%	7,720	7,911	191	2%	9,751	10,230	479	5%	11,953	12,787	834	7%
40%	1,161	1,152	-9	-1%	2,190	2,206	16	1%	4,718	4,751	33	1%	6,303	7,035	732	12%	8,616	9,671	1,055	12%	11,223	12,368	1,144	10%
50%	803	817	13	2%	1,514	1,453	-61	-4%	3,708	3,605	-103	-3%	5,465	6,332	867	16%	7,762	8,592	830	11%	10,253	11,782	1,529	15%
60%	435	482	47	11%	868	833	-35	-4%	3,347	3,111	-236	-7%	4,508	5,603	1,095	24%	7,348	8,094	745	10%	5,702	5,873	171	3%
70%	315	329	14	4%	556	552	-4	-1%	2,554	2,576	22	1%	4,083	5,171	1,088	27%	6,965	7,920	955	14%	3,936	4,211	275	7%
80%	217	231	14	7%	310	315	5	2%	1,653	1,680	27	2%	3,877	4,503	625	16%	6,379	7,692	1,314	21%	3,135	3,367	232	7%
90%	193	202	10	5%	196	195	0	0%	491	573	82	17%	2,965	3,175	210	7%	6,150	7,368	1,218	20%	2,799	3,064	265	9%
Long Term Full Simulation Period[b]	1,440	1,477	37	3%	2,323	2,286	-37	-2%	4,078	3,994	-83	-2%	5,951	6,487	536	9%	8,343	9,165	822	10%	8,186	8,745	559	7%
Water Year Types[c]																								
Wet (32%)	344	356	12	3%	543	541	-2	0%	1,738	1,675	-64	-4%	3,263	3,793	530	16%	6,676	7,481	804	12%	3,069	3,312	243	8%
Above Normal (16%)	482	490	8	2%	977	971	-6	-1%	3,213	3,139	-74	-2%	4,382	5,513	1,132	26%	6,594	7,838	1,244	19%	5,696	5,927	232	4%
Below Normal (13%)	1,745	1,797	52	3%	2,595	2,553	-42	-2%	4,637	4,457	-180	-4%	5,665	6,649	984	17%	7,689	8,846	1,156	15%	10,760	11,990	1,230	11%
Dry (24%)	1,713	1,828	115	7%	3,154	3,030	-124	-4%	4,959	4,837	-122	-2%	8,028	8,194	166	2%	9,803	10,434	631	6%	12,030	12,907	877	7%
Critical (15%)	4,116	4,096	-21	-1%	6,001	6,004	3	0%	8,104	8,120	16	0%	10,275	10,386	111	1%	12,015	12,429	415	3%	13,203	13,657	454	3%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

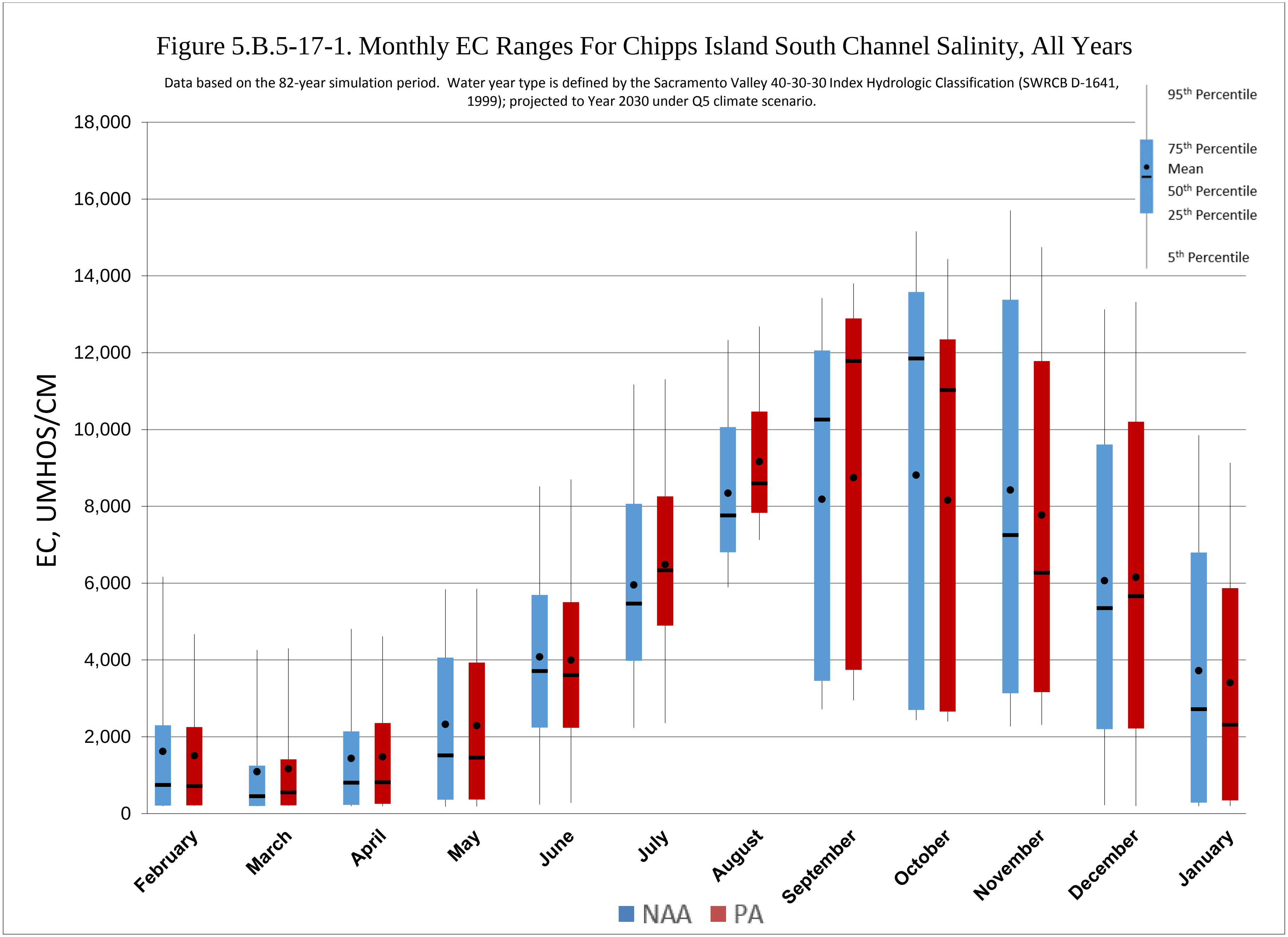


Figure 5.B.5-17-1. Monthly EC Ranges For Chipps Island South Channel Salinity, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-17-2. Monthly EC Ranges For Chipps Island South Channel Salinity, Wet Years

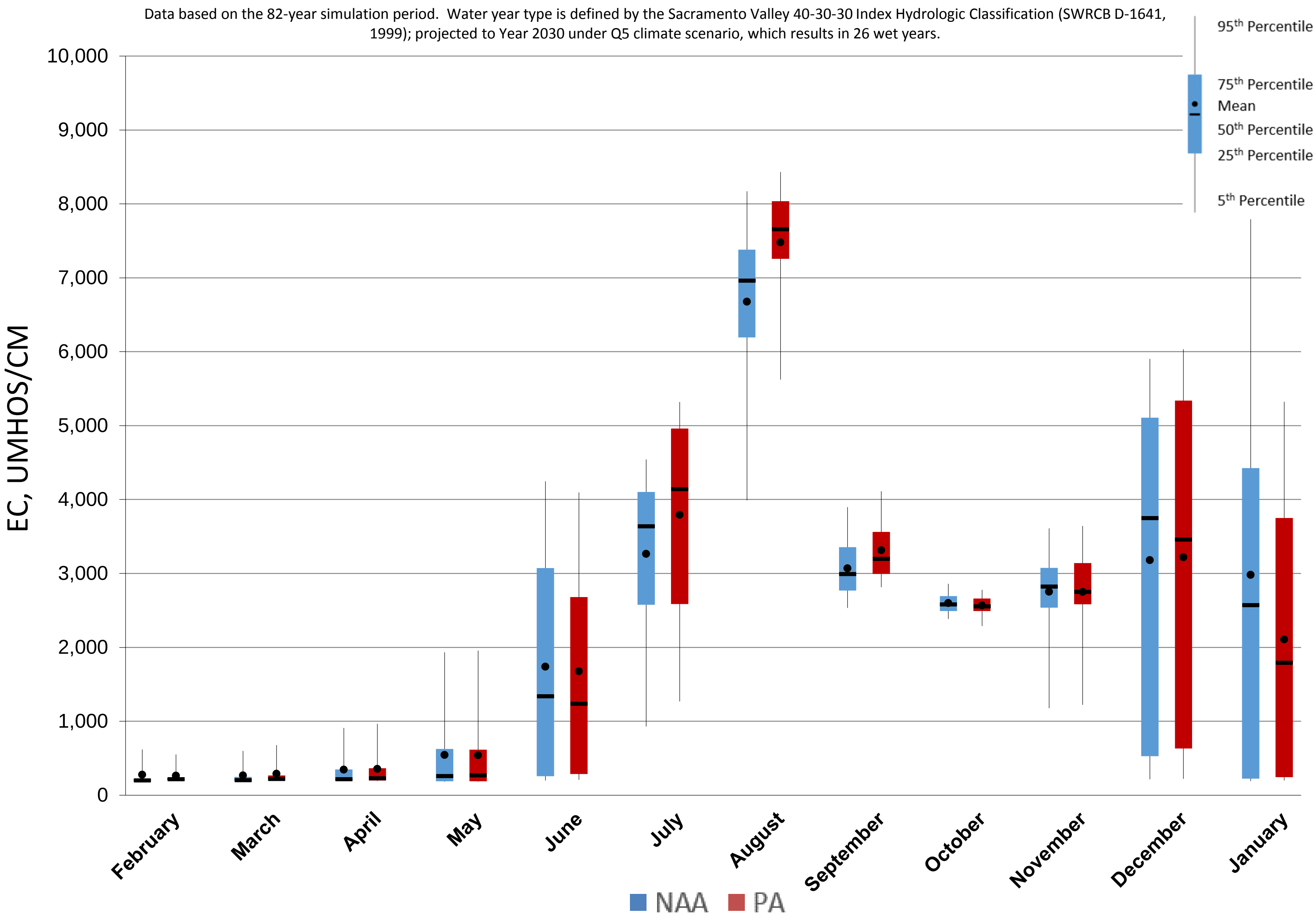


Figure 5.B.5-17-3. Monthly EC Ranges For Chipps Island South Channel Salinity, Above Normal Years

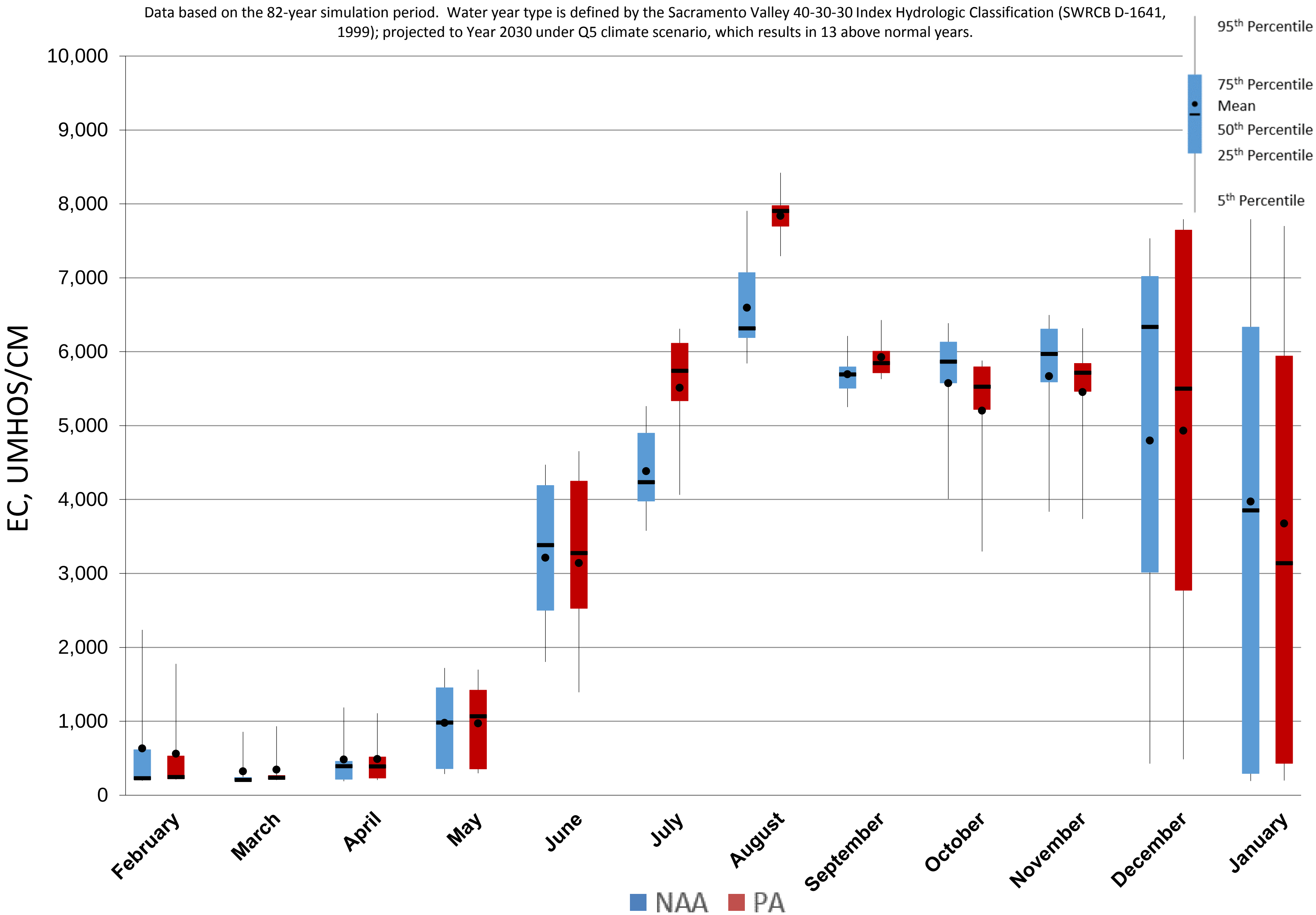


Figure 5.B.5-17-4. Monthly EC Ranges For Chipps Island South Channel Salinity, Below Normal Years

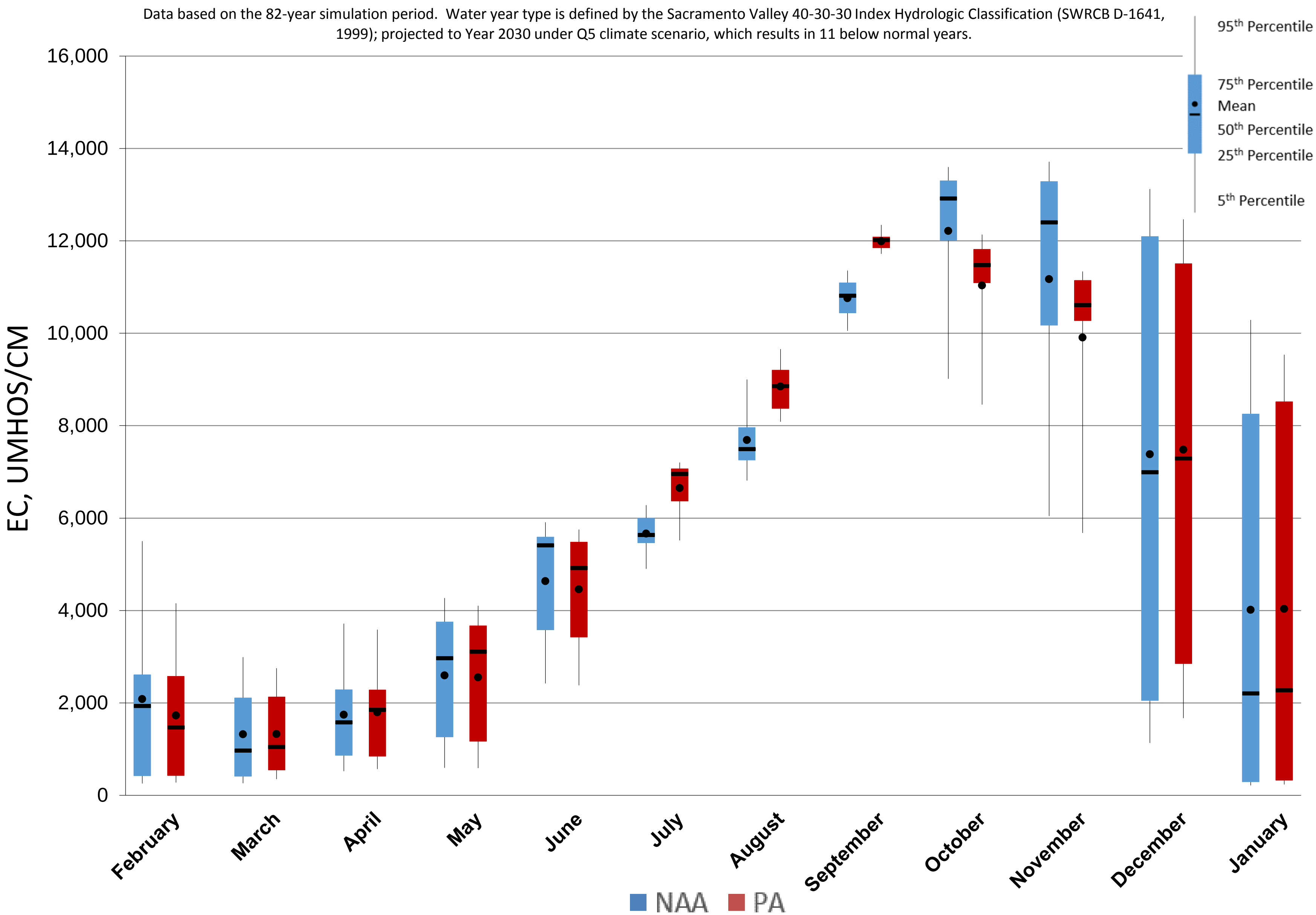
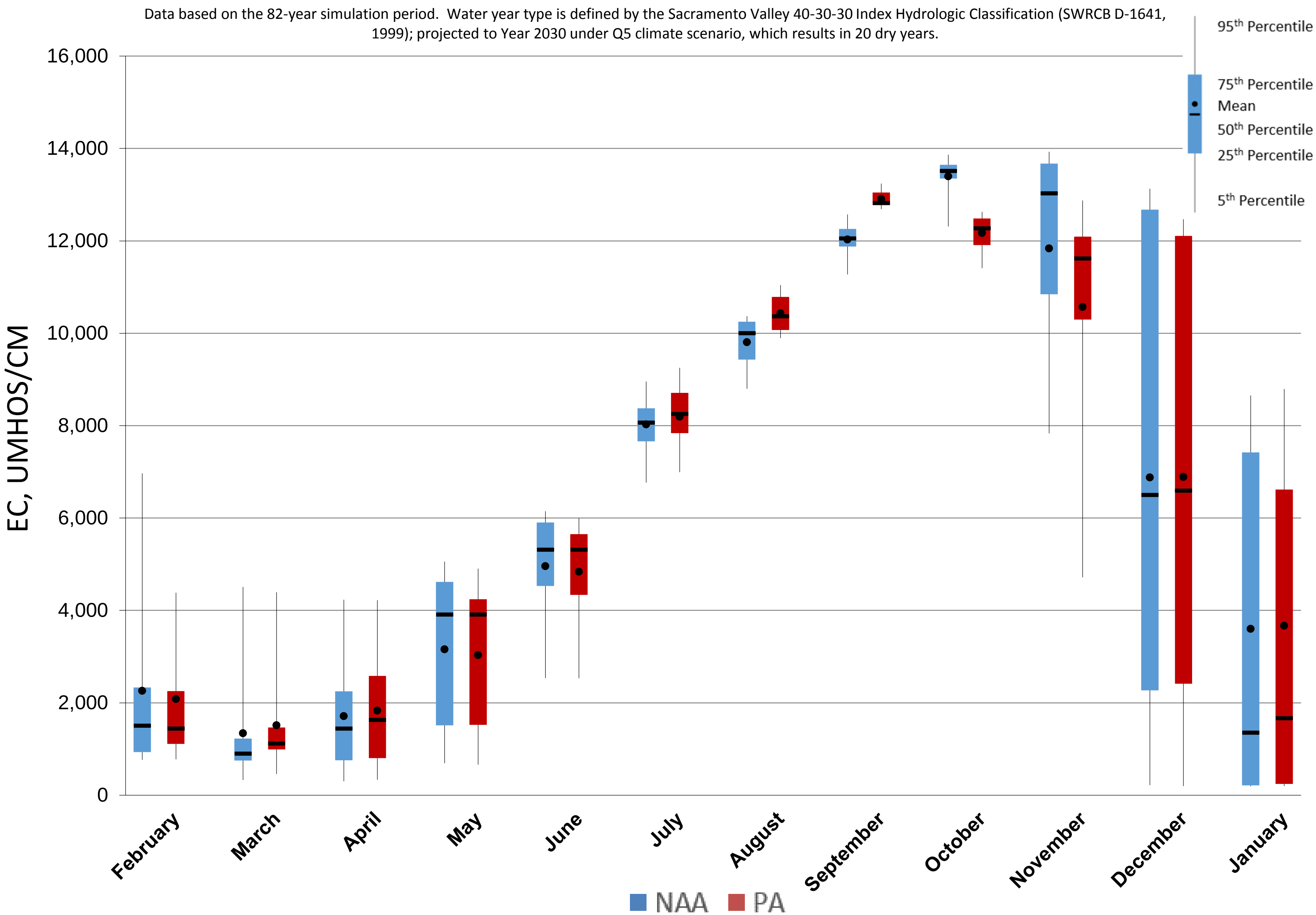


Figure 5.B.5-17-5. Monthly EC Ranges For Chipps Island South Channel Salinity, Dry Years



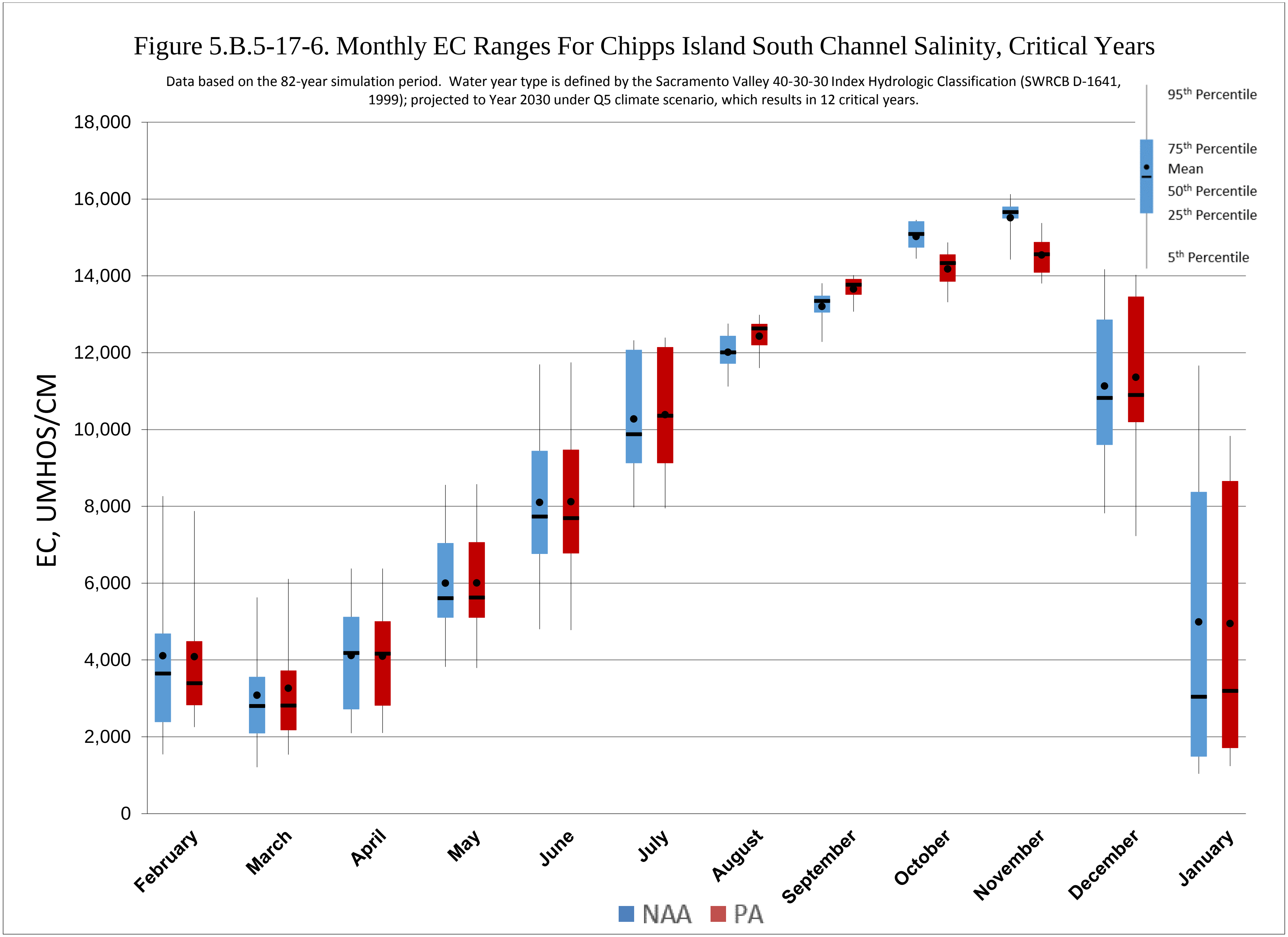
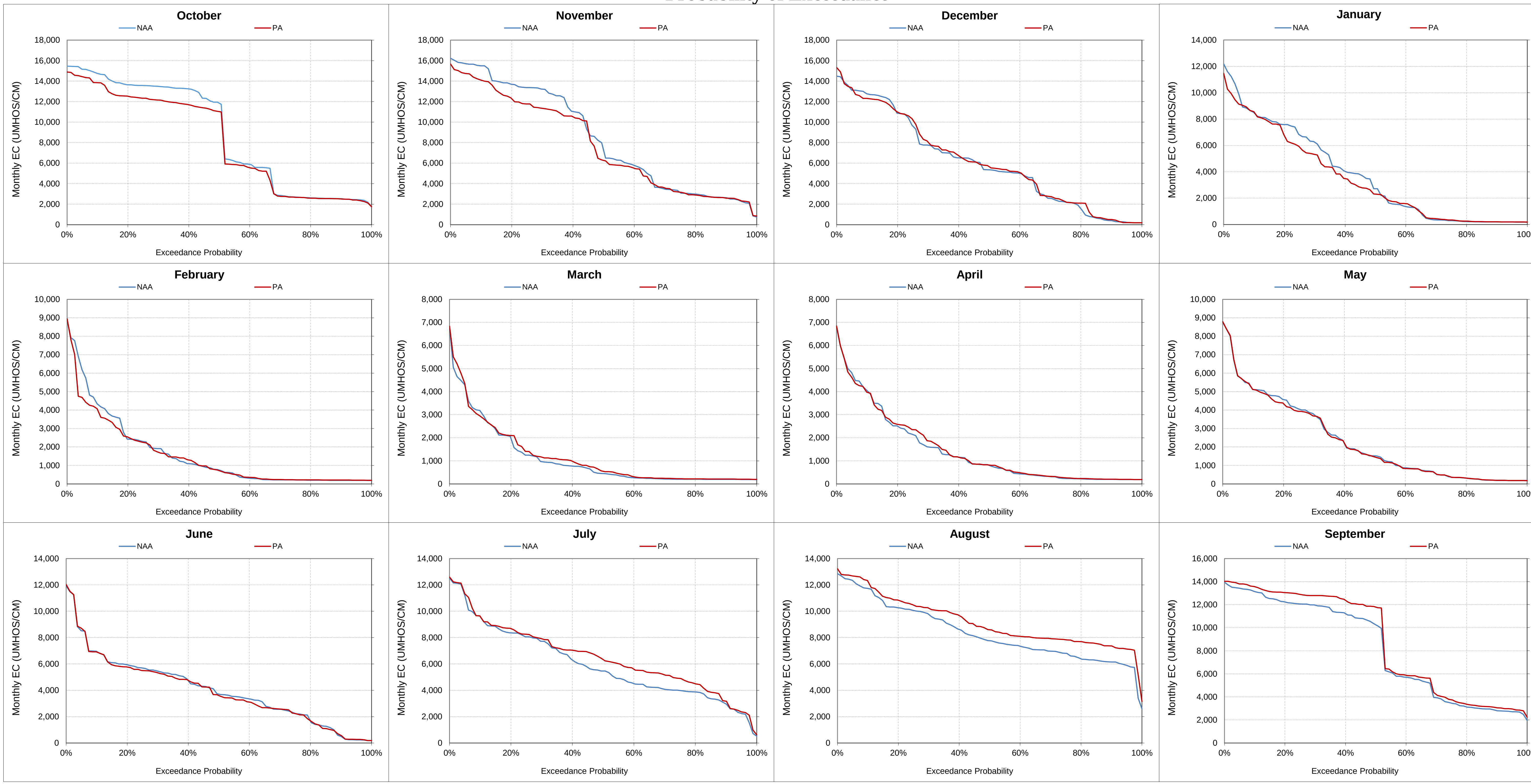


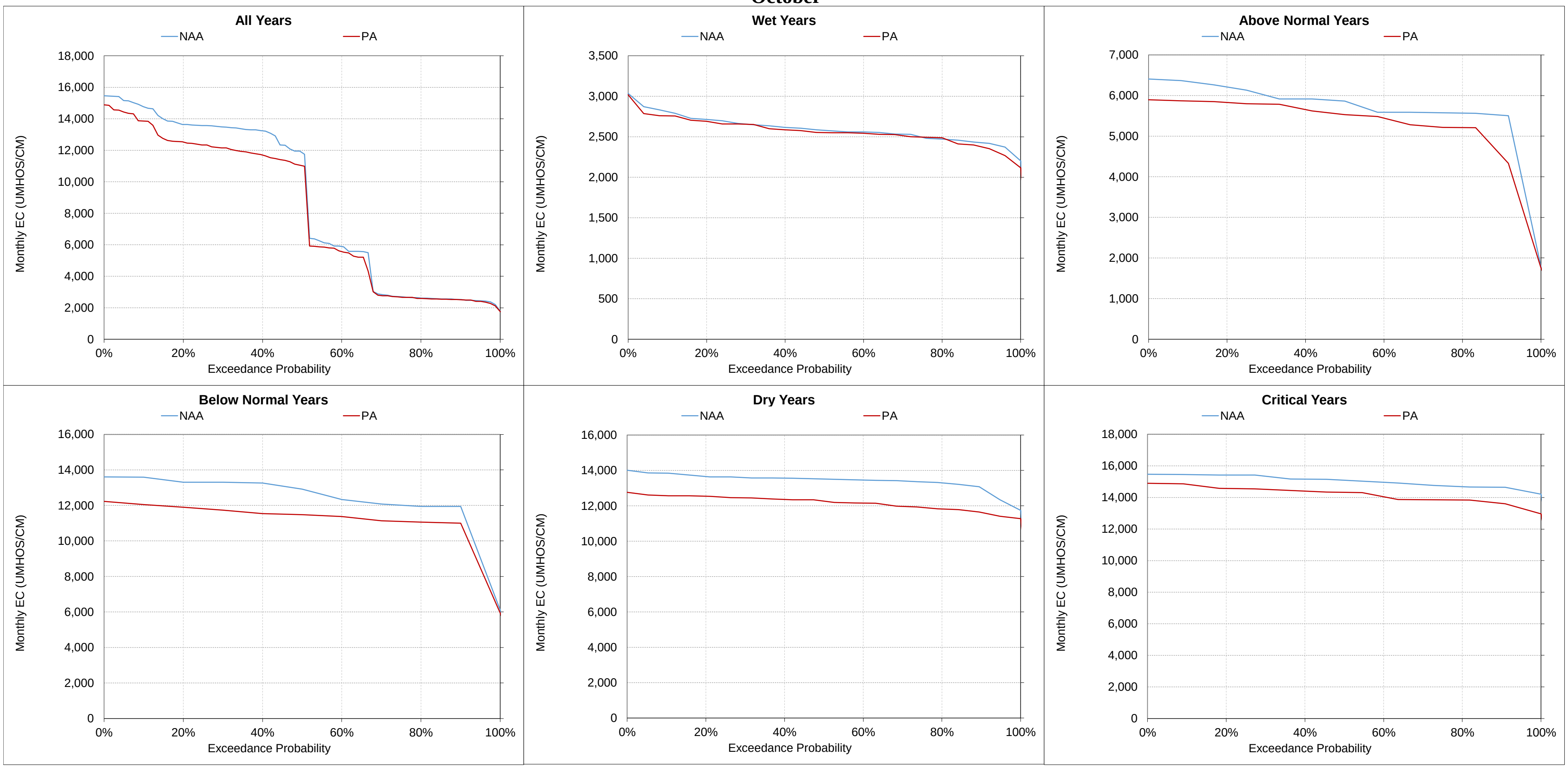
Figure 5.B.5-17-6. Monthly EC Ranges For Chipps Island South Channel Salinity, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-17-7. Chipps Island South Channel Salinity, Monthly EC Probability of Exceedance



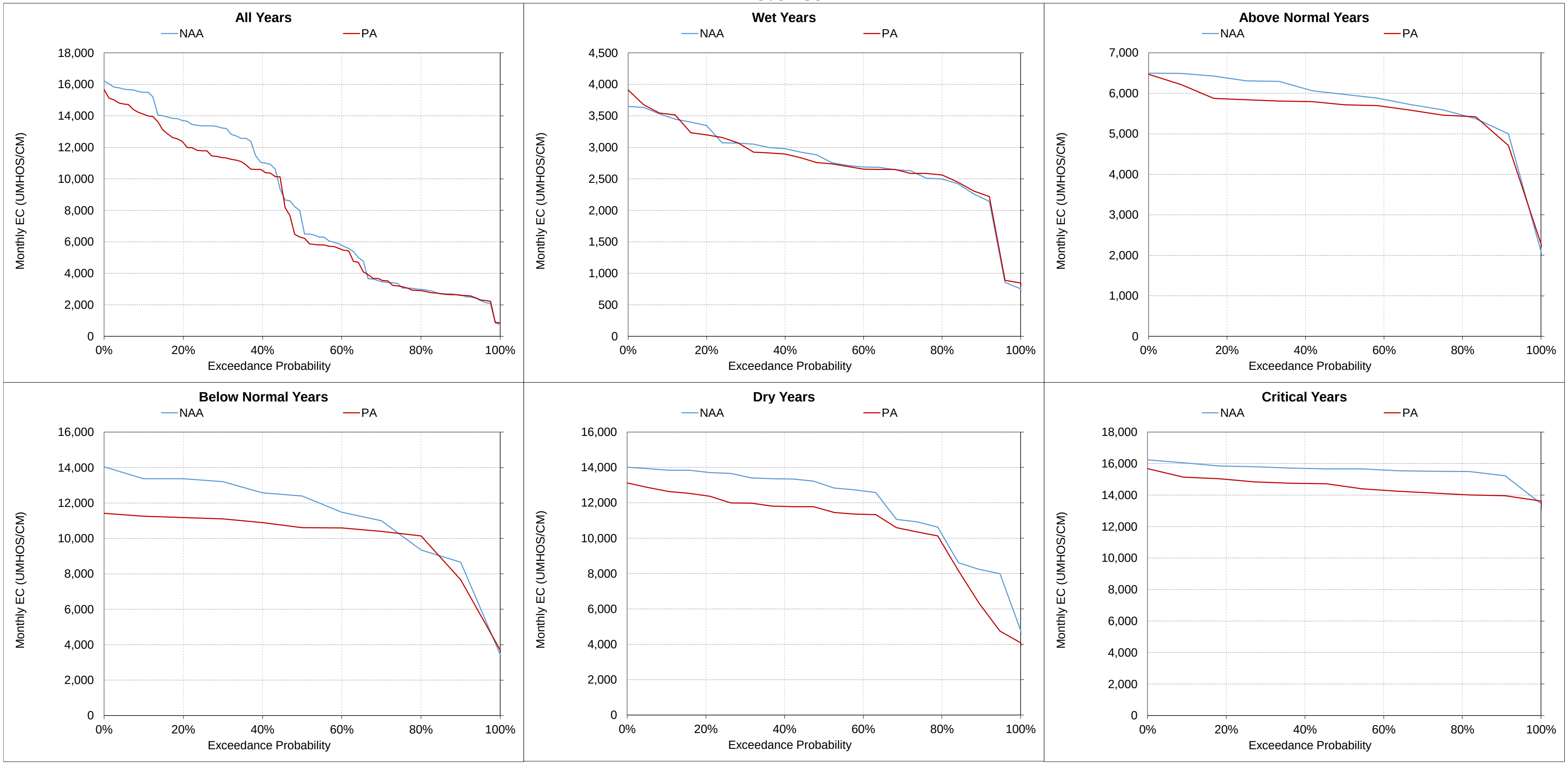
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-8. Chipps Island South Channel Salinity, Monthly EC October



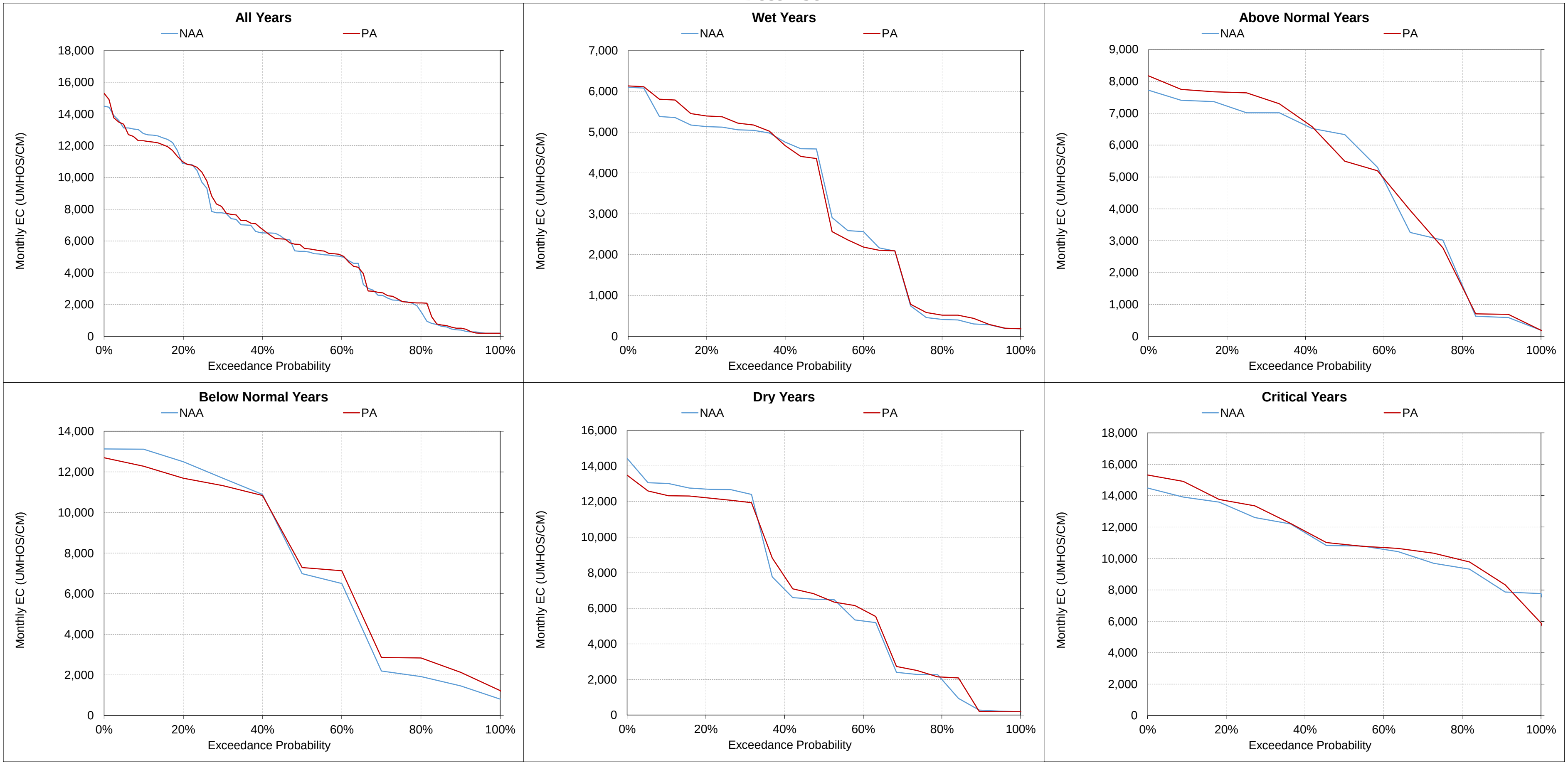
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-9. Chipps Island South Channel Salinity, Monthly EC
November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-10. Chipps Island South Channel Salinity, Monthly EC December



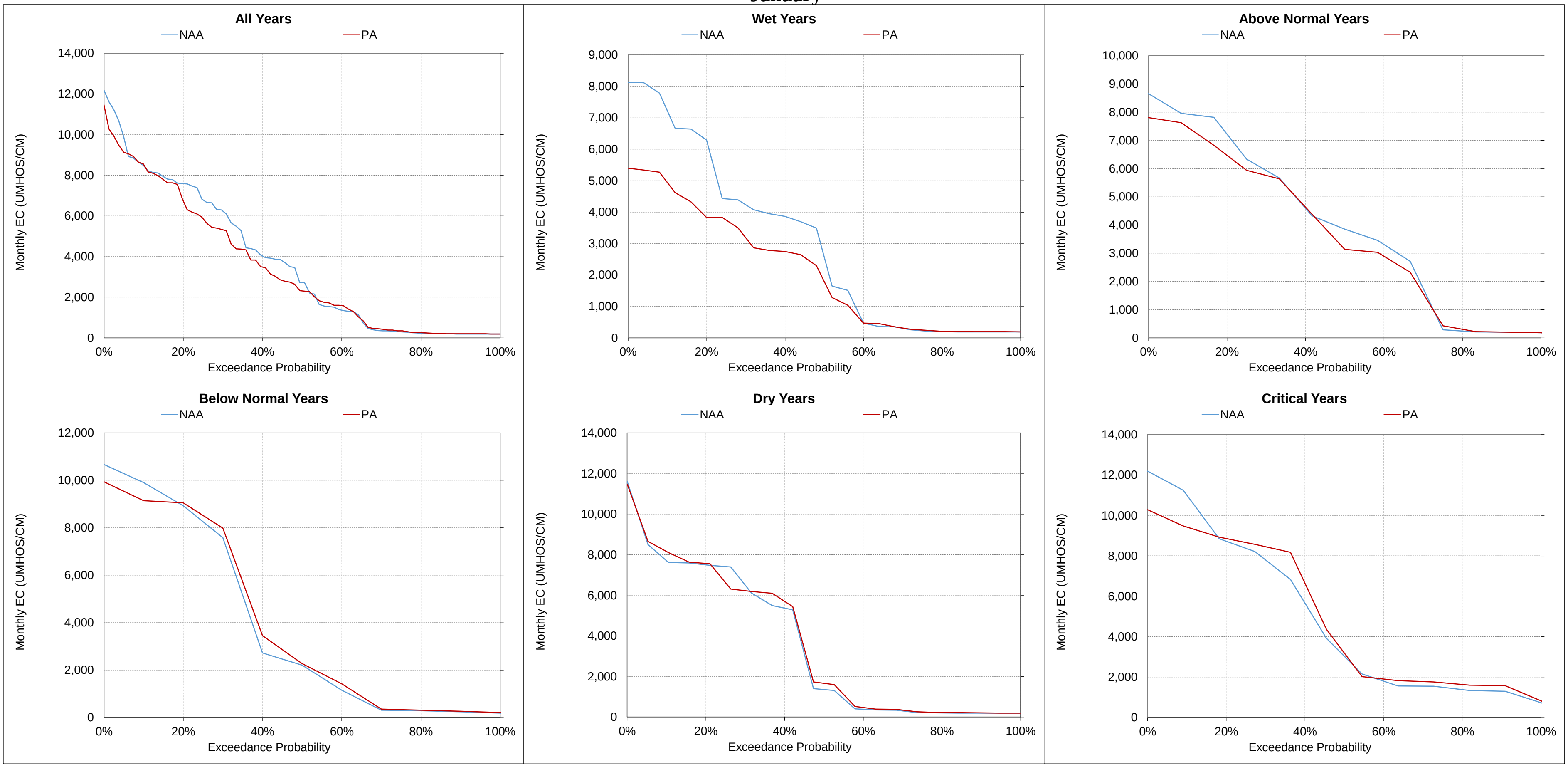
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

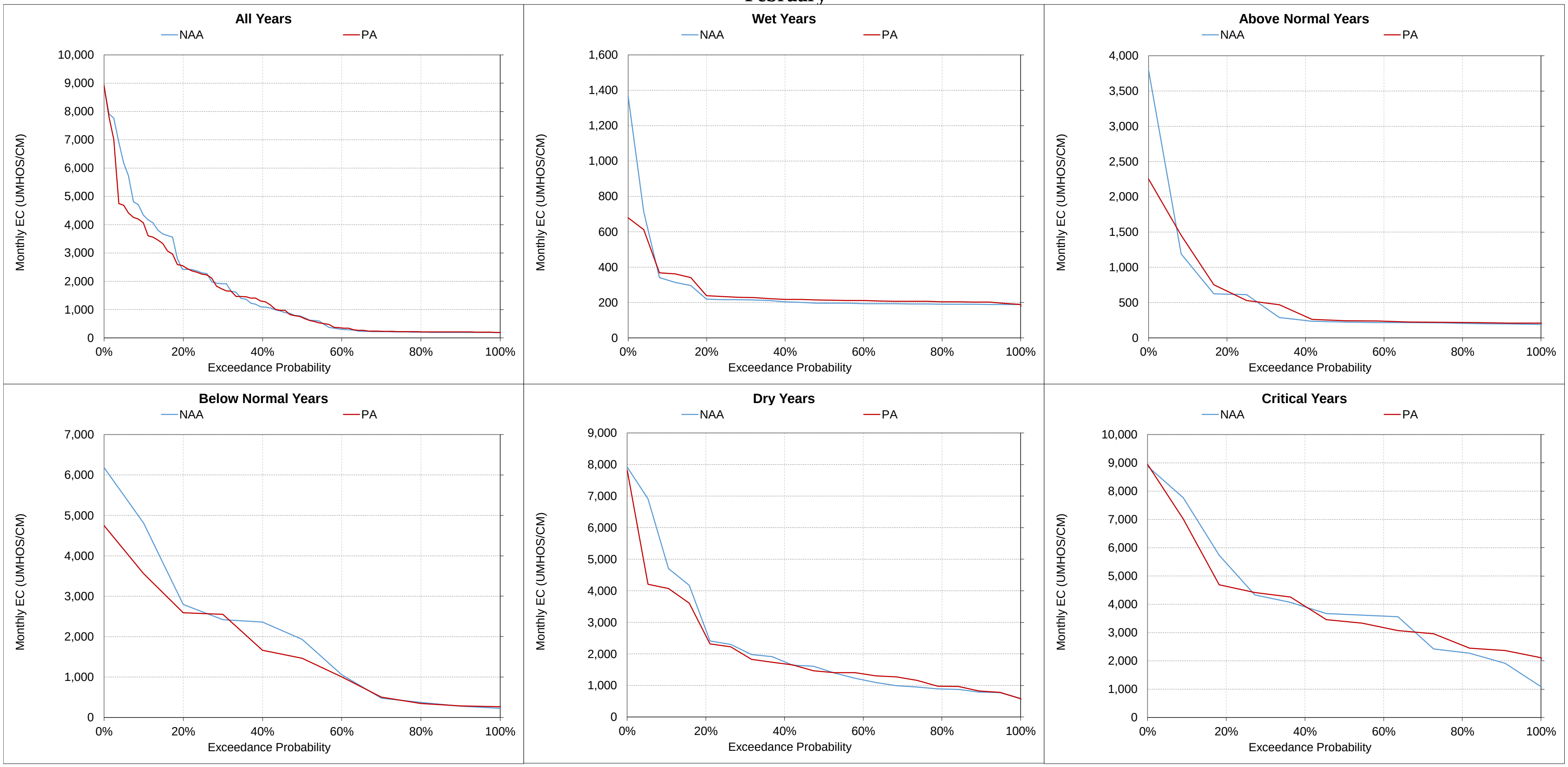
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-11. Chipps Island South Channel Salinity, Monthly EC January



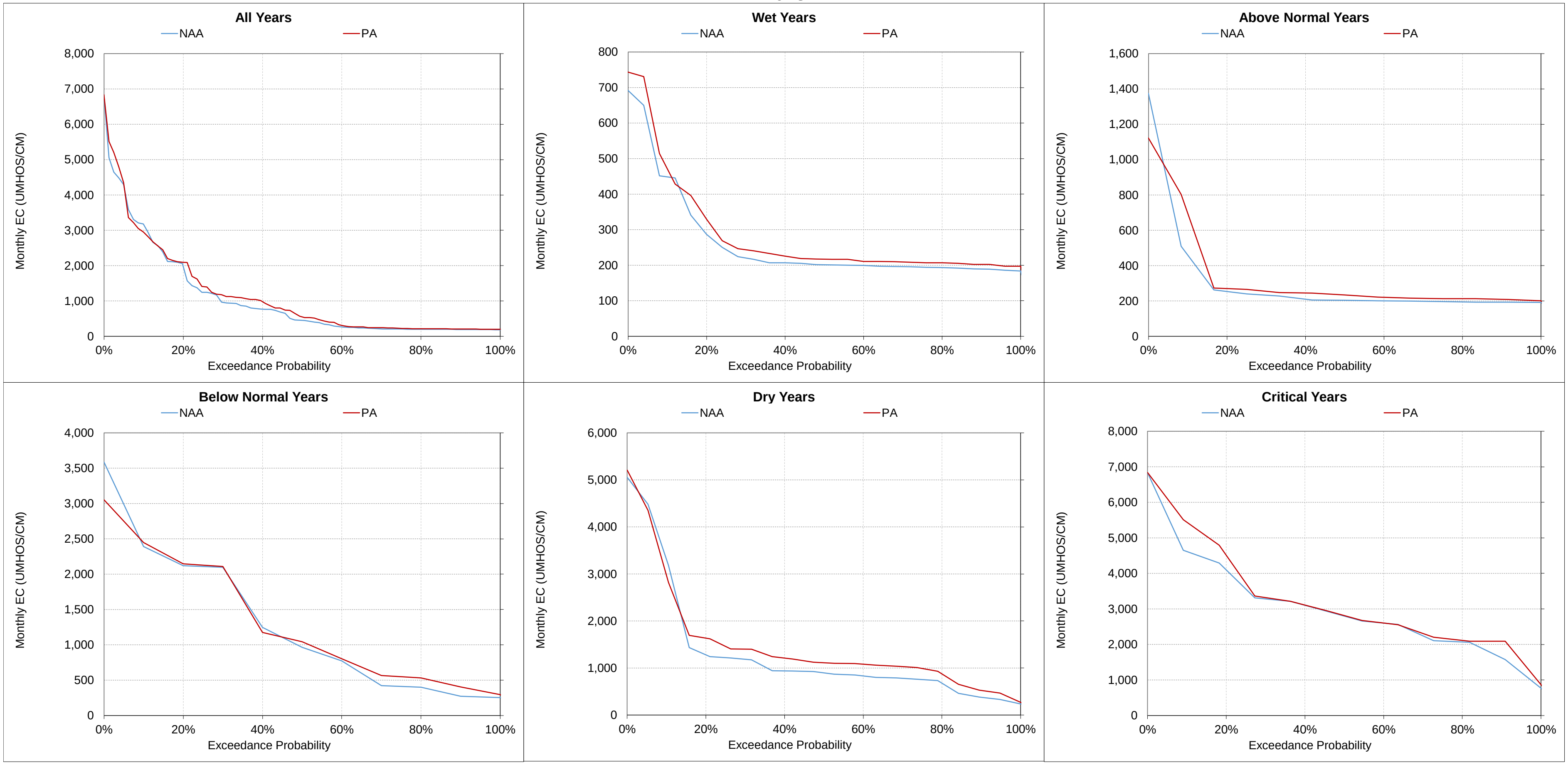
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-12. Chipps Island South Channel Salinity, Monthly EC February



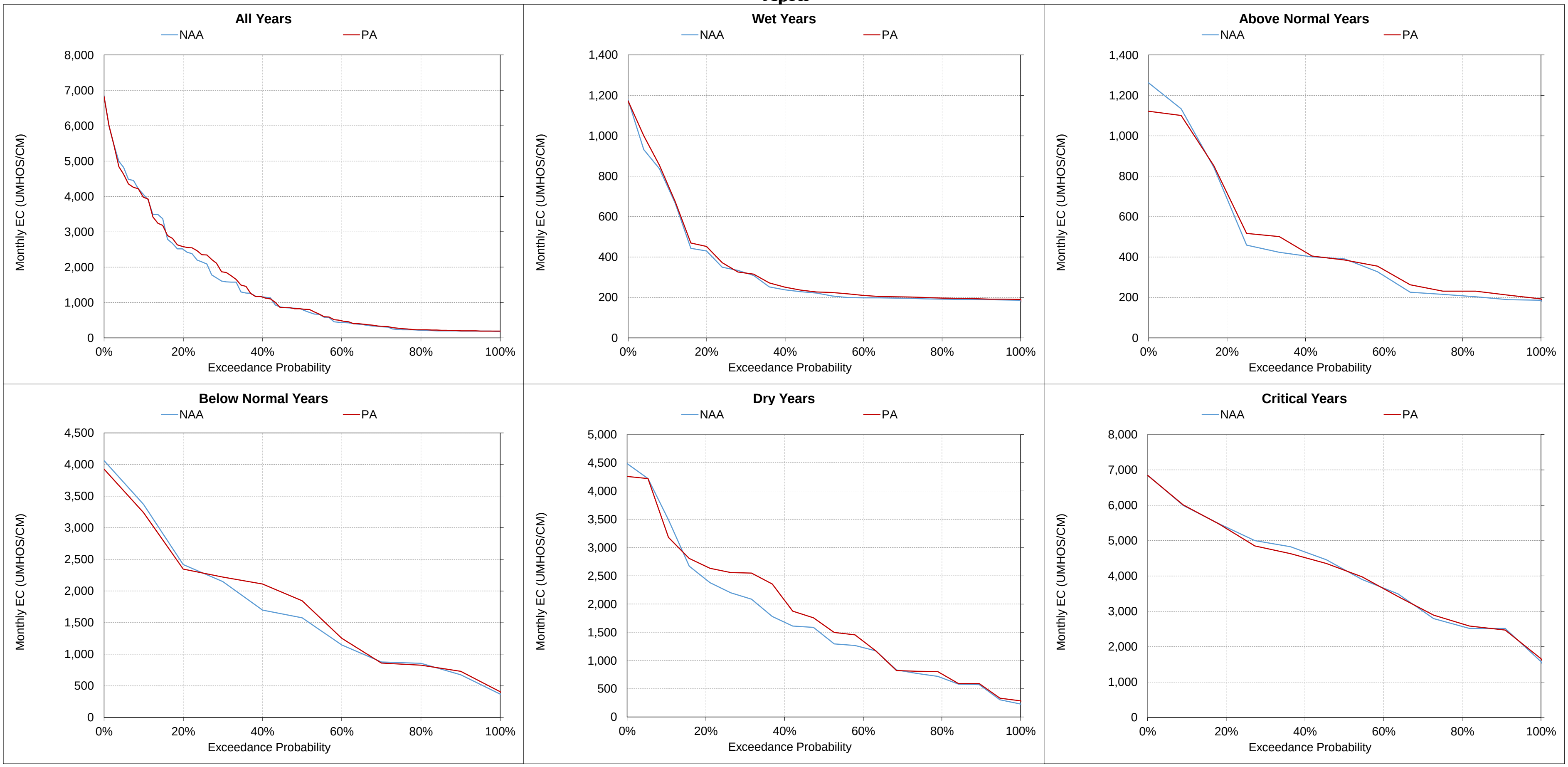
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-13. Chipps Island South Channel Salinity, Monthly EC
March



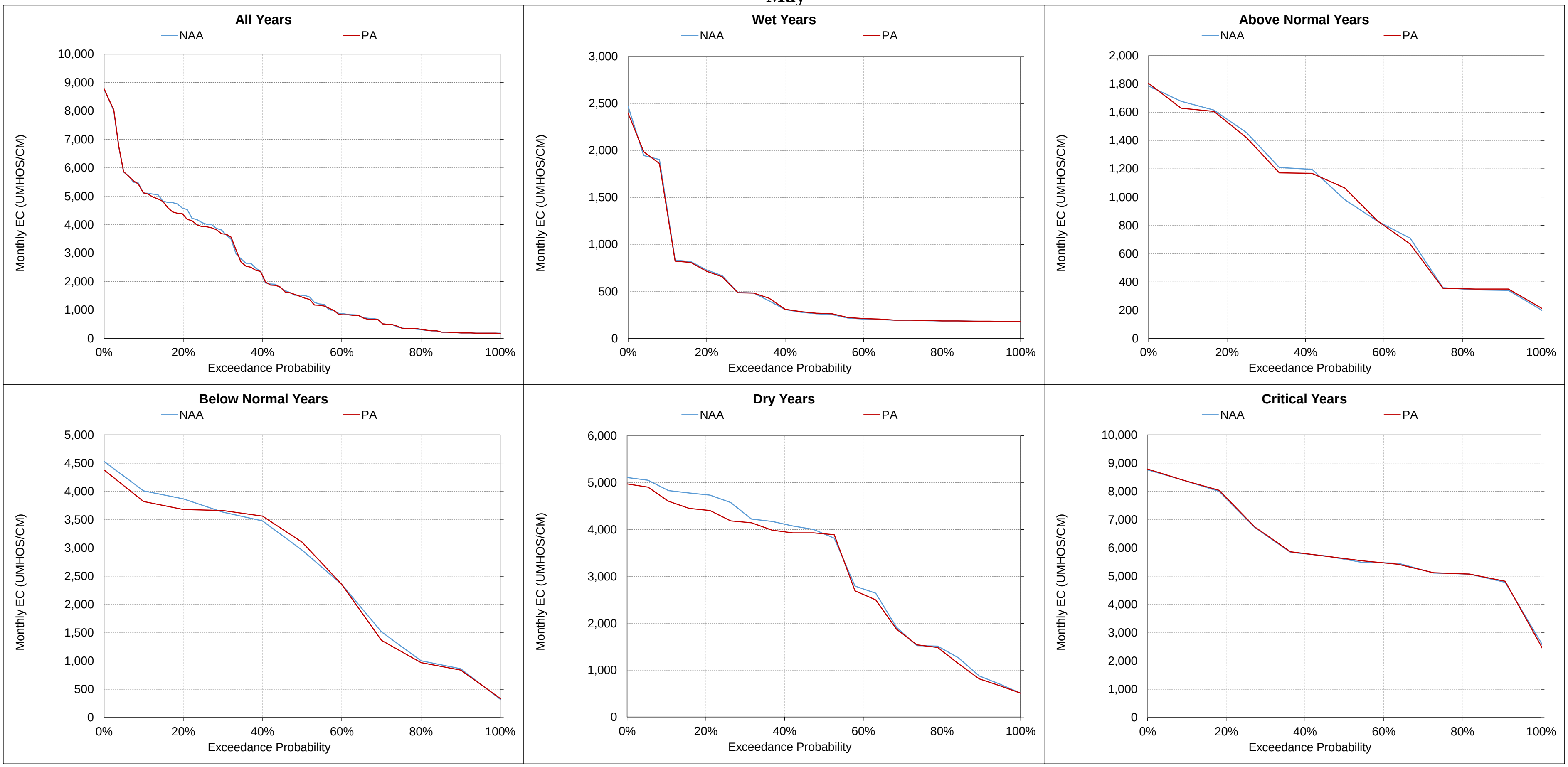
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-14. Chipps Island South Channel Salinity, Monthly EC
April



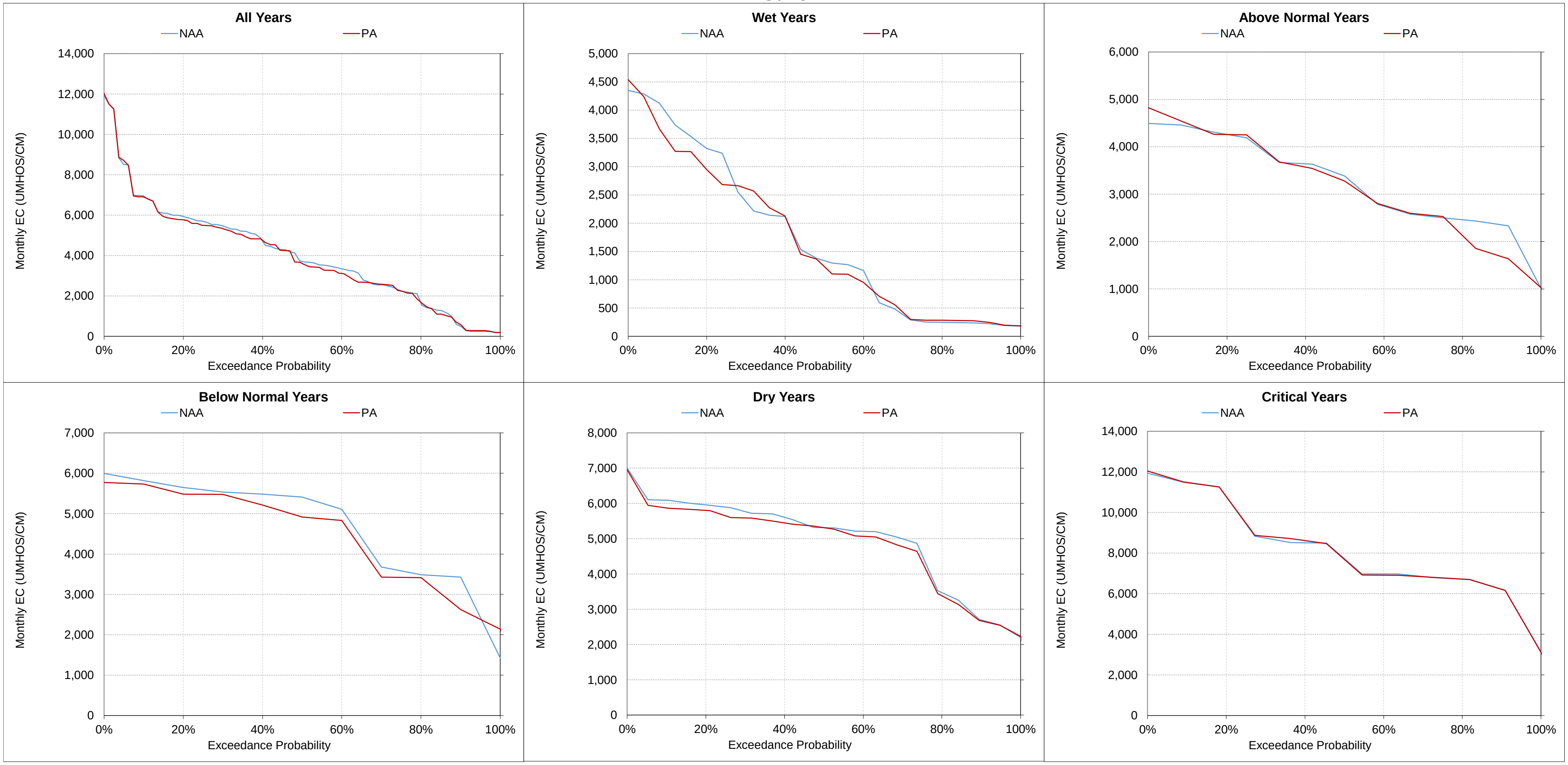
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-15. Chipps Island South Channel Salinity, Monthly EC
May



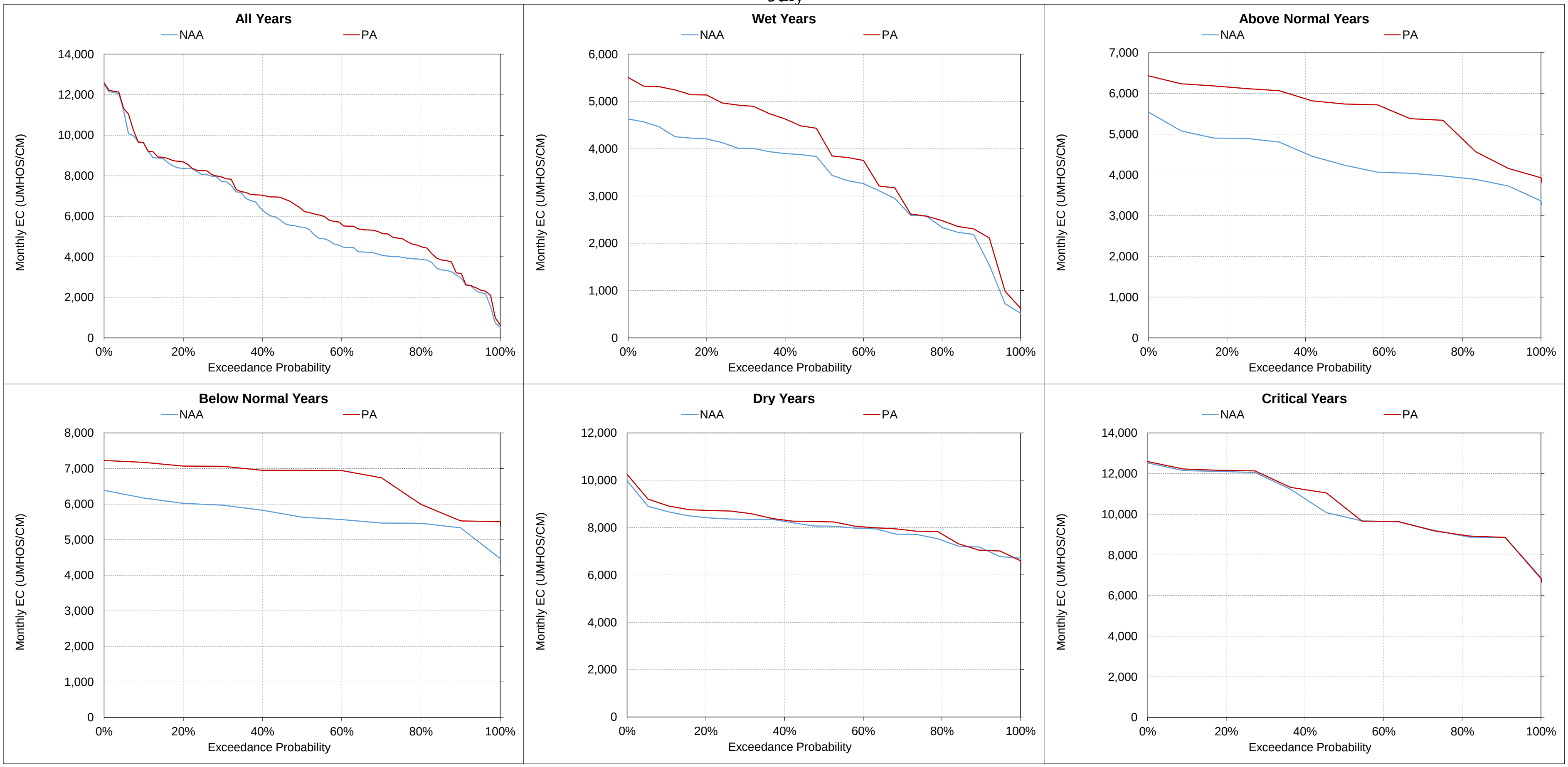
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-16. Chipps Island South Channel Salinity, Monthly EC
June



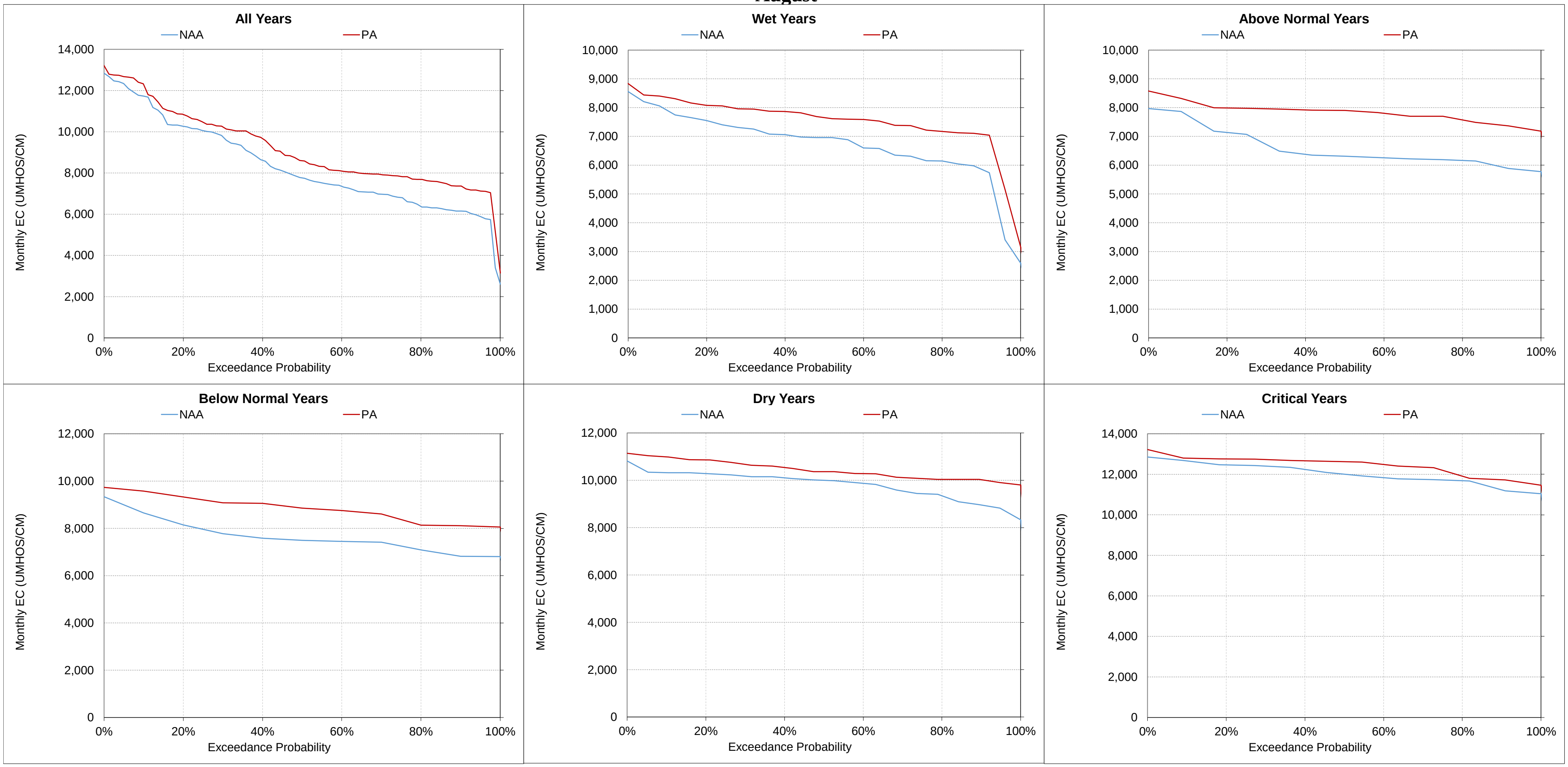
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-17. Chipps Island South Channel Salinity, Monthly EC
July



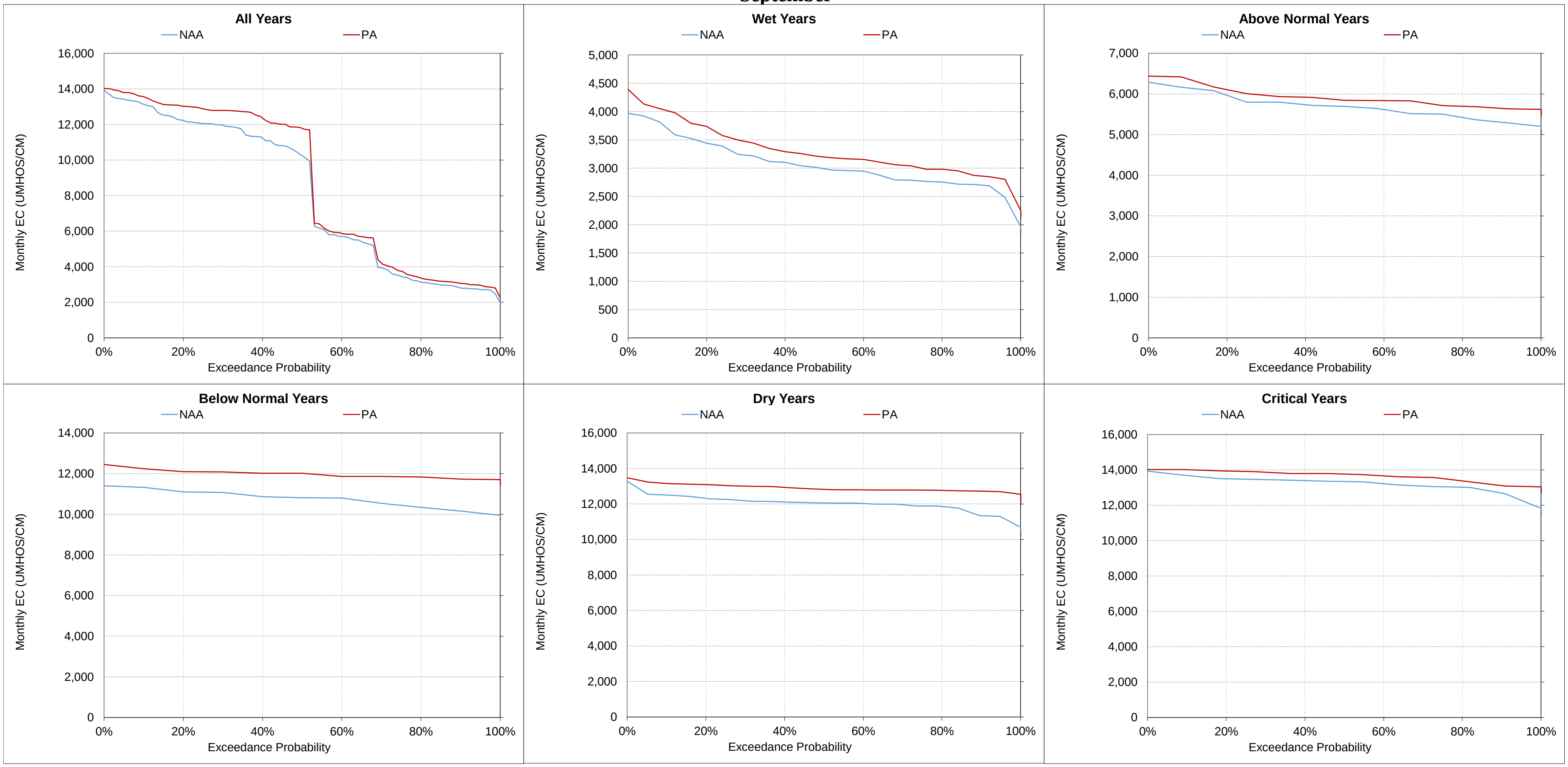
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-18. Chipps Island South Channel Salinity, Monthly EC
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-17-19. Chipps Island South Channel Salinity, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-18. Old River at Rock Slough Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	1,089	931	-158	-15%	1,313	905	-408	-31%	1,175	1,043	-132	-11%	972	845	-127	-13%	556	574	18	3%	391	538	146	37%
20%	970	800	-170	-18%	1,087	627	-460	-42%	981	759	-221	-23%	808	714	-94	-12%	486	531	45	9%	346	492	146	42%
30%	917	767	-150	-16%	952	557	-394	-41%	872	679	-194	-22%	680	574	-106	-16%	420	486	66	16%	317	433	116	37%
40%	847	709	-138	-16%	804	467	-337	-42%	719	545	-175	-24%	588	518	-70	-12%	384	451	67	17%	305	415	110	36%
50%	804	617	-187	-23%	689	436	-254	-37%	459	377	-83	-18%	532	477	-54	-10%	360	412	52	15%	296	379	83	28%
60%	305	346	41	13%	321	418	97	30%	374	320	-54	-14%	453	429	-24	-5%	339	396	56	17%	280	347	67	24%
70%	286	316	30	11%	259	402	143	55%	302	301	-1	0%	347	396	49	14%	308	378	70	23%	259	330	71	27%
80%	279	283	4	1%	239	371	133	56%	284	288	3	1%	316	372	56	18%	287	356	69	24%	244	313	68	28%
90%	265	264	-1	0%	232	311	79	34%	249	271	22	9%	289	316	27	9%	263	323	60	23%	233	290	56	24%
Long Term Full Simulation Period[b]	640	568	-72	-11%	681	520	-160	-24%	644	552	-92	-14%	567	539	-27	-5%	391	440	49	12%	304	401	97	32%
Water Year Types[c]																								
Wet (32%)	276	316	40	15%	244	386	142	58%	270	286	16	6%	431	424	-7	-2%	312	443	132	42%	271	396	126	46%
Above Normal (16%)	291	267	-24	-8%	350	346	-5	-1%	420	333	-87	-21%	564	486	-78	-14%	350	417	67	19%	278	493	215	78%
Below Normal (13%)	953	675	-277	-29%	858	469	-388	-45%	764	571	-193	-25%	631	617	-14	-2%	401	432	31	8%	299	373	74	25%
Dry (24%)	904	773	-131	-15%	988	551	-436	-44%	817	641	-176	-22%	611	556	-56	-9%	432	426	-6	-1%	317	356	39	12%
Critical (15%)	1,079	1,003	-76	-7%	1,310	995	-315	-24%	1,298	1,197	-101	-8%	730	748	18	2%	533	490	-44	-8%	387	409	22	6%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	386	492	106	27%	399	422	23	6%	319	370	51	16%	575	384	-191	-33%	732	606	-125	-17%	909	909	0	0%
20%	364	439	75	21%	376	397	21	5%	288	341	53	18%	445	349	-97	-22%	630	525	-106	-17%	831	802	-28	-3%
30%	346	412	66	19%	365	380	16	4%	277	318	42	15%	400	313	-87	-22%	582	469	-112	-19%	774	741	-33	-4%
40%	333	390	56	17%	357	364	7	2%	273	303	30	11%	350	300	-50	-14%	535	378	-157	-29%	717	601	-117	-16%
50%	322	369	47	15%	335	351	15	4%	265	293	28	10%	338	293	-46	-14%	472	326	-146	-31%	665	514	-151	-23%
60%	310	344	34	11%	321	342	21	7%	259	288	29	11%	307	286	-21	-7%	436	304	-132	-30%	610	351	-259	-42%
70%	301	324	24	8%	303	327	24	8%	251	283	32	13%	276	277	1	0%	414	286	-128	-31%	569	329	-240	-42%
80%	287	294	8	3%	283	301	18	6%	242	276	34	14%	257	271	14	5%	369	276	-93	-25%	535	323	-212	-40%
90%	254	240	-14	-5%	218	207	-12	-5%	231	262	31	13%	240	255	15	6%	338	263	-75	-22%	485	307	-178	-37%
Long Term Full Simulation Period[b]	323	377	54	17%	326	344	17	5%	278	313	35	13%	374	325	-49	-13%	511	404	-106	-21%	675	554	-121	-18%
Water Year Types[c]																								
Wet (32%)	291	329	39	13%	294	300	6	2%	246	299	53	21%	266	275	9	3%	387	289	-99	-25%	550	315	-235	-43%
Above Normal (16%)	335	482	146	44%	362	403	42	11%	258	302	44	17%	295	278	-18	-6%	389	281	-108	-28%	508	341	-167	-33%
Below Normal (13%)	344	378	35	10%	361	363	2	1%	274	294	21	8%	377	284	-93	-25%	497	333	-164	-33%	787	557	-231	-29%
Dry (24%)	325	361	36	11%	315	337	21	7%	270	293	23	9%	464	336	-129	-28%	631	488	-144	-23%	772	763	-10	-1%
Critical (15%)	355	390	35	10%	345	367	22	6%	388	408	20	5%	541	506	-35	-6%	721	716	-6	-1%	859	950	91	11%

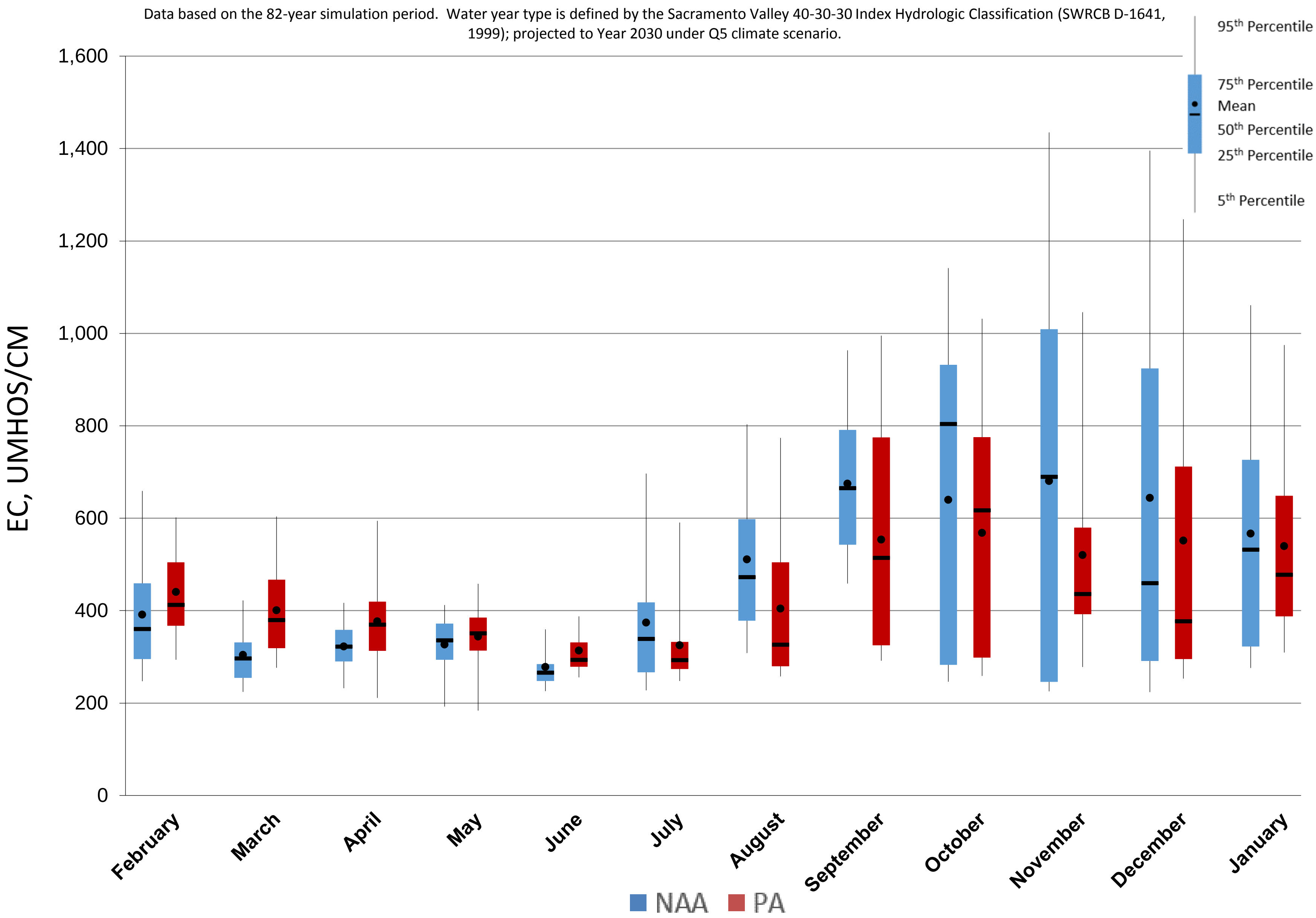
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-1. Monthly EC Ranges For Old River at Rock Slough Salinity, All Years



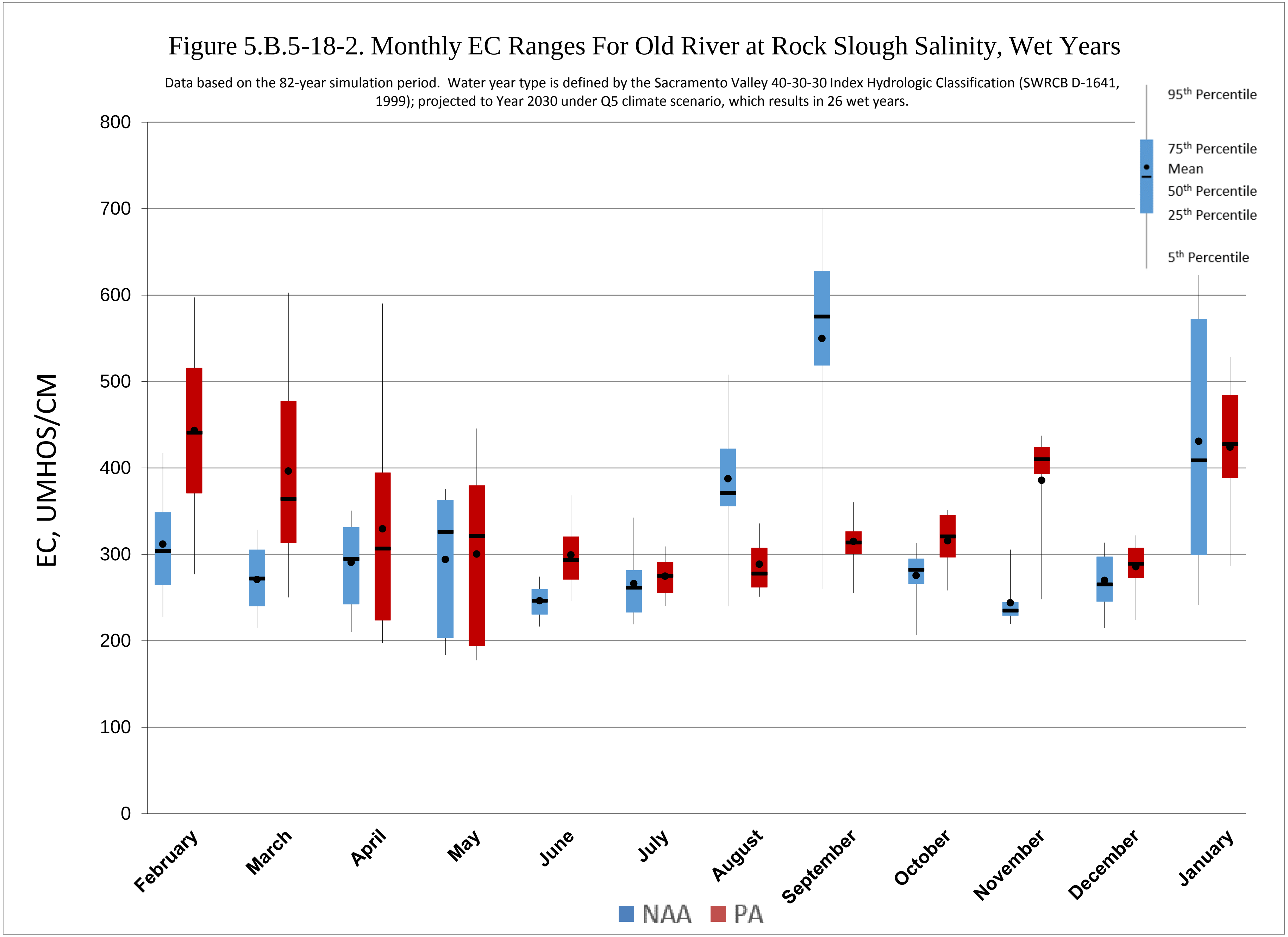
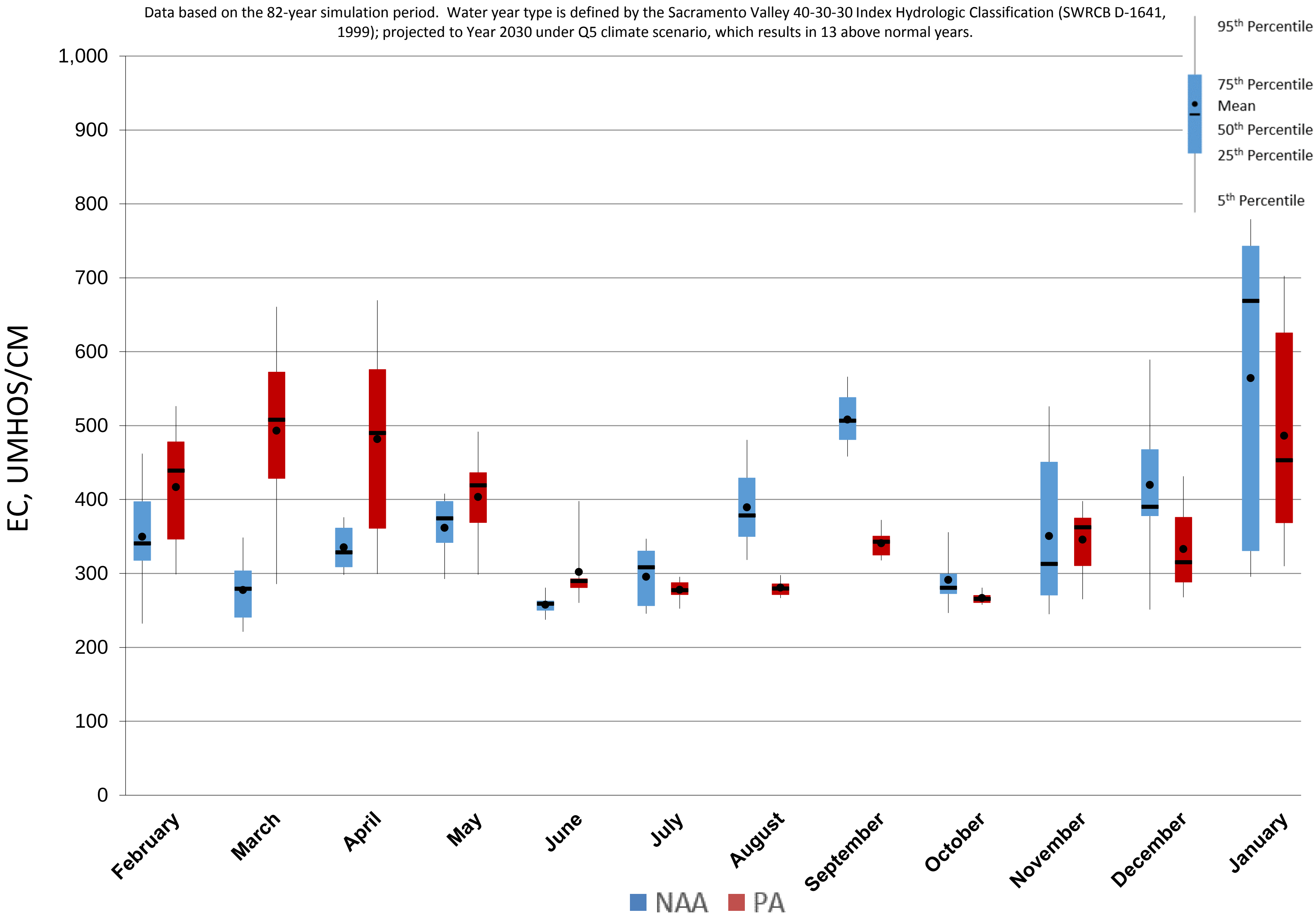


Figure 5.B.5-18-2. Monthly EC Ranges For Old River at Rock Slough Salinity, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
800
700
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-18-3. Monthly EC Ranges For Old River at Rock Slough Salinity, Above Normal Years



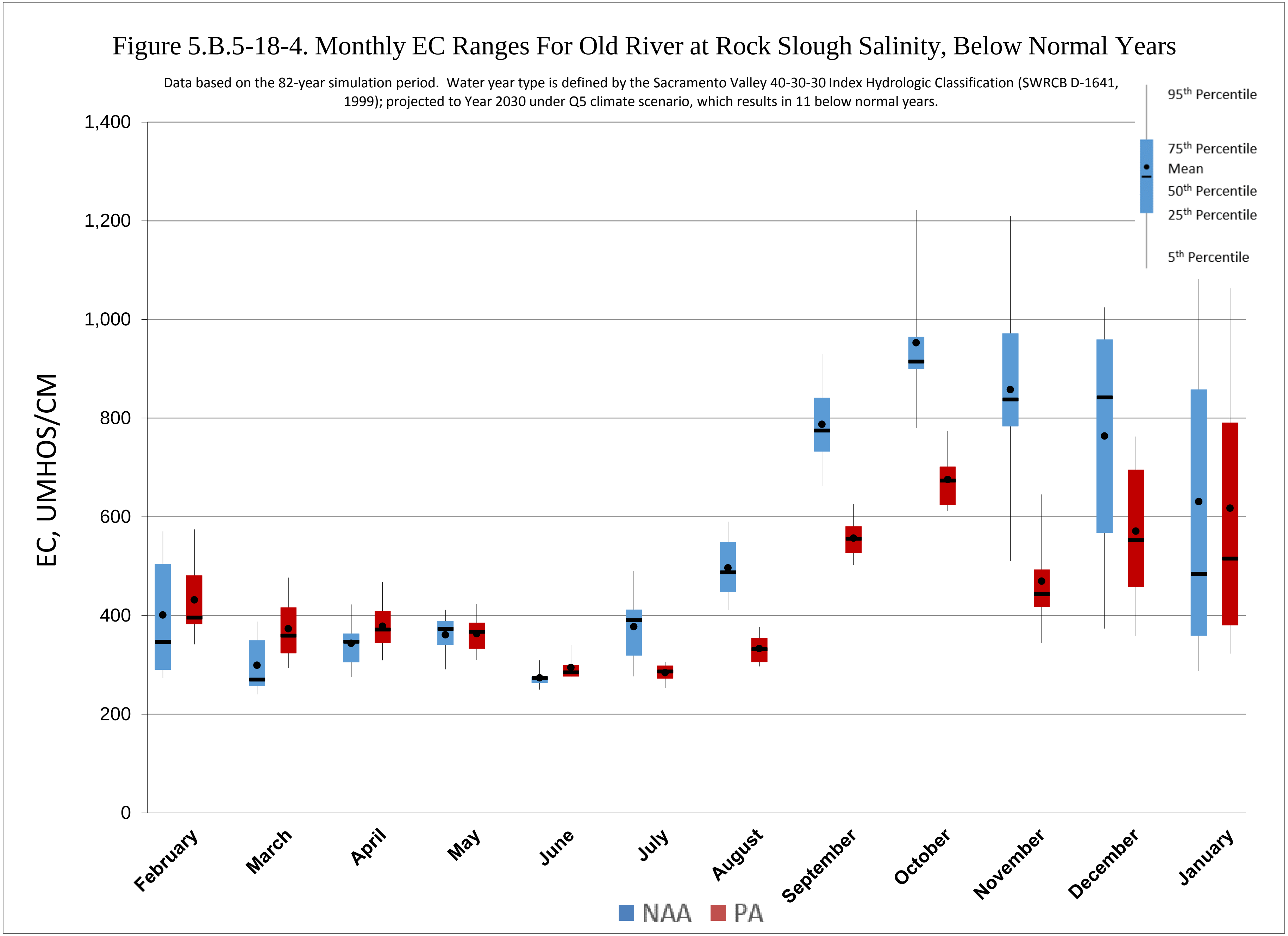


Figure 5.B.5-18-4. Monthly EC Ranges For Old River at Rock Slough Salinity, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
1,400
1,200
1,000
800
600
400
200
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

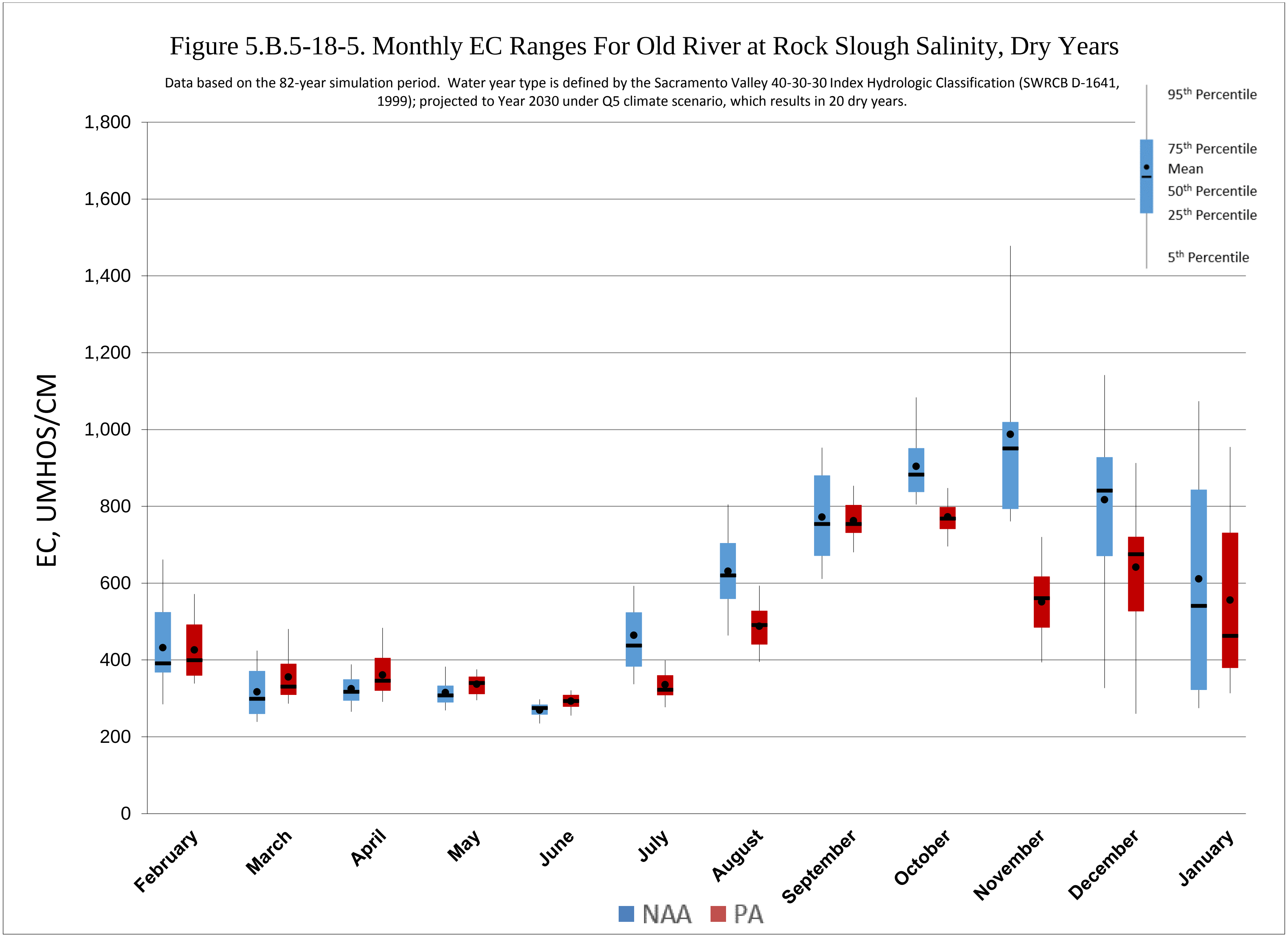


Figure 5.B.5-18-5. Monthly EC Ranges For Old River at Rock Slough Salinity, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

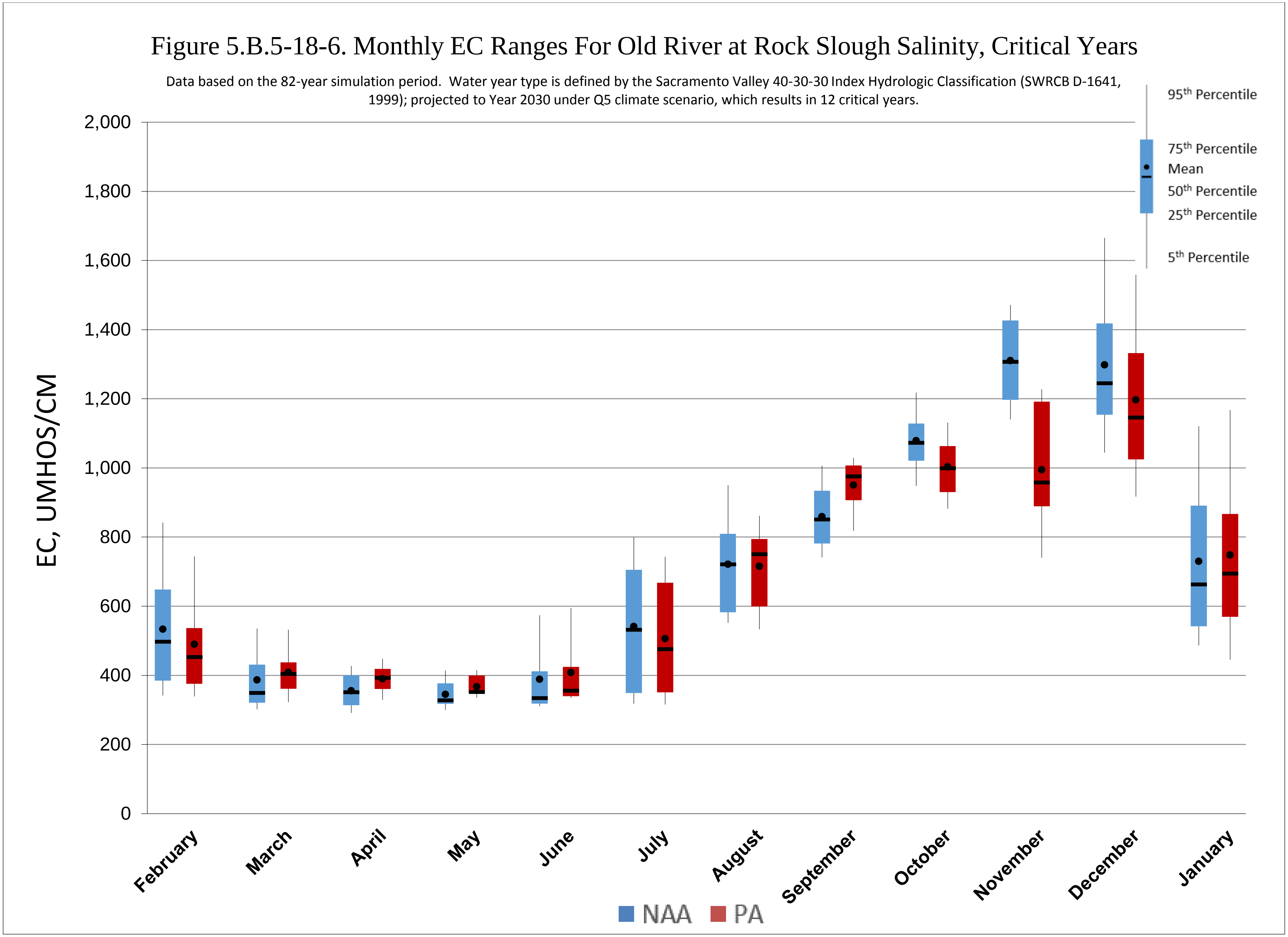
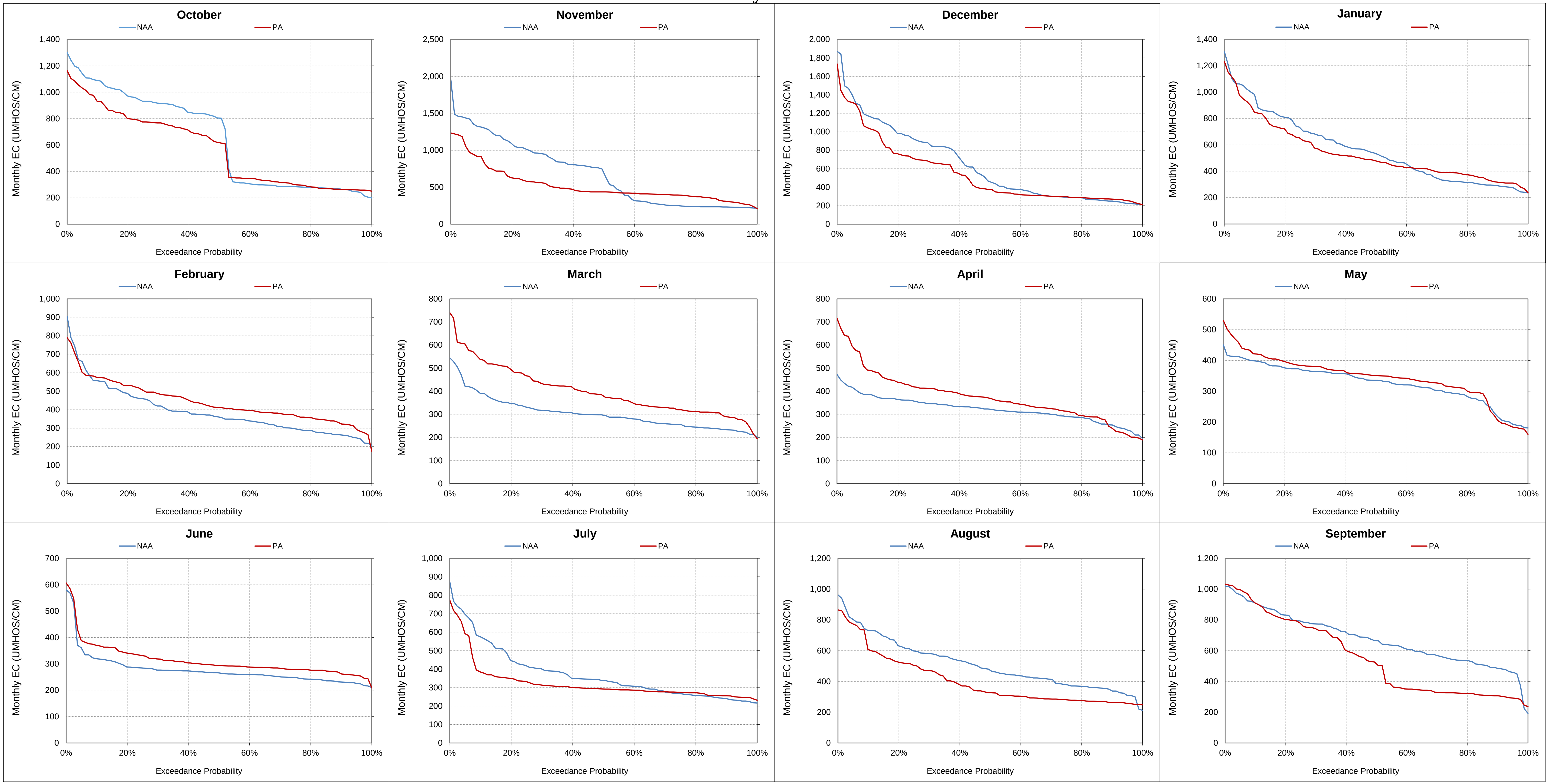


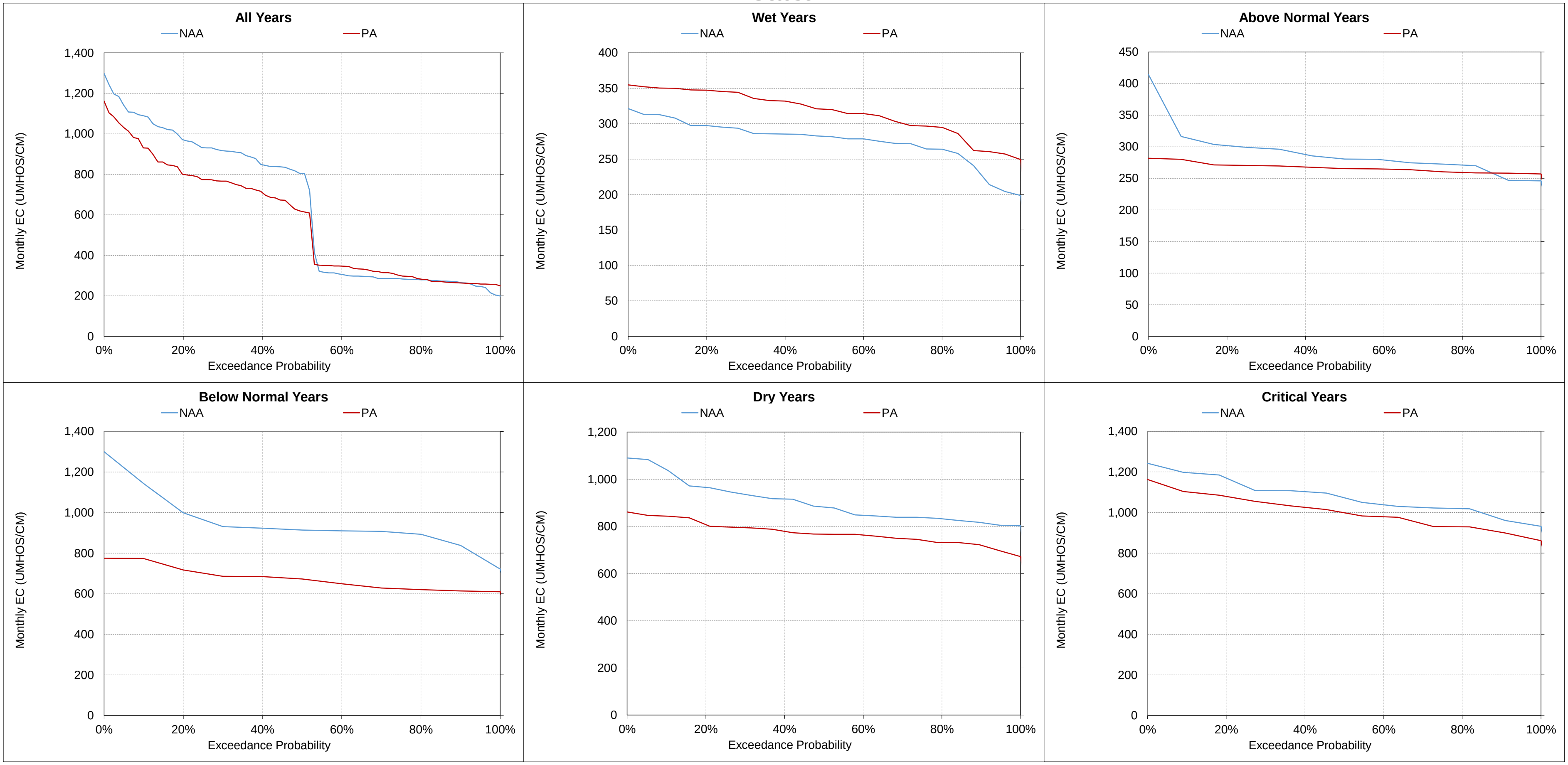
Figure 5.B.5-18-6. Monthly EC Ranges For Old River at Rock Slough Salinity, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
EC, UMHOS/CM
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-18-7. Old River at Rock Slough Salinity, Monthly EC Probability of Exceedance



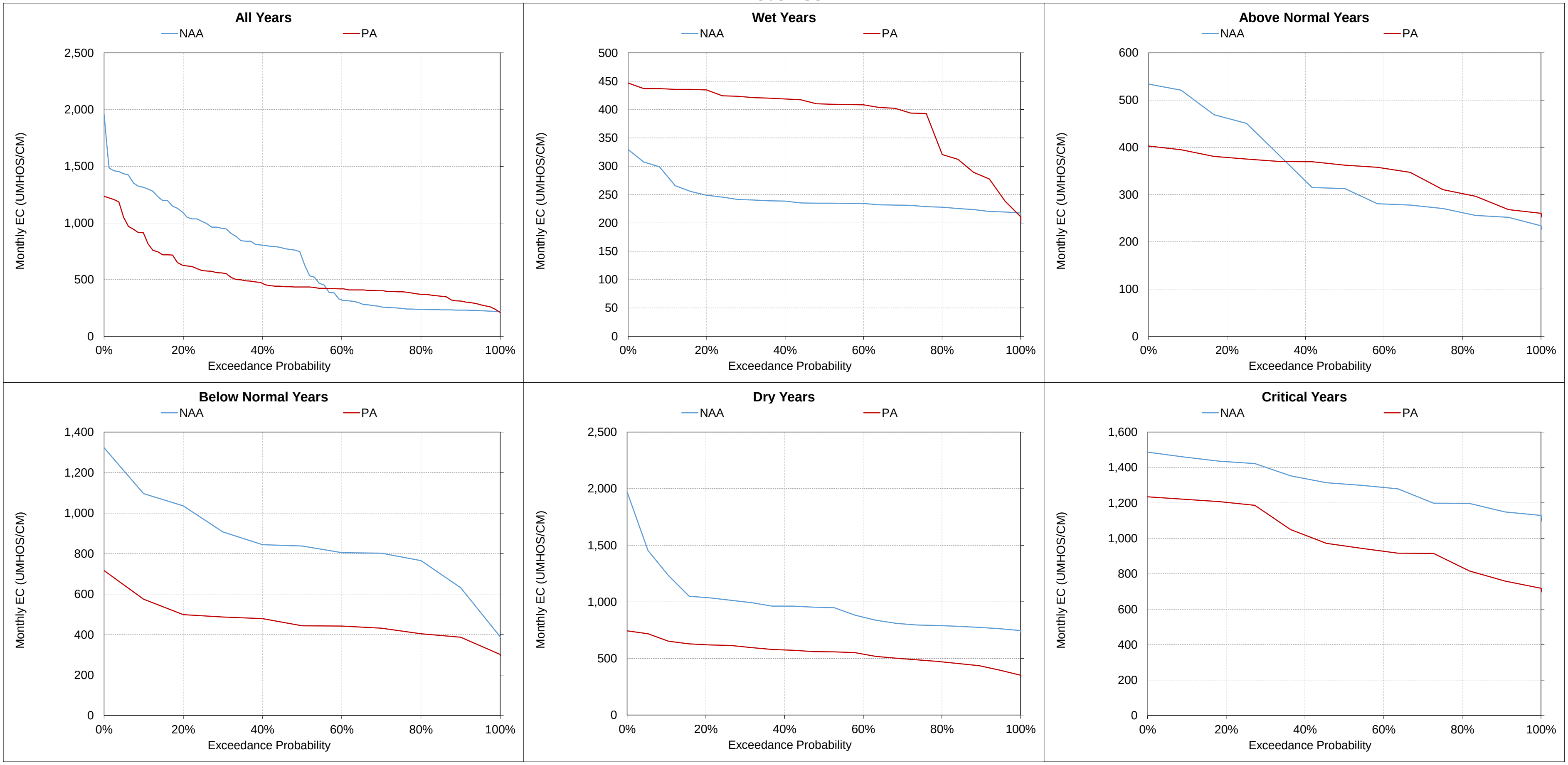
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-8. Old River at Rock Slough Salinity, Monthly EC October



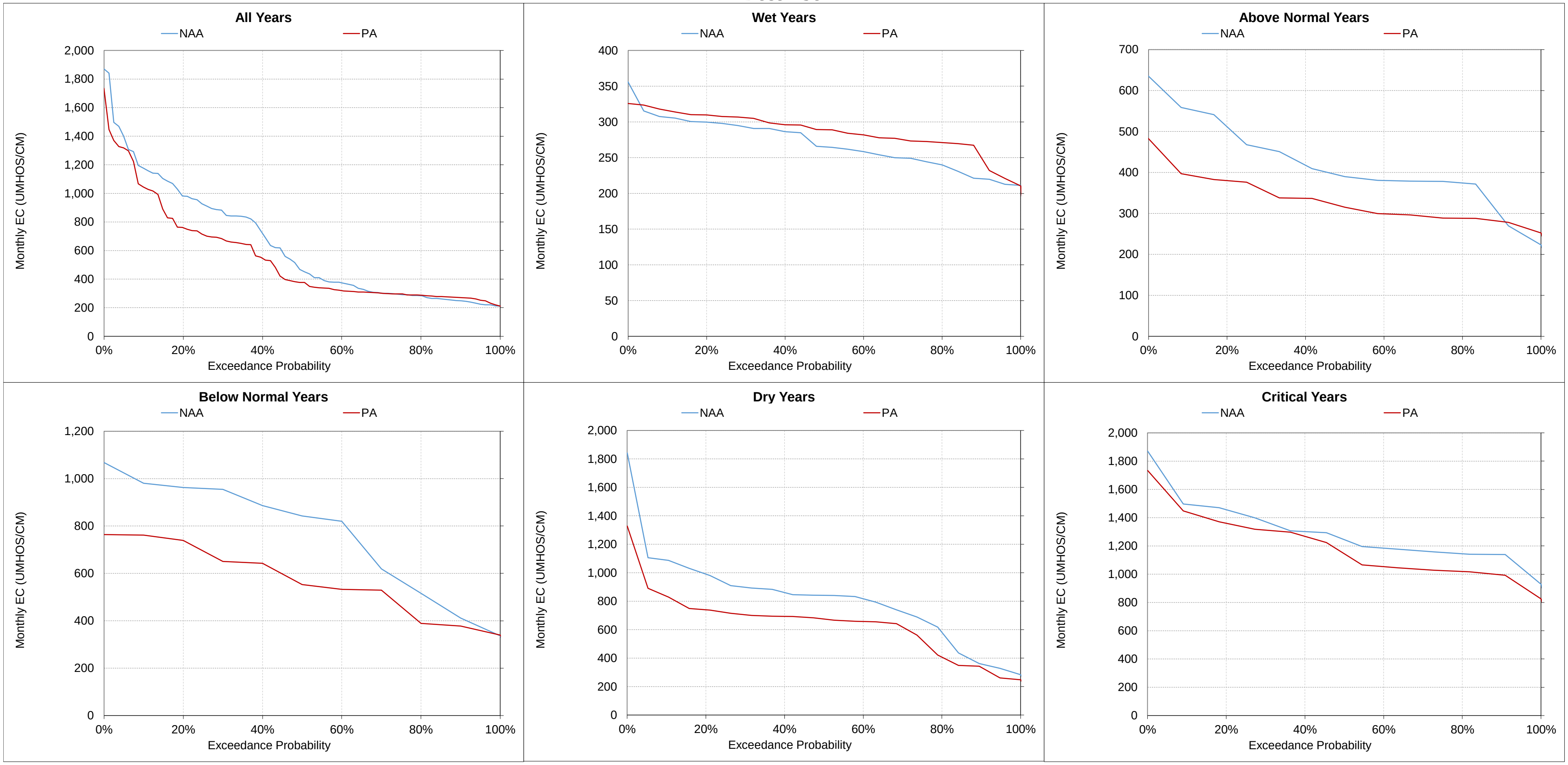
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-9. Old River at Rock Slough Salinity, Monthly EC
November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-10. Old River at Rock Slough Salinity, Monthly EC December



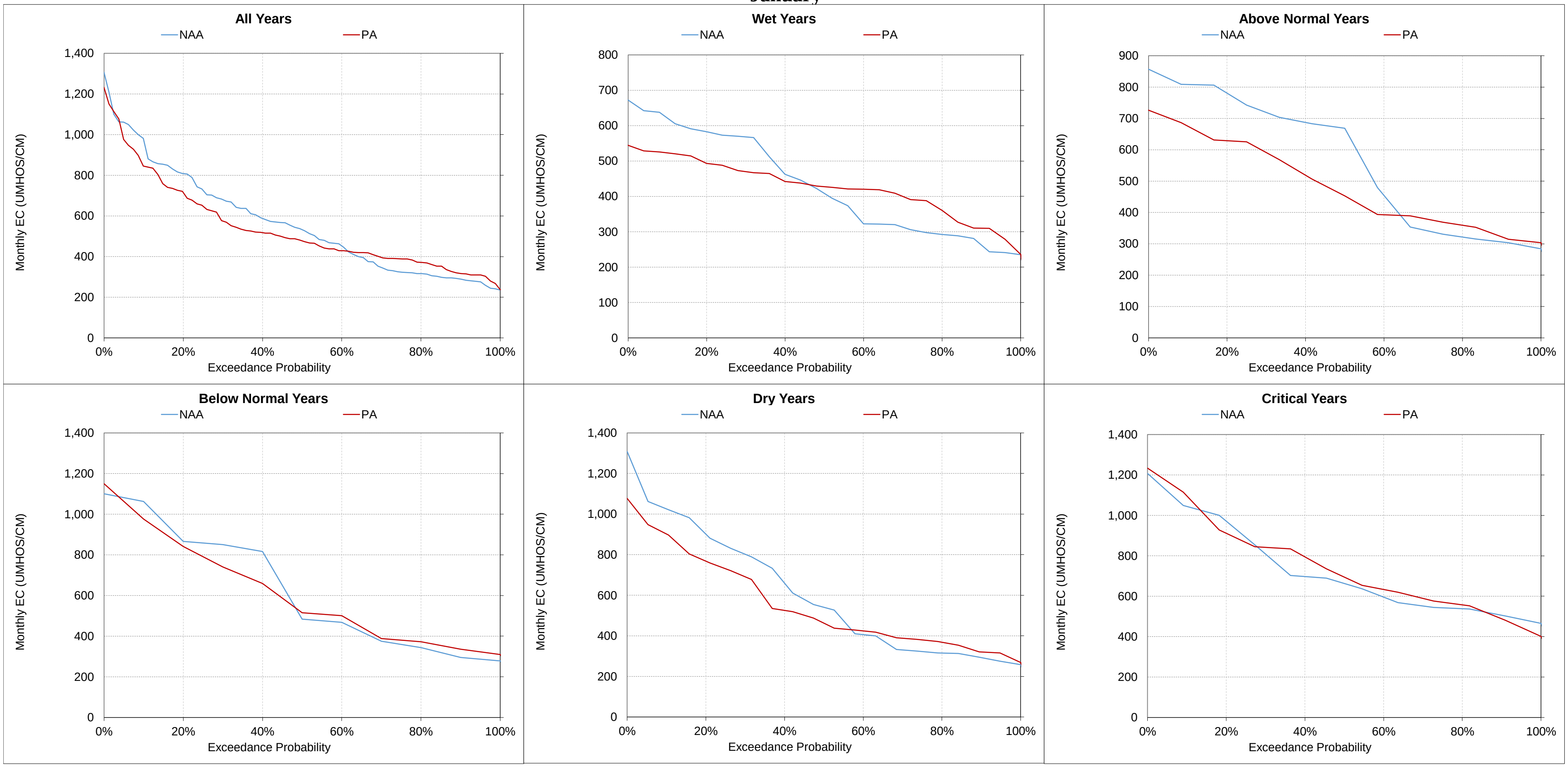
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

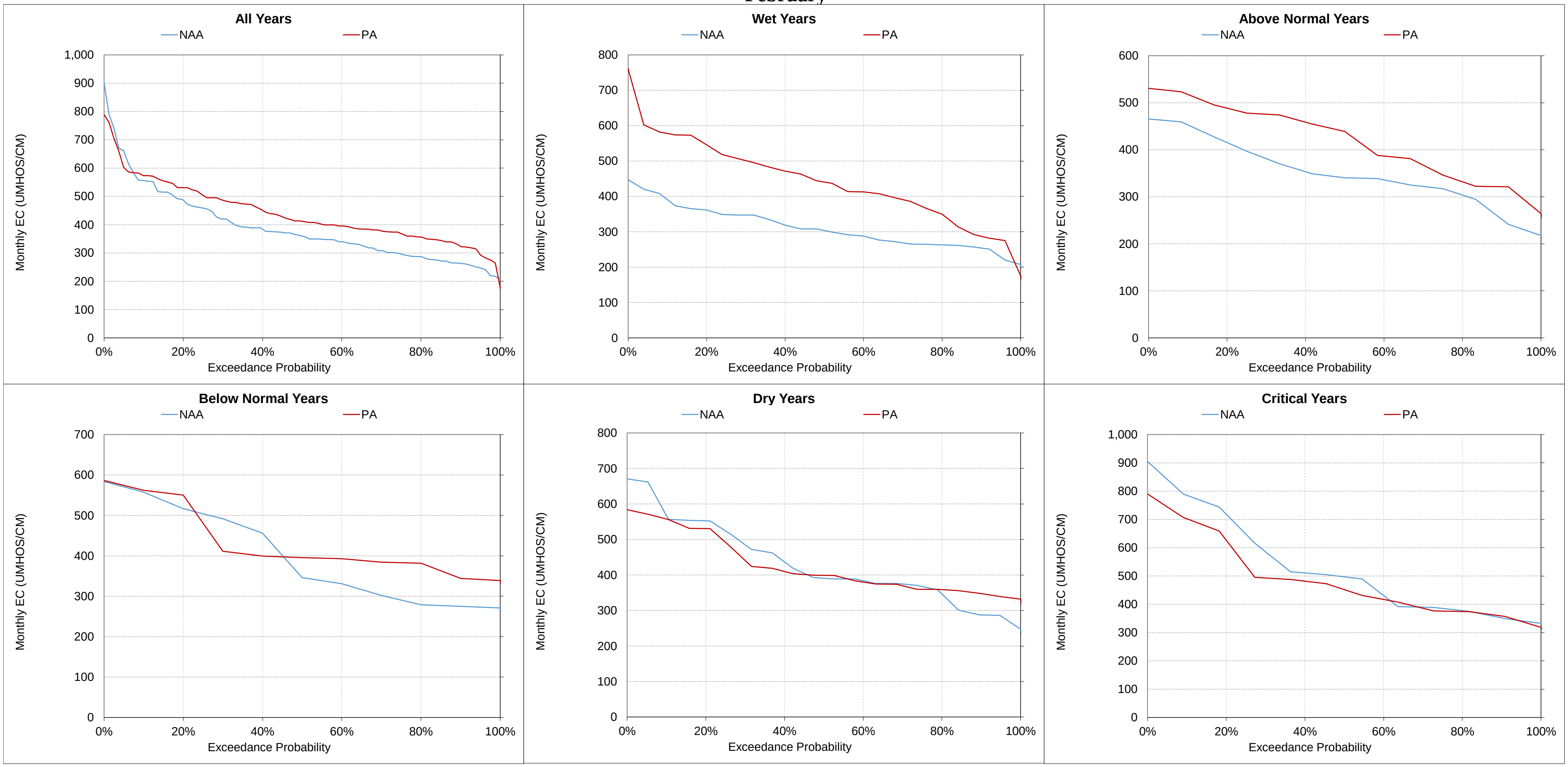
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-11. Old River at Rock Slough Salinity, Monthly EC
January



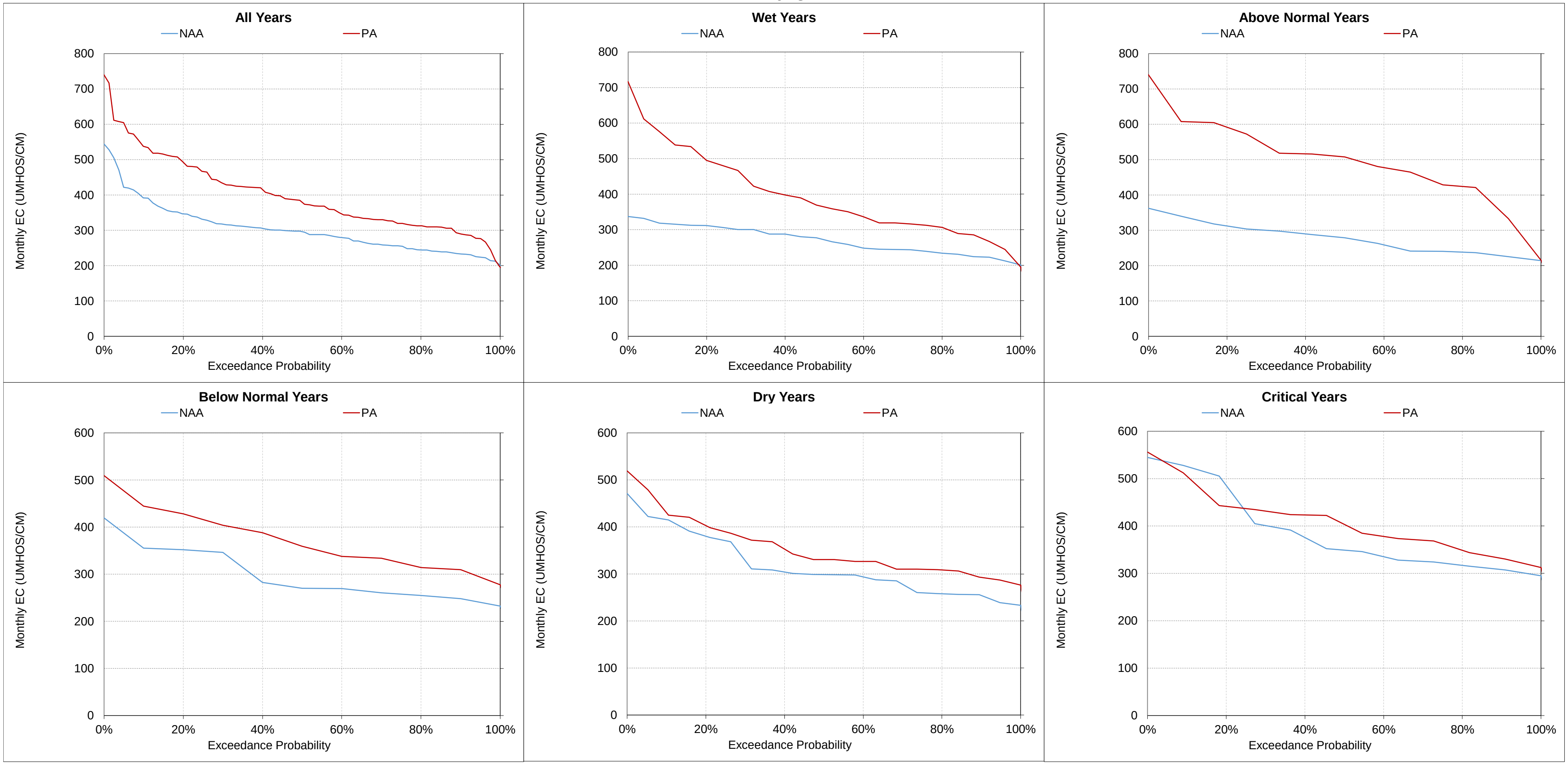
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-12. Old River at Rock Slough Salinity, Monthly EC
February



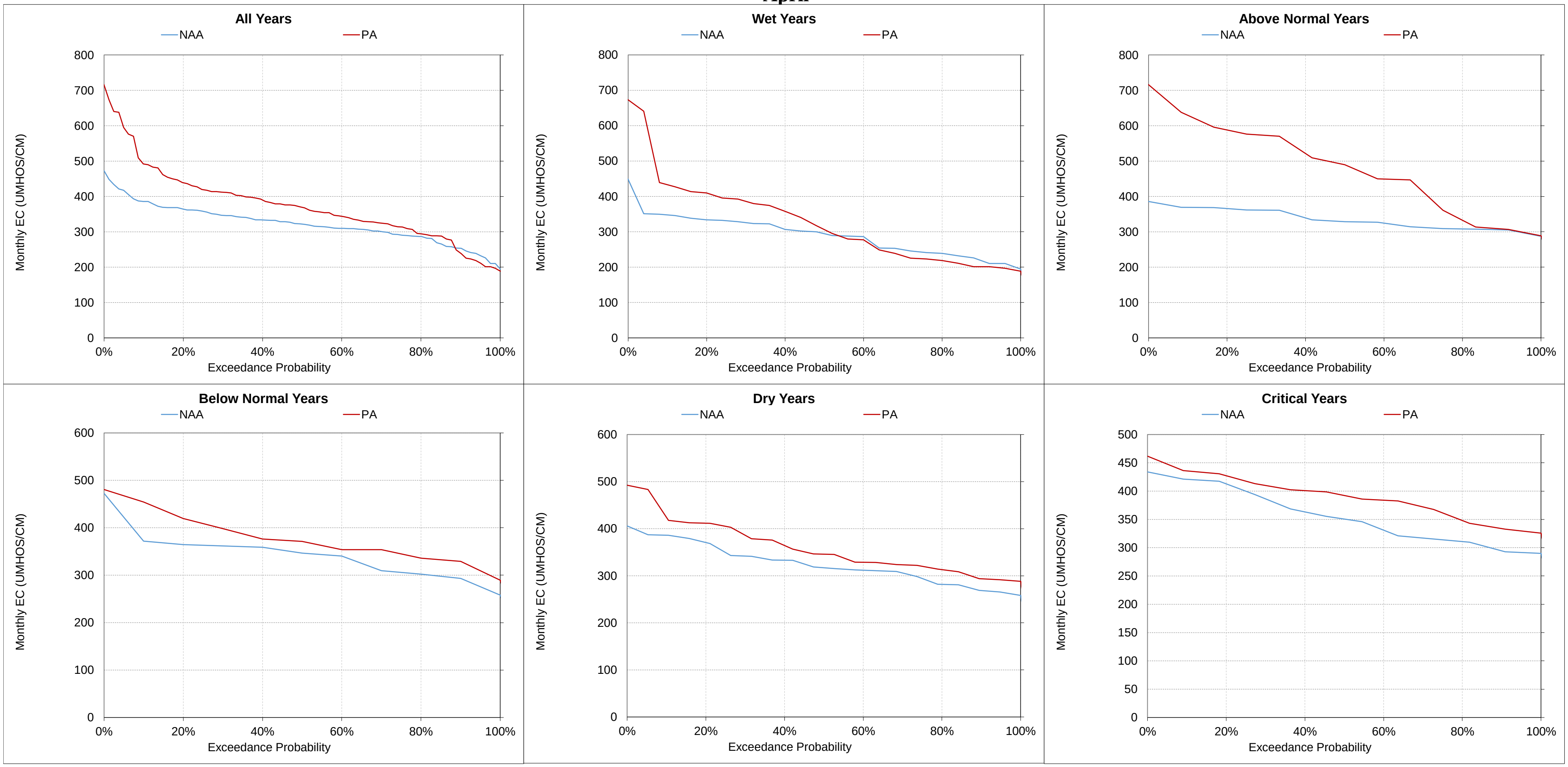
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-13. Old River at Rock Slough Salinity, Monthly EC March



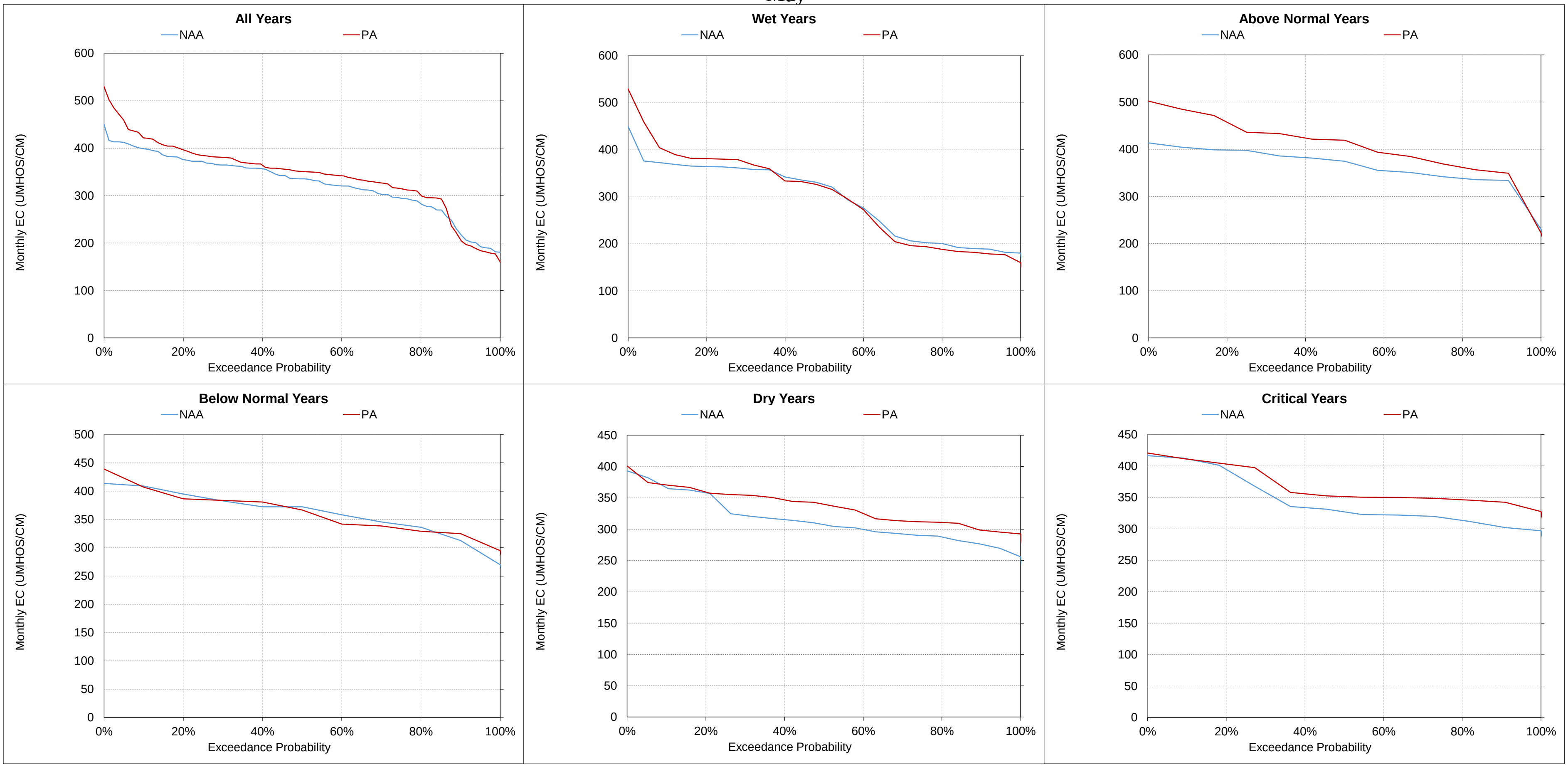
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-14. Old River at Rock Slough Salinity, Monthly EC
April



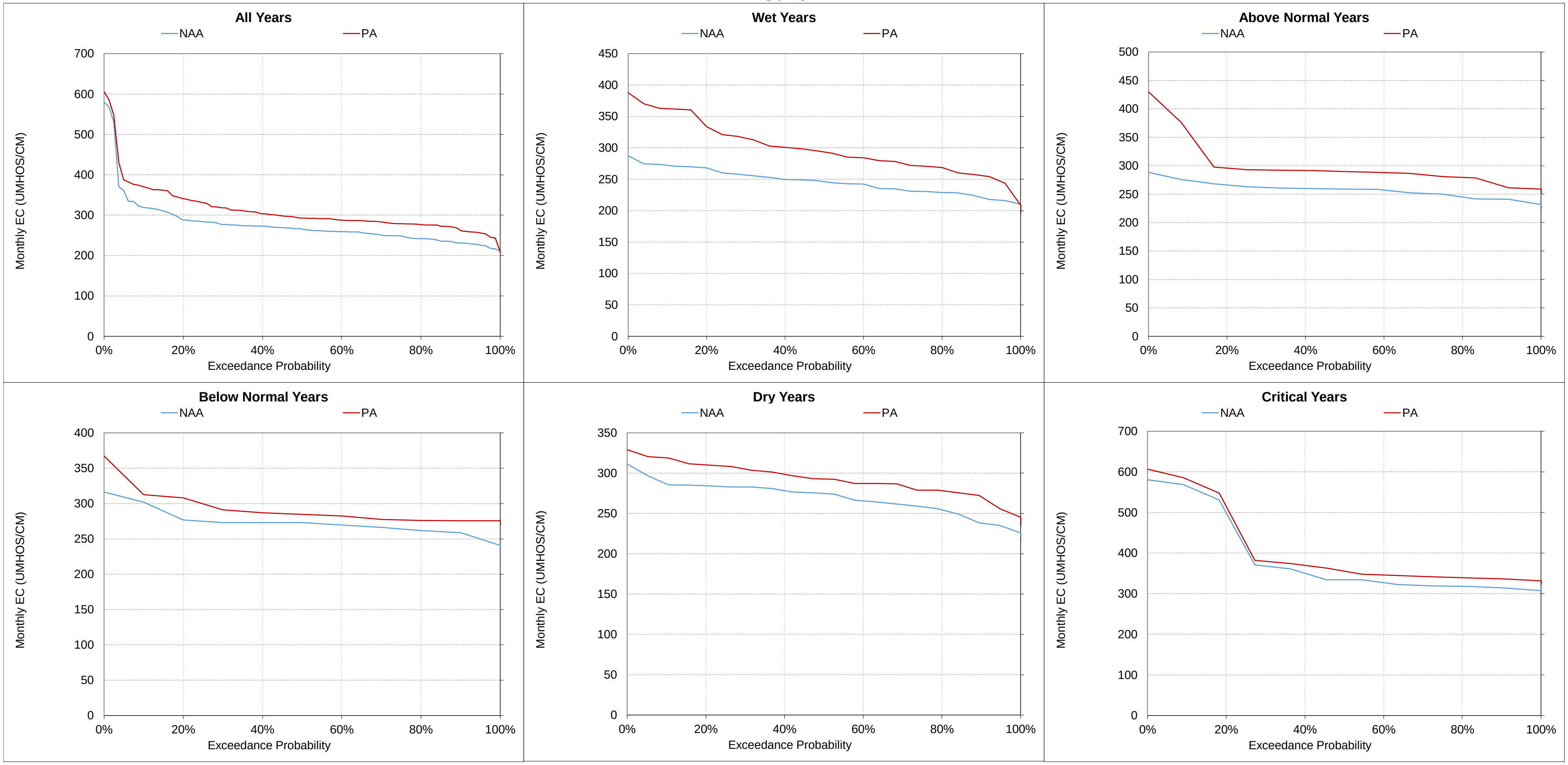
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-15. Old River at Rock Slough Salinity, Monthly EC
May



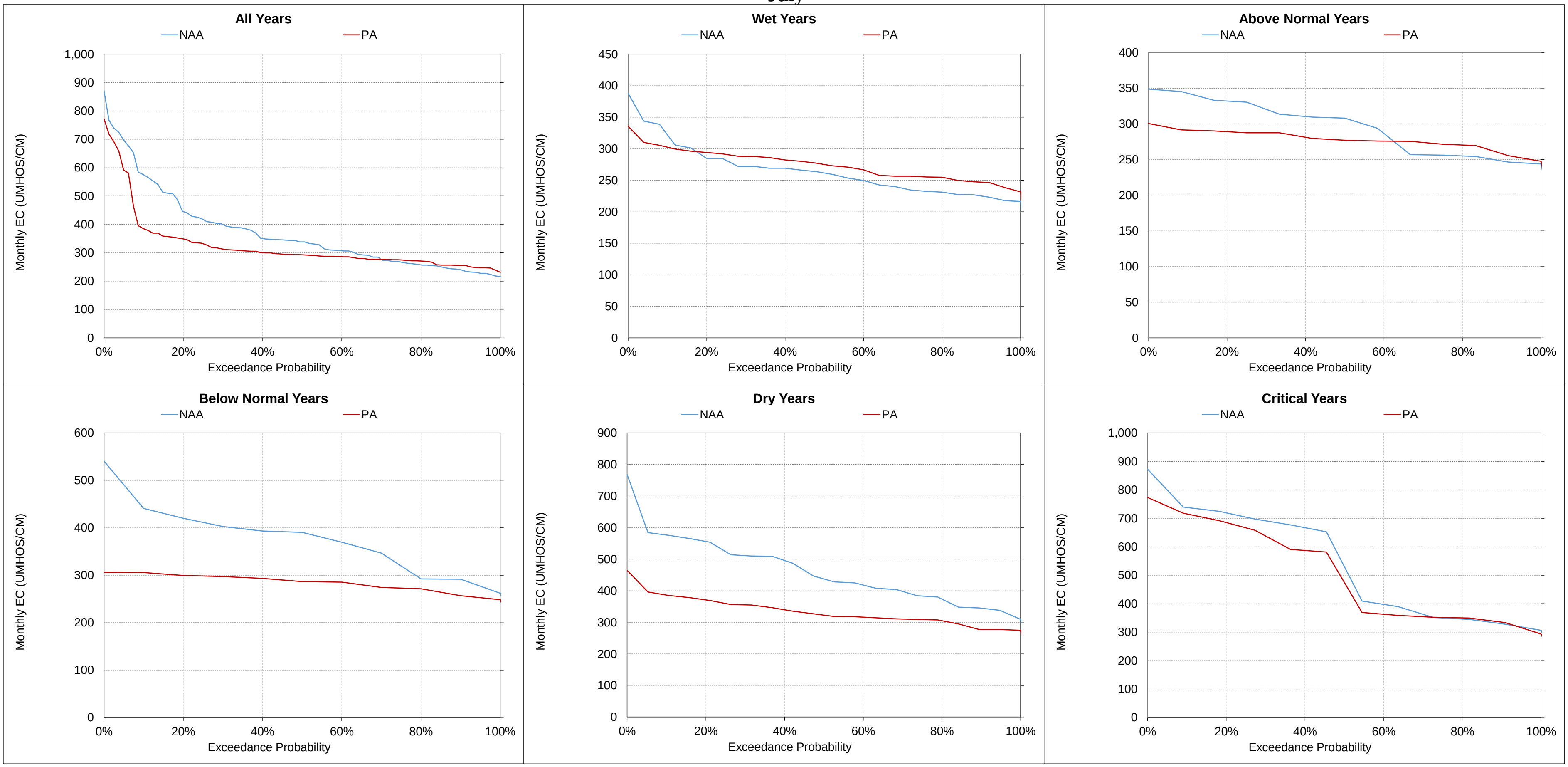
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-16. Old River at Rock Slough Salinity, Monthly EC
June



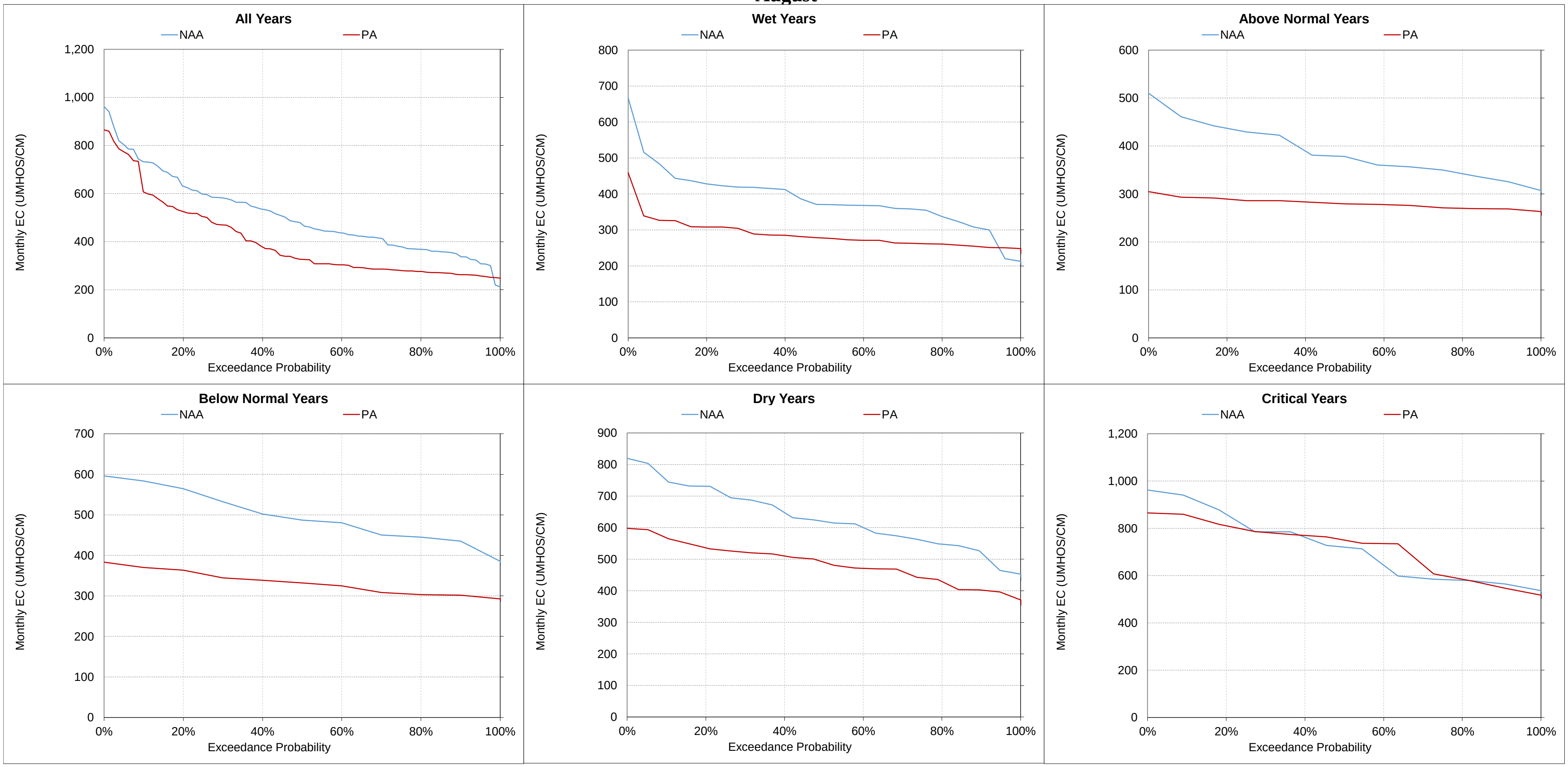
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-17. Old River at Rock Slough Salinity, Monthly EC
July



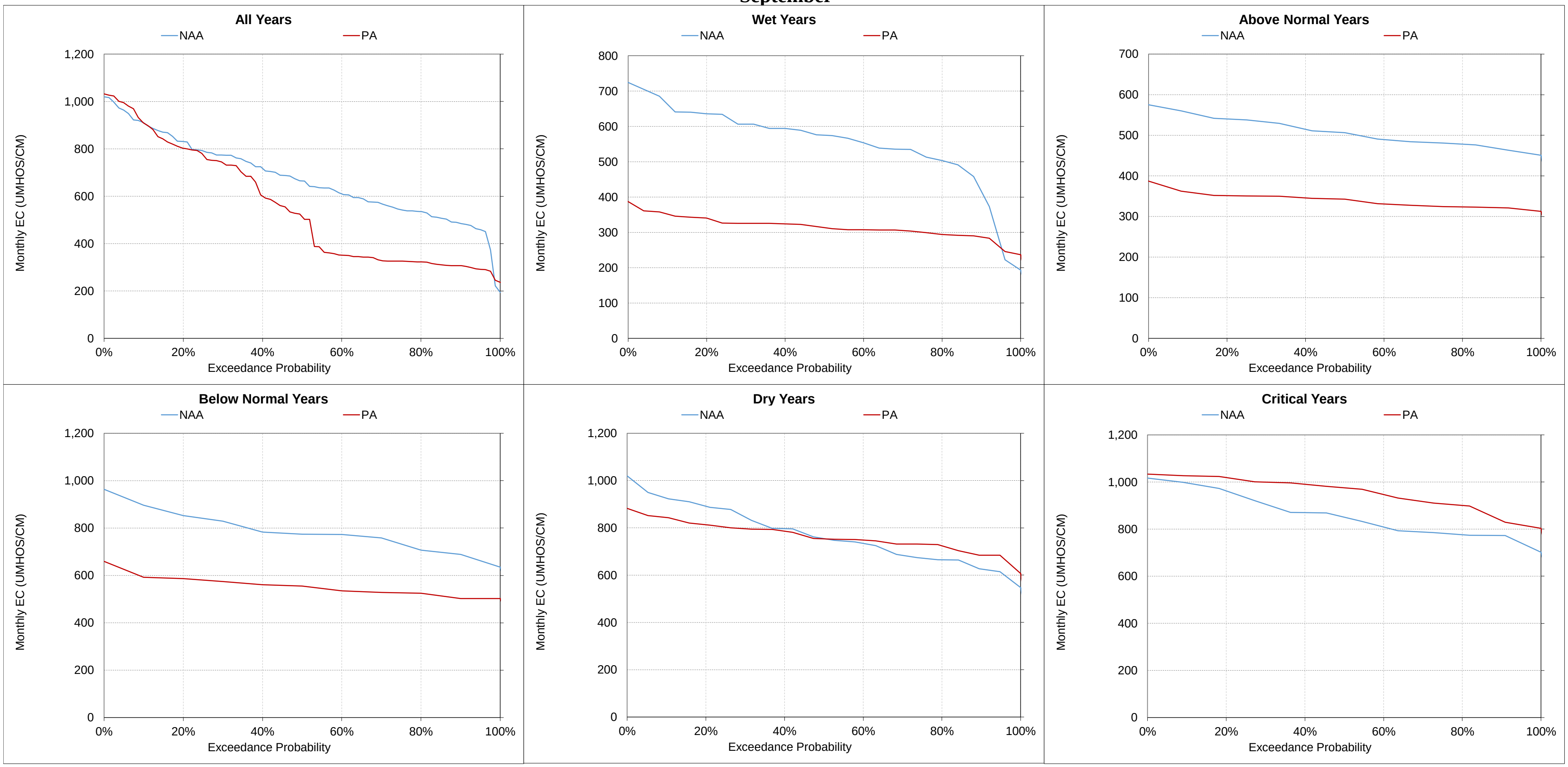
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-18. Old River at Rock Slough Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-18-19. Old River at Rock Slough Salinity, Monthly EC
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-19. Jones Pumping Plant South Delta Exports Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	732	677	-55	-8%	882	694	-189	-21%	881	822	-59	-7%	841	849	7	1%	837	818	-18	-2%	856	829	-27	-3%
20%	695	629	-66	-9%	742	583	-159	-21%	824	695	-129	-16%	770	785	14	2%	729	771	42	6%	712	768	56	8%
30%	668	601	-67	-10%	694	546	-148	-21%	738	659	-79	-11%	733	753	20	3%	689	724	35	5%	643	717	74	12%
40%	635	564	-71	-11%	634	519	-115	-18%	713	599	-114	-16%	681	723	41	6%	659	682	24	4%	598	675	78	13%
50%	602	522	-80	-13%	574	499	-75	-13%	549	538	-11	-2%	651	679	28	4%	615	643	28	5%	550	639	90	16%
60%	405	478	73	18%	423	478	55	13%	504	505	1	0%	617	628	11	2%	548	619	72	13%	445	614	169	38%
70%	385	431	46	12%	374	447	73	20%	466	485	20	4%	585	600	15	3%	496	581	85	17%	375	535	161	43%
80%	372	409	37	10%	352	383	31	9%	440	475	35	8%	536	561	26	5%	424	485	61	14%	323	401	78	24%
90%	359	363	4	1%	343	366	23	7%	423	452	28	7%	456	478	21	5%	320	346	25	8%	291	321	30	10%
Long Term																								
Full Simulation Period[b]	536	523	-12	-2%	563	507	-56	-10%	622	586	-36	-6%	649	666	17	3%	590	629	40	7%	538	609	72	13%
Water Year Types[c]																								
Wet (32%)	371	417	46	12%	348	411	63	18%	422	457	35	8%	535	645	110	21%	409	487	78	19%	341	450	109	32%
Above Normal (16%)	372	407	35	9%	403	419	17	4%	519	503	-16	-3%	655	596	-59	-9%	577	689	112	19%	464	698	233	50%
Below Normal (13%)	671	542	-130	-19%	652	516	-135	-21%	697	600	-97	-14%	702	696	-6	-1%	626	681	56	9%	564	630	66	12%
Dry (24%)	659	606	-53	-8%	725	551	-174	-24%	724	631	-92	-13%	668	638	-30	-4%	691	677	-14	-2%	657	663	6	1%
Critical (15%)	738	724	-14	-2%	855	729	-126	-15%	931	868	-63	-7%	808	807	-1	0%	793	745	-48	-6%	821	749	-72	-9%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	642	756	114	18%	565	712	147	26%	481	542	61	13%	469	514	45	10%	587	505	-82	-14%	653	646	-7	-1%
20%	605	682	78	13%	545	579	34	6%	438	494	57	13%	423	486	63	15%	538	468	-70	-13%	627	578	-48	-8%
30%	541	636	95	18%	505	539	35	7%	419	479	61	14%	404	460	56	14%	489	446	-44	-9%	581	552	-28	-5%
40%	477	606	129	27%	449	523	74	16%	401	456	56	14%	392	429	37	9%	458	437	-21	-4%	554	511	-42	-8%
50%	423	562	139	33%	405	491	85	21%	394	434	39	10%	380	411	31	8%	421	418	-3	-1%	536	482	-54	-10%
60%	375	507	132	35%	381	445	63	17%	385	400	15	4%	372	395	23	6%	393	392	-1	0%	512	464	-48	-9%
70%	348	437	89	26%	365	400	35	10%	373	389	16	4%	365	377	12	3%	374	369	-5	-1%	484	456	-28	-6%
80%	316	373	57	18%	338	378	41	12%	362	381	20	5%	348	363	15	4%	359	356	-3	-1%	463	417	-46	-10%
90%	237	340	102	43%	205	336	131	64%	333	354	21	6%	332	345	12	4%	345	344	-1	0%	451	393	-58	-13%
Long Term																								
Full Simulation Period[b]	441	549	108	24%	413	495	81	20%	398	447	49	12%	395	428	33	8%	448	421	-26	-6%	535	501	-34	-6%
Water Year Types[c]																								
Wet (32%)	290	440	149	51%	292	449	157	54%	356	447	91	26%	362	425	64	18%	361	379	18	5%	469	417	-52	-11%
Above Normal (16%)	394	631	237	60%	379	540	161	42%	391	452	60	15%	365	450	85	23%	371	401	30	8%	456	453	-3	-1%
Below Normal (13%)	457	537	80	18%	437	494	56	13%	403	425	21	5%	373	391	17	5%	441	376	-64	-15%	581	474	-107	-18%
Dry (24%)	537	581	44	8%	486	488	2	0%	406	428	22	5%	414	405	-9	-2%	538	436	-102	-19%	584	554	-30	-5%
Critical (15%)	642	652	10	1%	570	556	-14	-2%	478	494	16	3%	487	483	-3	-1%	574	552	-22	-4%	638	669	31	5%

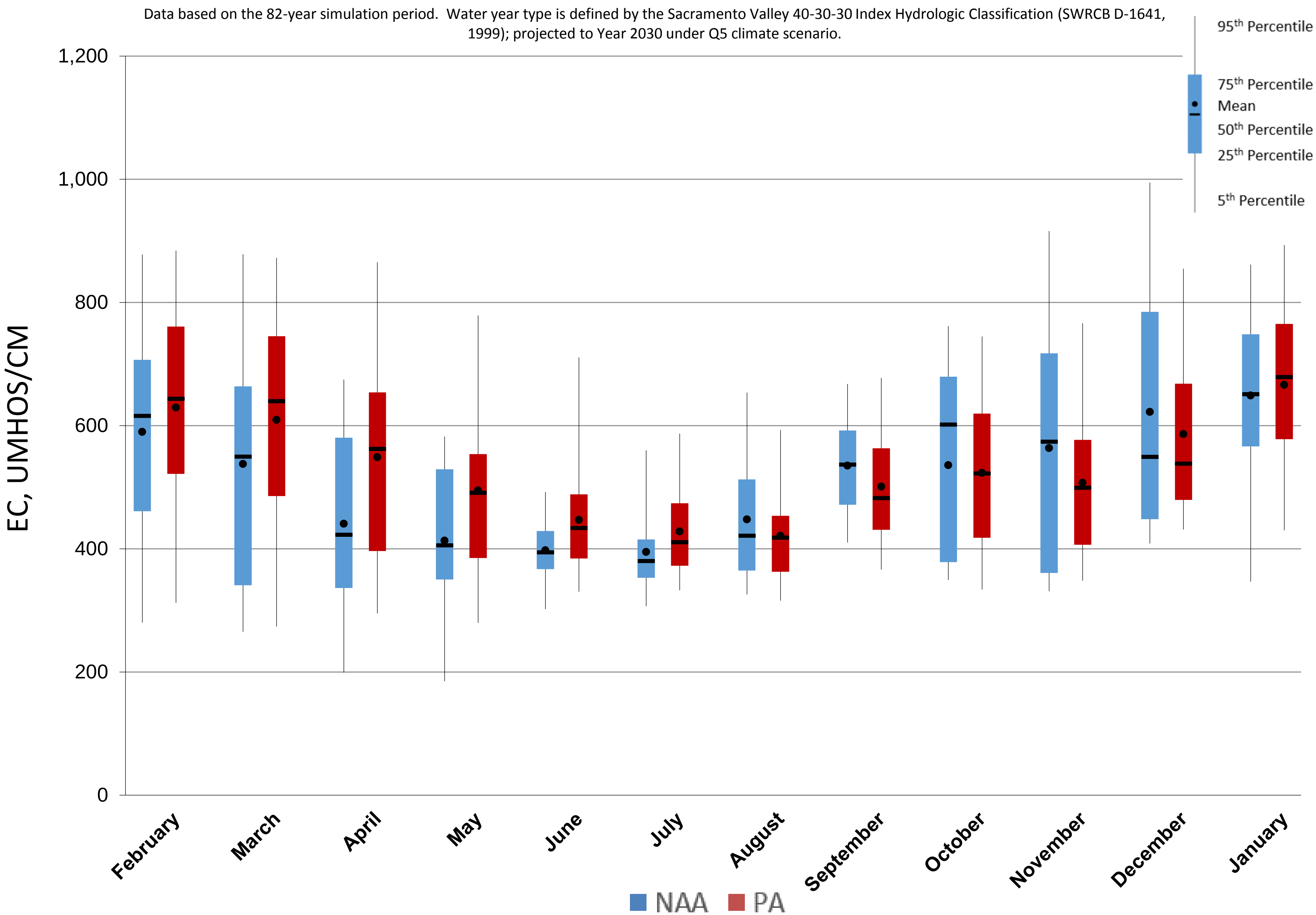
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-1. Monthly EC Ranges For Jones Pumping Plant South Delta Exports Salinity, All Years



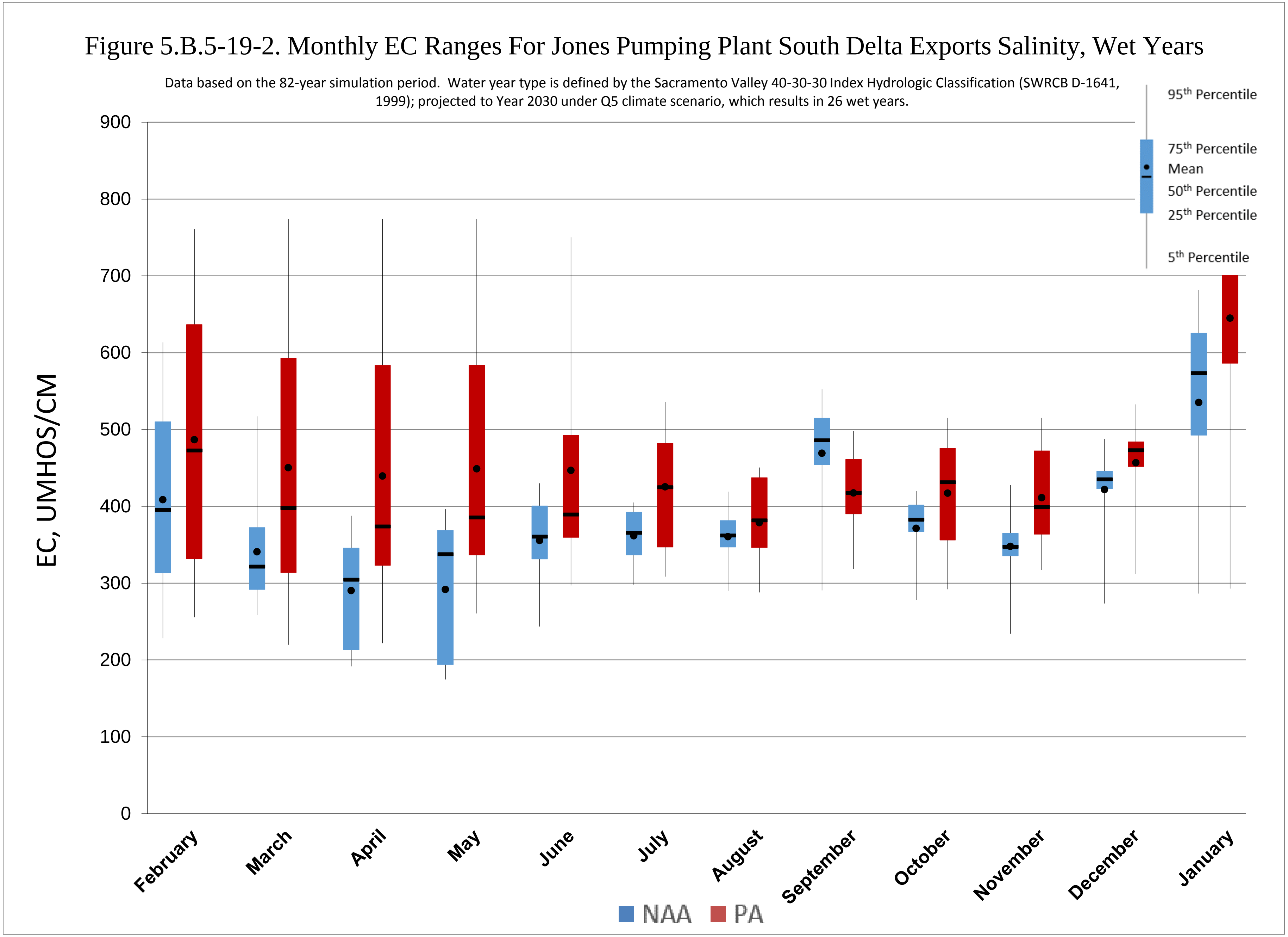
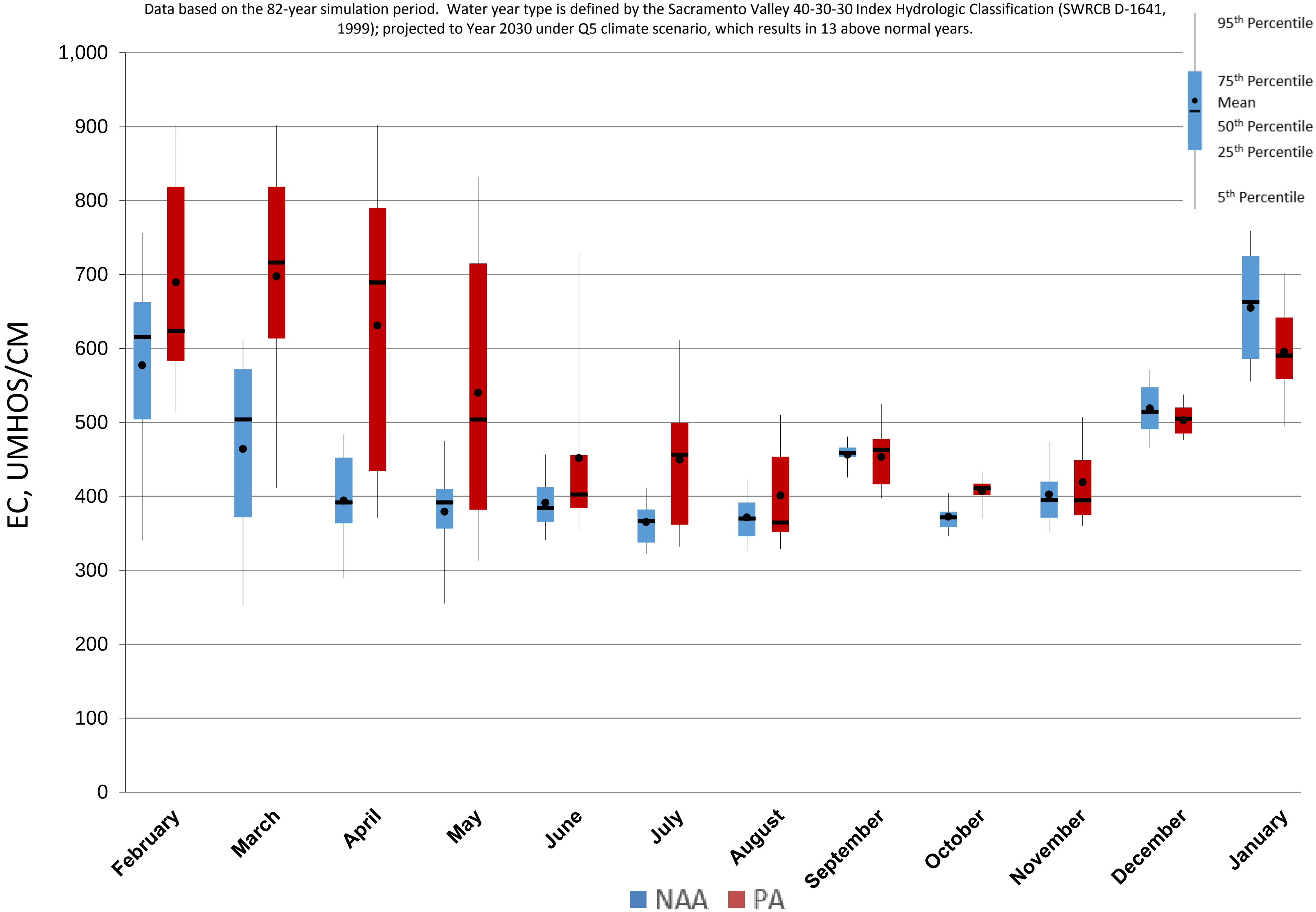


Figure 5.B.5-19-2. Monthly EC Ranges For Jones Pumping Plant South Delta Exports Salinity, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
900
800
700
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-19-3. Monthly EC Ranges For Jones Pumping Plant South Delta Exports Salinity, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.



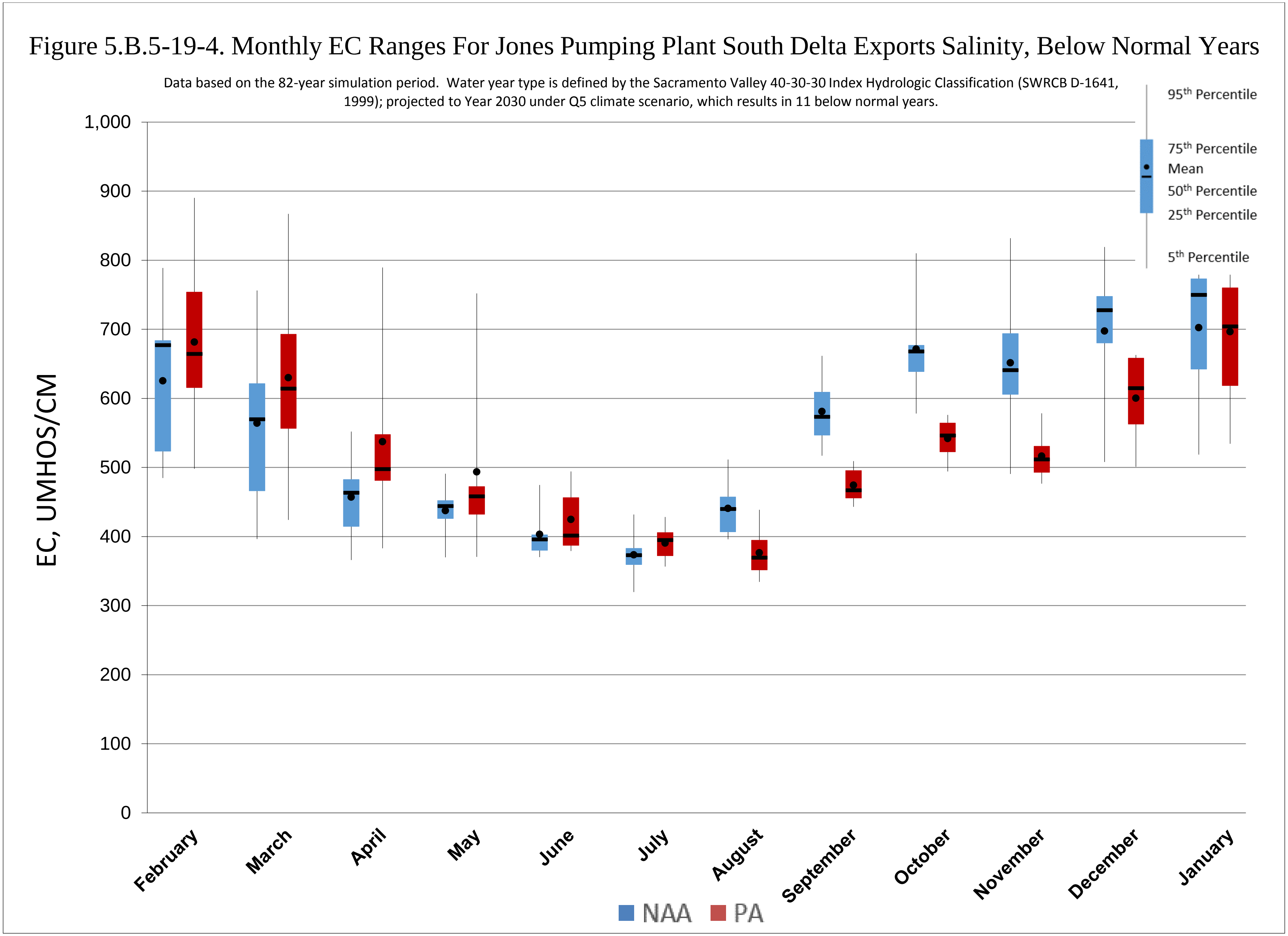


Figure 5.B.5-19-4. Monthly EC Ranges For Jones Pumping Plant South Delta Exports Salinity, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
EC, UMHOS/CM
1,000
900
800
700
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-19-5. Monthly EC Ranges For Jones Pumping Plant South Delta Exports Salinity, Dry Years

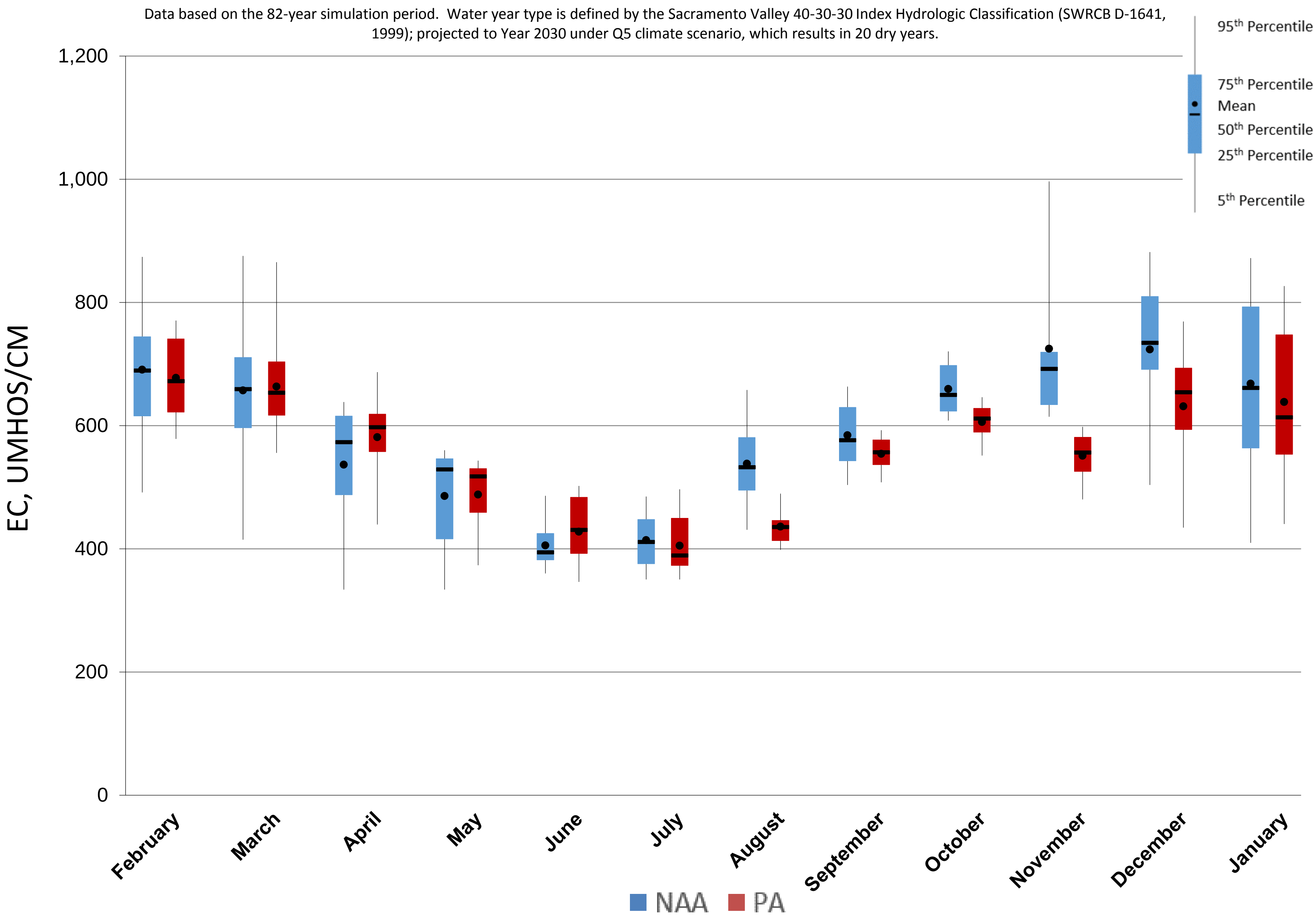


Figure 5.B.5-19-6. Monthly EC Ranges For Jones Pumping Plant South Delta Exports Salinity, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

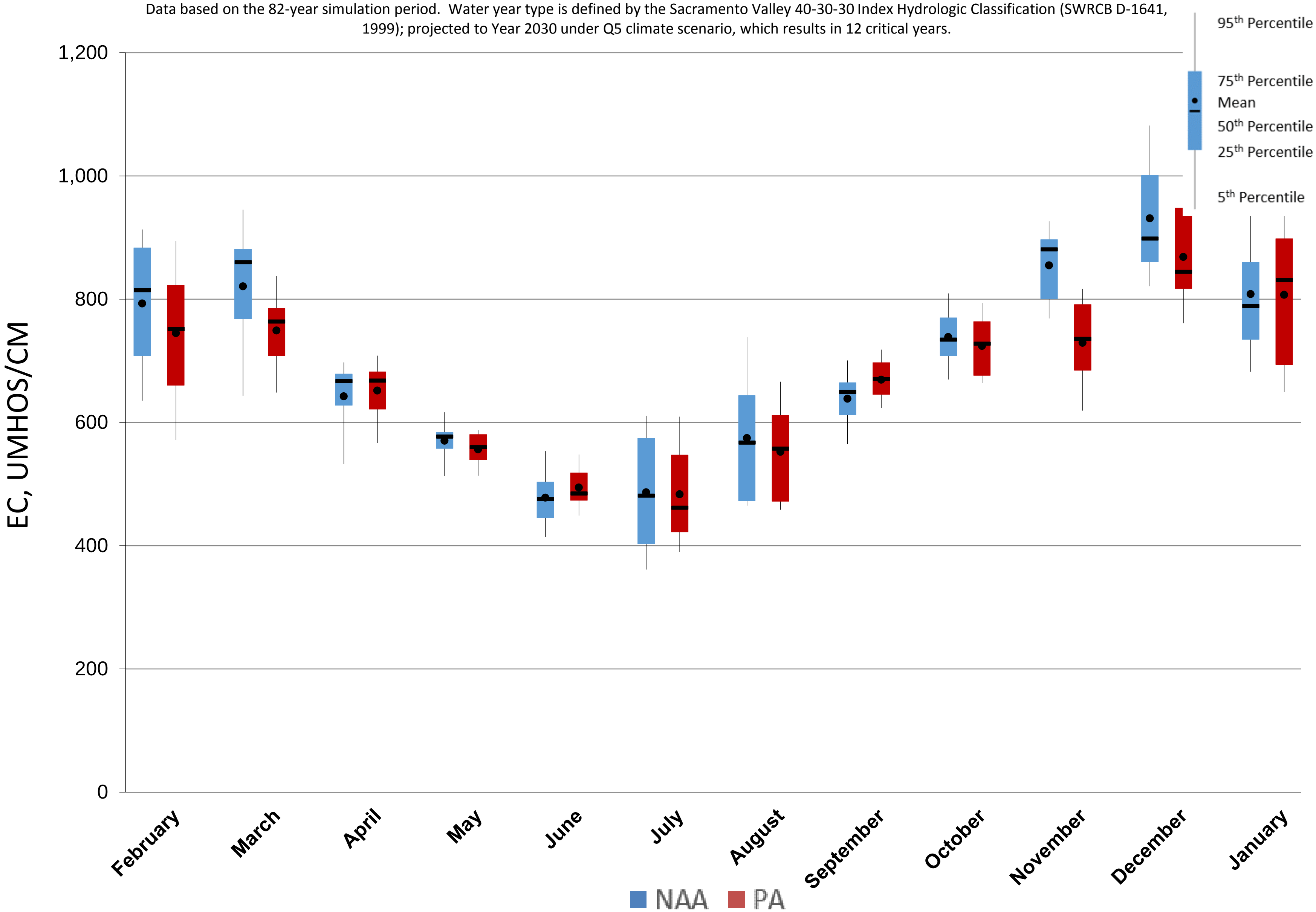
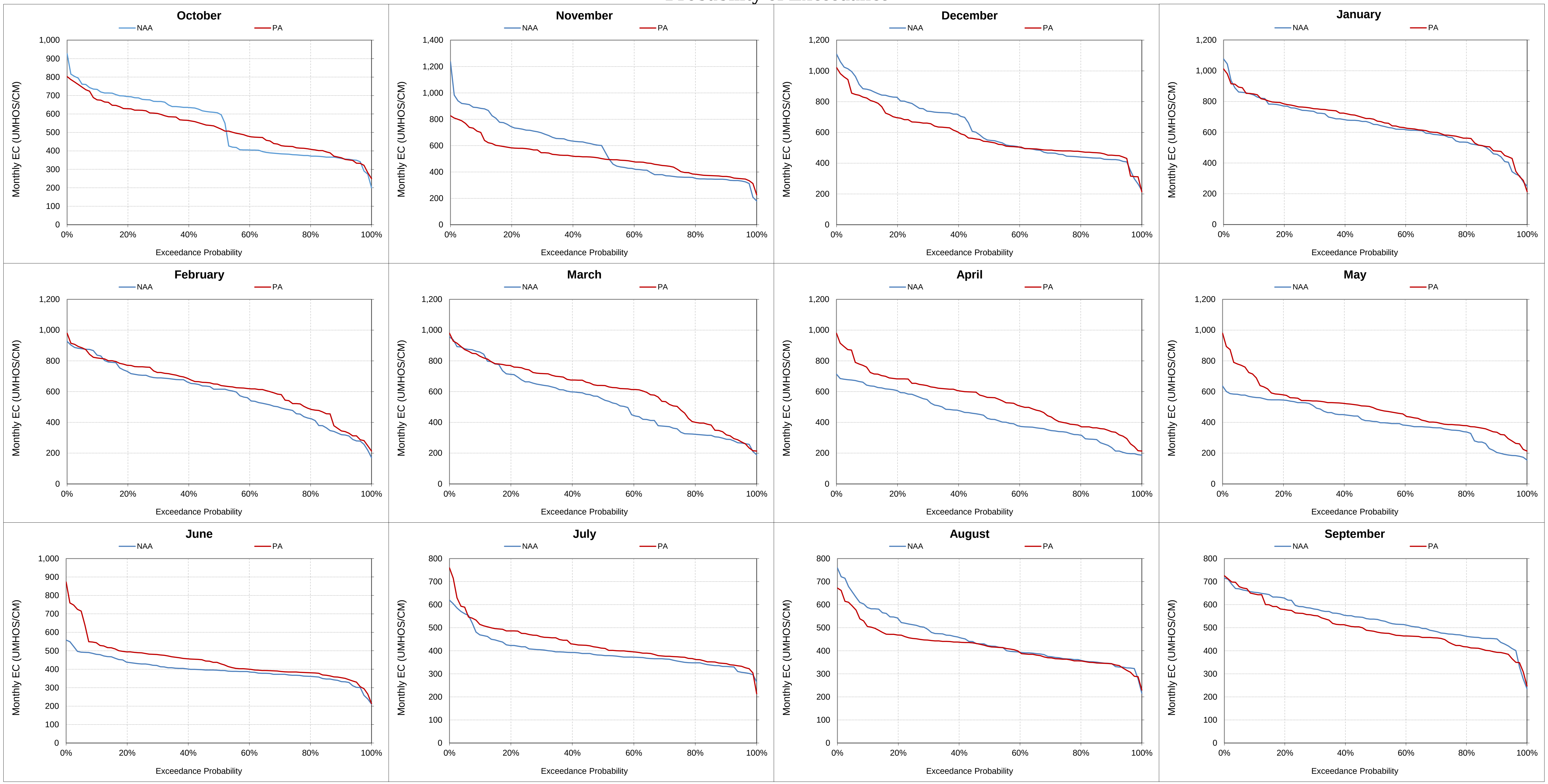
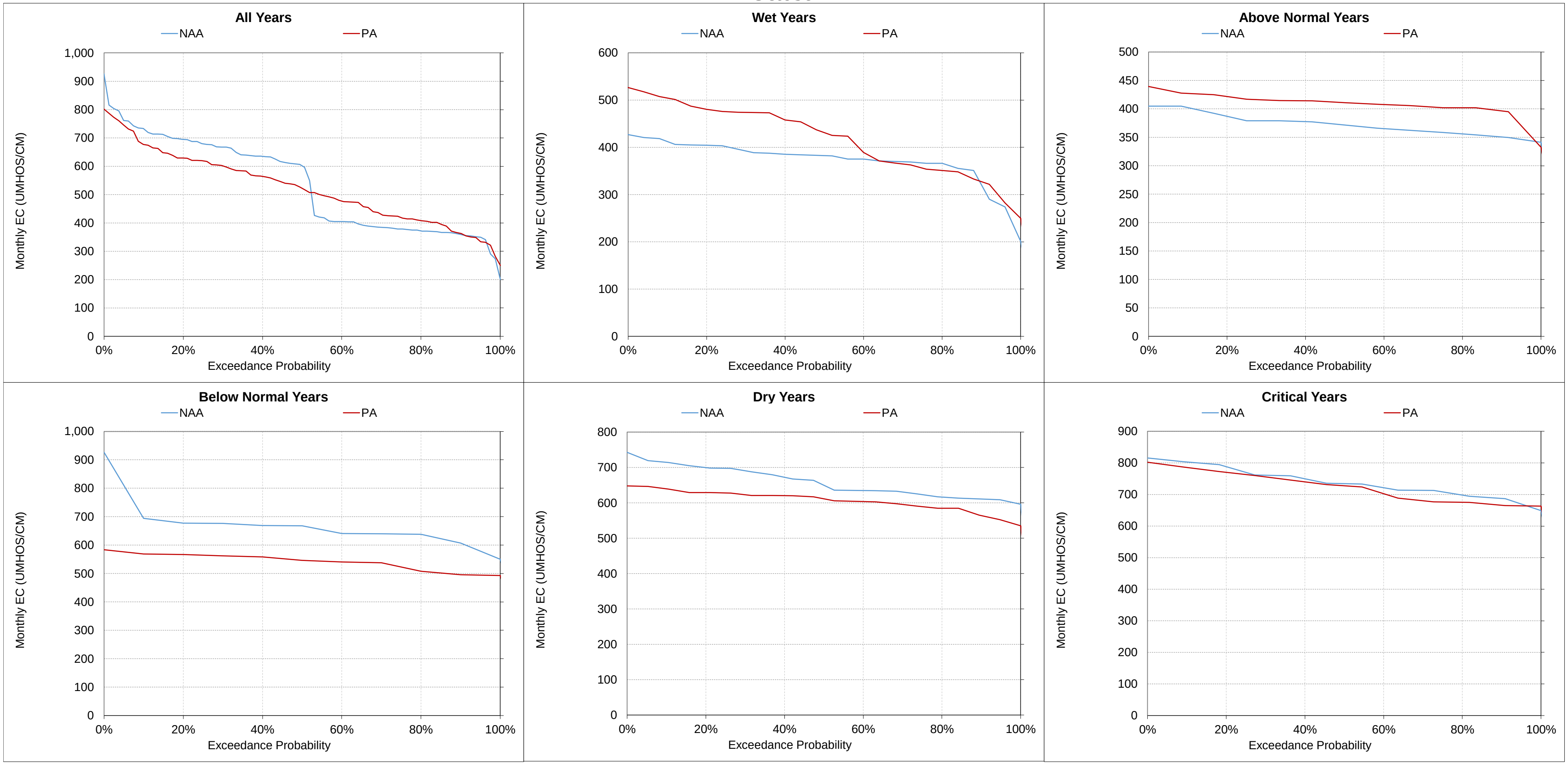


Figure 5.B.5-19-7. Jones Pumping Plant South Delta Exports Salinity, Monthly EC Probability of Exceedance



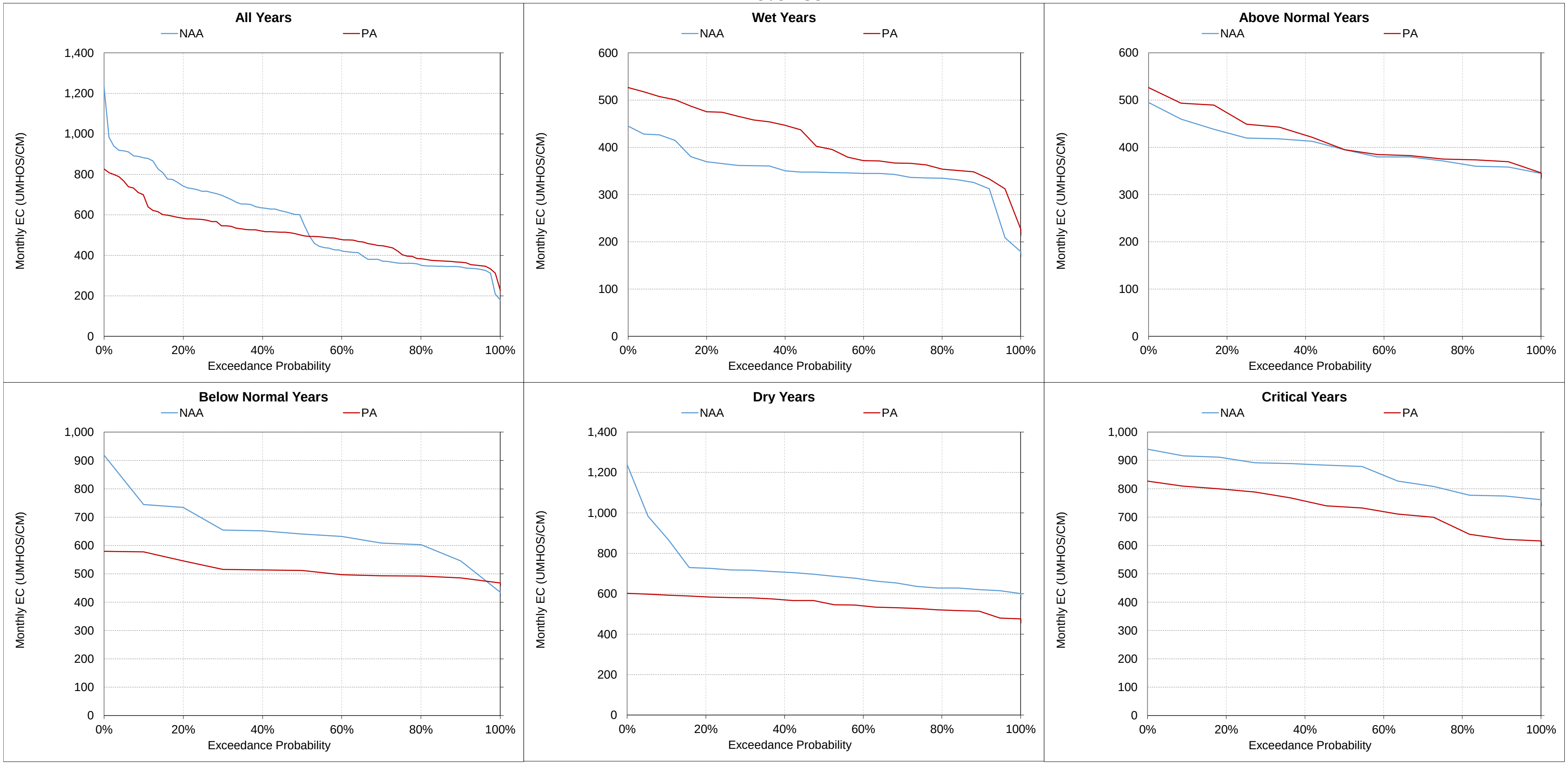
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-8. Jones Pumping Plant South Delta Exports Salinity, Monthly EC
October



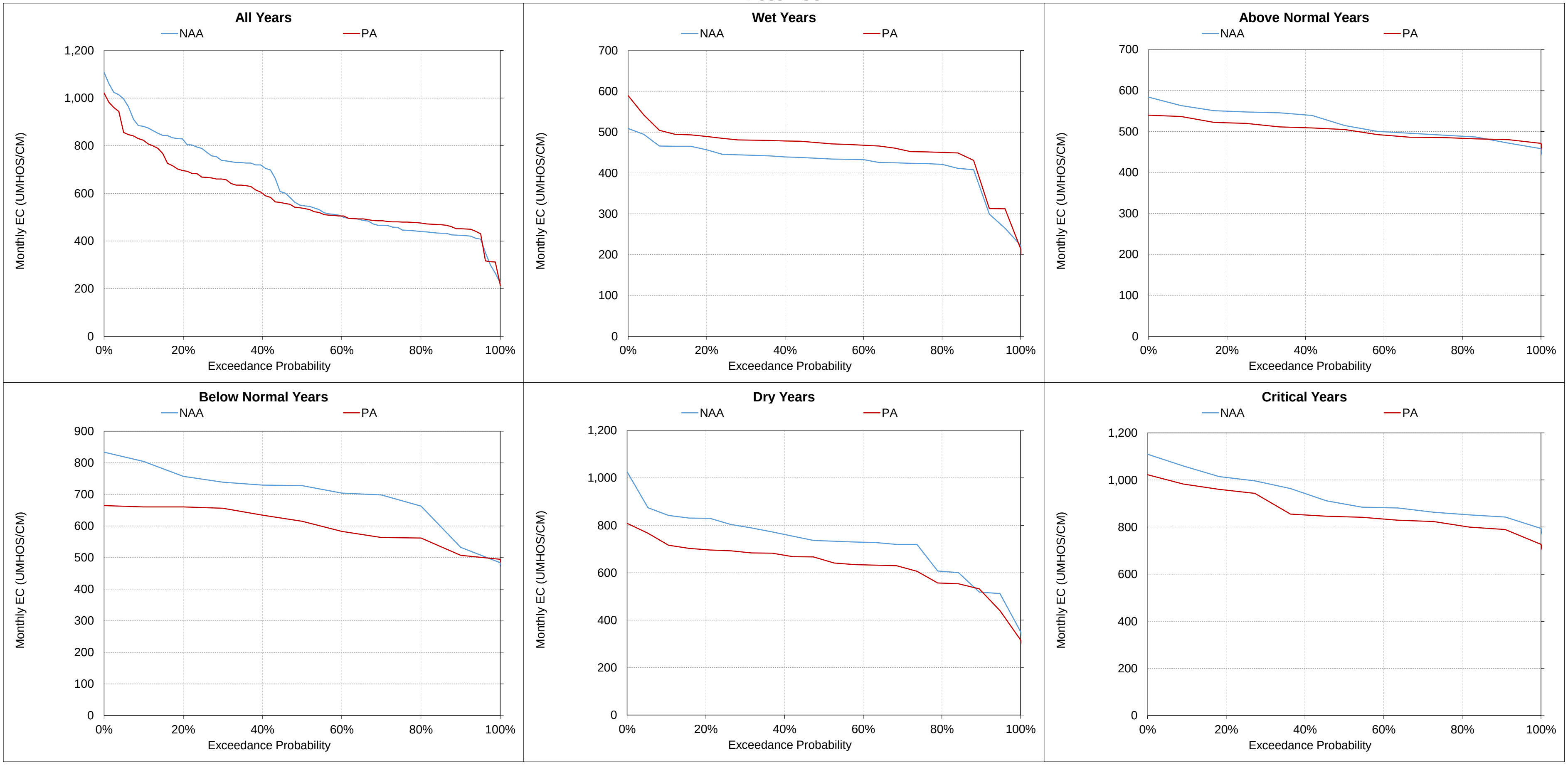
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-9. Jones Pumping Plant South Delta Exports Salinity, Monthly EC November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-10. Jones Pumping Plant South Delta Exports Salinity, Monthly EC December



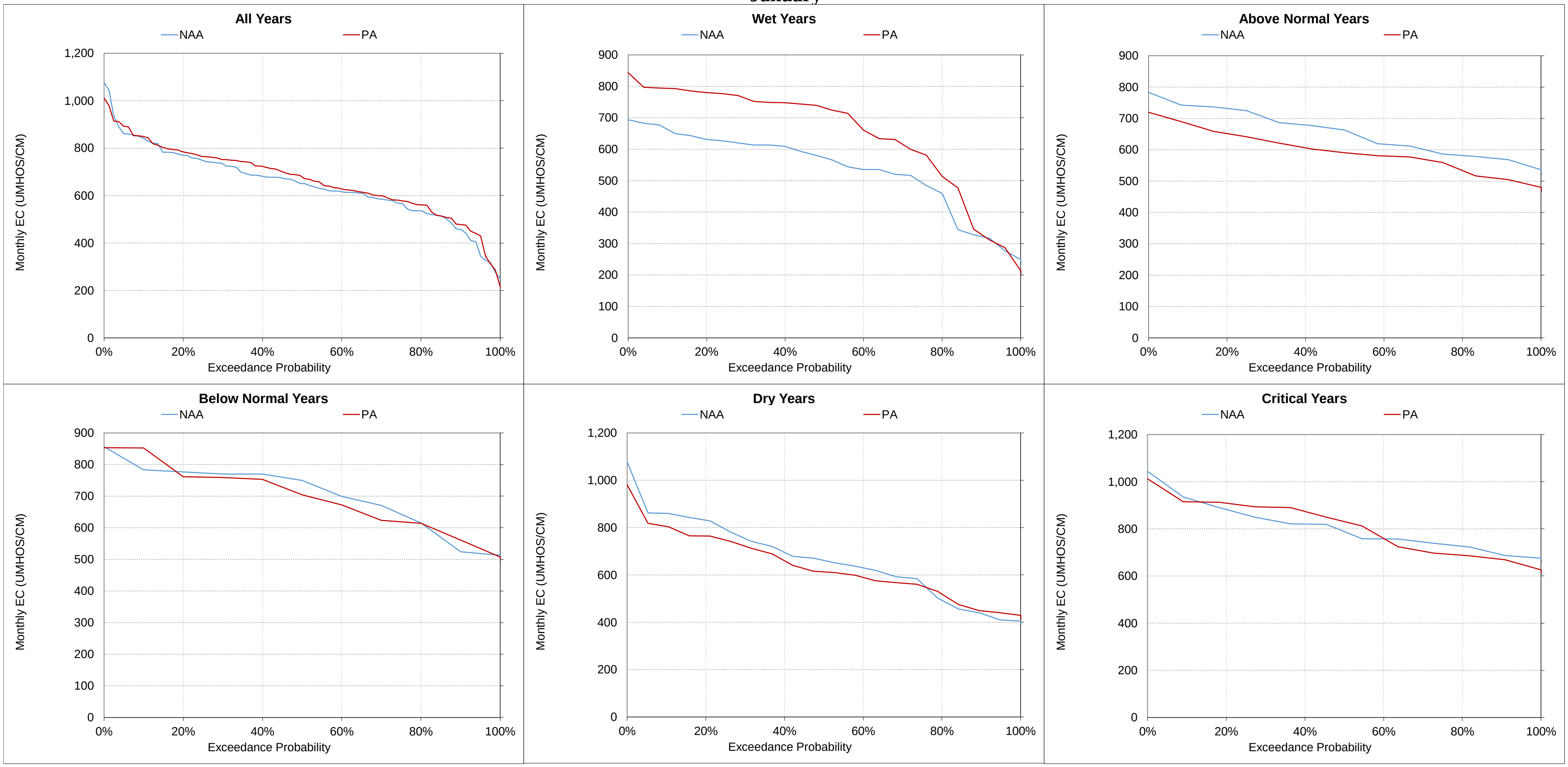
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

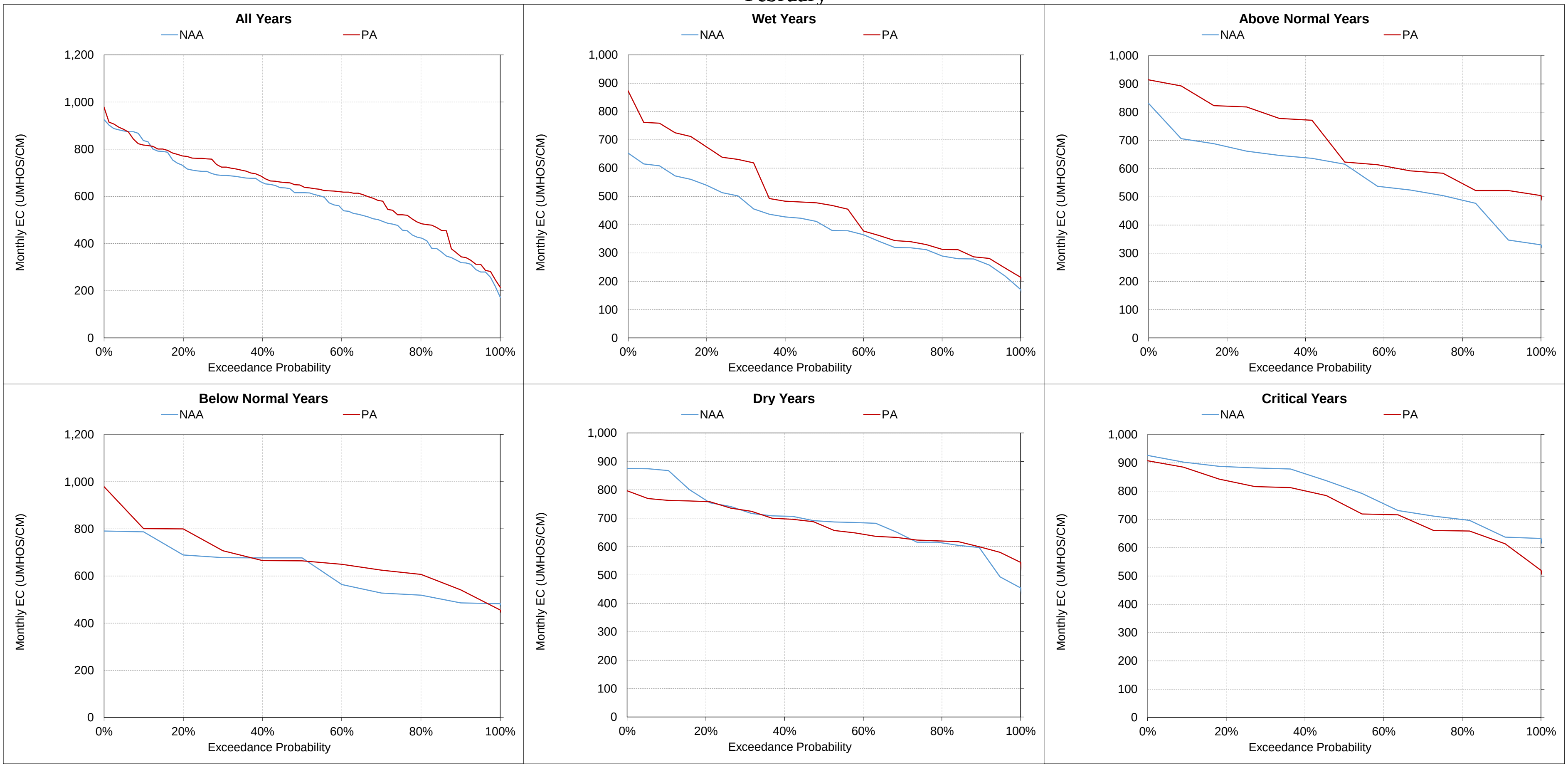
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-11. Jones Pumping Plant South Delta Exports Salinity, Monthly EC
January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-12. Jones Pumping Plant South Delta Exports Salinity, Monthly EC February



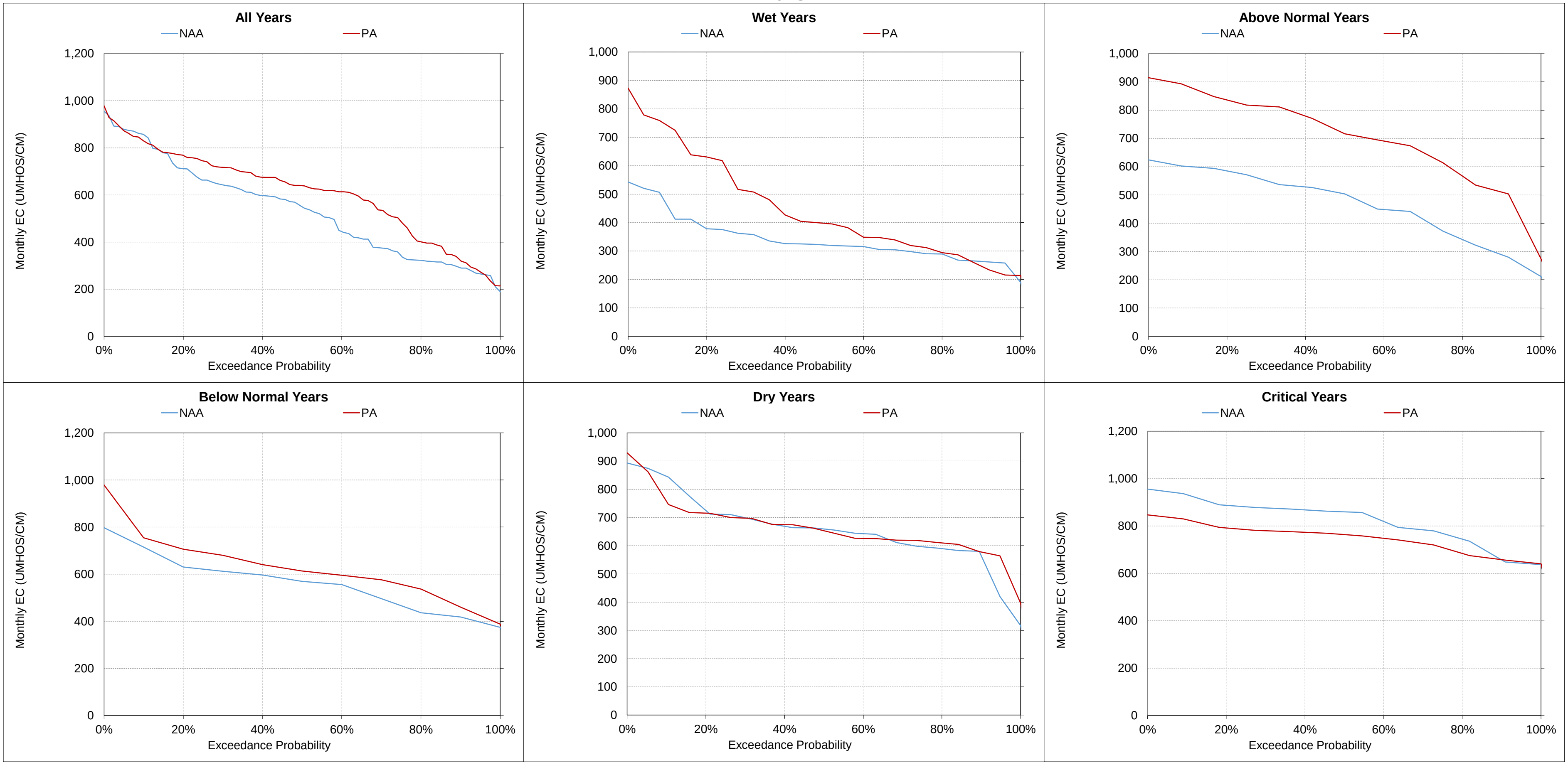
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

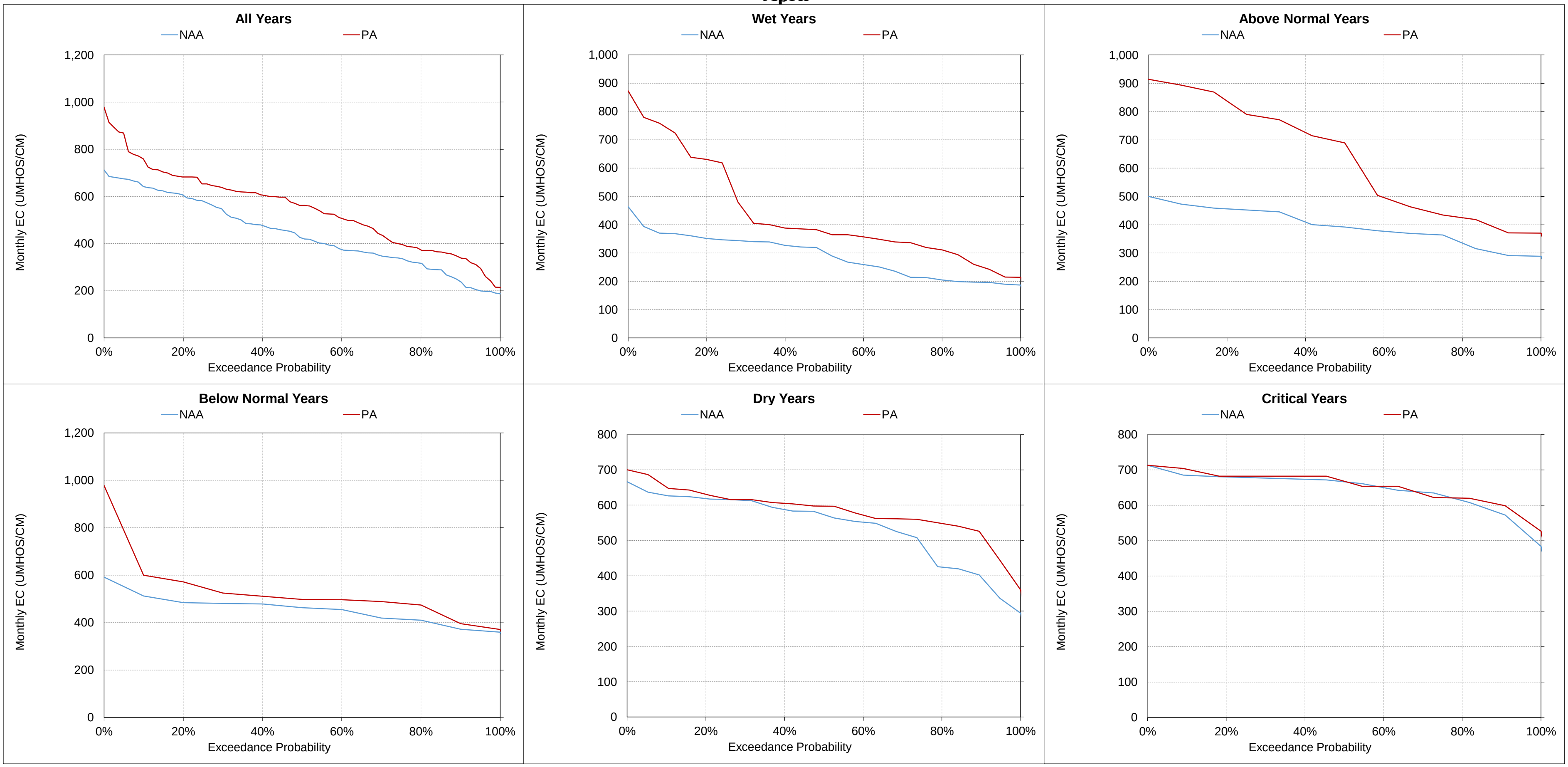
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-13. Jones Pumping Plant South Delta Exports Salinity, Monthly EC March



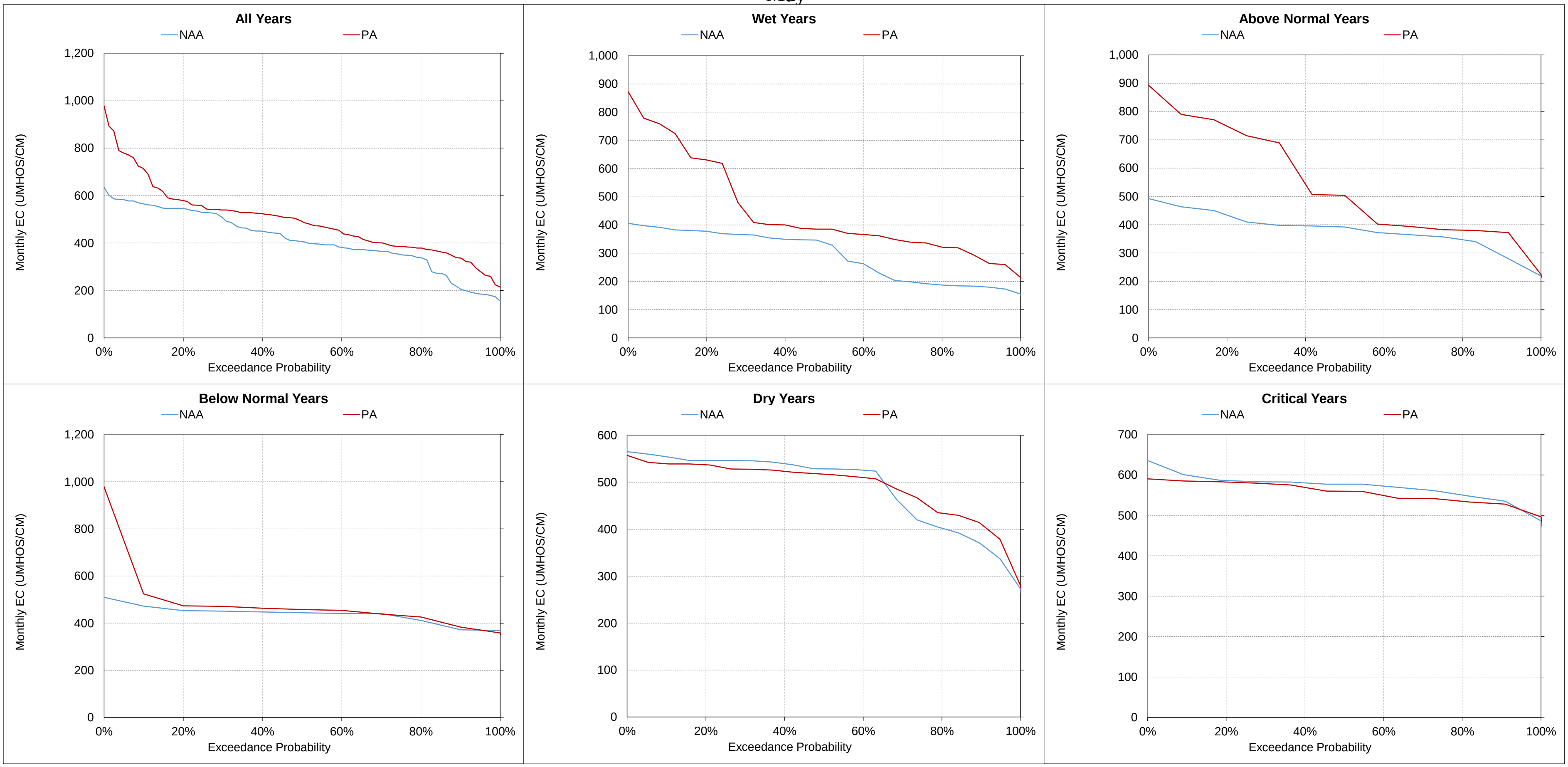
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-14. Jones Pumping Plant South Delta Exports Salinity, Monthly EC April



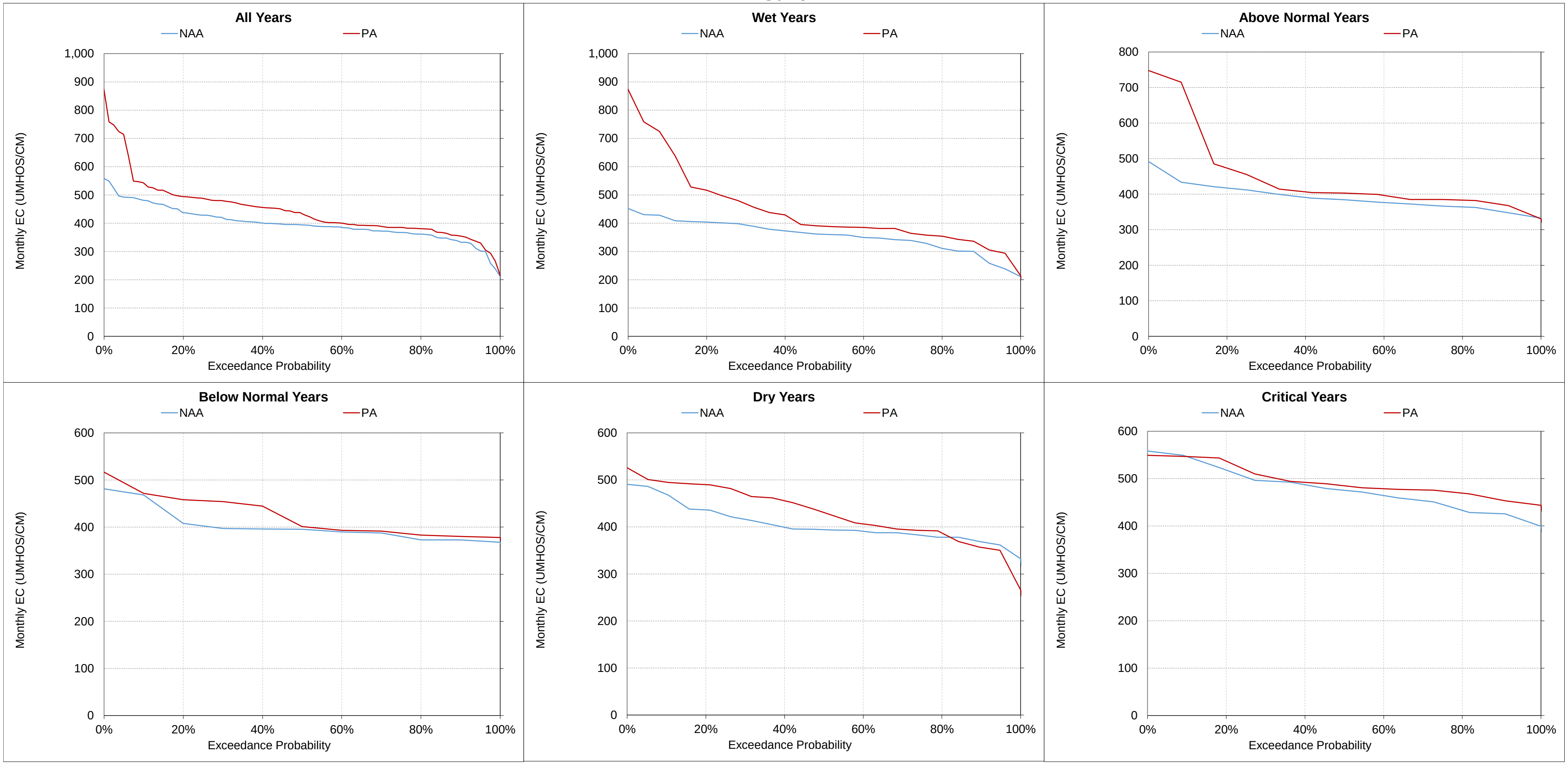
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-15. Jones Pumping Plant South Delta Exports Salinity, Monthly EC
May



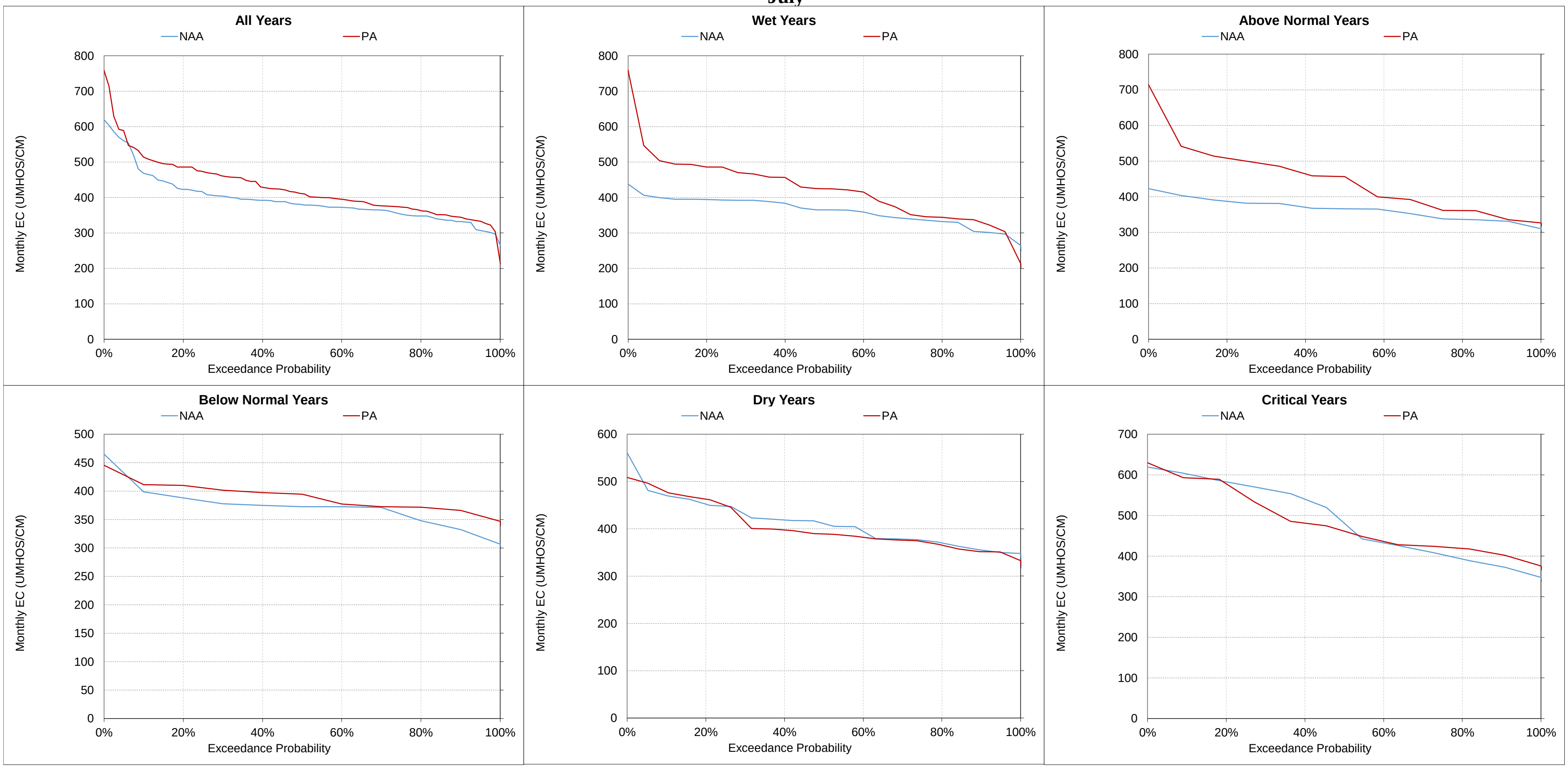
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-16. Jones Pumping Plant South Delta Exports Salinity, Monthly EC
June



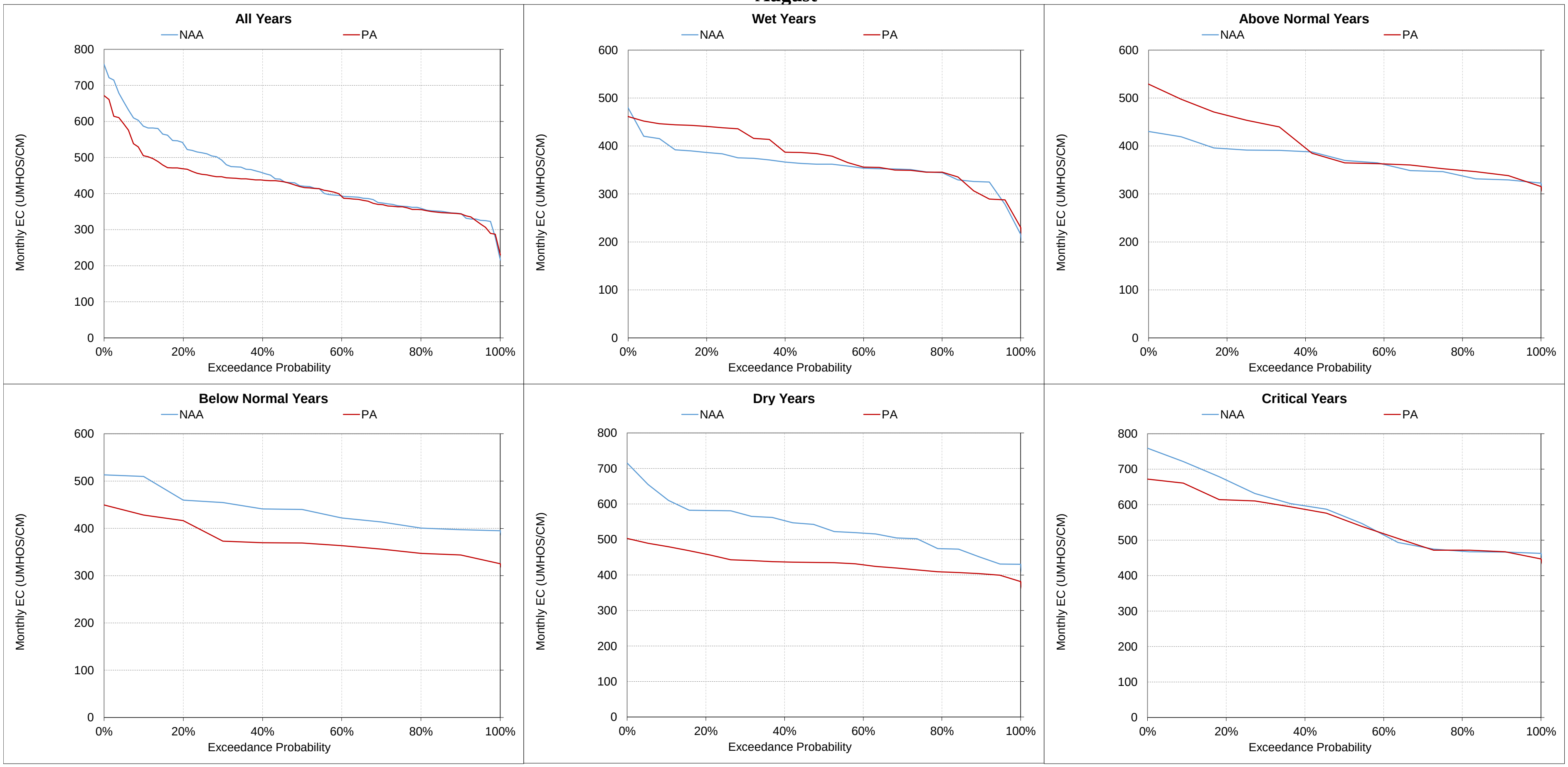
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-17. Jones Pumping Plant South Delta Exports Salinity, Monthly EC July



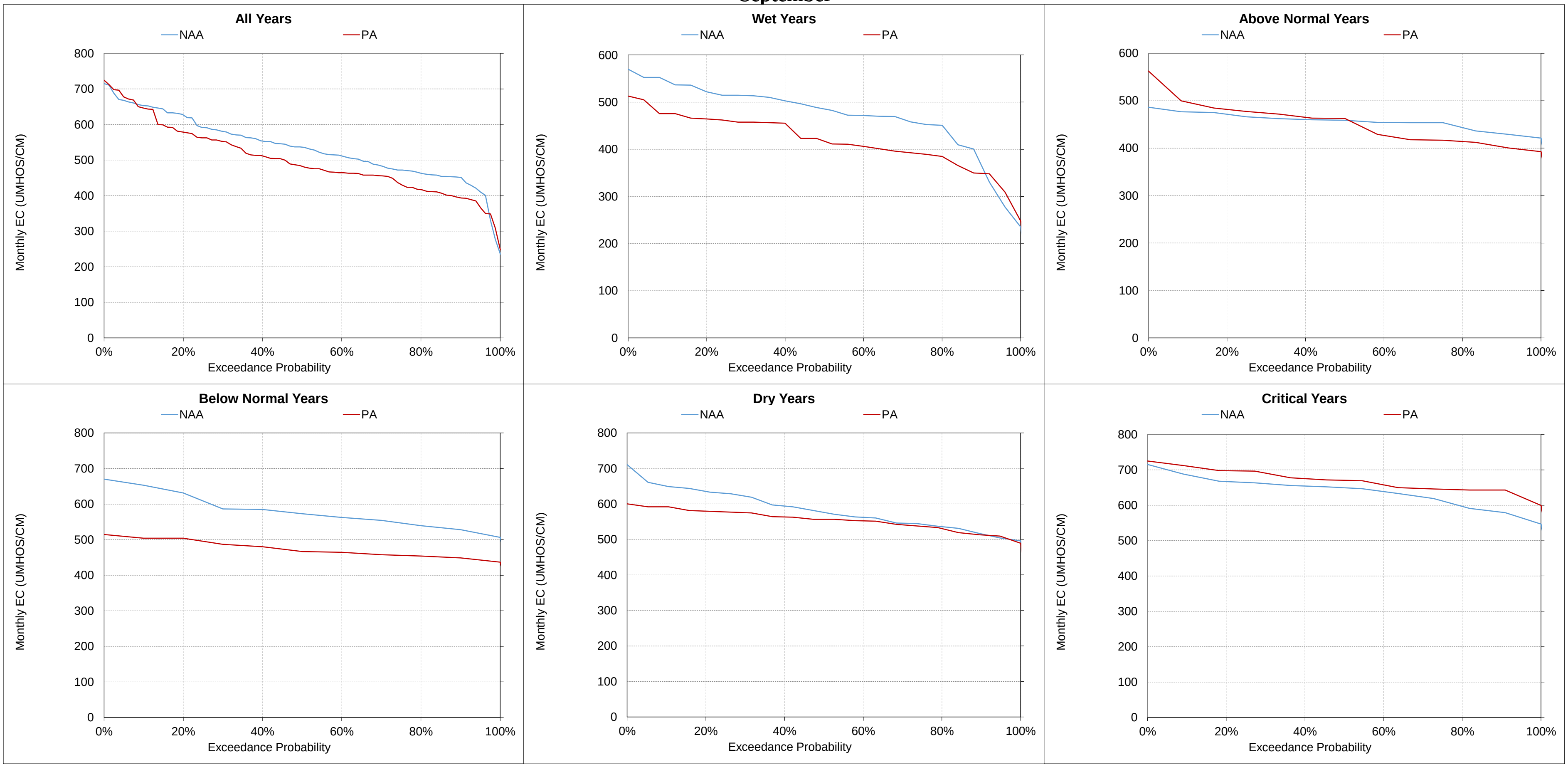
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-18. Jones Pumping Plant South Delta Exports Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-19-19. Jones Pumping Plant South Delta Exports Salinity, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-20. Banks Pumping Plant South Delta Exports Salinity, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	766	723	-42	-6%	900	695	-205	-23%	965	823	-142	-15%	876	855	-21	-2%	673	719	46	7%	611	712	101	17%
20%	708	647	-60	-9%	746	569	-177	-24%	839	638	-201	-24%	753	679	-74	-10%	621	656	35	6%	545	634	89	16%
30%	685	601	-84	-12%	705	541	-164	-23%	723	557	-166	-23%	684	610	-74	-11%	571	619	48	8%	495	599	105	21%
40%	641	550	-92	-14%	653	499	-153	-23%	669	489	-180	-27%	592	576	-16	-3%	553	601	48	9%	462	570	108	23%
50%	581	505	-76	-13%	588	451	-137	-23%	465	438	-27	-6%	541	531	-10	-2%	518	574	55	11%	428	545	117	27%
60%	382	401	20	5%	354	424	70	20%	382	396	15	4%	510	475	-35	-7%	490	549	58	12%	398	508	111	28%
70%	367	388	21	6%	330	402	71	22%	344	380	36	10%	475	454	-21	-4%	434	534	100	23%	358	474	116	32%
80%	347	372	26	7%	318	388	70	22%	314	363	49	16%	437	428	-10	-2%	388	511	123	32%	340	398	58	17%
90%	323	364	41	13%	308	368	61	20%	292	348	56	19%	387	390	4	1%	335	406	71	21%	300	339	39	13%
Long Term Full Simulation Period[b]	534	509	-25	-5%	555	490	-65	-12%	575	514	-61	-11%	599	565	-34	-6%	516	572	56	11%	446	528	81	18%
Water Year Types[c]																								
Wet (32%)	355	376	21	6%	311	386	76	24%	306	356	51	17%	440	424	-16	-4%	393	495	101	26%	327	431	104	32%
Above Normal (16%)	336	375	39	12%	357	385	28	8%	408	399	-9	-2%	578	516	-62	-11%	507	570	64	13%	415	549	133	32%
Below Normal (13%)	706	530	-176	-25%	670	492	-178	-27%	671	508	-163	-24%	653	635	-17	-3%	537	587	50	9%	474	550	76	16%
Dry (24%)	679	617	-63	-9%	740	537	-203	-27%	719	563	-155	-22%	649	591	-58	-9%	585	608	23	4%	502	561	59	12%
Critical (15%)	735	744	9	1%	885	750	-135	-15%	1,014	905	-110	-11%	833	816	-17	-2%	658	671	13	2%	619	636	17	3%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	590	685	95	16%	518	623	105	20%	475	545	69	15%	436	482	46	11%	593	470	-124	-21%	650	632	-18	-3%
20%	505	646	141	28%	493	595	103	21%	435	512	78	18%	421	442	20	5%	503	410	-93	-18%	610	542	-68	-11%
30%	454	579	124	27%	464	572	108	23%	397	490	94	24%	358	414	56	16%	456	395	-60	-13%	573	479	-95	-17%
40%	431	558	127	29%	444	529	86	19%	383	471	88	23%	345	393	47	14%	417	368	-48	-12%	543	429	-114	-21%
50%	415	527	112	27%	406	506	101	25%	368	440	72	19%	332	375	43	13%	386	354	-32	-8%	518	403	-115	-22%
60%	378	504	126	33%	373	484	112	30%	360	432	72	20%	321	365	45	14%	358	344	-15	-4%	504	378	-126	-25%
70%	339	452	114	34%	353	442	90	25%	349	410	61	17%	312	353	41	13%	334	336	2	1%	478	368	-110	-23%
80%	309	376	67	22%	329	395	66	20%	326	382	56	17%	299	336	38	13%	319	326	7	2%	458	361	-97	-21%
90%	259	337	78	30%	199	329	130	65%	291	350	60	21%	286	323	37	13%	302	315	12	4%	436	351	-86	-20%
Long Term Full Simulation Period[b]	411	516	104	25%	399	496	97	24%	381	450	69	18%	355	393	37	11%	419	380	-39	-9%	526	443	-83	-16%
Water Year Types[c]																								
Wet (32%)	289	419	131	45%	283	412	129	45%	317	388	71	22%	306	365	59	19%	330	335	5	2%	473	358	-115	-24%
Above Normal (16%)	379	560	181	48%	378	543	165	44%	361	473	112	31%	306	393	87	28%	329	337	8	2%	443	366	-76	-17%
Below Normal (13%)	437	524	86	20%	439	510	71	16%	399	448	49	12%	341	347	6	2%	408	338	-70	-17%	574	411	-164	-28%
Dry (24%)	474	544	70	15%	453	511	58	13%	391	457	66	17%	378	377	-1	0%	523	398	-125	-24%	574	500	-73	-13%
Critical (15%)	584	622	38	6%	545	589	43	8%	505	547	43	8%	489	520	30	6%	548	533	-14	-3%	610	643	33	5%

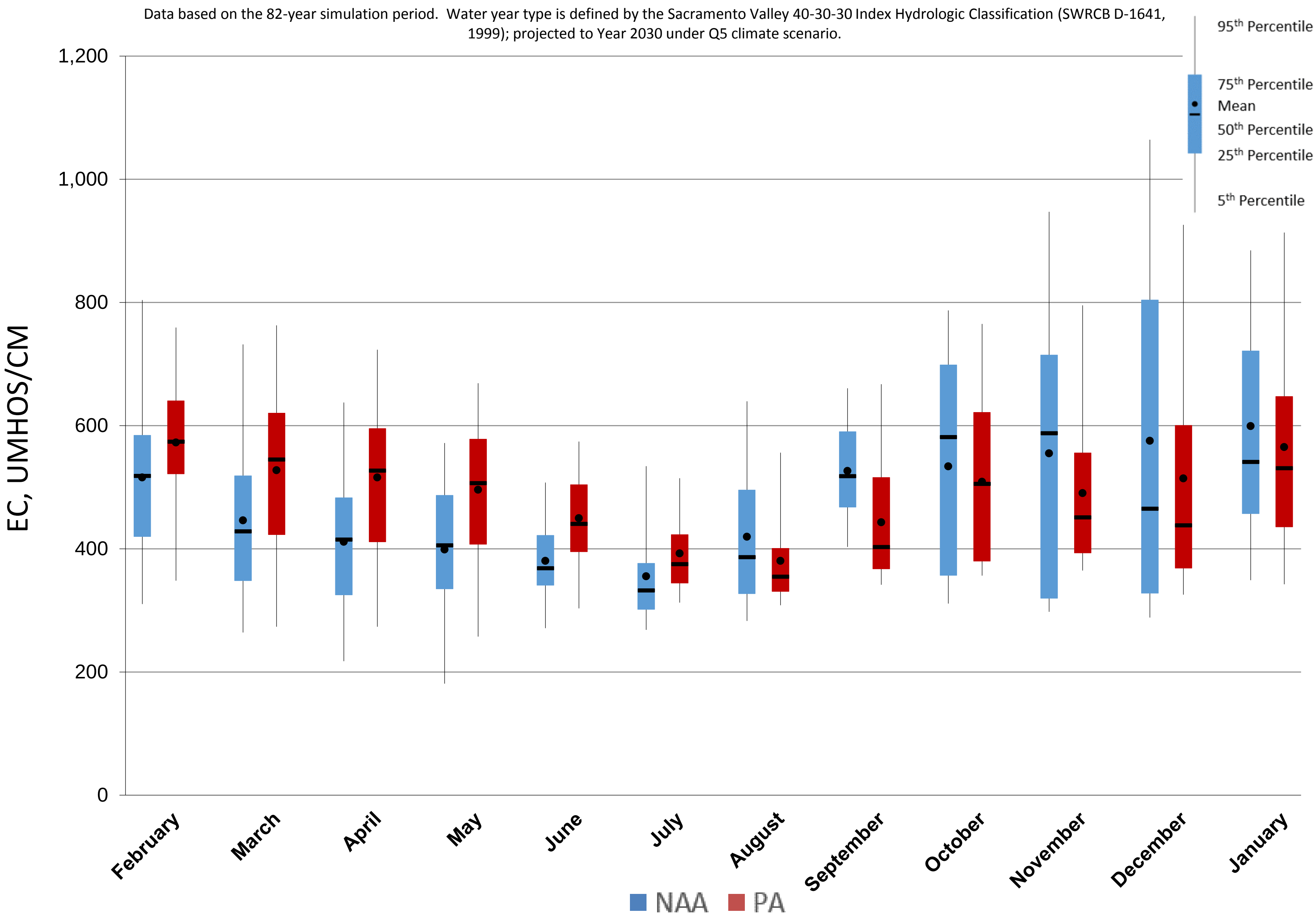
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-1. Monthly EC Ranges For Banks Pumping Plant South Delta Exports Salinity, All Years



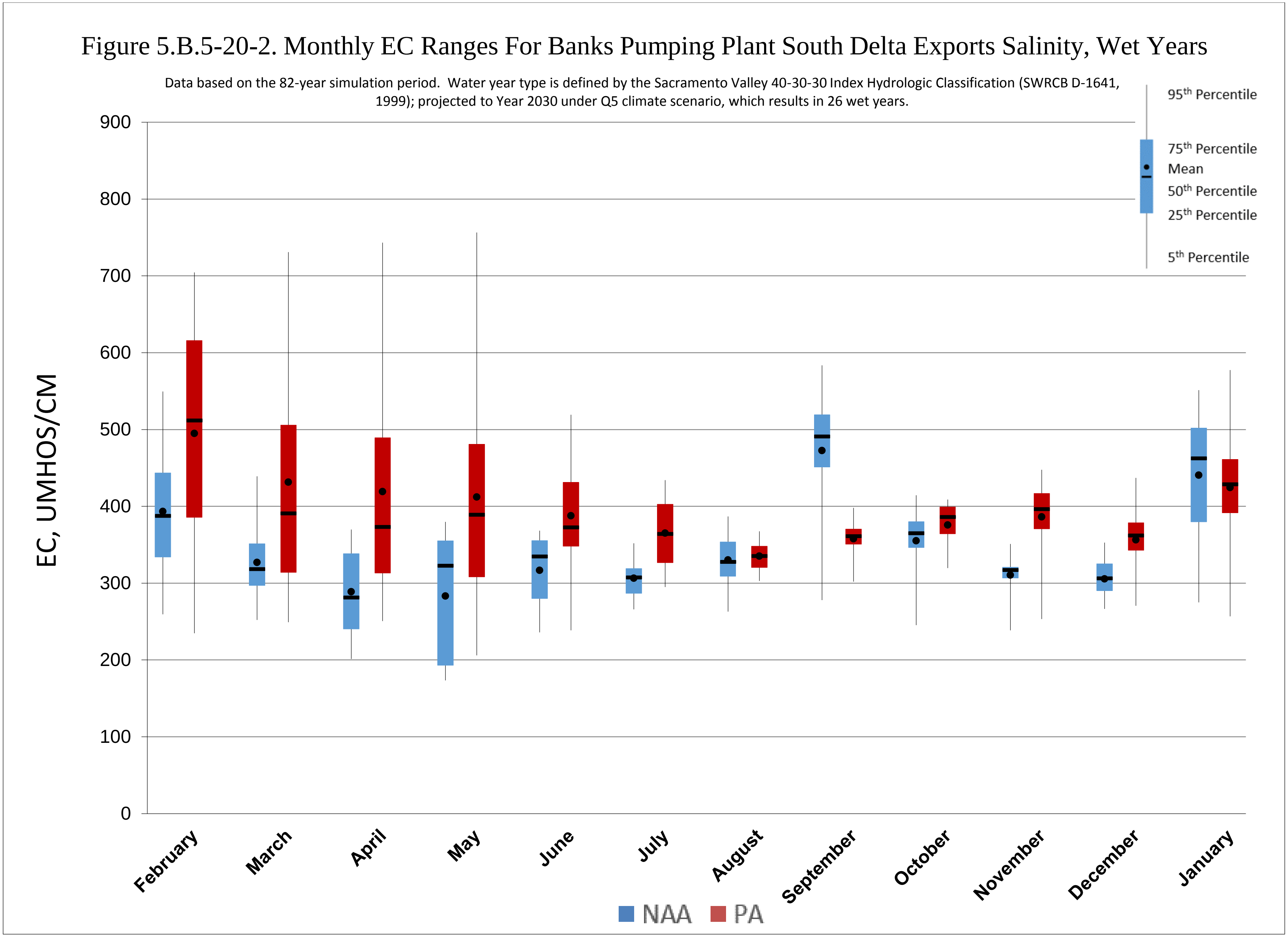
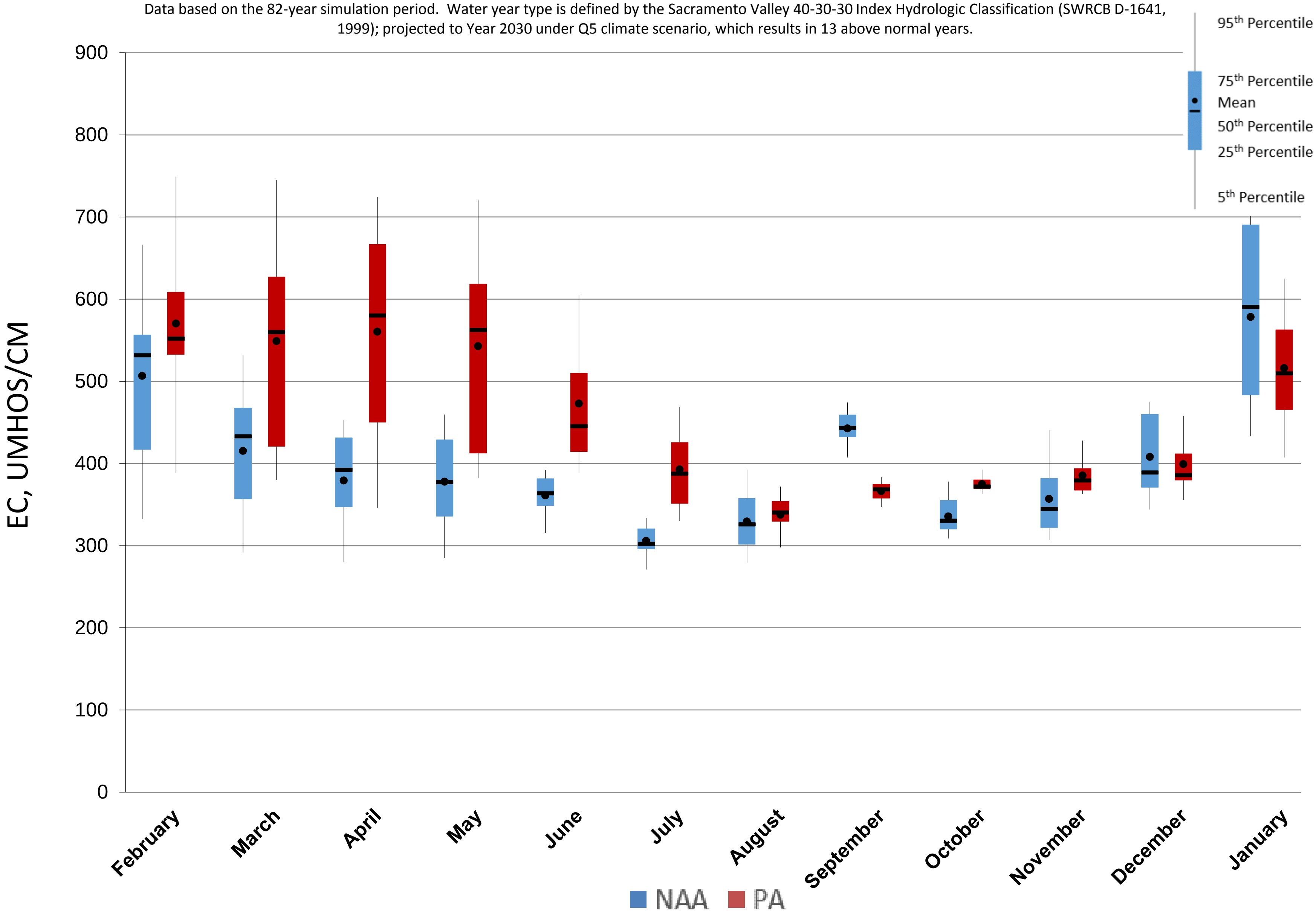


Figure 5.B.5-20-2. Monthly EC Ranges For Banks Pumping Plant South Delta Exports Salinity, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
900
800
700
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-20-3. Monthly EC Ranges For Banks Pumping Plant South Delta Exports Salinity, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.



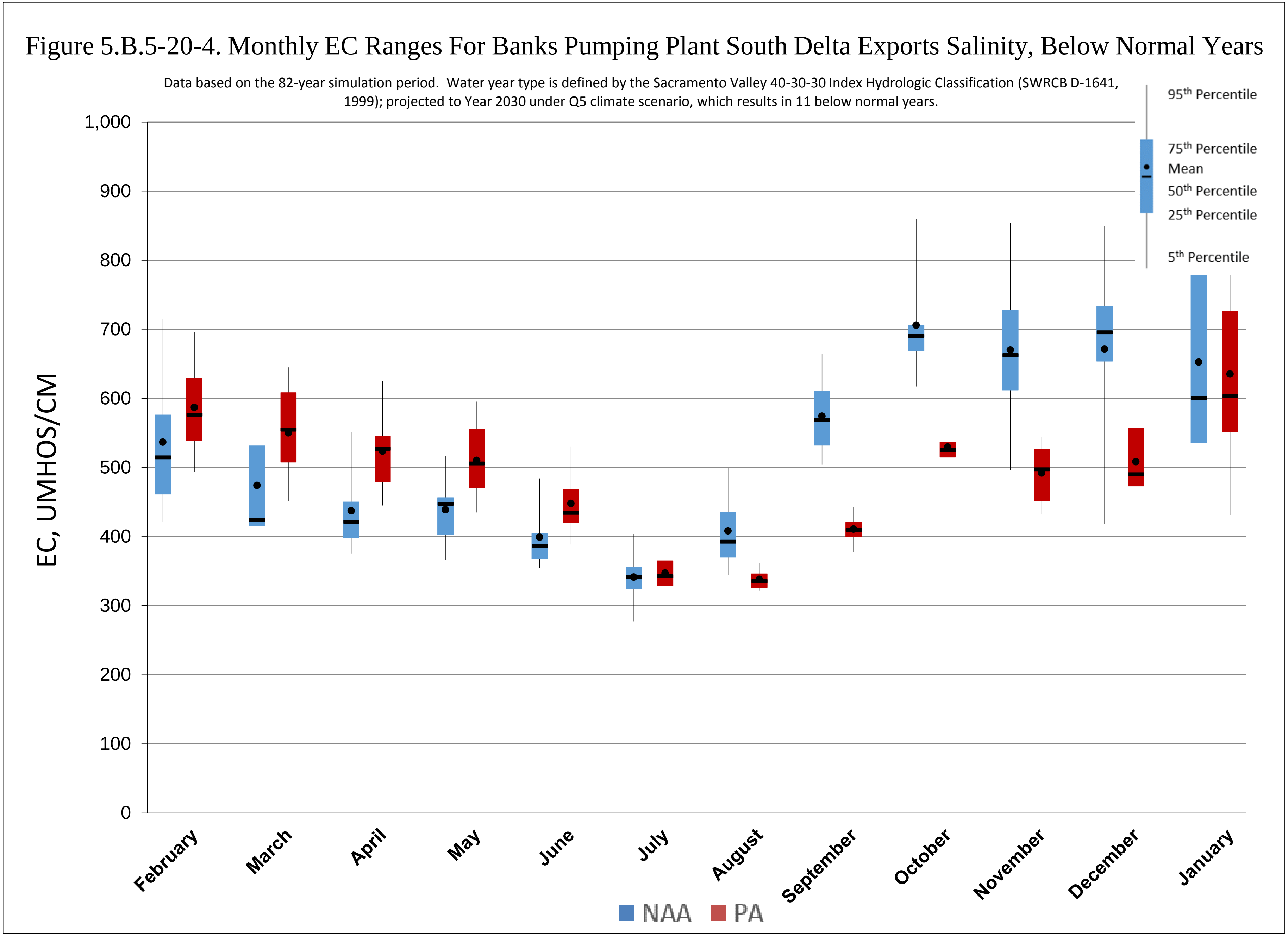
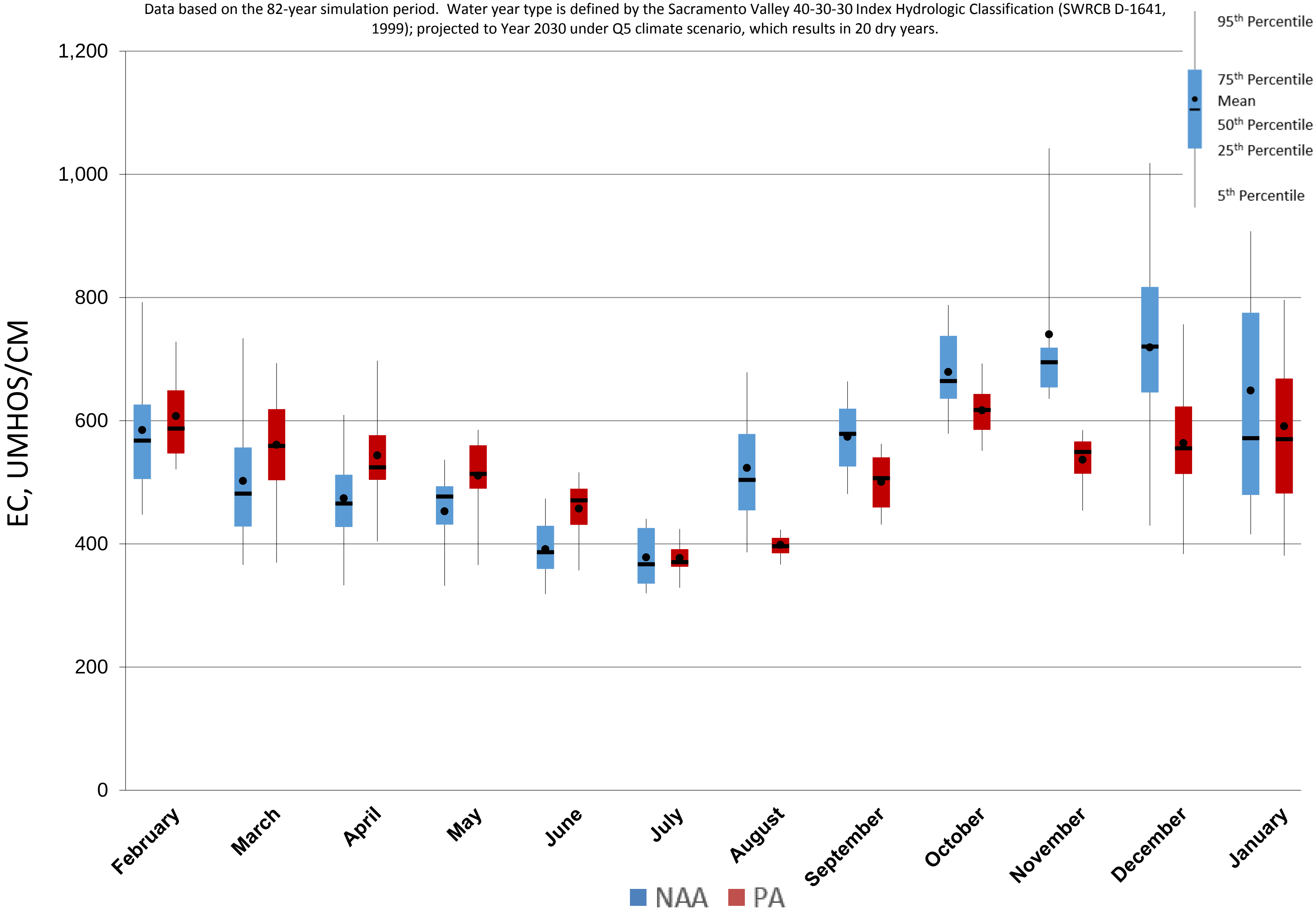


Figure 5.B.5-20-4. Monthly EC Ranges For Banks Pumping Plant South Delta Exports Salinity, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
1,000
900
800
700
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-20-5. Monthly EC Ranges For Banks Pumping Plant South Delta Exports Salinity, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.



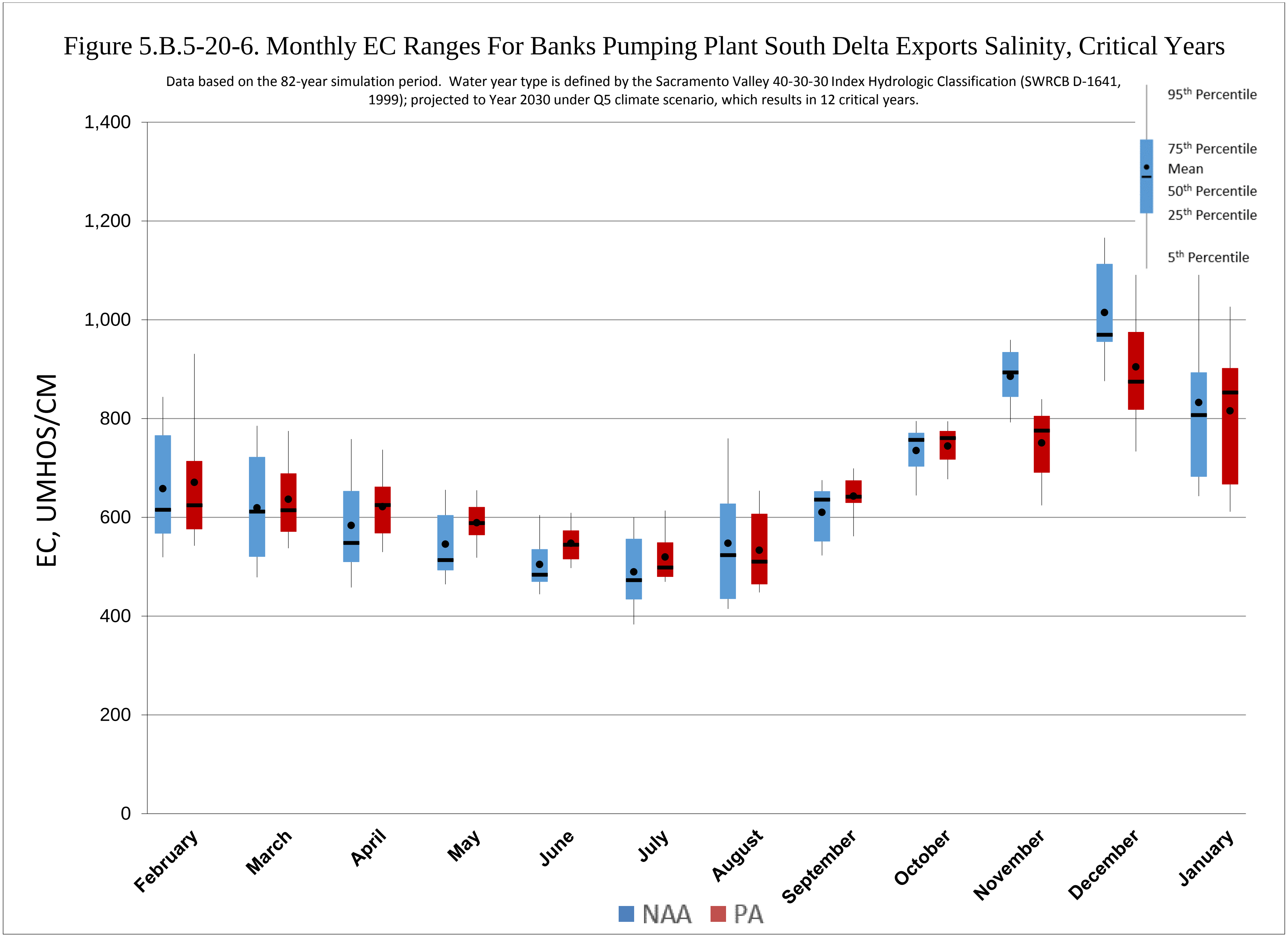
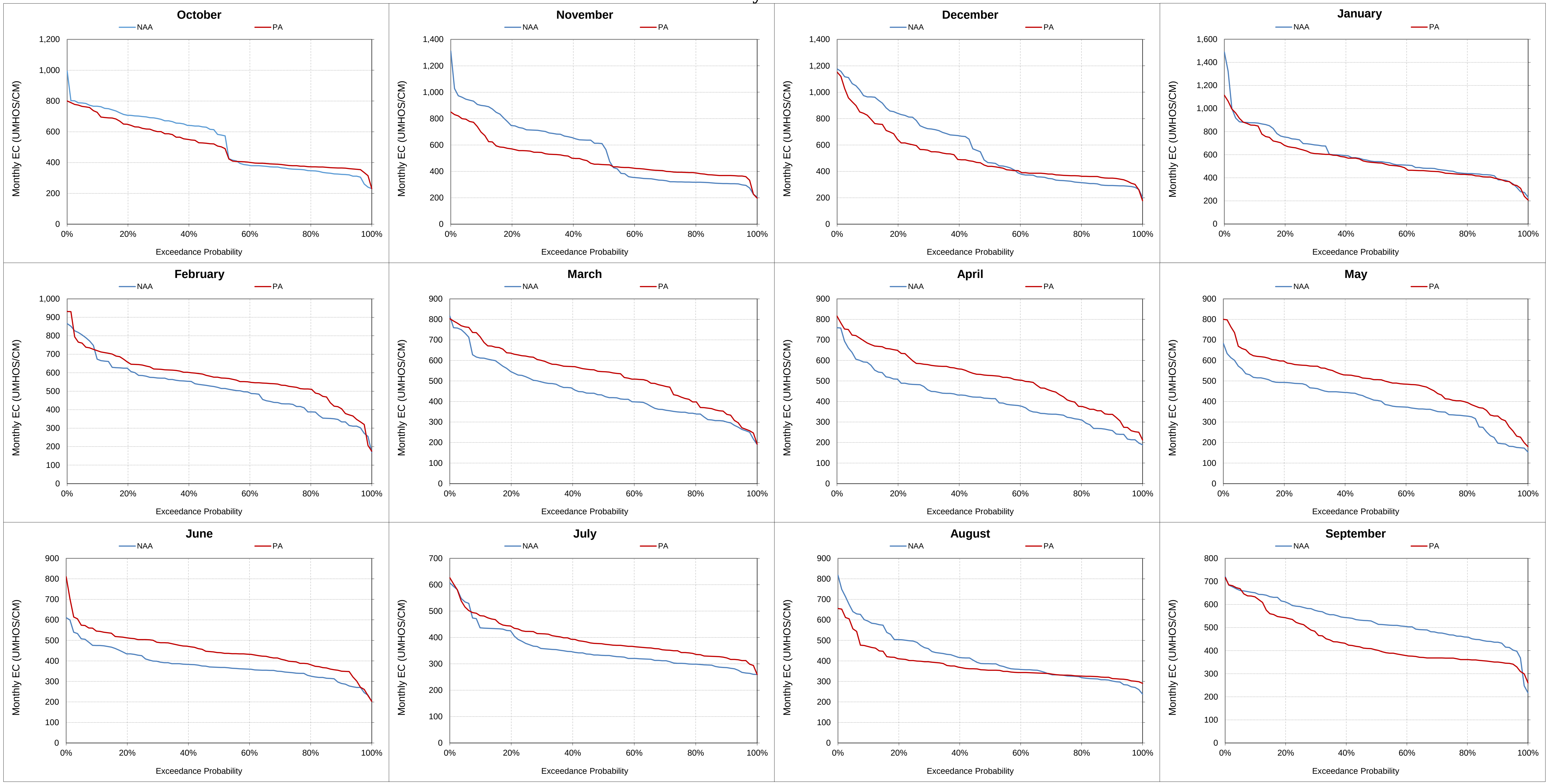


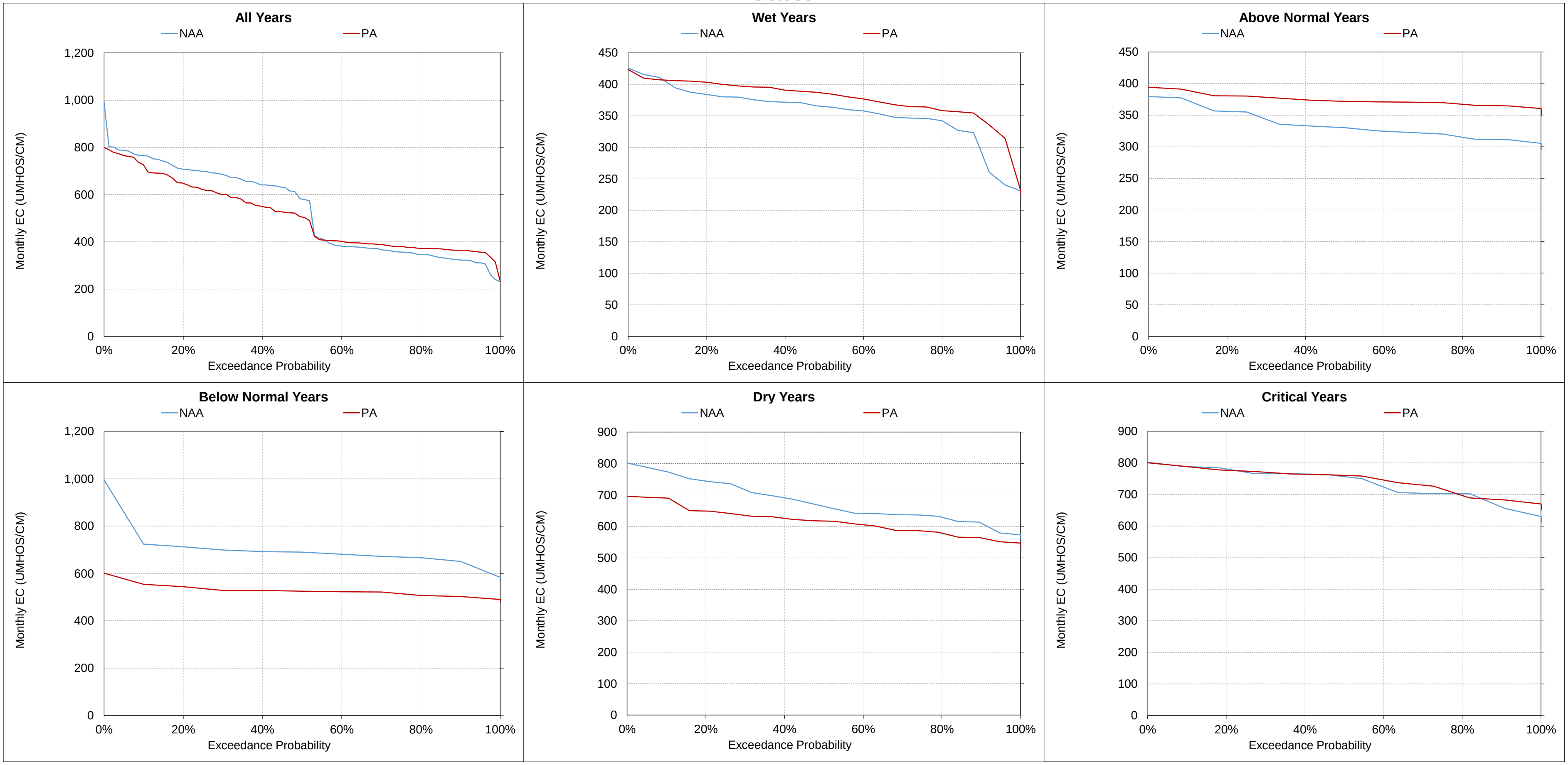
Figure 5.B.5-20-6. Monthly EC Ranges For Banks Pumping Plant South Delta Exports Salinity, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
1,400
1,200
1,000
800
600
400
200
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-20-7. Banks Pumping Plant South Delta Exports Salinity, Monthly EC Probability of Exceedance



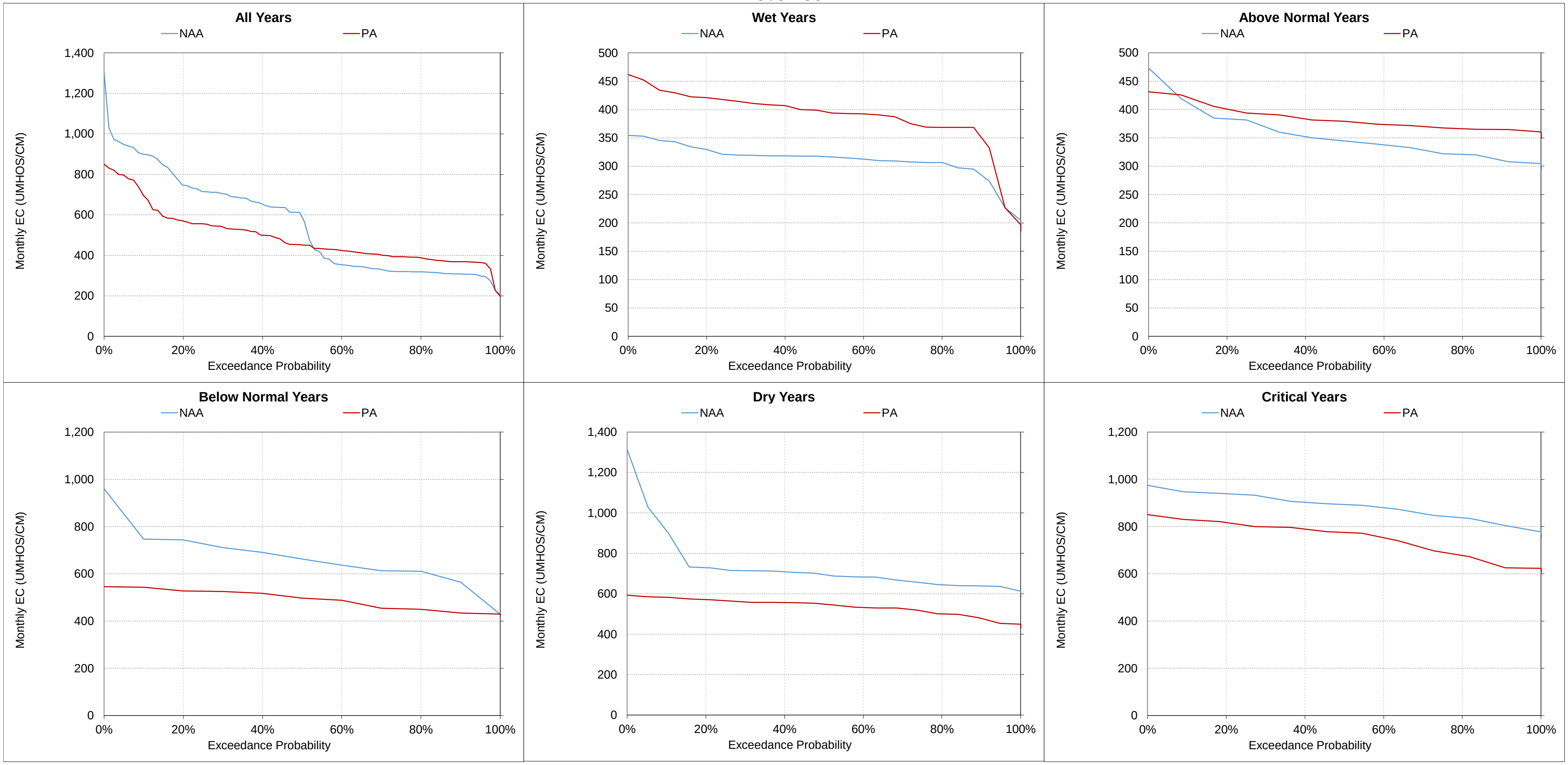
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-8. Banks Pumping Plant South Delta Exports Salinity, Monthly EC
October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-9. Banks Pumping Plant South Delta Exports Salinity, Monthly EC November



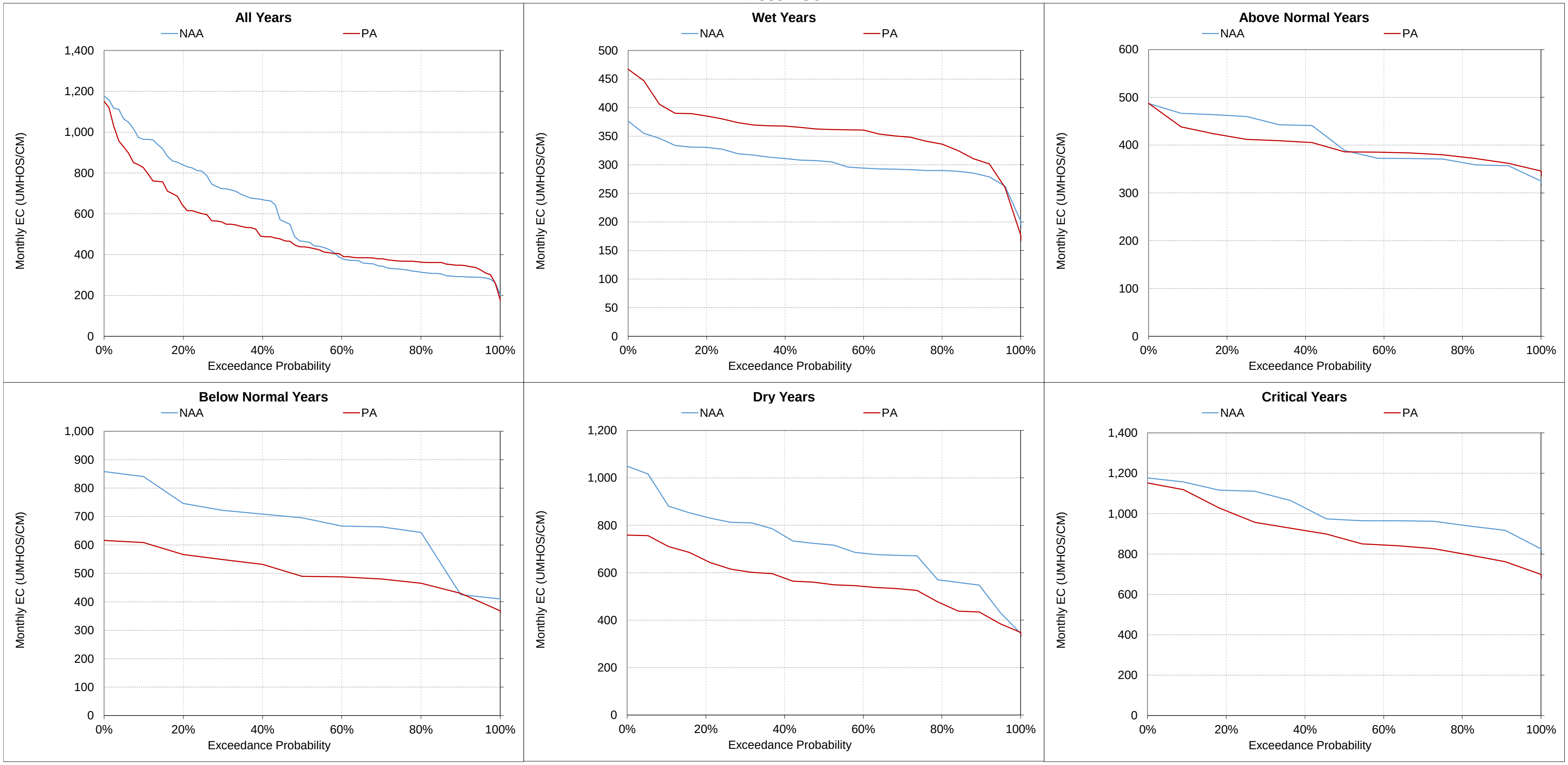
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

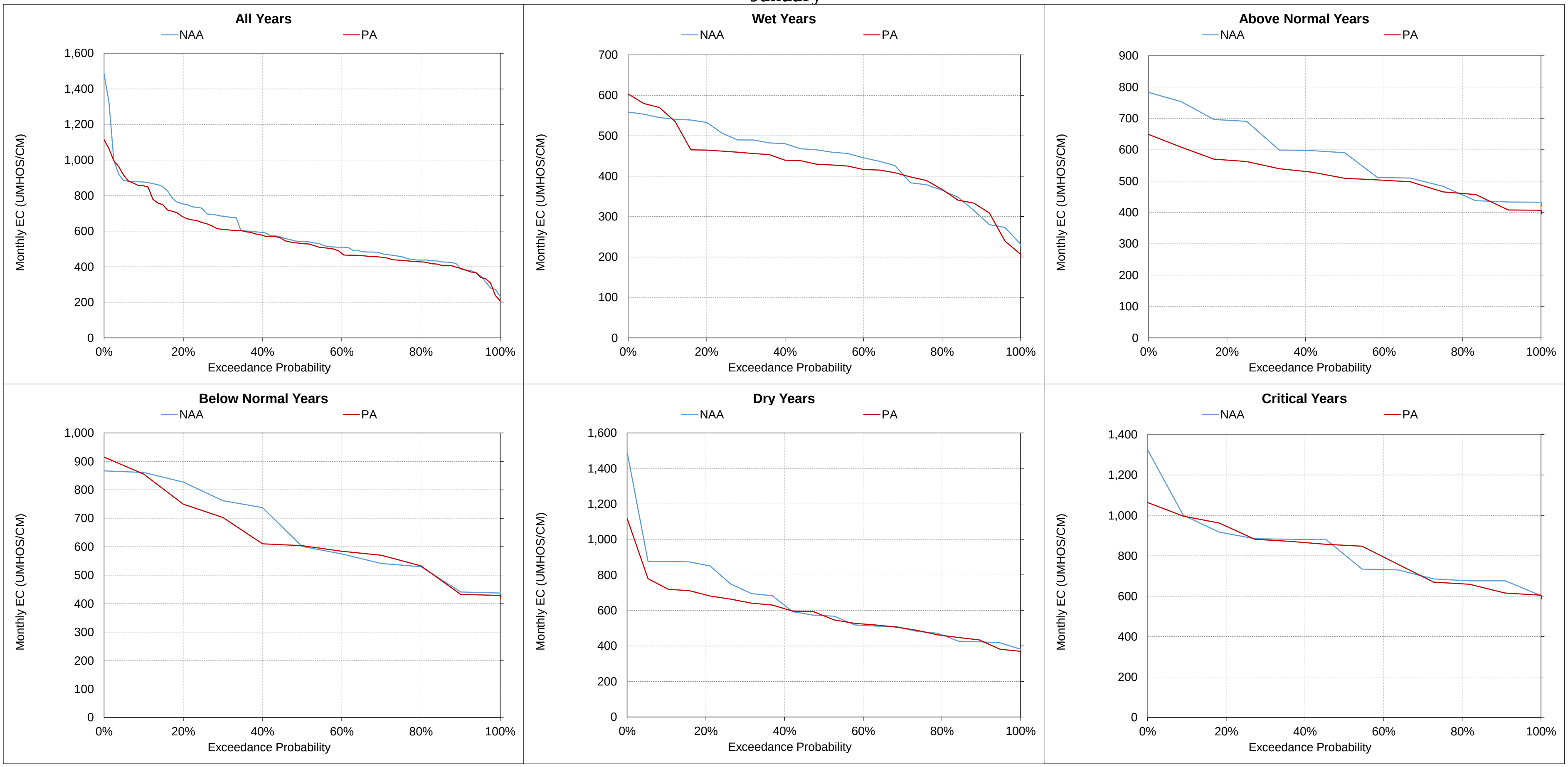
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-10. Banks Pumping Plant South Delta Exports Salinity, Monthly EC December



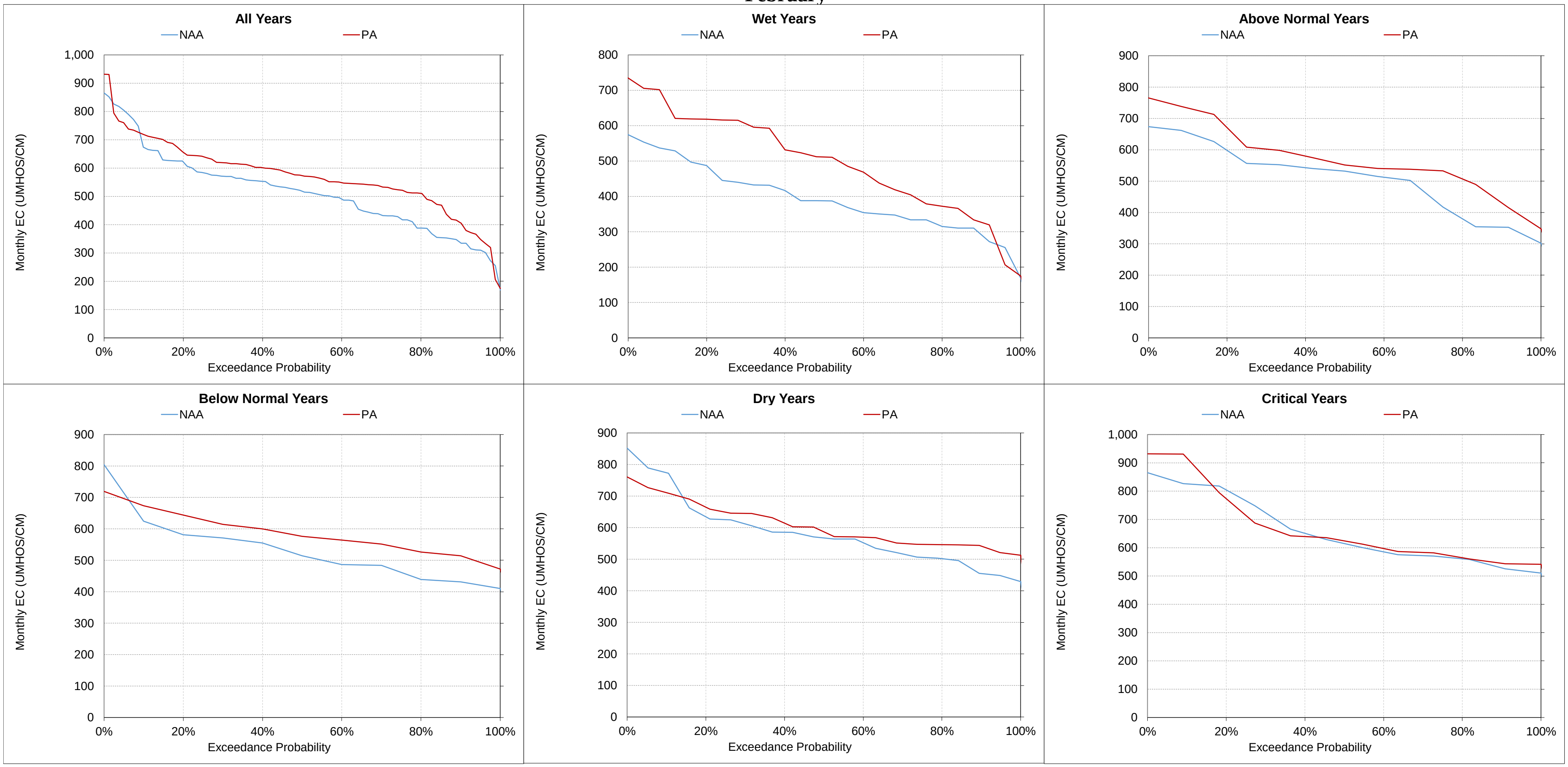
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-11. Banks Pumping Plant South Delta Exports Salinity, Monthly EC
January



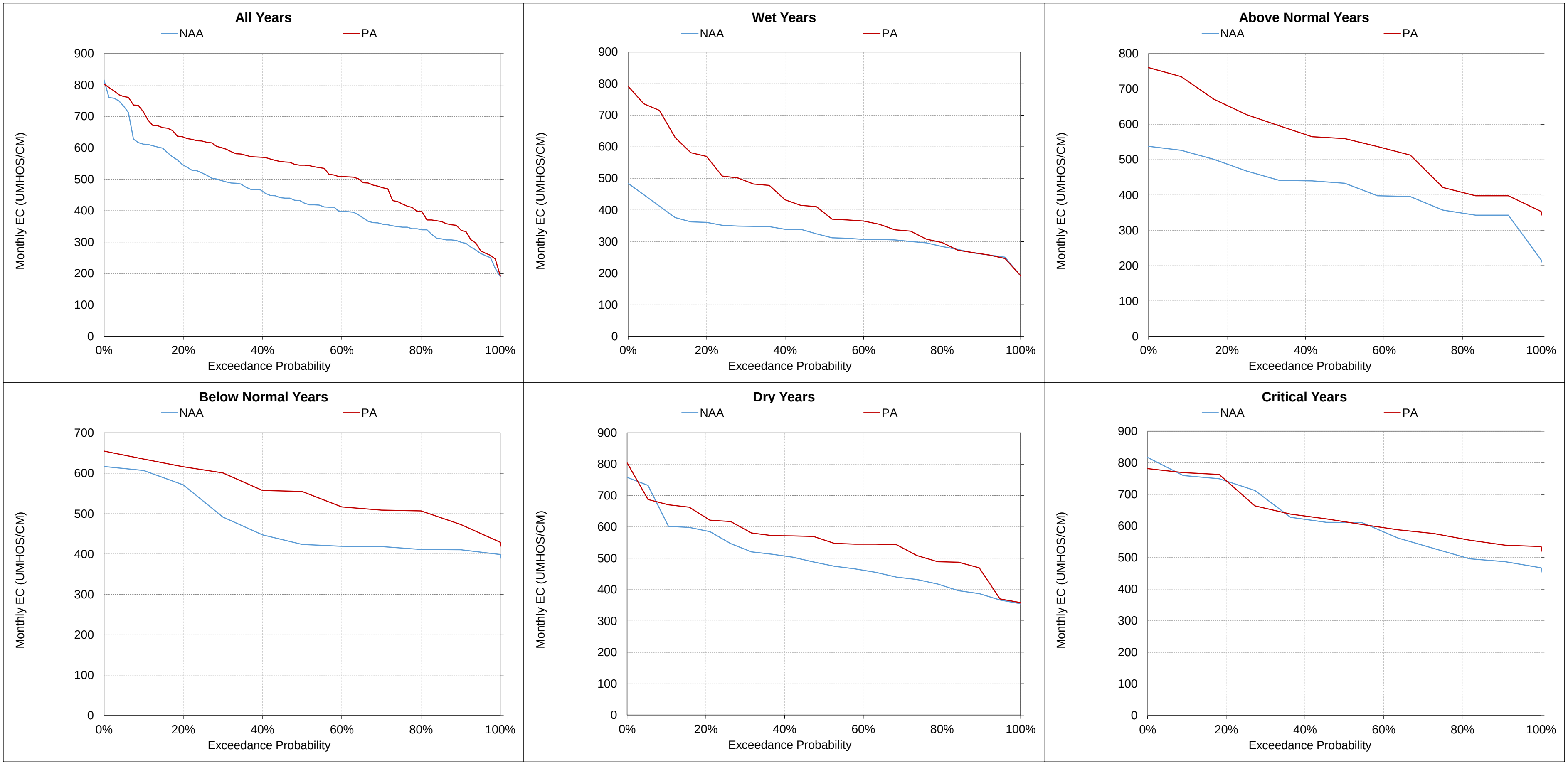
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-12. Banks Pumping Plant South Delta Exports Salinity, Monthly EC February



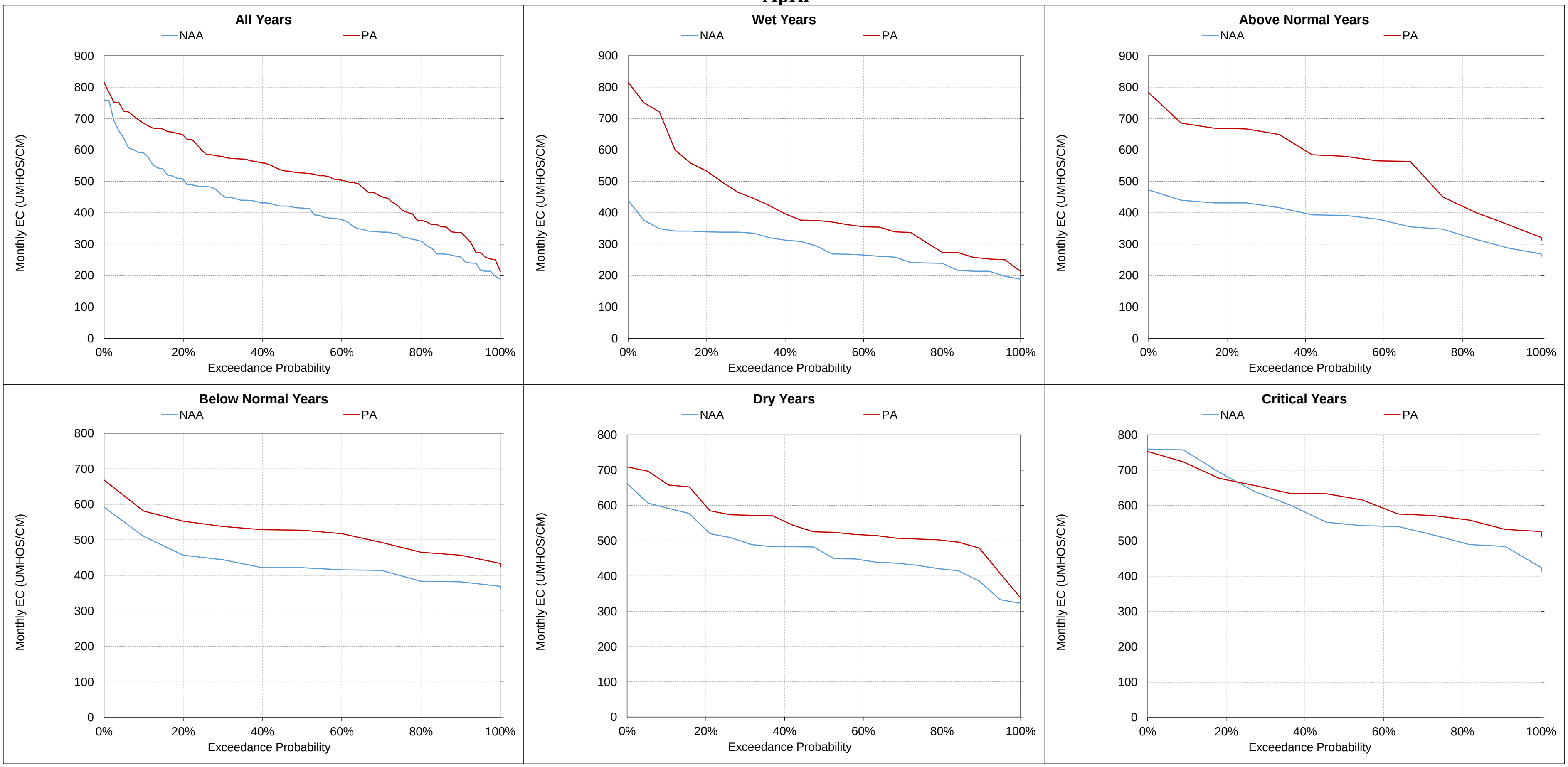
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-13. Banks Pumping Plant South Delta Exports Salinity, Monthly EC
March



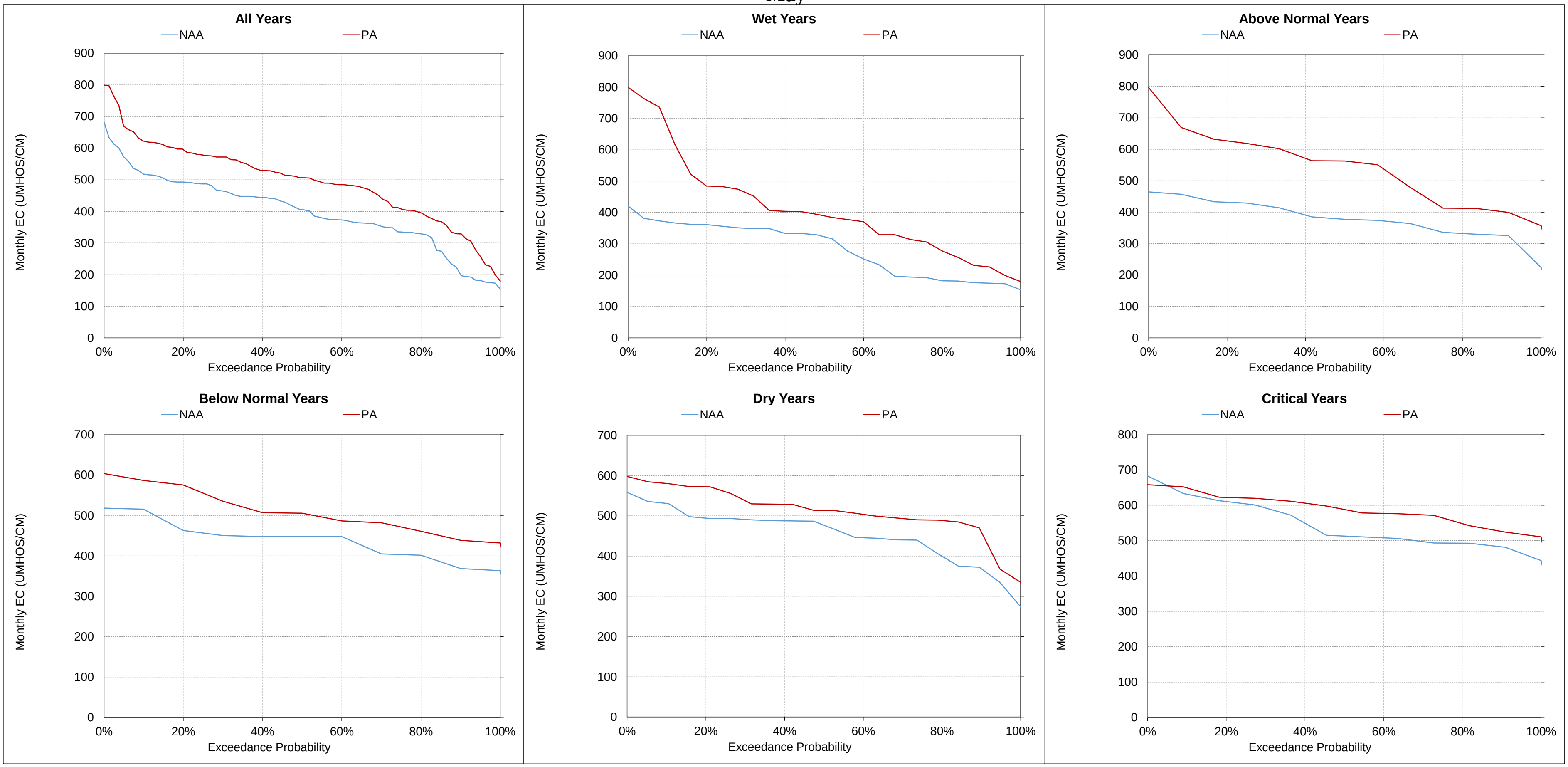
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-14. Banks Pumping Plant South Delta Exports Salinity, Monthly EC
April



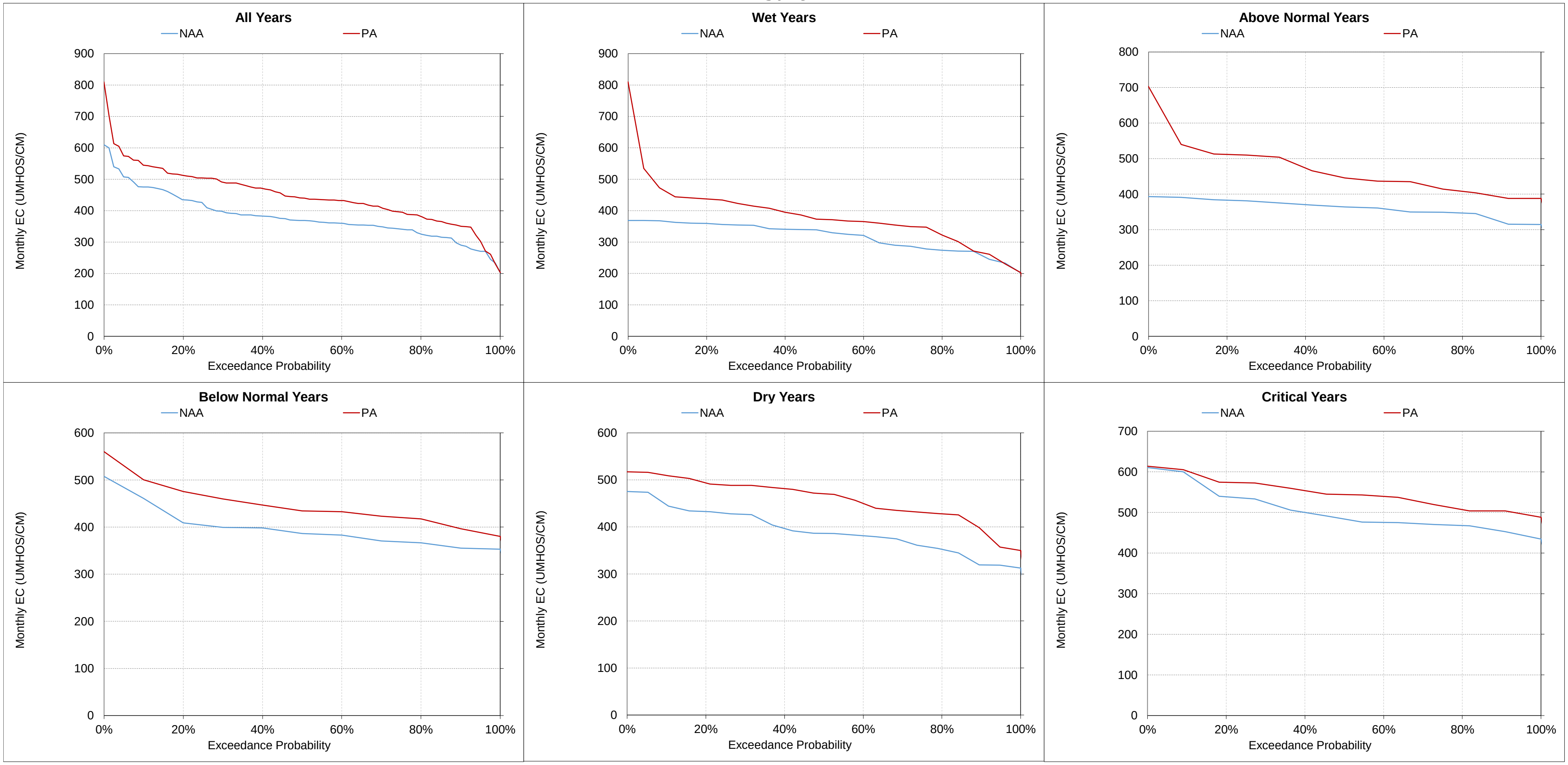
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-15. Banks Pumping Plant South Delta Exports Salinity, Monthly EC May



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-16. Banks Pumping Plant South Delta Exports Salinity, Monthly EC June



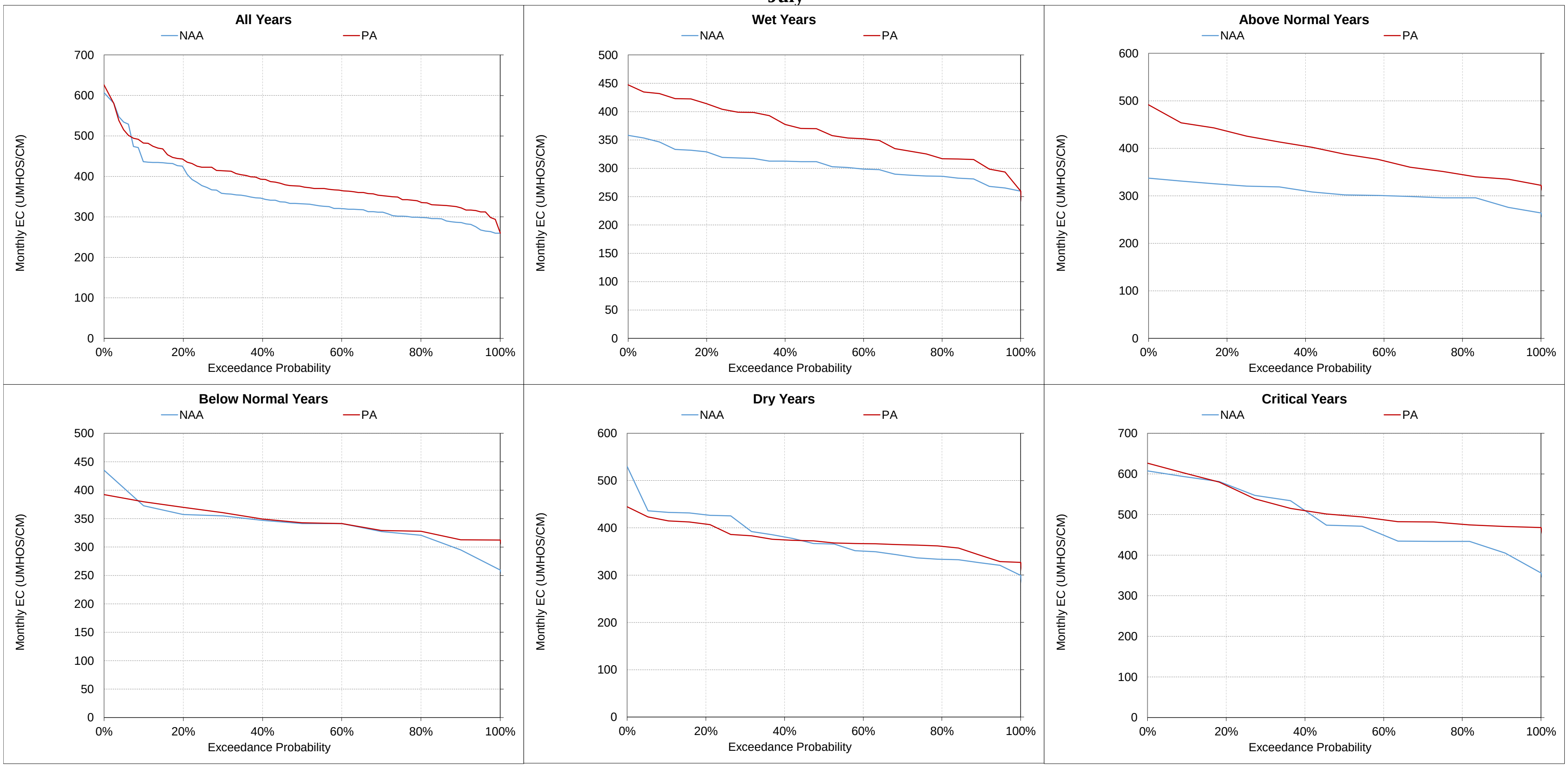
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

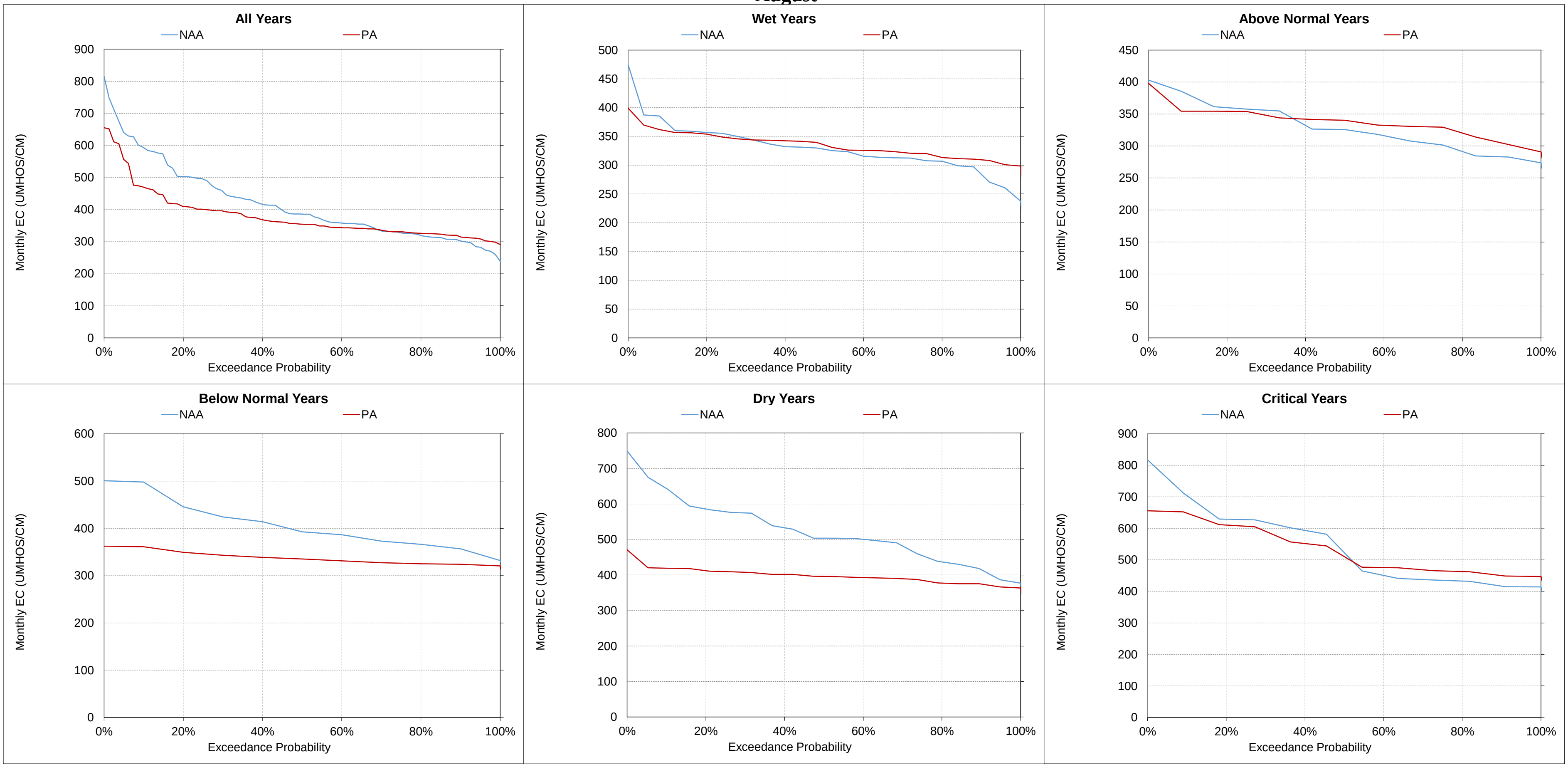
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-17. Banks Pumping Plant South Delta Exports Salinity, Monthly EC
July



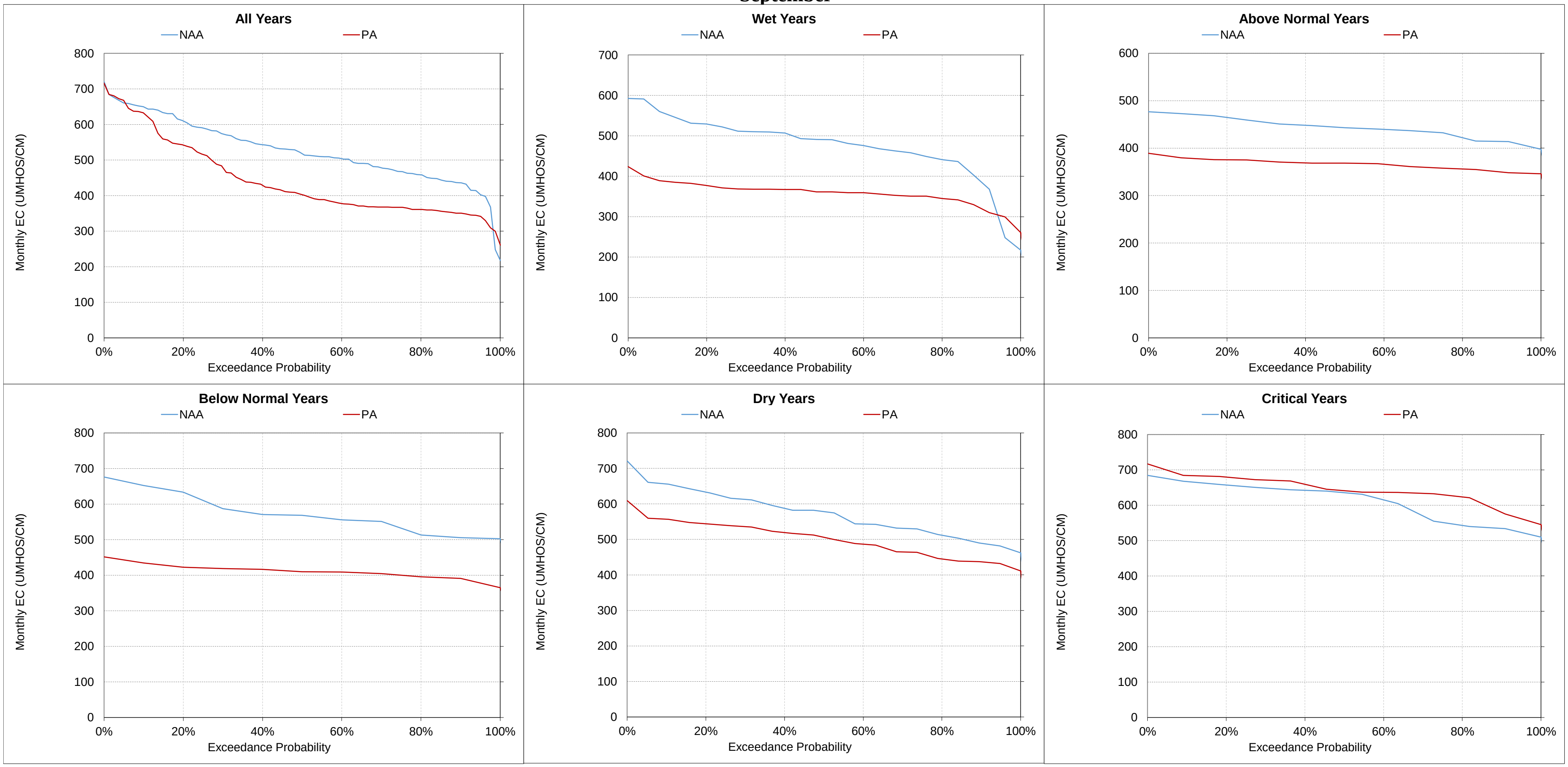
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-18. Banks Pumping Plant South Delta Exports Salinity, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-20-19. Banks Pumping Plant South Delta Exports Salinity, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-21. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent

Statistic	Monthly Percent (%)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	88	84	-4	-5%	89	78	-11	-12%	96	92	-3	-3%	96	95	-1	-1%	96	94	-2	-2%	96	93	-4	-4%
20%	88	83	-5	-6%	87	75	-13	-14%	92	88	-3	-3%	95	92	-3	-3%	95	93	-3	-3%	95	91	-4	-4%
30%	86	80	-6	-7%	83	74	-9	-11%	87	82	-5	-6%	93	91	-2	-2%	95	91	-4	-4%	94	89	-5	-5%
40%	78	75	-3	-3%	78	72	-6	-8%	79	78	-2	-2%	91	89	-2	-2%	93	89	-4	-4%	93	87	-6	-6%
50%	57	59	2	3%	75	70	-5	-7%	77	73	-4	-5%	86	86	0	0%	92	88	-4	-4%	92	86	-6	-7%
60%	52	57	6	11%	61	58	-3	-5%	75	68	-7	-10%	82	81	-1	-1%	90	86	-4	-4%	91	85	-6	-7%
70%	50	56	5	10%	52	56	3	7%	71	64	-7	-10%	77	77	-1	-1%	88	84	-3	-4%	89	80	-9	-10%
80%	50	55	5	10%	50	54	3	7%	62	59	-4	-6%	72	74	2	3%	85	83	-2	-3%	85	77	-8	-10%
90%	44	50	6	14%	43	47	3	7%	53	53	0	0%	68	69	1	2%	83	80	-3	-3%	80	75	-6	-7%
Long Term Full Simulation Period[b]	66	67	0	0%	68	65	-4	-6%	76	73	-4	-5%	84	84	0	-1%	90	87	-3	-3%	90	84	-6	-7%
Water Year Types[c]																								
Wet (32%)	88	82	-6	-6%	87	75	-12	-14%	83	77	-6	-7%	85	85	0	0%	94	89	-5	-5%	91	82	-9	-10%
Above Normal (16%)	78	77	-1	-1%	78	72	-6	-8%	80	75	-5	-6%	83	83	0	0%	93	90	-3	-3%	94	87	-7	-8%
Below Normal (13%)	55	59	4	7%	59	60	0	1%	73	71	-2	-3%	84	83	-1	-1%	88	86	-3	-3%	90	84	-5	-6%
Dry (24%)	51	56	5	9%	58	60	2	3%	75	73	-2	-2%	85	83	-2	-2%	89	87	-2	-2%	90	86	-4	-4%
Critical (15%)	44	48	4	9%	43	45	3	6%	62	60	-2	-3%	81	81	0	0%	84	82	-1	-1%	84	82	-2	-2%

Statistic	Monthly Percent (%)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	93	88	-4	-4%	87	81	-5	-6%	81	71	-11	-13%	80	68	-12	-15%	73	65	-8	-11%	91	87	-4	-4%
20%	91	86	-5	-6%	82	79	-3	-4%	74	70	-5	-6%	78	66	-12	-15%	72	63	-9	-12%	89	84	-5	-6%
30%	89	85	-5	-5%	79	76	-3	-4%	72	68	-4	-6%	76	64	-12	-16%	70	61	-9	-12%	86	80	-6	-7%
40%	87	82	-4	-5%	78	74	-3	-4%	70	67	-3	-5%	74	62	-12	-16%	69	60	-9	-13%	81	78	-3	-4%
50%	85	81	-5	-6%	76	73	-4	-5%	69	65	-4	-6%	71	60	-11	-15%	66	59	-7	-11%	62	53	-8	-14%
60%	84	79	-6	-7%	75	71	-4	-6%	68	64	-4	-6%	66	59	-6	-10%	63	57	-6	-9%	58	51	-7	-13%
70%	83	76	-6	-8%	74	68	-6	-8%	67	59	-8	-11%	64	57	-6	-10%	60	54	-6	-10%	55	50	-5	-9%
80%	81	73	-8	-10%	70	64	-6	-9%	65	57	-8	-13%	62	56	-6	-10%	57	51	-6	-10%	53	49	-4	-8%
90%	77	69	-8	-10%	66	60	-6	-9%	58	52	-6	-11%	57	52	-6	-10%	52	48	-4	-8%	50	48	-2	-3%
Long Term Full Simulation Period[b]	85	80	-5	-6%	76	72	-4	-6%	69	63	-6	-9%	69	60	-9	-13%	64	57	-7	-11%	70	65	-5	-7%
Water Year Types[c]																								
Wet (32%)	85	78	-7	-9%	77	71	-6	-8%	73	61	-11	-16%	75	61	-14	-19%	68	57	-11	-16%	90	85	-5	-6%
Above Normal (16%)	89	80	-9	-10%	78	72	-7	-8%	69	61	-7	-11%	77	64	-12	-16%	72	63	-8	-12%	81	77	-3	-4%
Below Normal (13%)	86	81	-5	-6%	77	73	-4	-5%	69	65	-3	-5%	74	65	-9	-13%	69	62	-7	-11%	59	52	-8	-13%
Dry (24%)	86	83	-3	-4%	77	74	-2	-3%	70	67	-3	-4%	63	59	-5	-7%	61	56	-5	-8%	54	49	-5	-9%
Critical (15%)	79	78	-1	-2%	70	69	-2	-2%	62	60	-1	-2%	55	53	-2	-4%	52	49	-3	-5%	50	48	-2	-4%

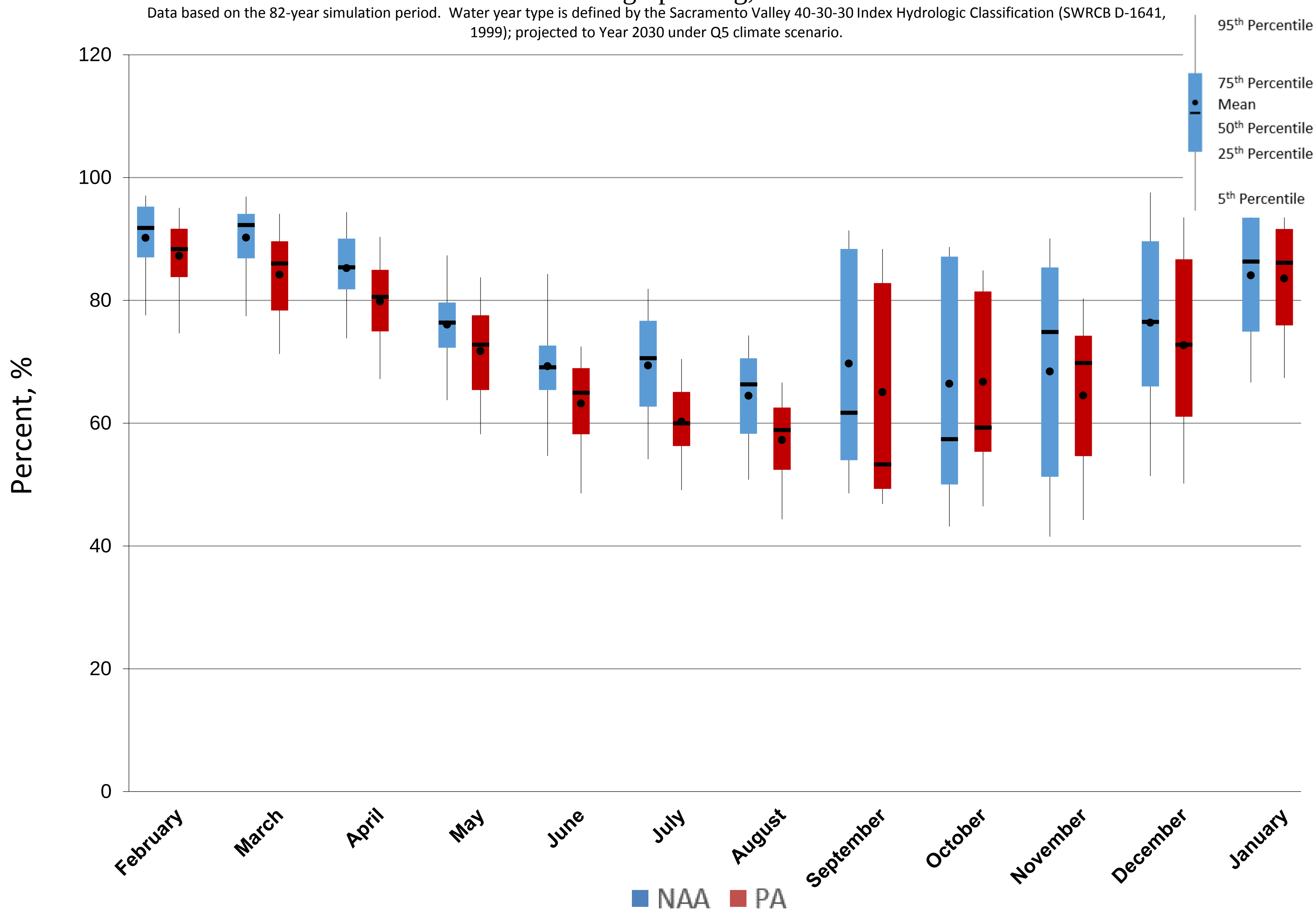
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-1. Monthly Percent Ranges For Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, All Years



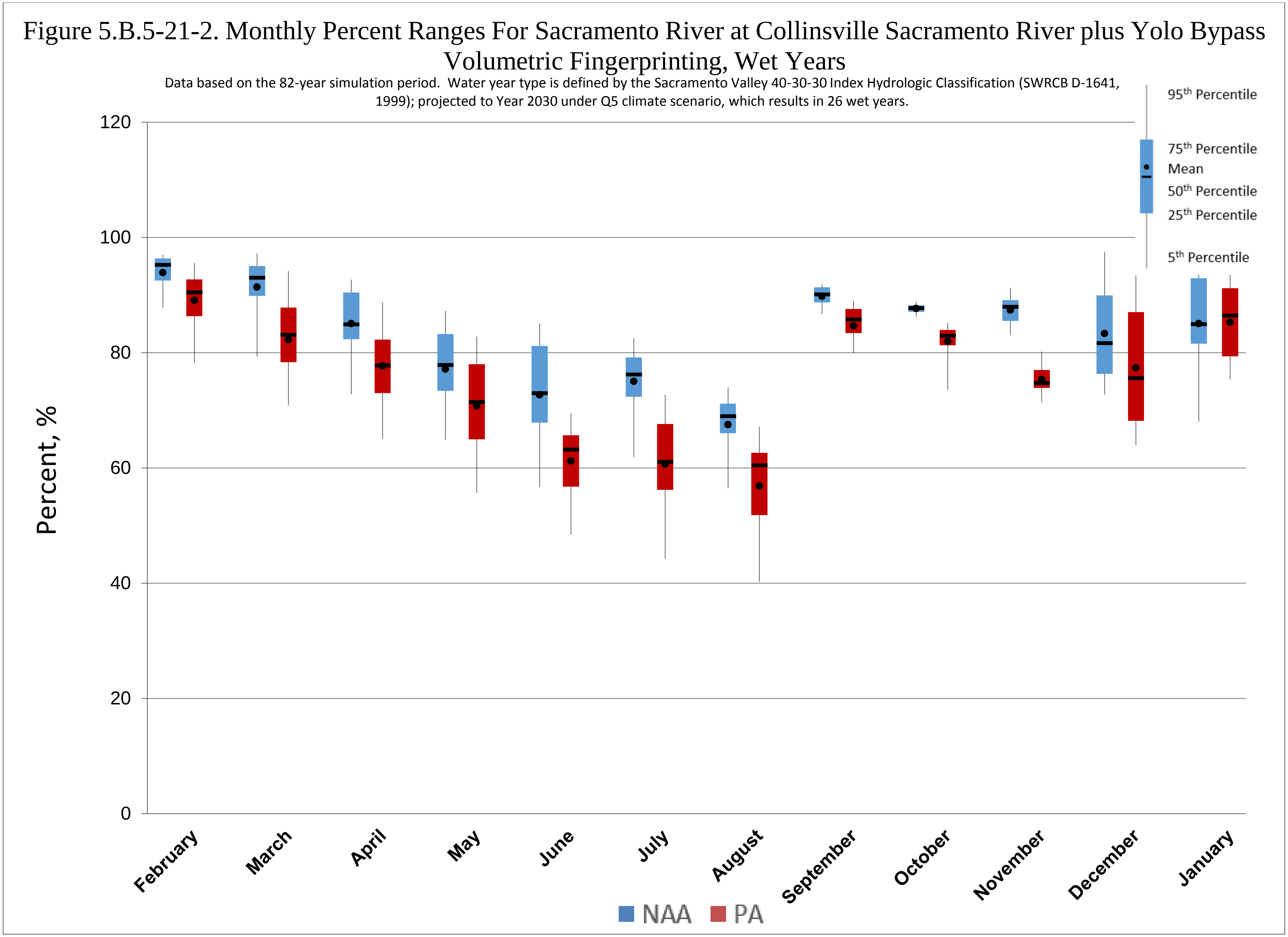


Figure 5.B.5-21-2. Monthly Percent Ranges For Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Percent, %
120
100
80
60
40
20
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-21-3. Monthly Percent Ranges For Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

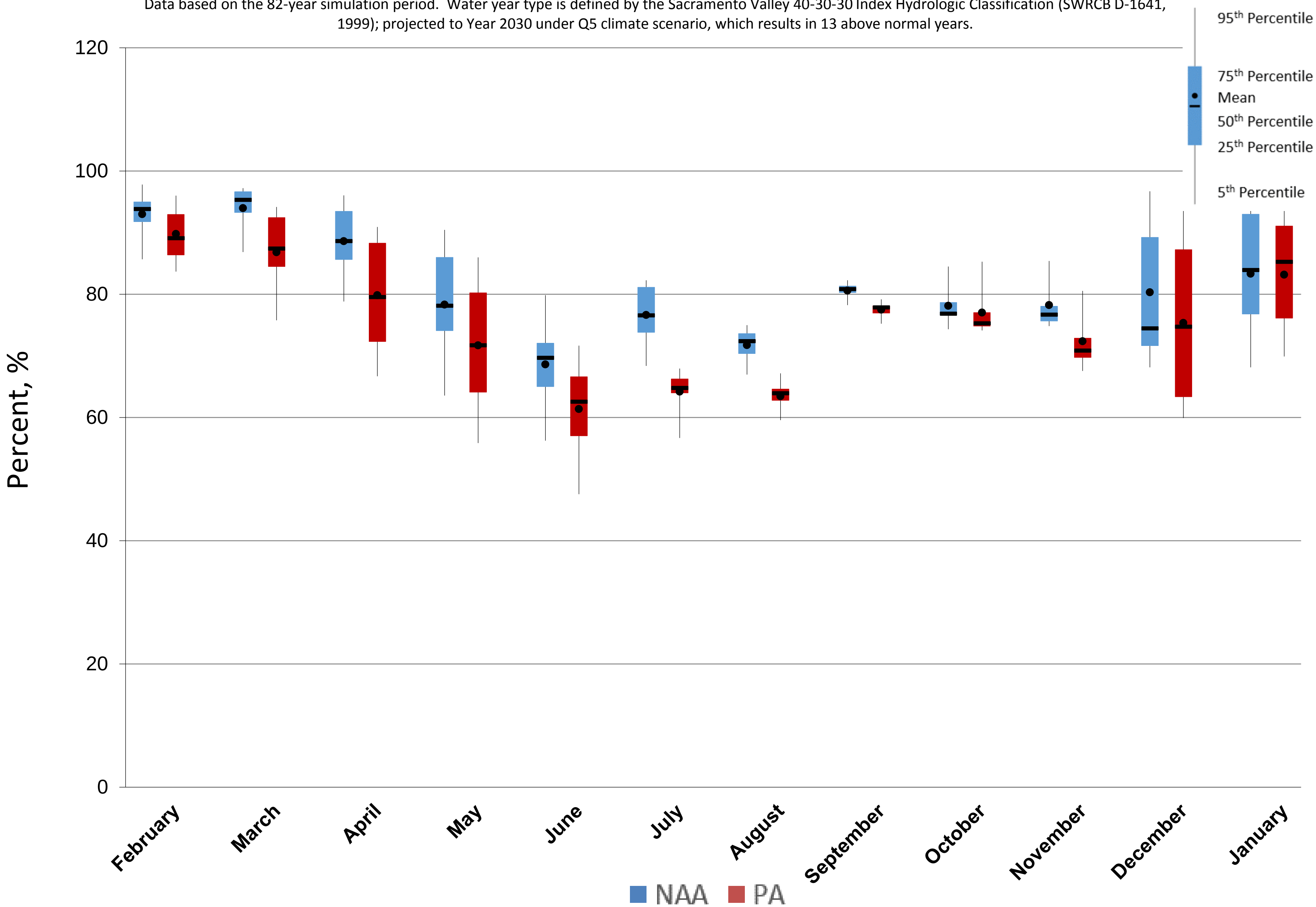


Figure 5.B.5-21-4. Monthly Percent Ranges For Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Below Normal Years

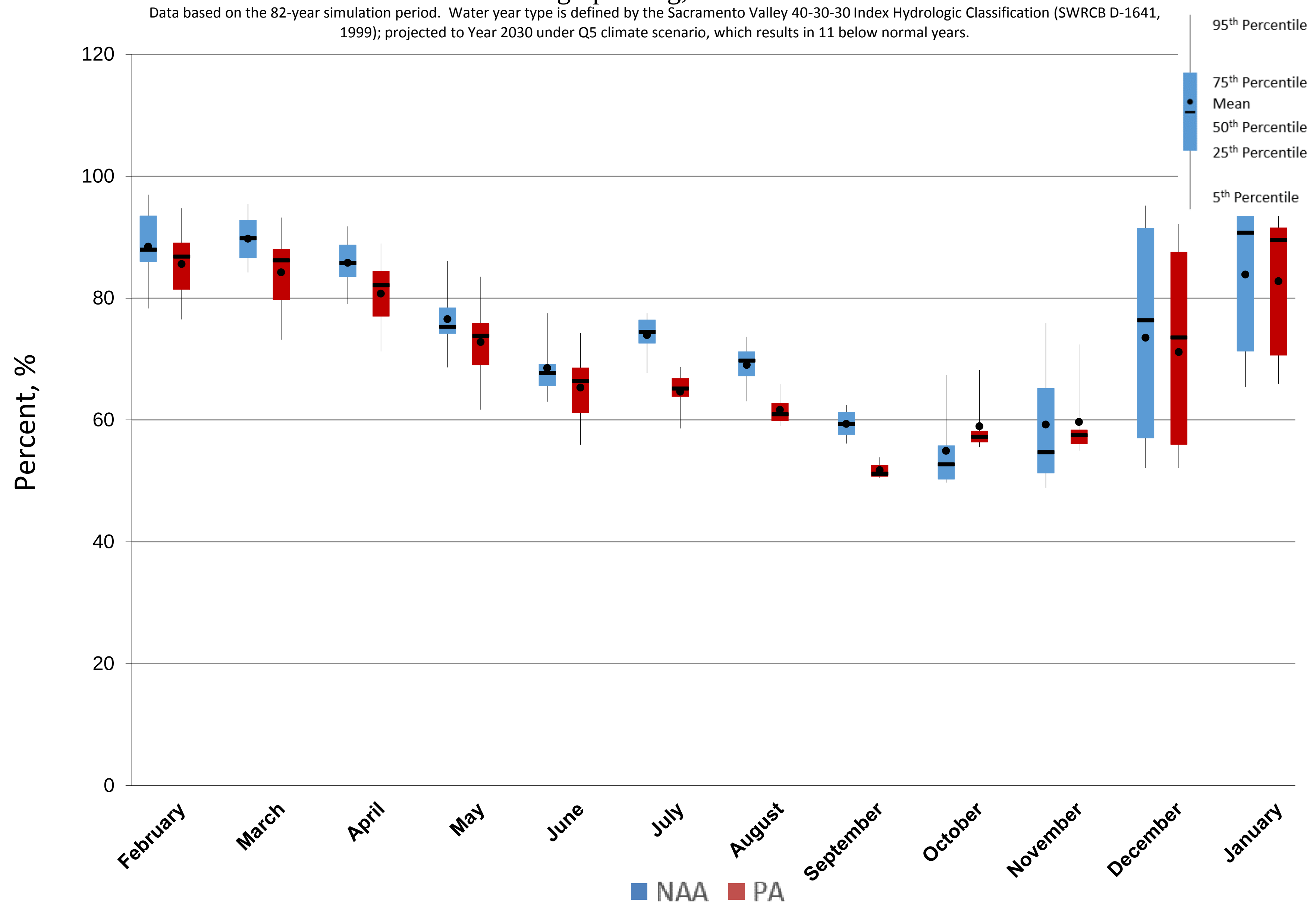


Figure 5.B.5-21-5. Monthly Percent Ranges For Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.

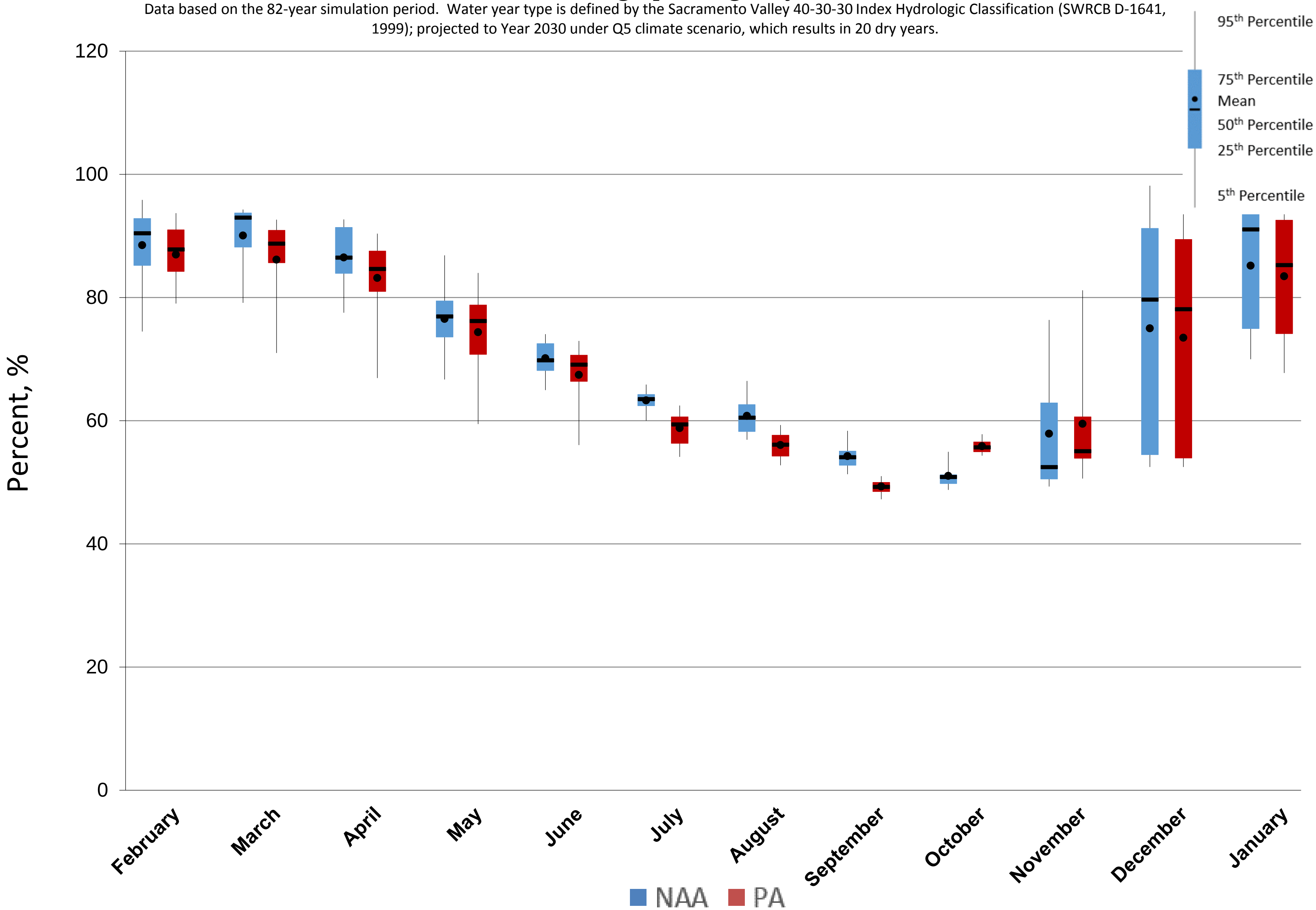


Figure 5.B.5-21-6. Monthly Percent Ranges For Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Critical Years

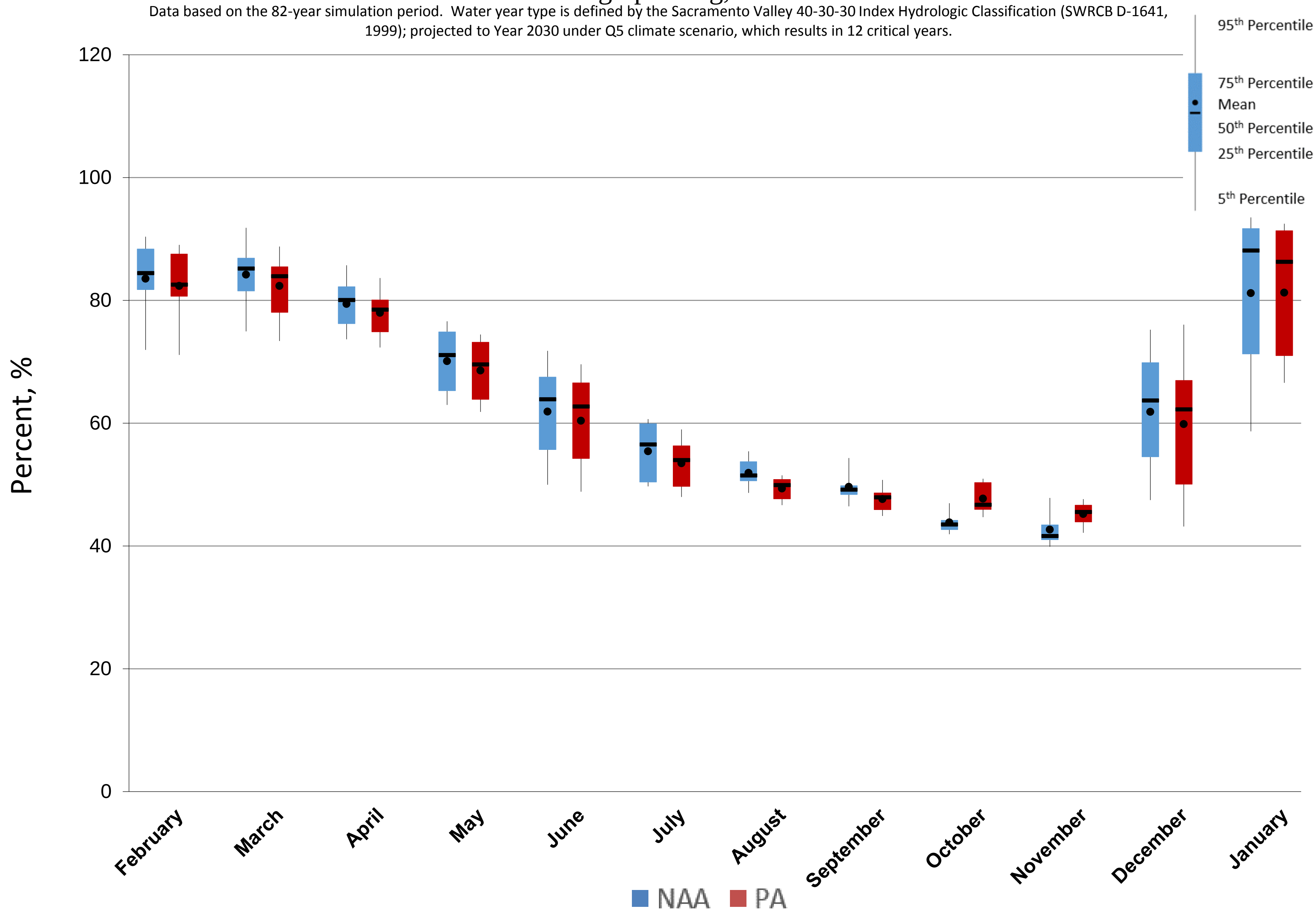
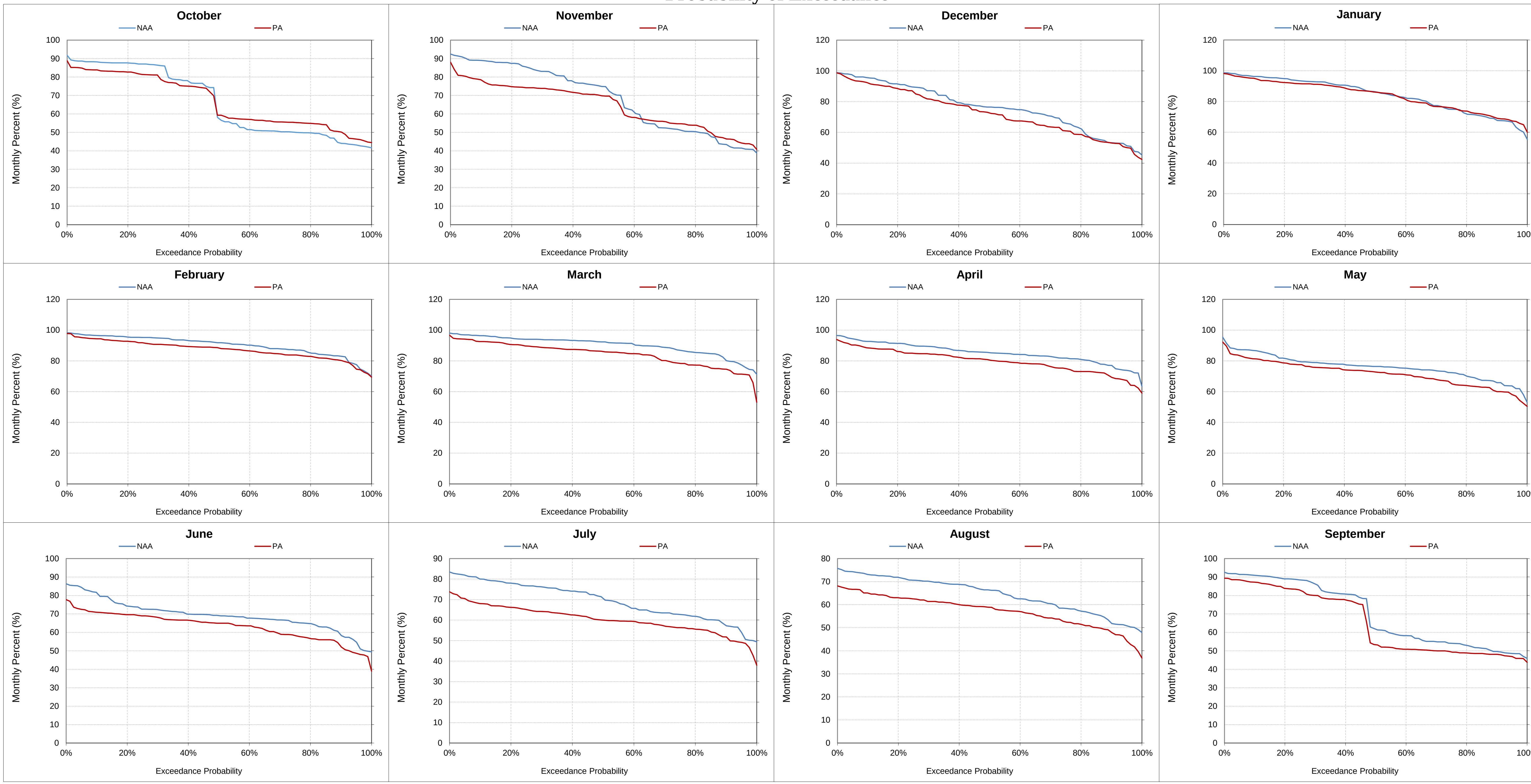
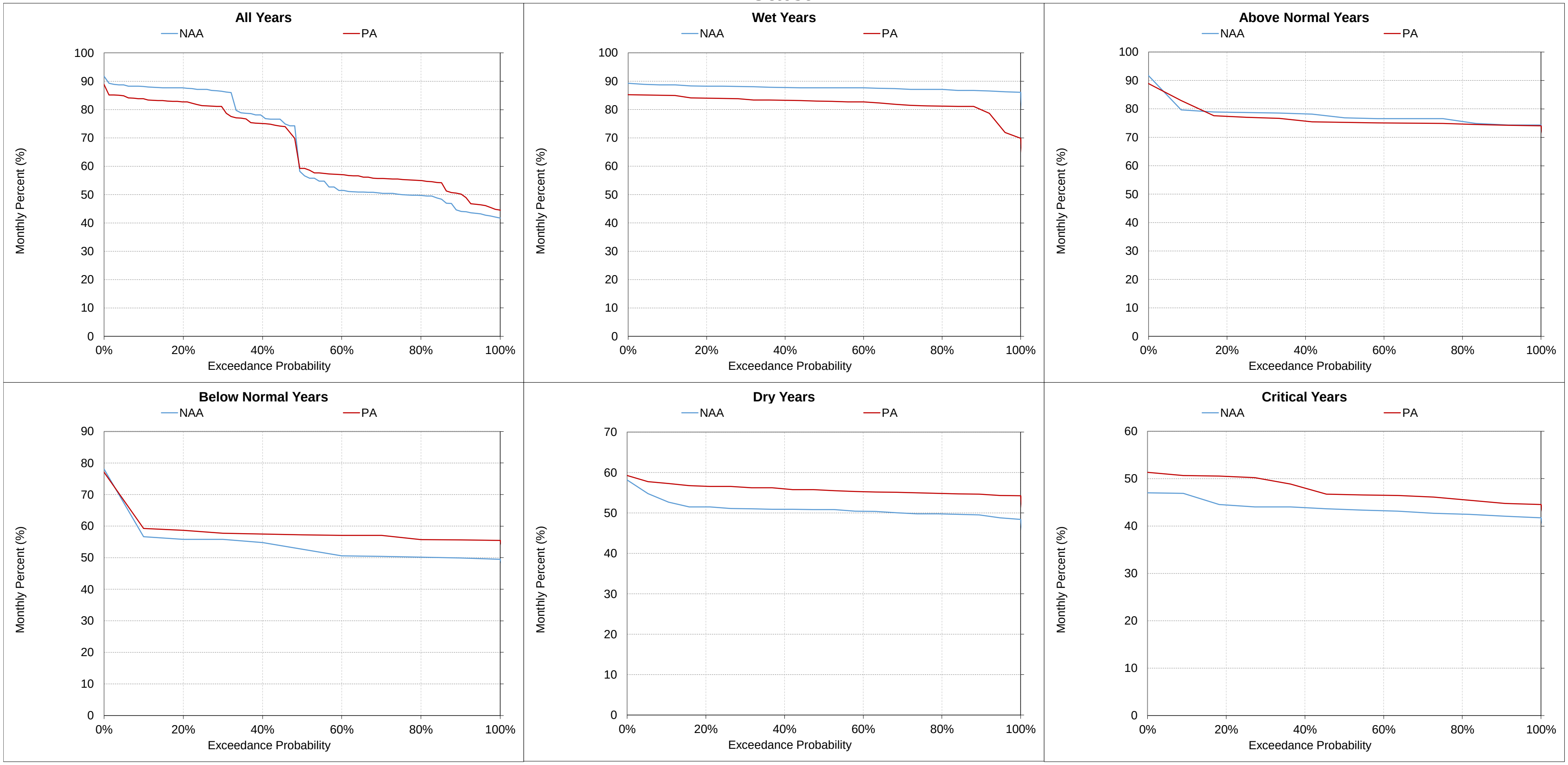


Figure 5.B.5-21-7. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent Probability of Exceedance



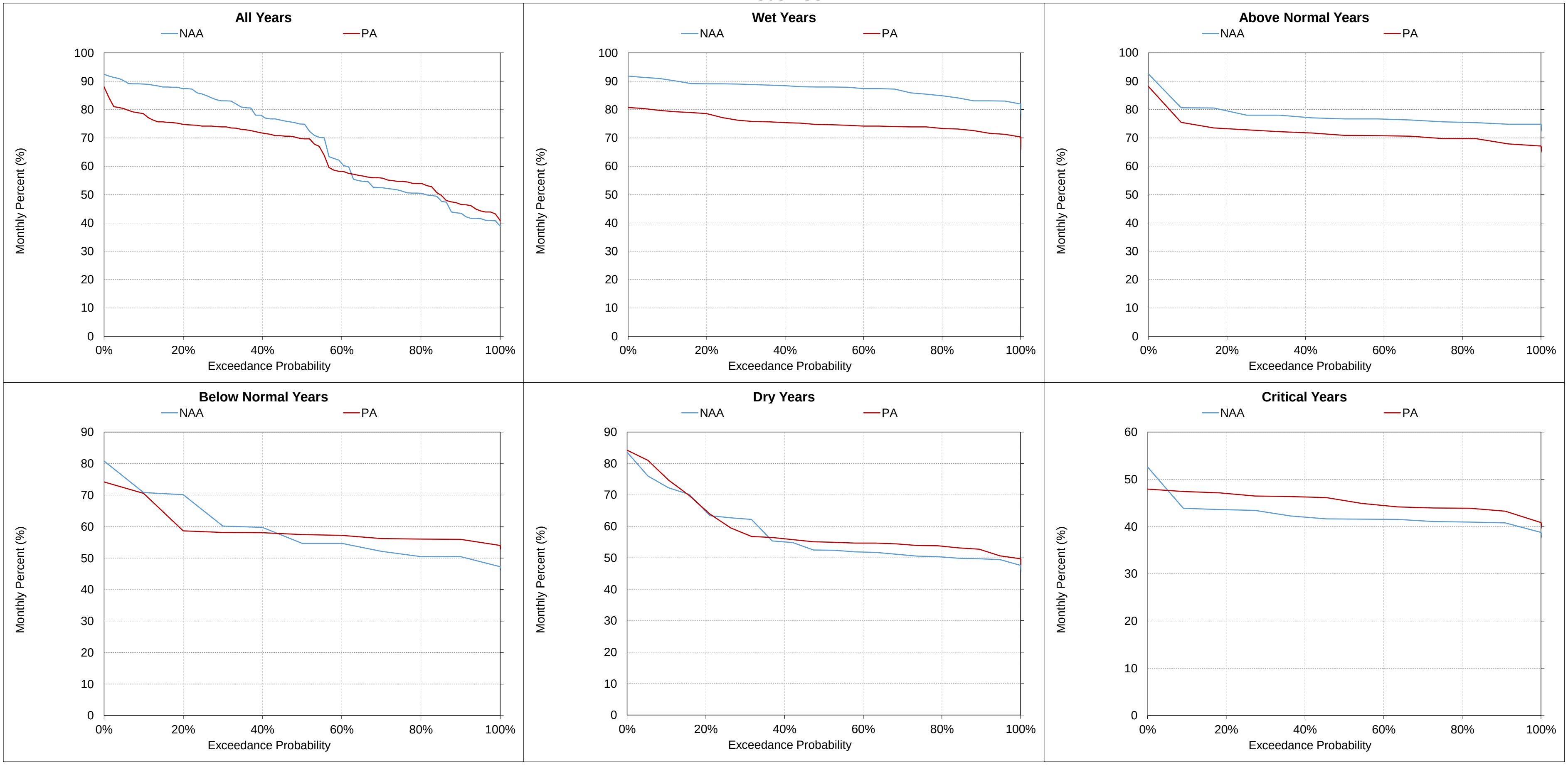
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-8. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent October



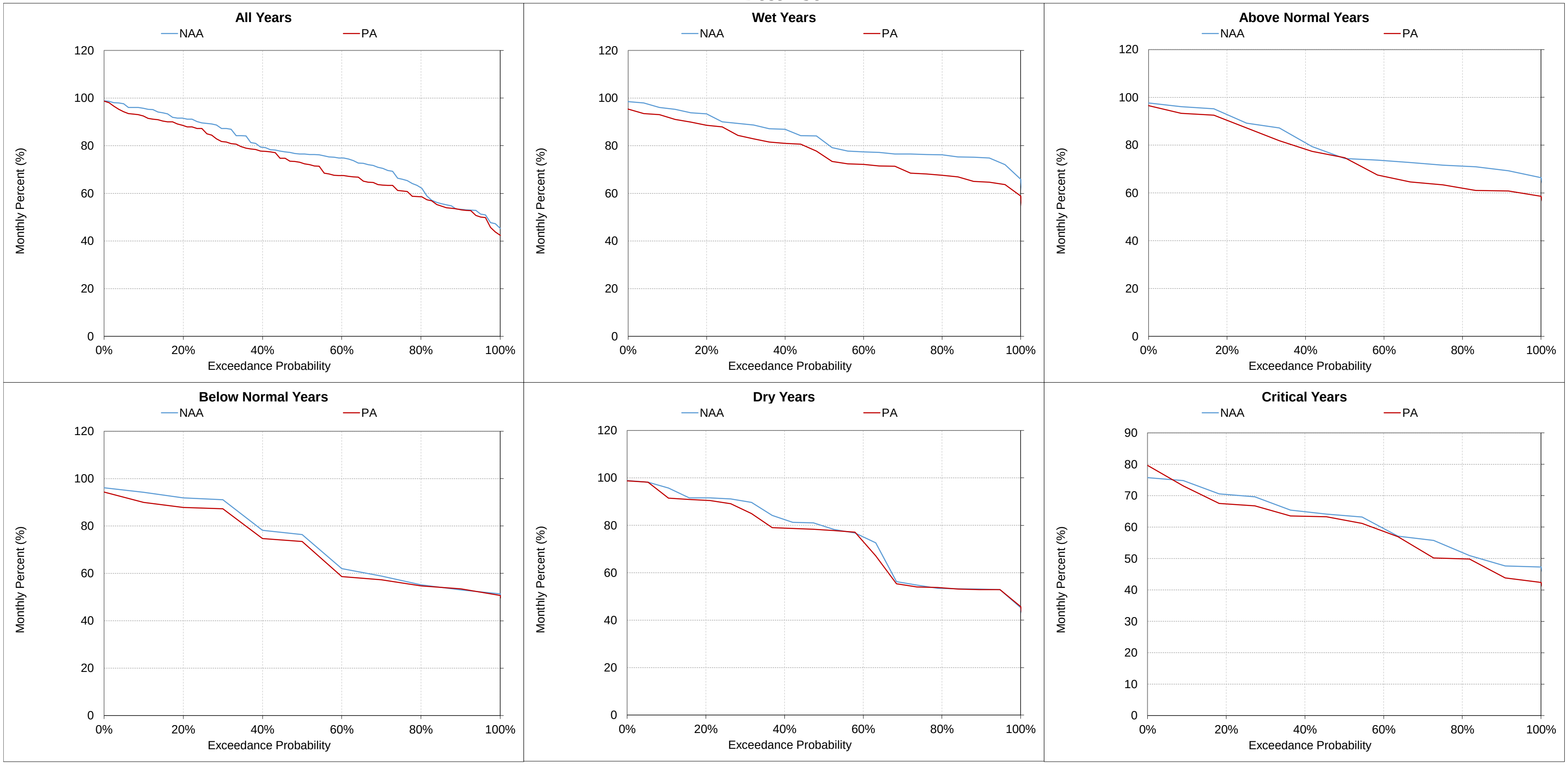
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-9. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-10. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent December



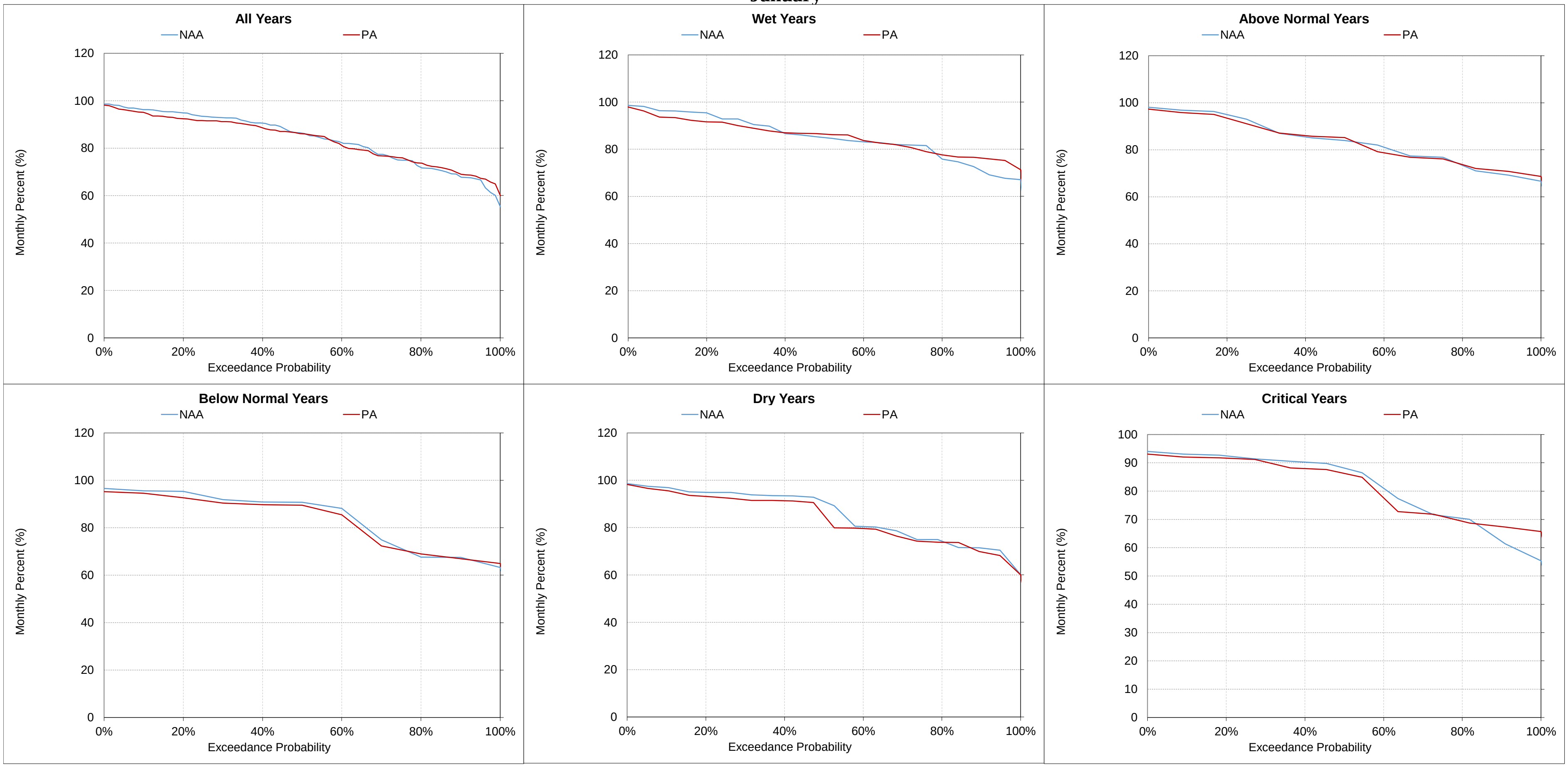
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

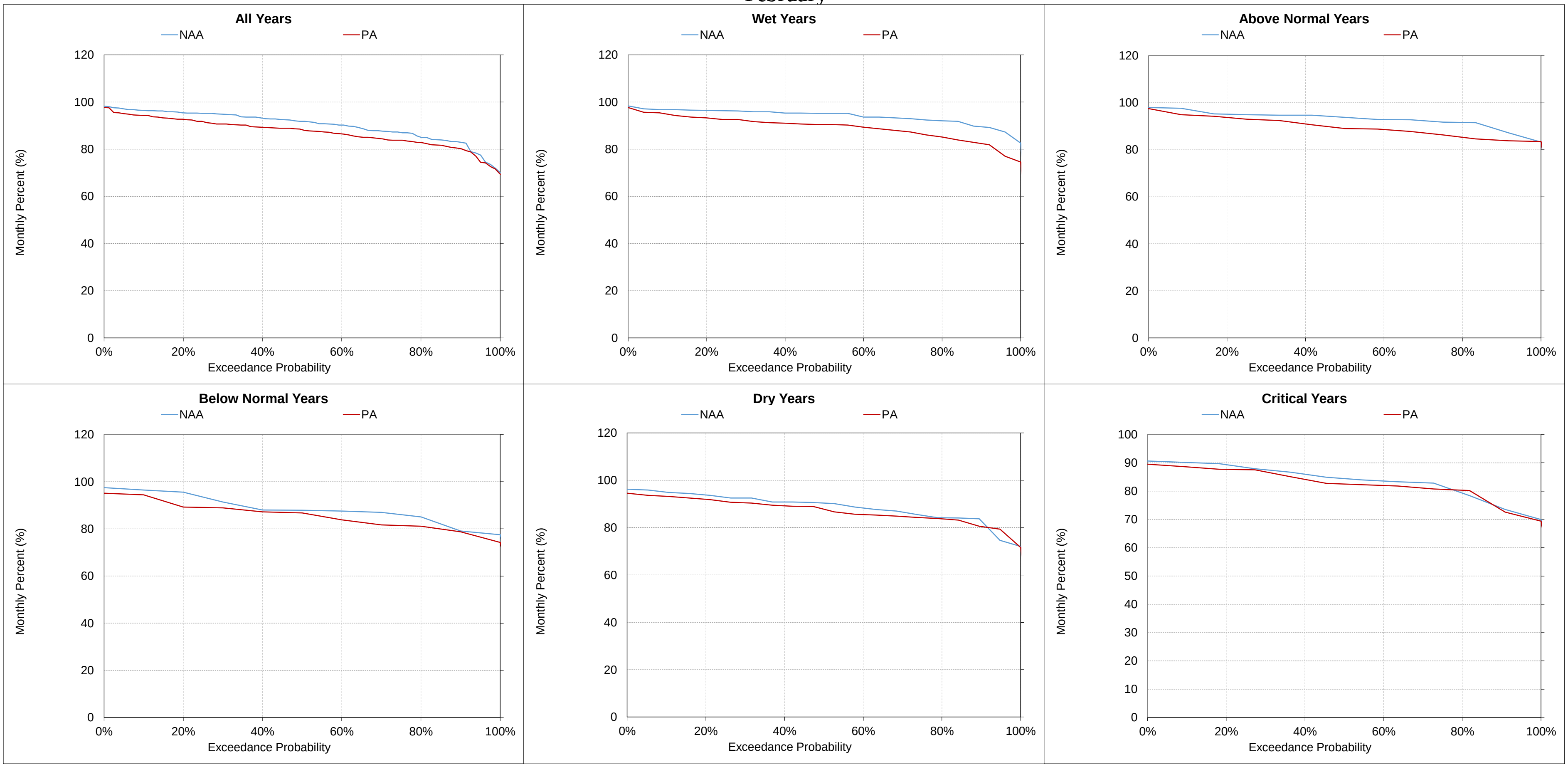
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-11. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent January



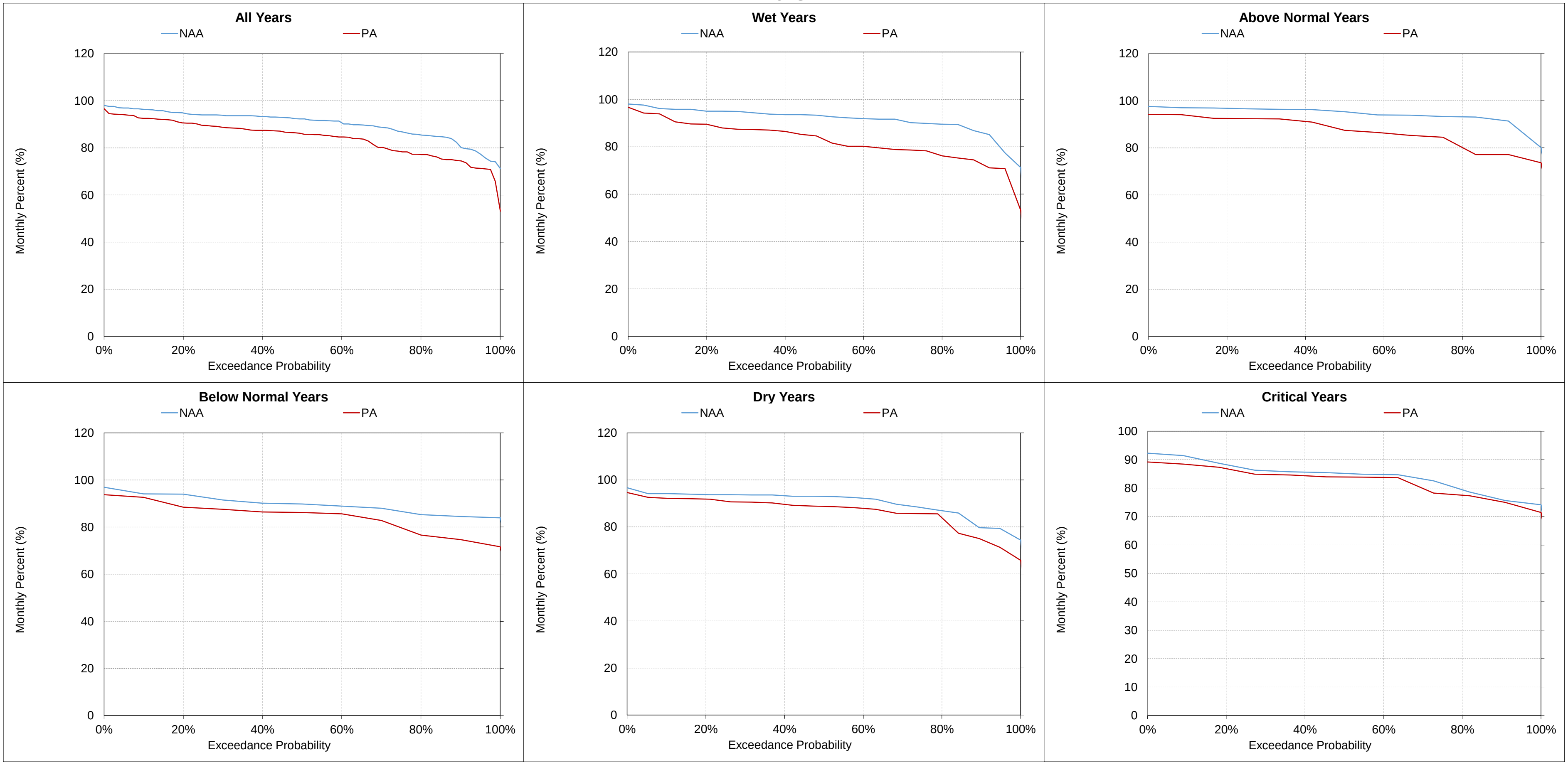
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-12. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent February



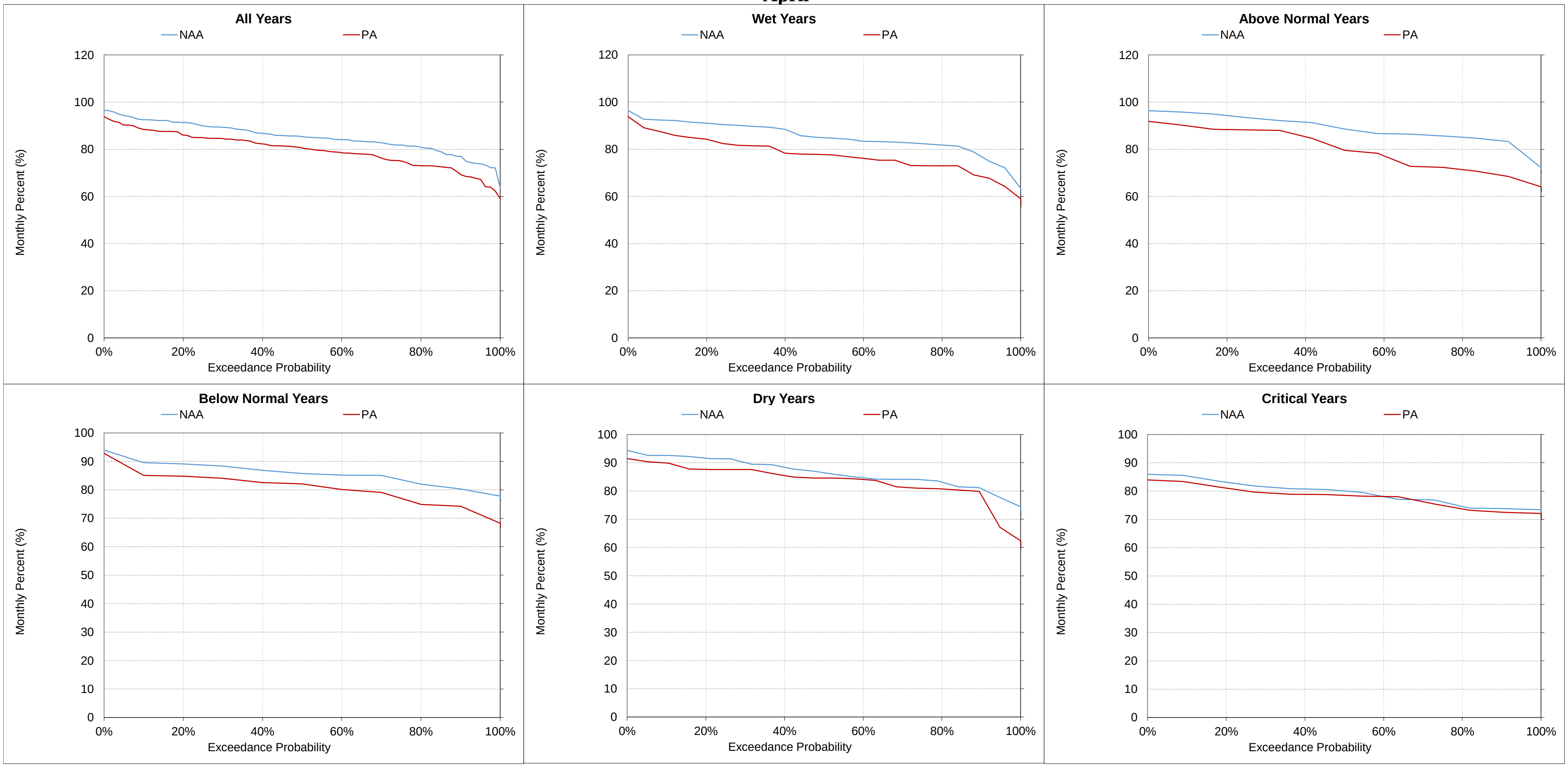
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-13. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent March



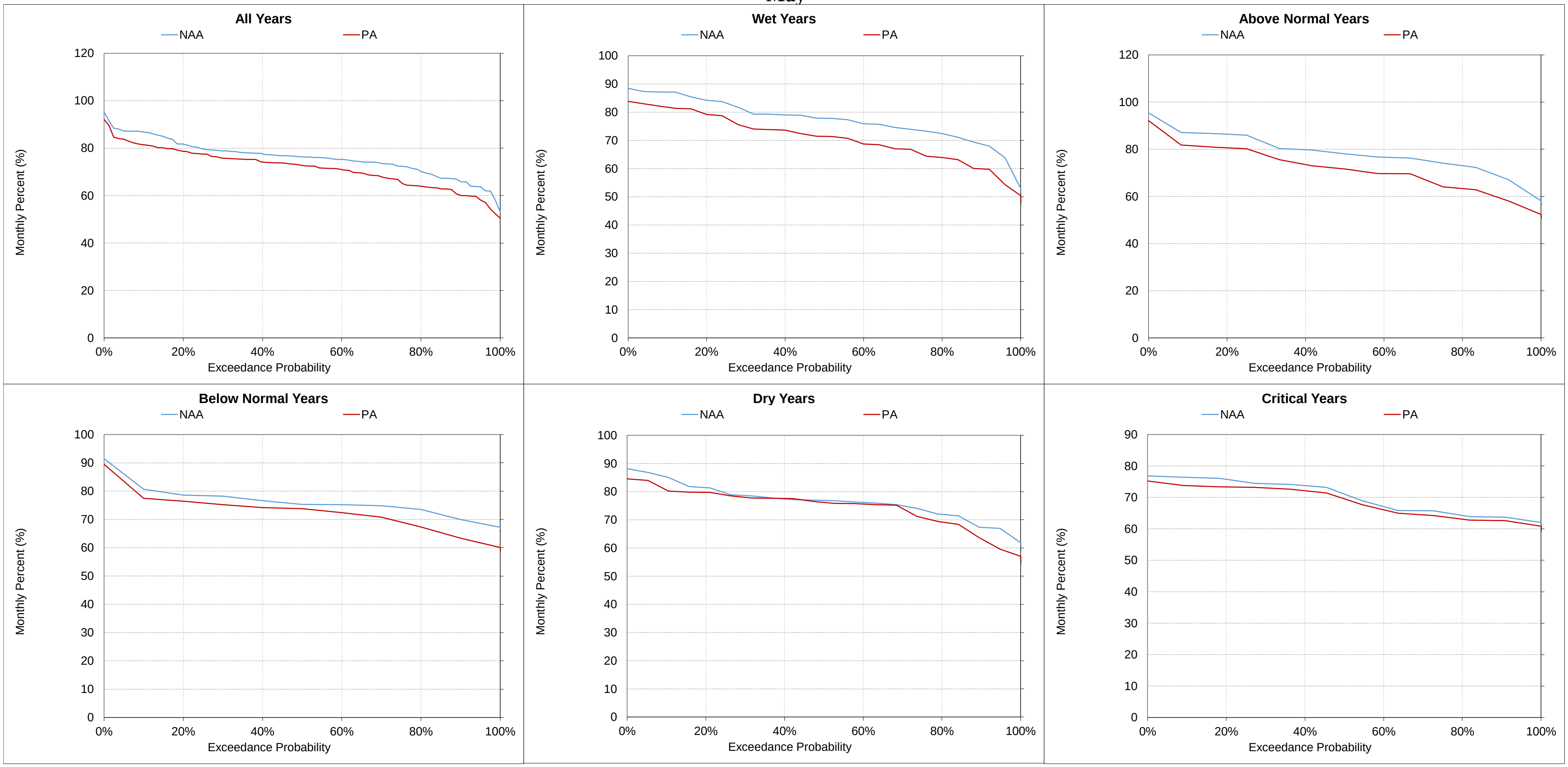
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-14. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent April



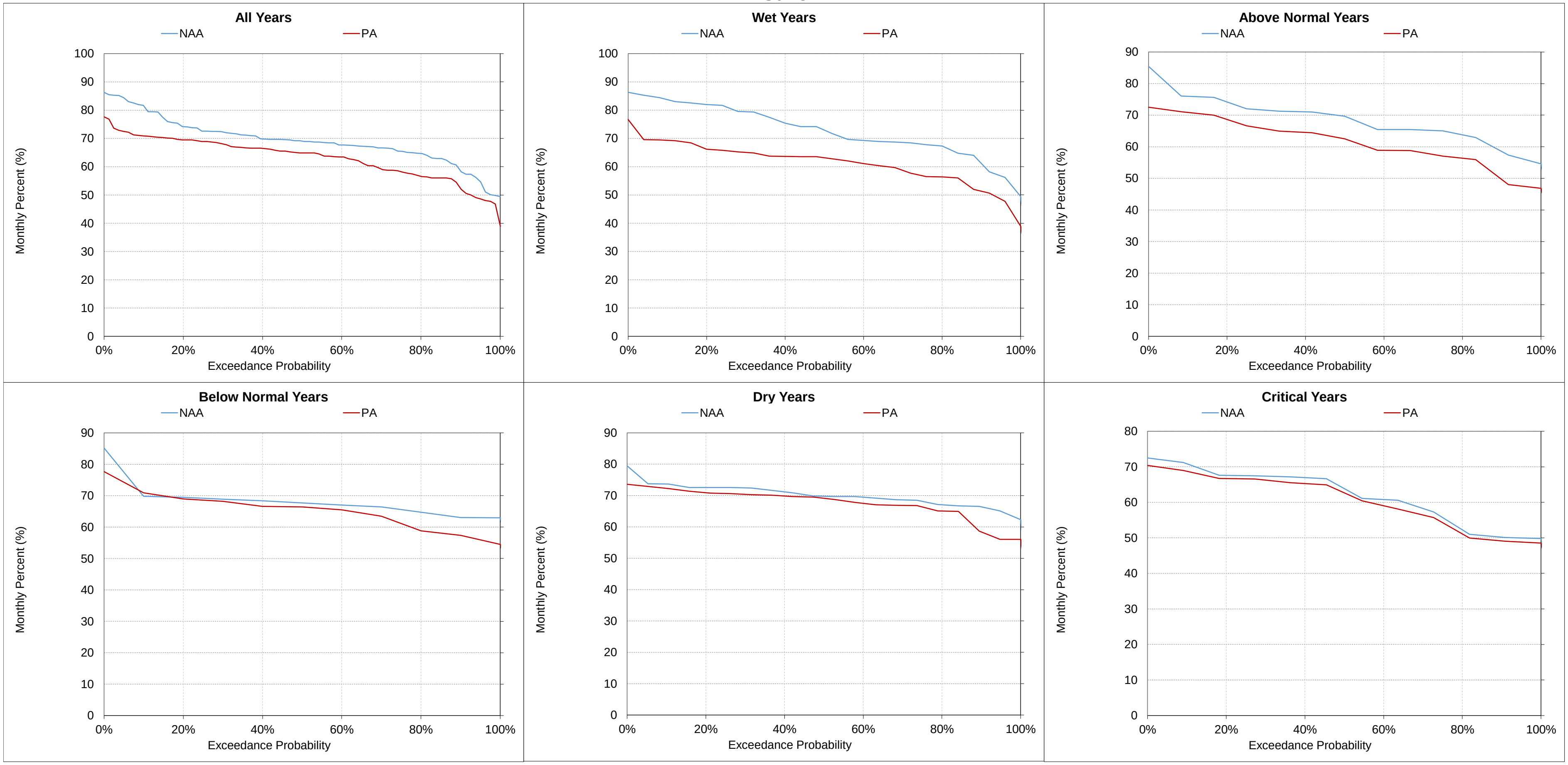
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-15. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent May



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-16. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent June



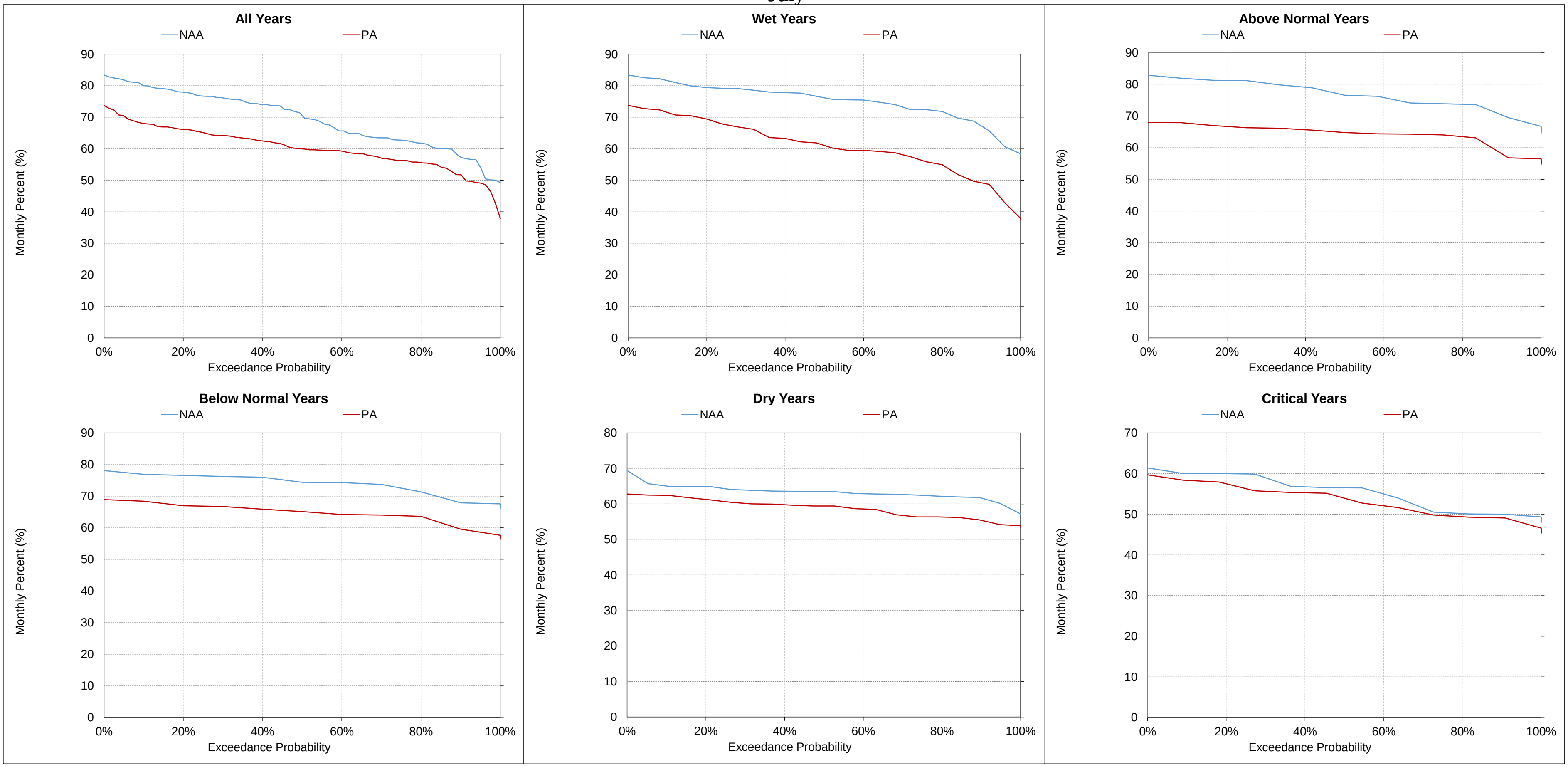
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

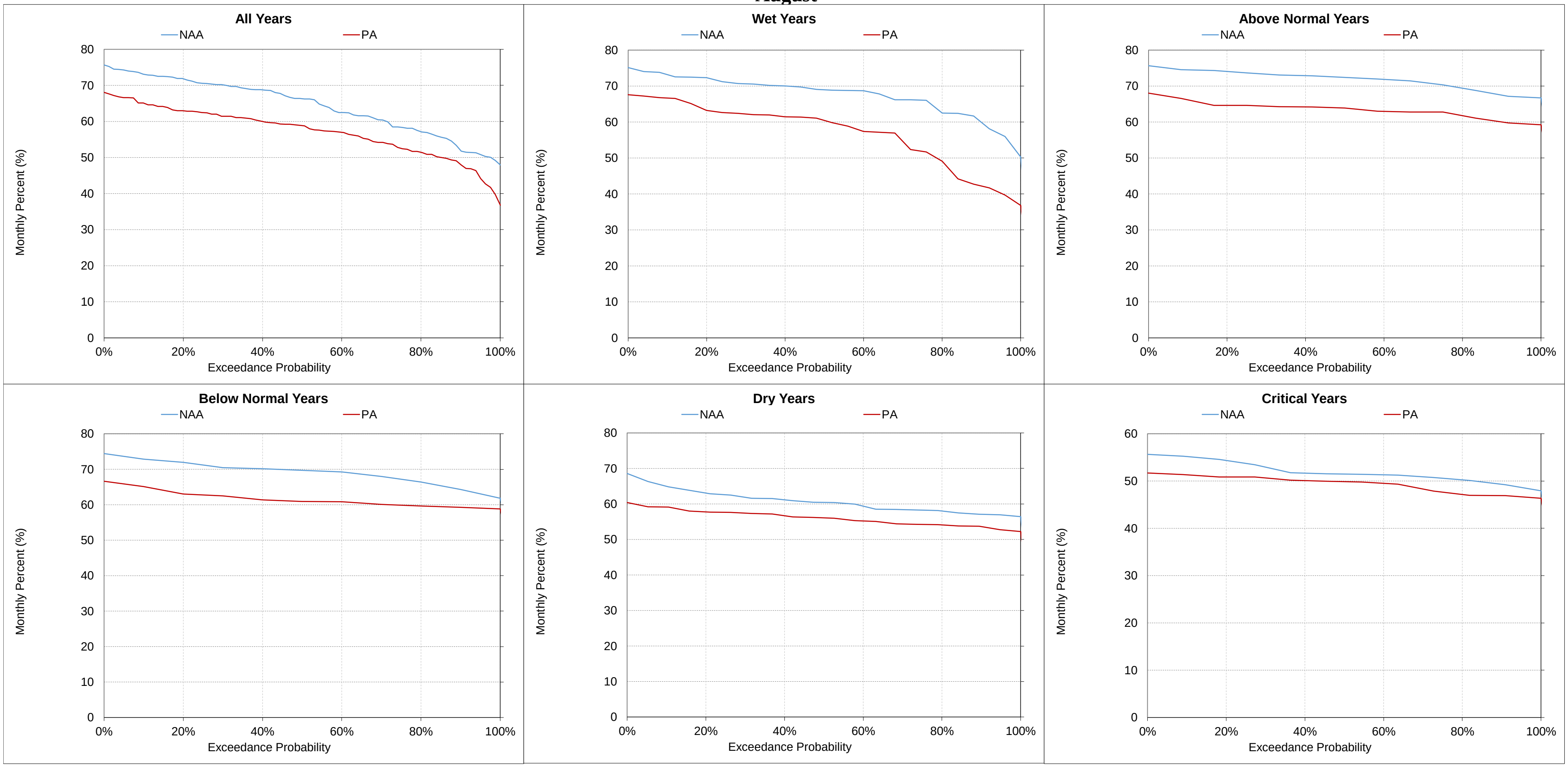
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-17. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent July



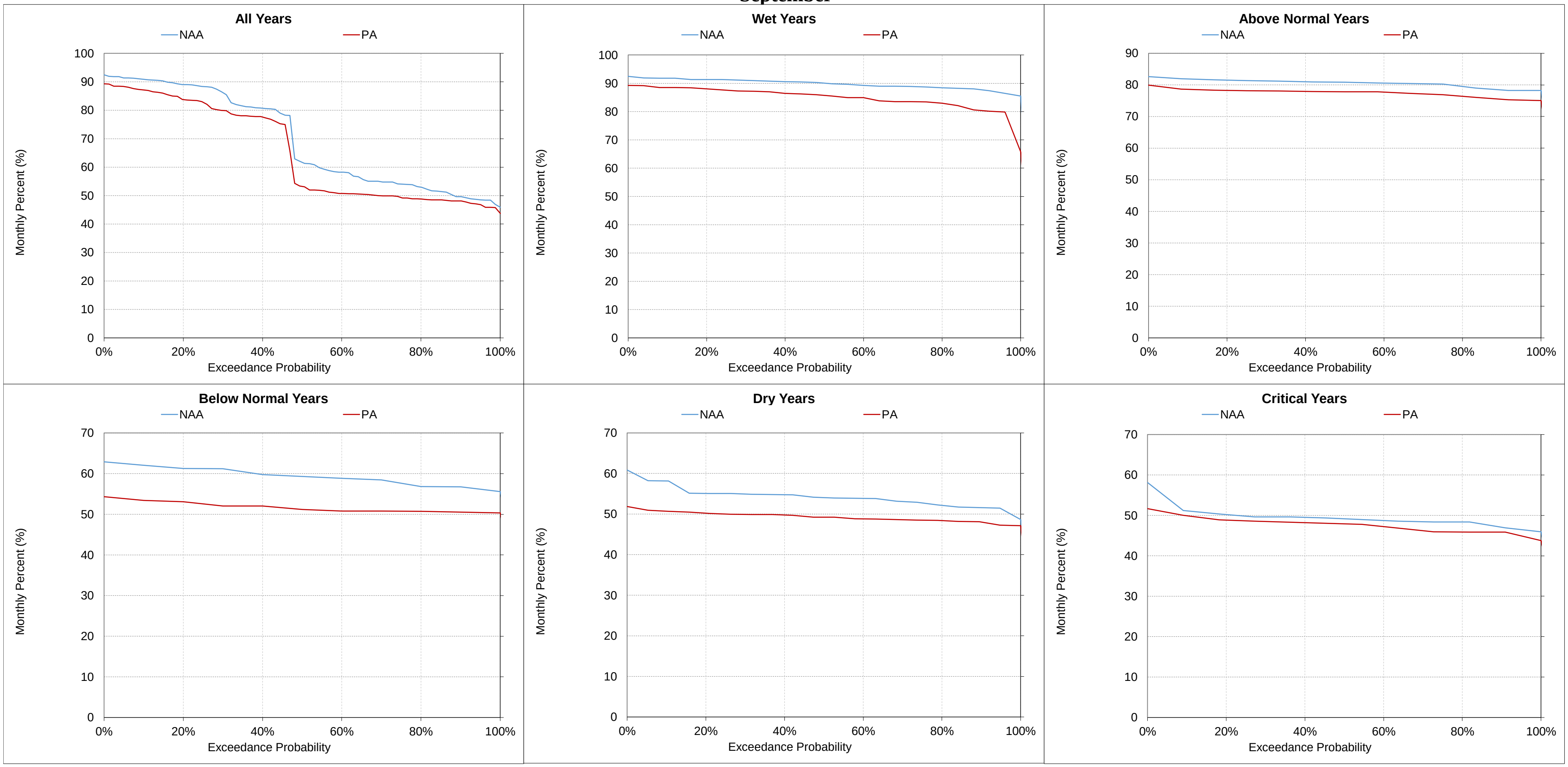
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-18. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-21-19. Sacramento River at Collinsville Sacramento River plus Yolo Bypass Volumetric Fingerprinting, Monthly Percent September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-22. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent

Statistic	Monthly Percent (%)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	0	3	2	2490%	0	11	11	2710%	0	6	6	1420%	1	3	2	230%	3	8	5	172%	5	15	10	192%
20%	0	2	2	1700%	0	8	8	3810%	0	5	5	2370%	0	2	1	464%	1	5	4	354%	3	12	9	347%
30%	0	1	1	1070%	0	6	5	2700%	0	4	3	1685%	0	1	1	588%	1	3	3	417%	2	8	6	385%
40%	0	1	1	-	0	4	4	3720%	0	2	2	1600%	0	1	1	800%	1	2	2	360%	1	5	4	710%
50%	0	1	1	-	0	2	2	1900%	0	1	1	950%	0	1	1	500%	0	2	2	1550%	0	3	2	500%
60%	0	0	0	-	0	1	1	900%	0	1	1	600%	0	0	0	-	0	1	1	1000%	0	2	2	527%
70%	0	0	0	-	0	1	1	600%	0	0	0	-	0	0	0	-	0	1	1	1900%	0	1	1	600%
80%	0	0	0	-	0	1	1	-	0	0	0	-	0	0	0	-	0	0	0	-	0	1	1	800%
90%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	1	1	6000%
Long Term Full Simulation Period[b]	0	1	1	2312%	0	4	4	1478%	0	2	2	576%	1	2	1	183%	1	3	2	204%	2	6	4	203%
Water Year Types[c]																								
Wet (32%)	0	3	3	2796%	1	10	9	1469%	1	5	4	519%	1	3	2	167%	2	6	3	162%	4	11	7	179%
Above Normal (16%)	0	1	1	5100%	0	4	4	3738%	0	3	3	5571%	0	1	1	1533%	1	3	2	199%	2	7	5	260%
Below Normal (13%)	0	0	0	-	0	1	1	1800%	0	1	1	789%	0	1	0	224%	0	3	2	478%	1	5	4	262%
Dry (24%)	0	0	0	617%	0	1	1	914%	0	1	0	250%	0	1	1	173%	0	1	1	388%	1	3	2	203%
Critical (15%)	0	0	0	217%	0	0	0	165%	0	0	0	56%	0	0	0	32%	0	0	0	179%	0	1	1	250%

Statistic	Monthly Percent (%)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	11	19	8	71%	19	26	7	38%	15	27	12	79%	6	17	11	186%	1	6	5	469%	0	1	1	595%
20%	8	17	9	116%	14	21	7	49%	10	22	12	110%	3	11	8	245%	1	3	3	512%	0	1	1	780%
30%	5	13	8	173%	10	18	8	78%	9	17	8	84%	2	6	4	164%	0	2	1	386%	0	1	1	500%
40%	3	10	7	220%	8	14	6	68%	7	13	6	91%	2	5	3	177%	0	1	1	380%	0	0	0	260%
50%	1	5	4	333%	5	10	5	111%	4	9	5	124%	1	3	2	210%	0	1	1	300%	0	0	0	-
60%	1	3	2	264%	3	6	4	150%	3	6	3	101%	1	2	2	230%	0	1	1	540%	0	0	0	-
70%	1	2	2	338%	1	4	2	178%	2	4	2	137%	1	2	1	226%	0	1	0	400%	0	0	0	-
80%	0	2	1	400%	1	2	1	160%	1	2	1	181%	0	1	1	225%	0	0	0	300%	0	0	0	-
90%	0	1	1	700%	0	1	1	228%	1	1	1	182%	0	1	1	333%	0	0	0	-	0	0	0	-
Long Term Full Simulation Period[b]	4	9	5	116%	8	12	4	58%	7	12	6	85%	3	7	4	167%	1	3	2	270%	0	1	1	694%
Water Year Types[c]																								
Wet (32%)	9	16	7	83%	14	20	6	46%	11	21	10	89%	6	14	9	162%	2	6	5	252%	0	2	2	808%
Above Normal (16%)	4	12	8	180%	10	17	7	66%	8	15	7	79%	2	6	4	211%	0	2	1	544%	0	0	0	1900%
Below Normal (13%)	2	6	4	208%	6	10	4	72%	5	9	4	75%	1	3	2	162%	0	1	1	375%	0	0	0	725%
Dry (24%)	2	4	2	155%	4	7	3	77%	3	6	3	83%	1	2	2	163%	0	1	1	308%	0	0	0	391%
Critical (15%)	1	2	1	209%	1	2	1	150%	1	2	1	122%	1	2	1	137%	0	1	0	147%	0	0	0	158%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-1. Monthly Percent Ranges For Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, All Years

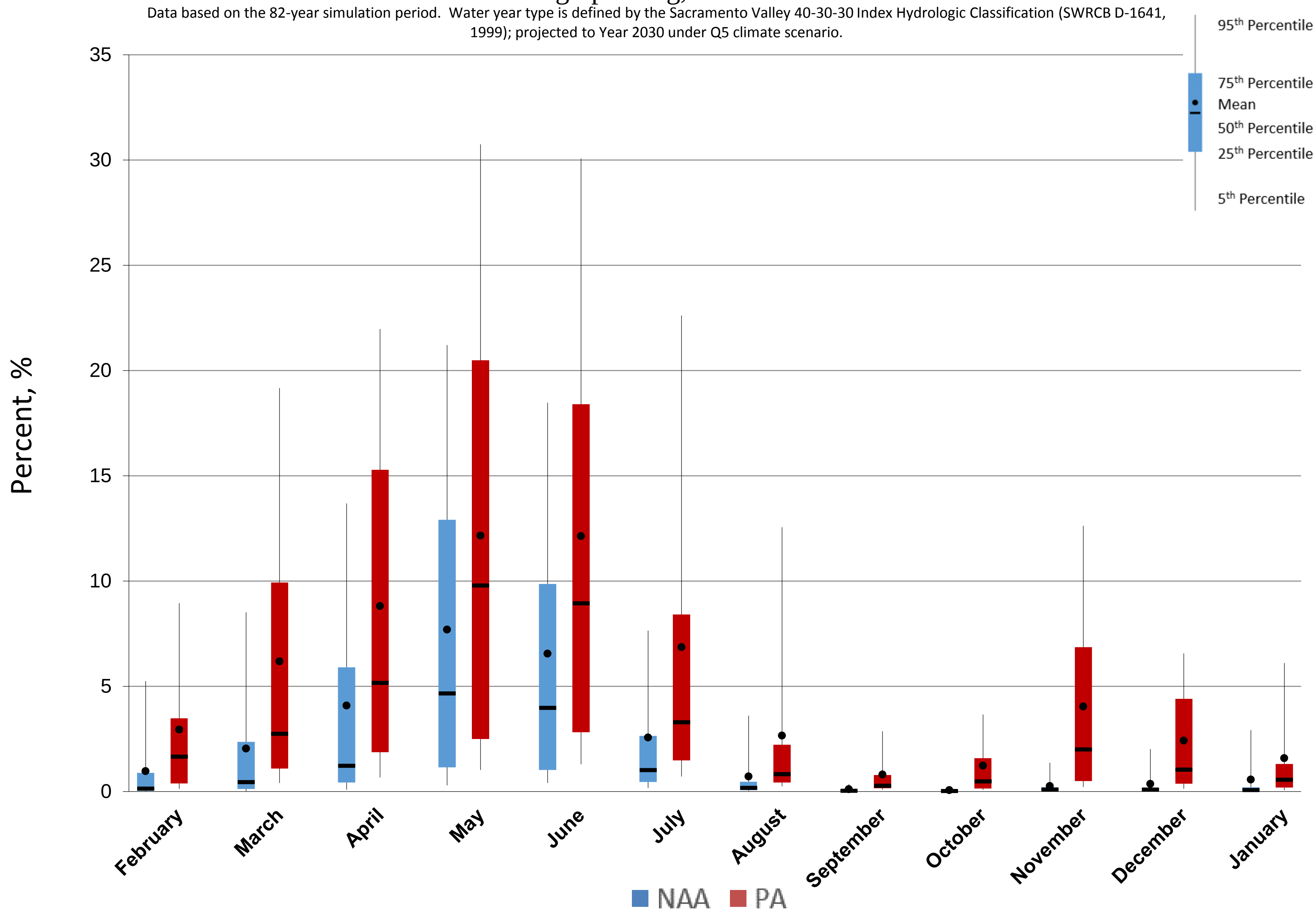
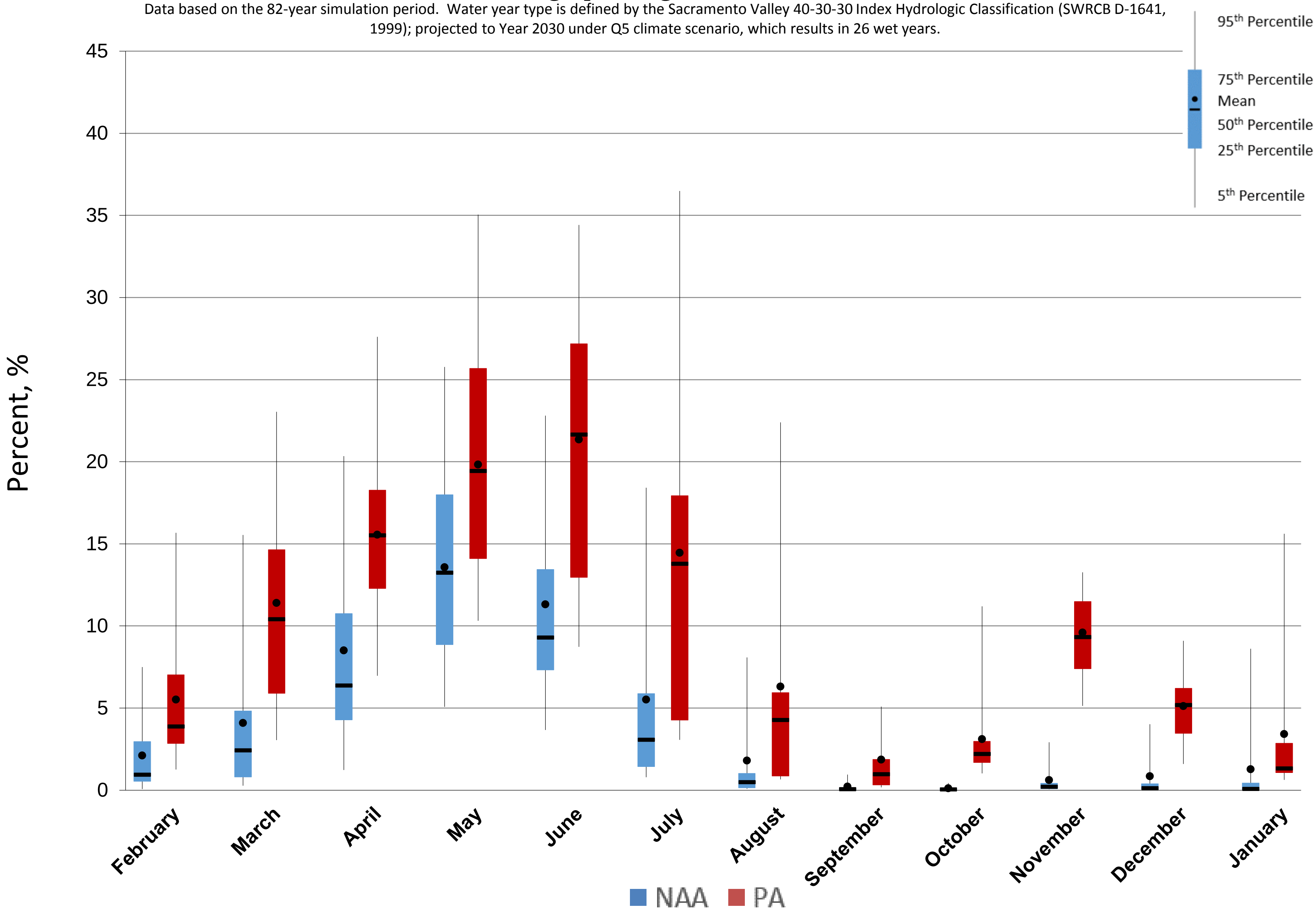


Figure 5.B.5-22-2. Monthly Percent Ranges For Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.



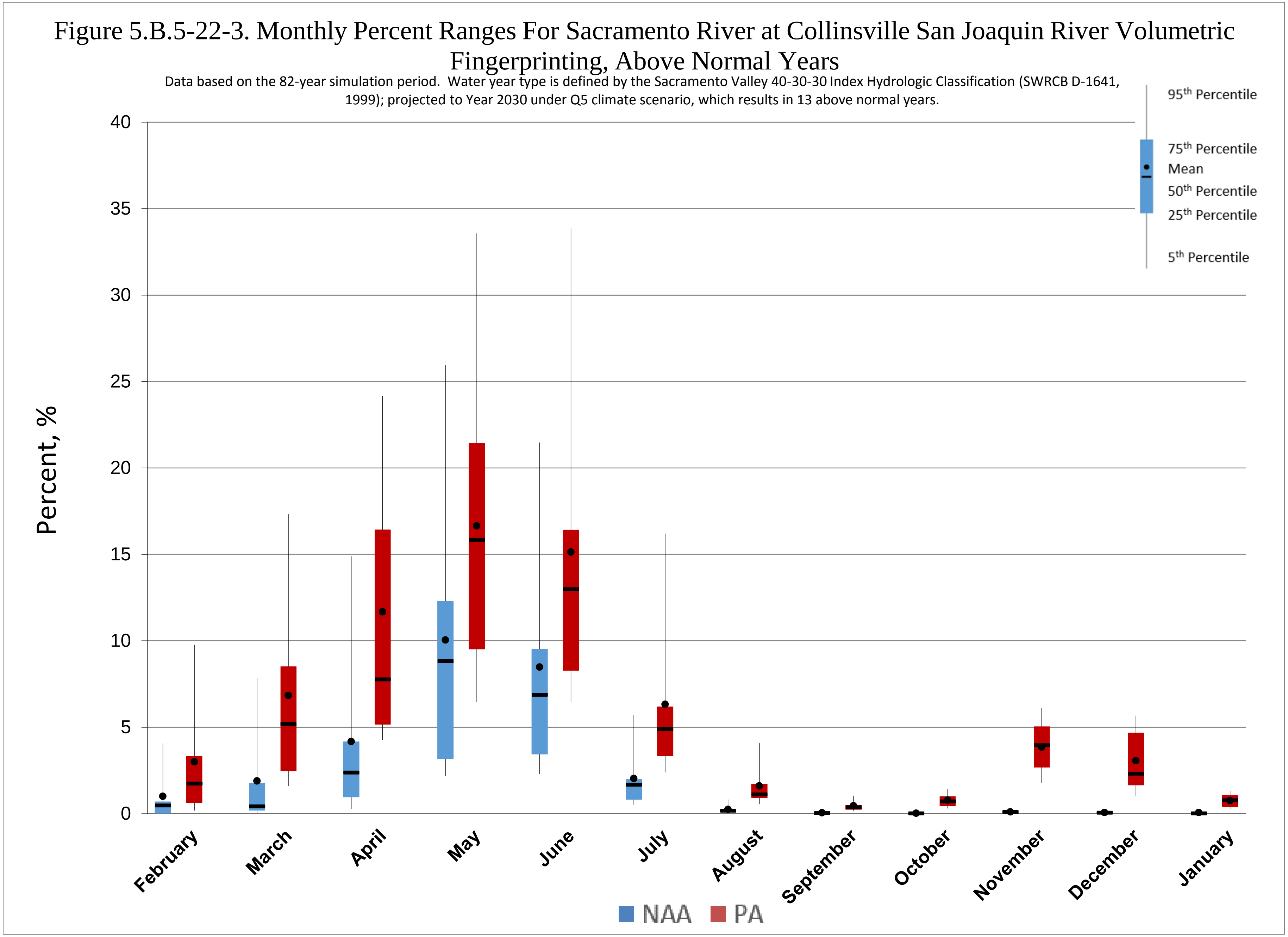


Figure 5.B.5-22-3. Monthly Percent Ranges For Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Percent, %
40
35
30
25
20
15
10
5
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-22-4. Monthly Percent Ranges For Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

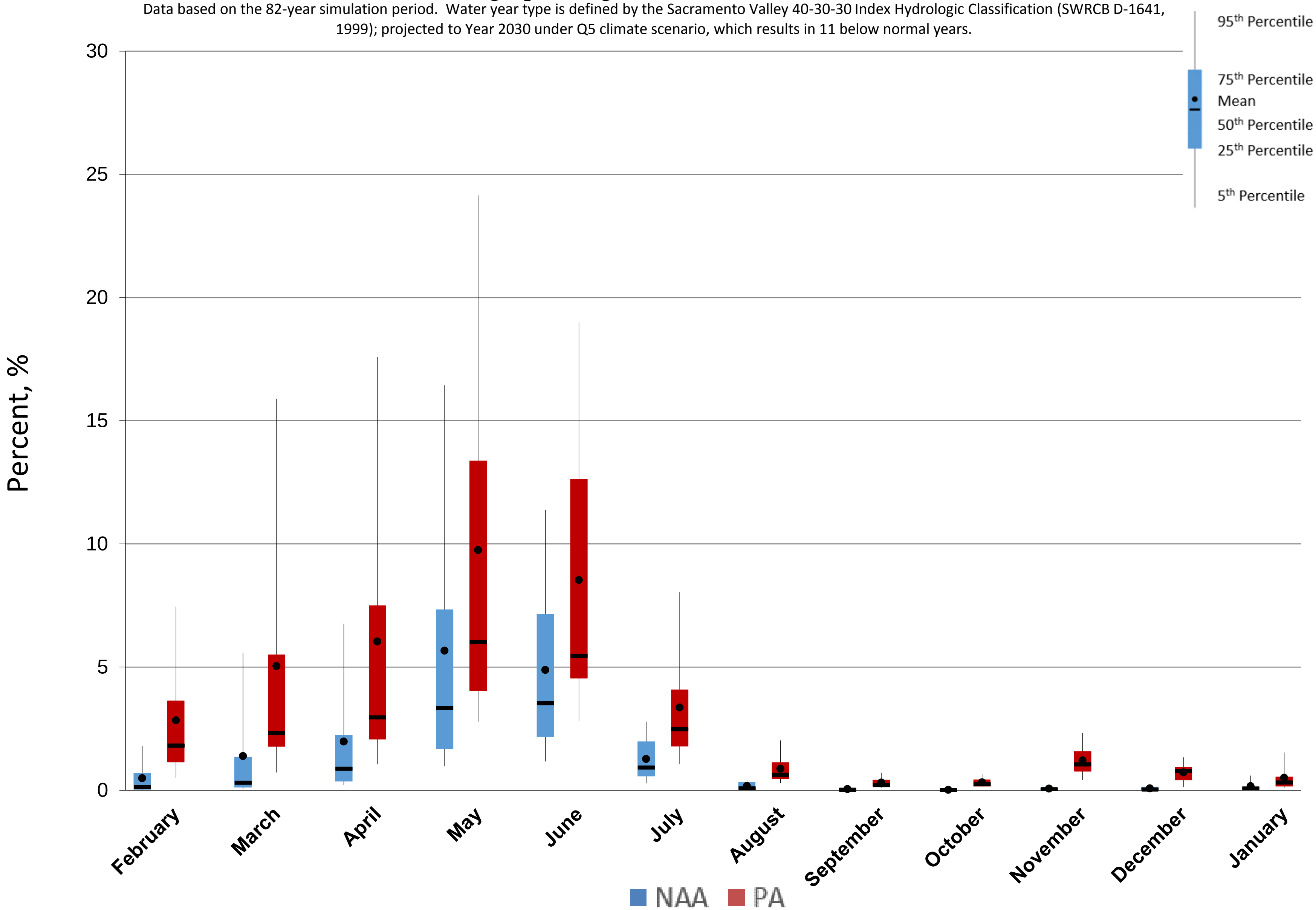


Figure 5.B.5-22-5. Monthly Percent Ranges For Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Dry Years

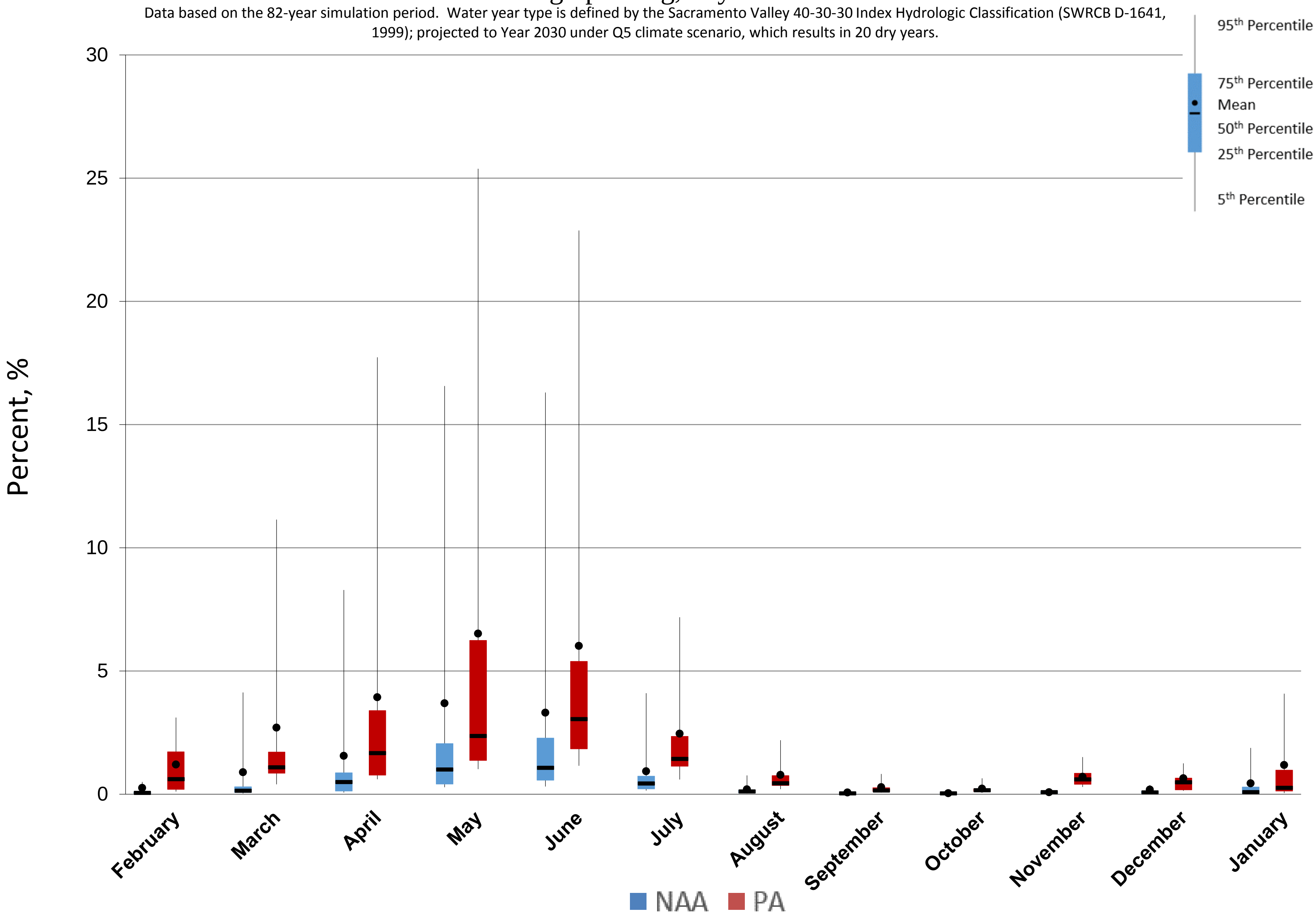


Figure 5.B.5-22-6. Monthly Percent Ranges For Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

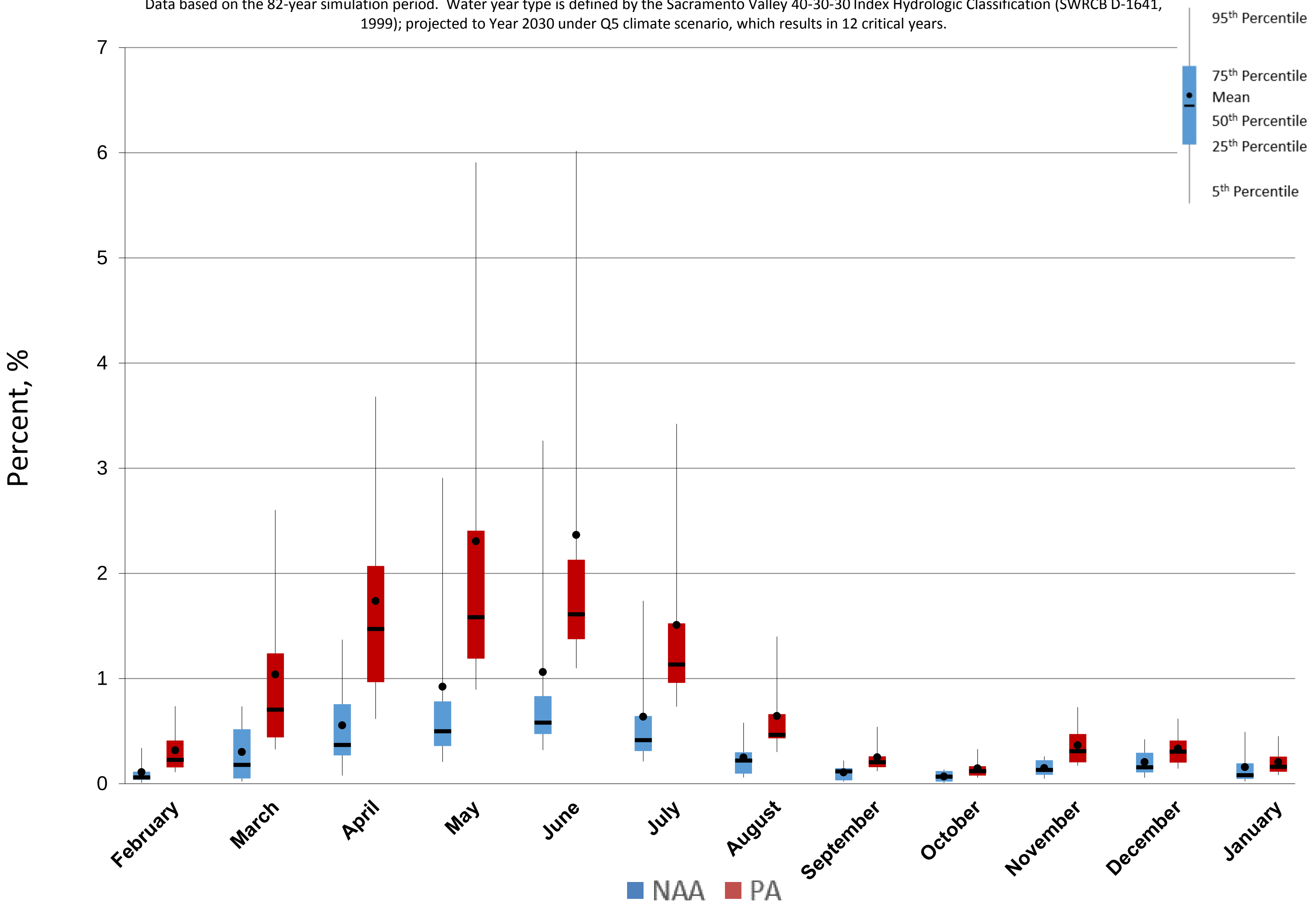
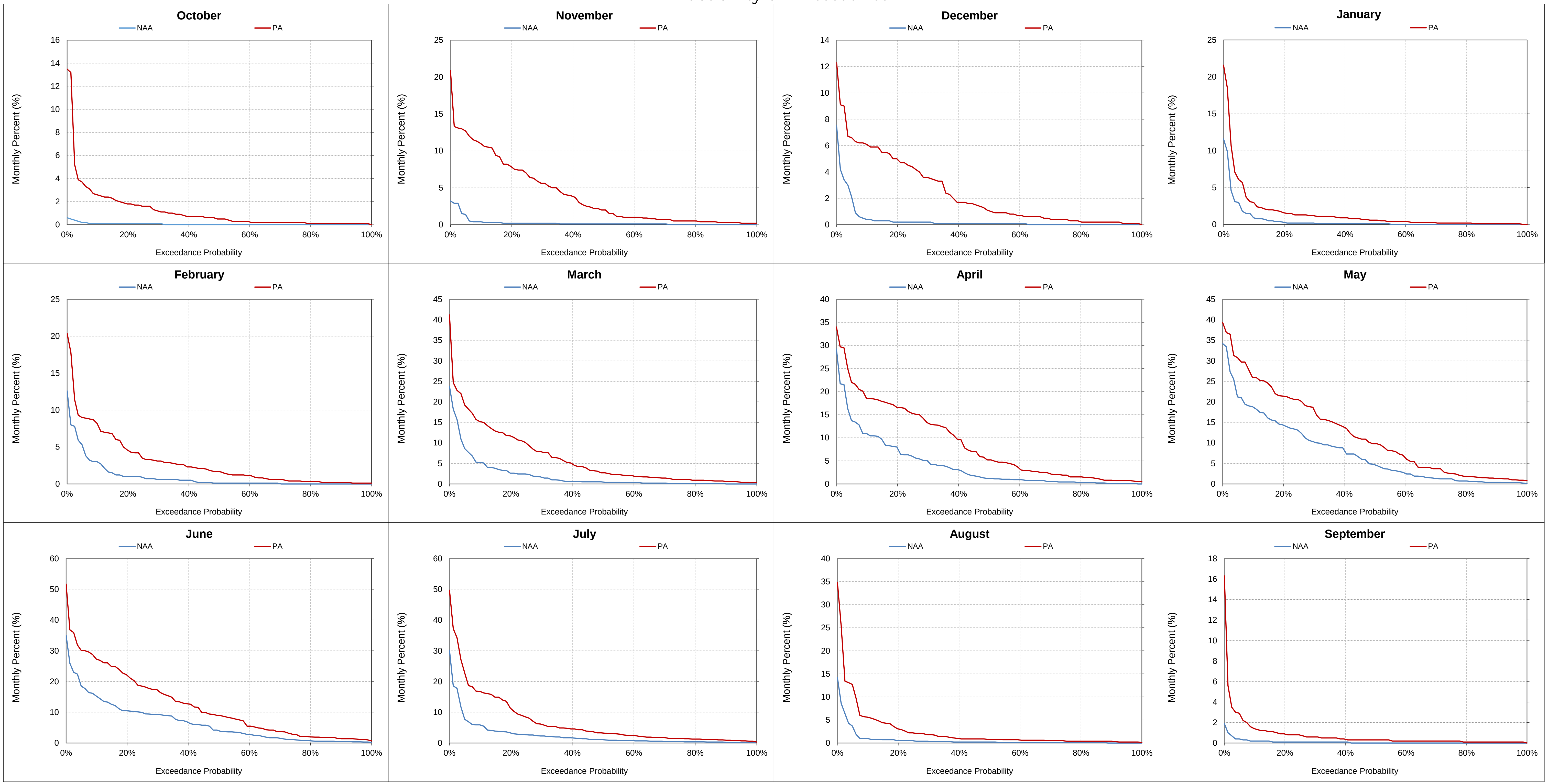
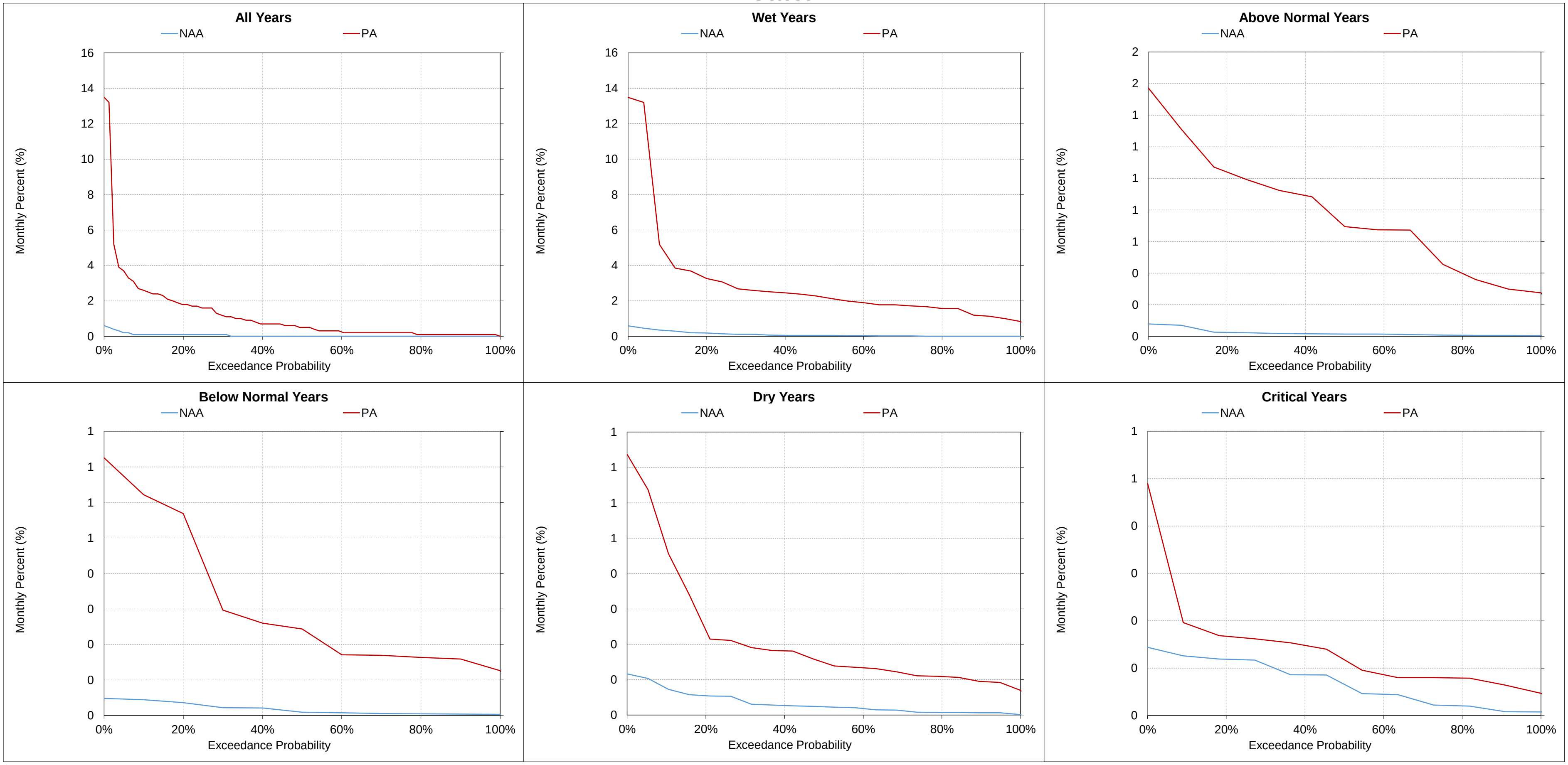


Figure 5.B.5-22-7. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent Probability of Exceedance



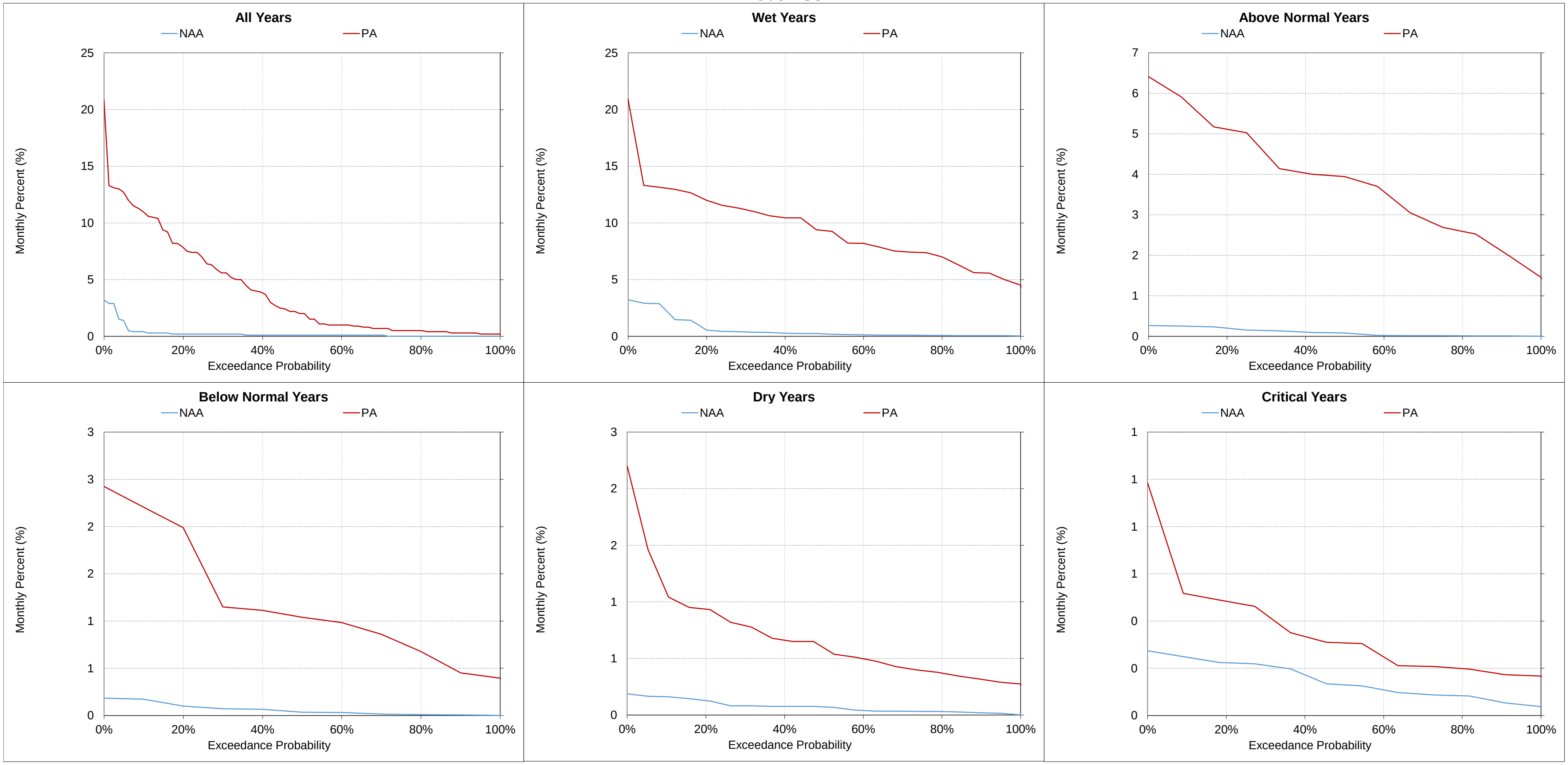
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-8. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent October



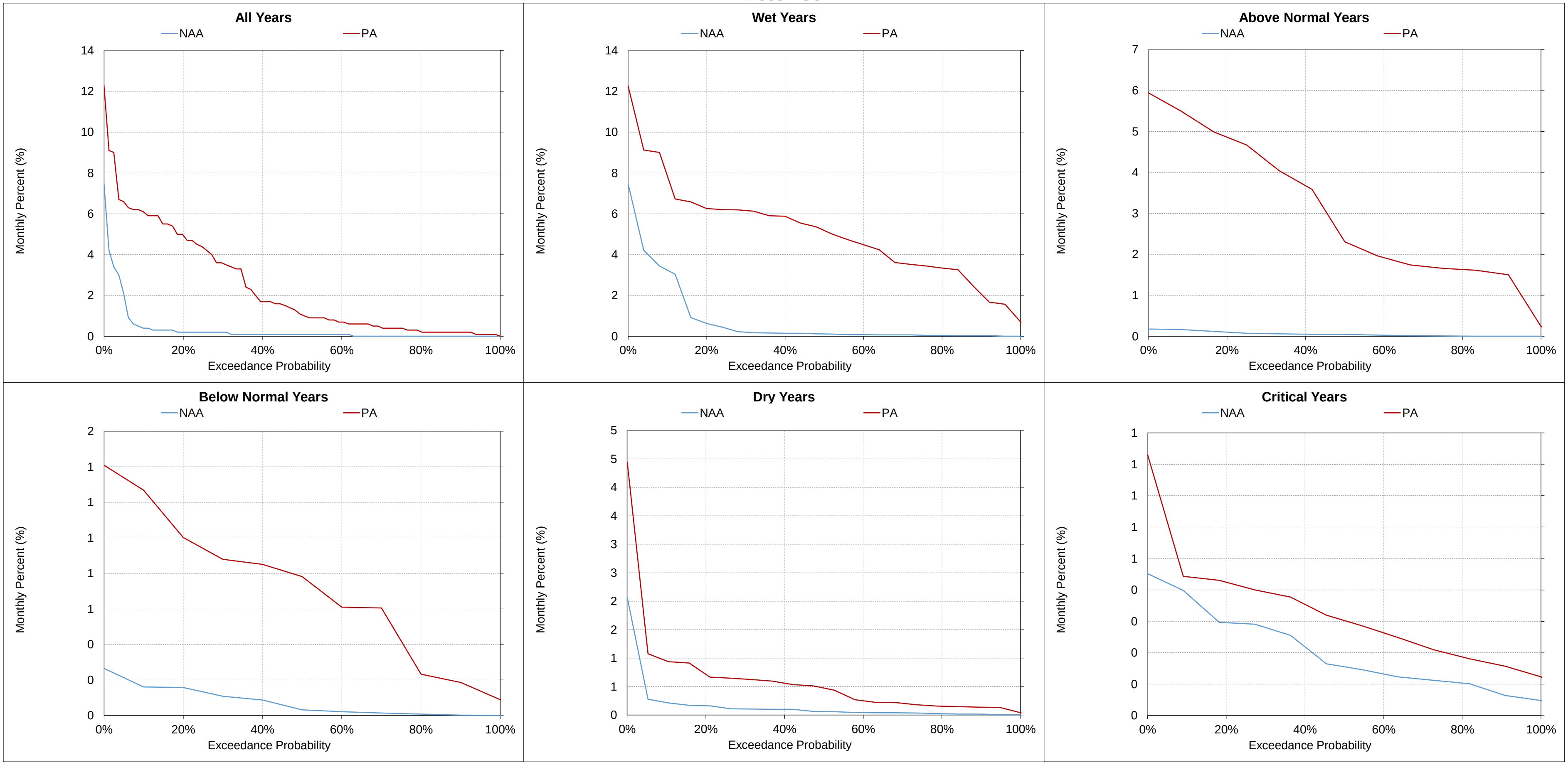
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-9. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent November



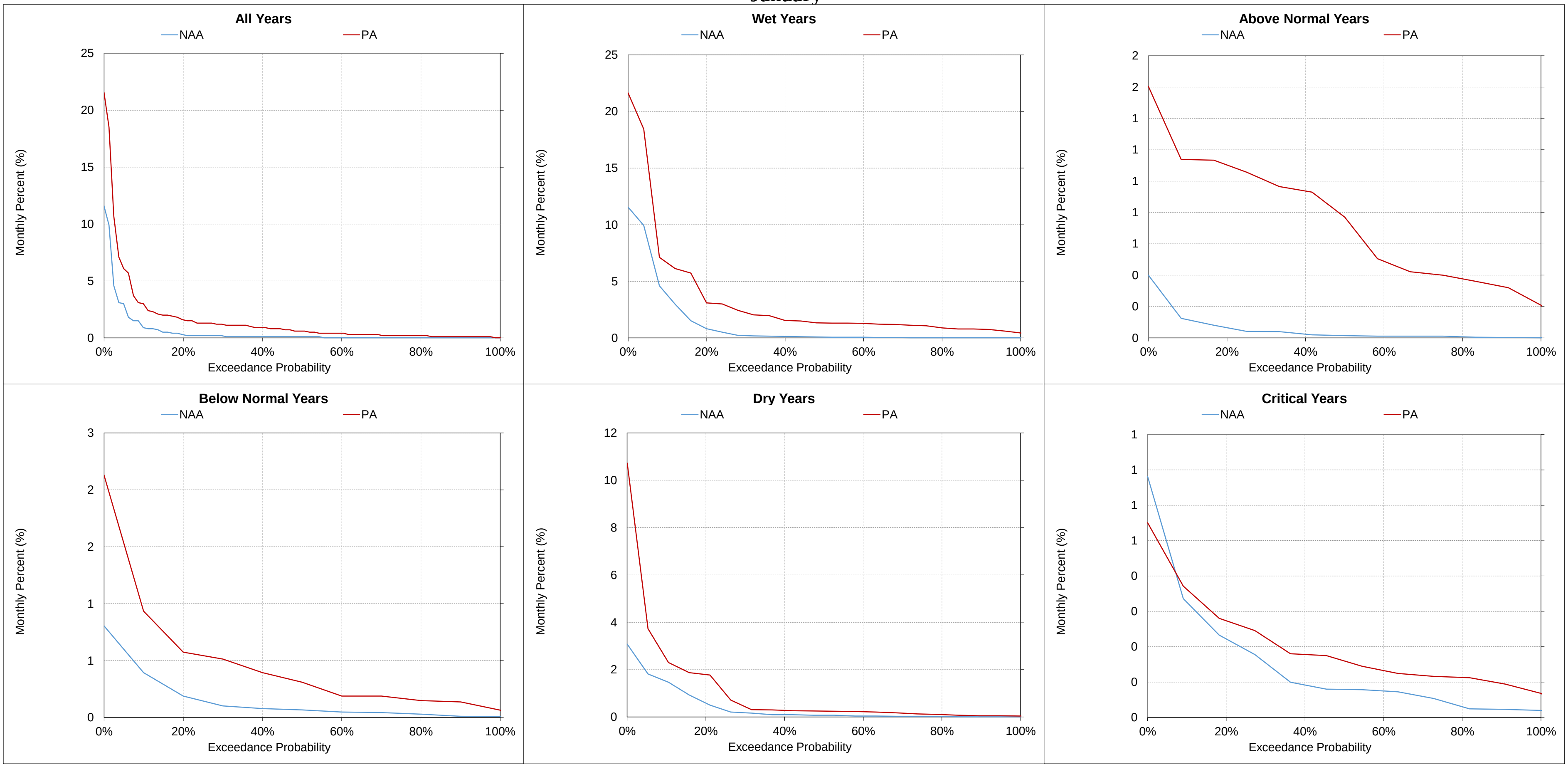
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-10. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent December



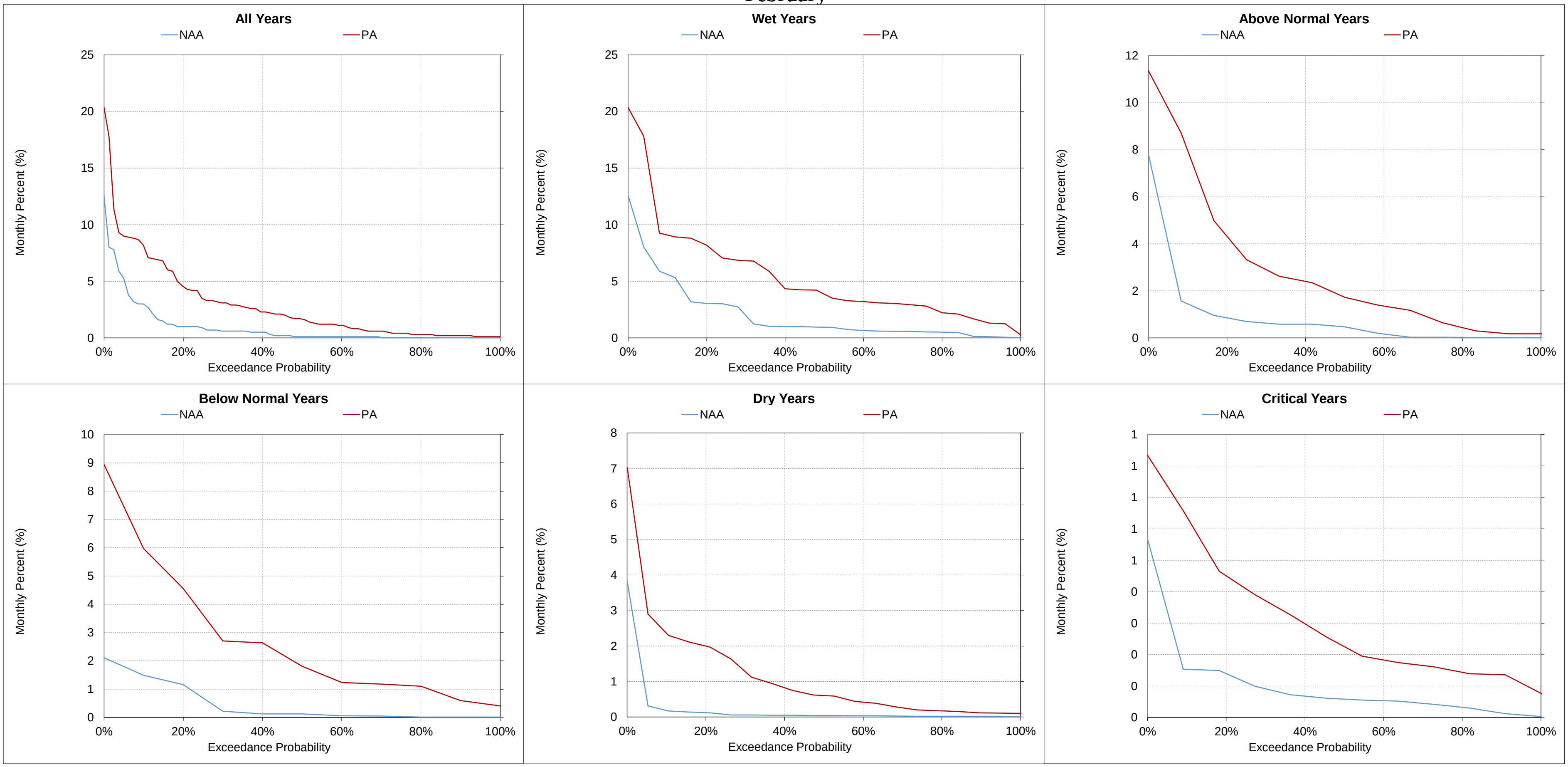
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-11. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent
January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-12. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent February



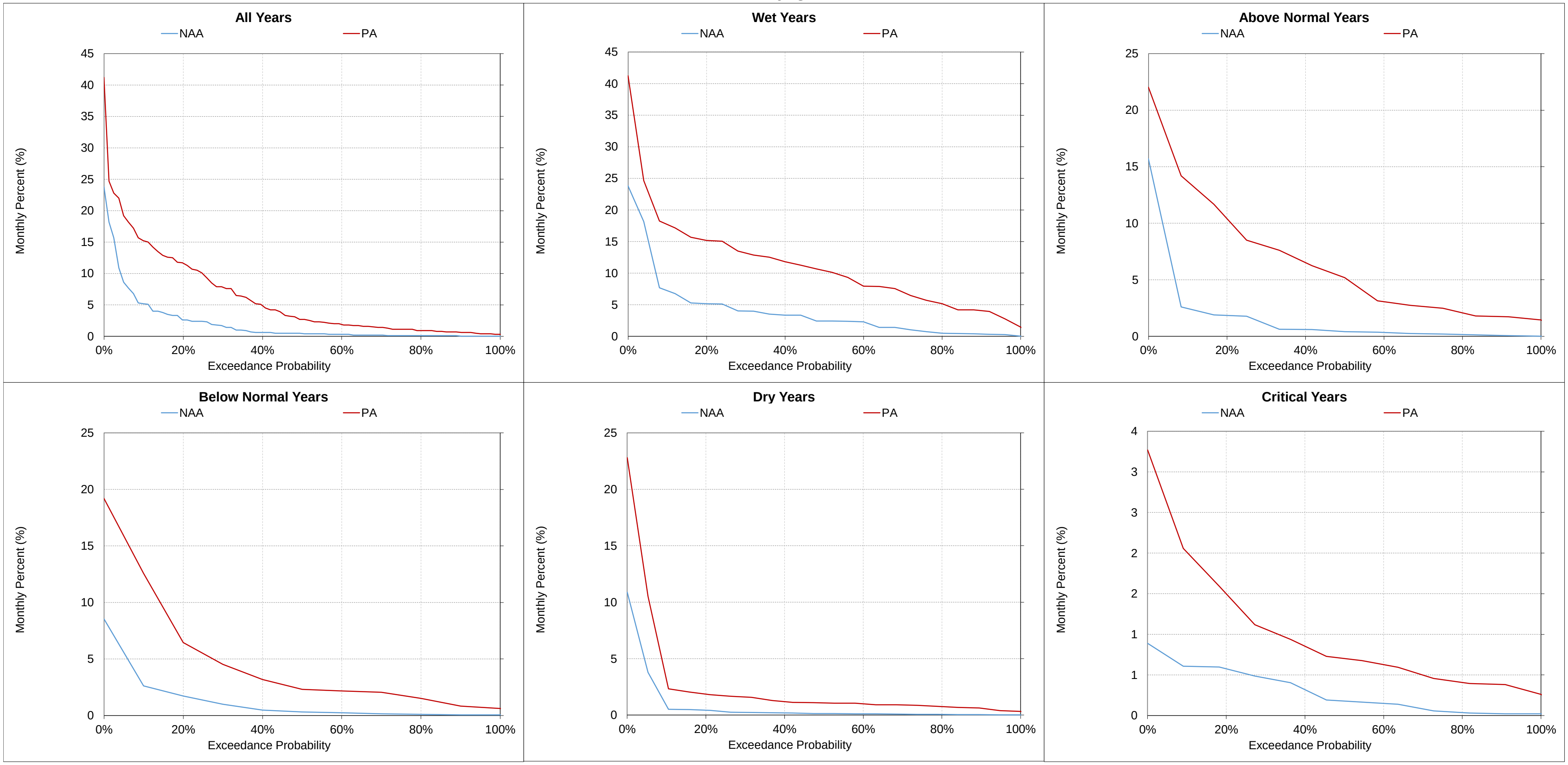
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-13. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent March



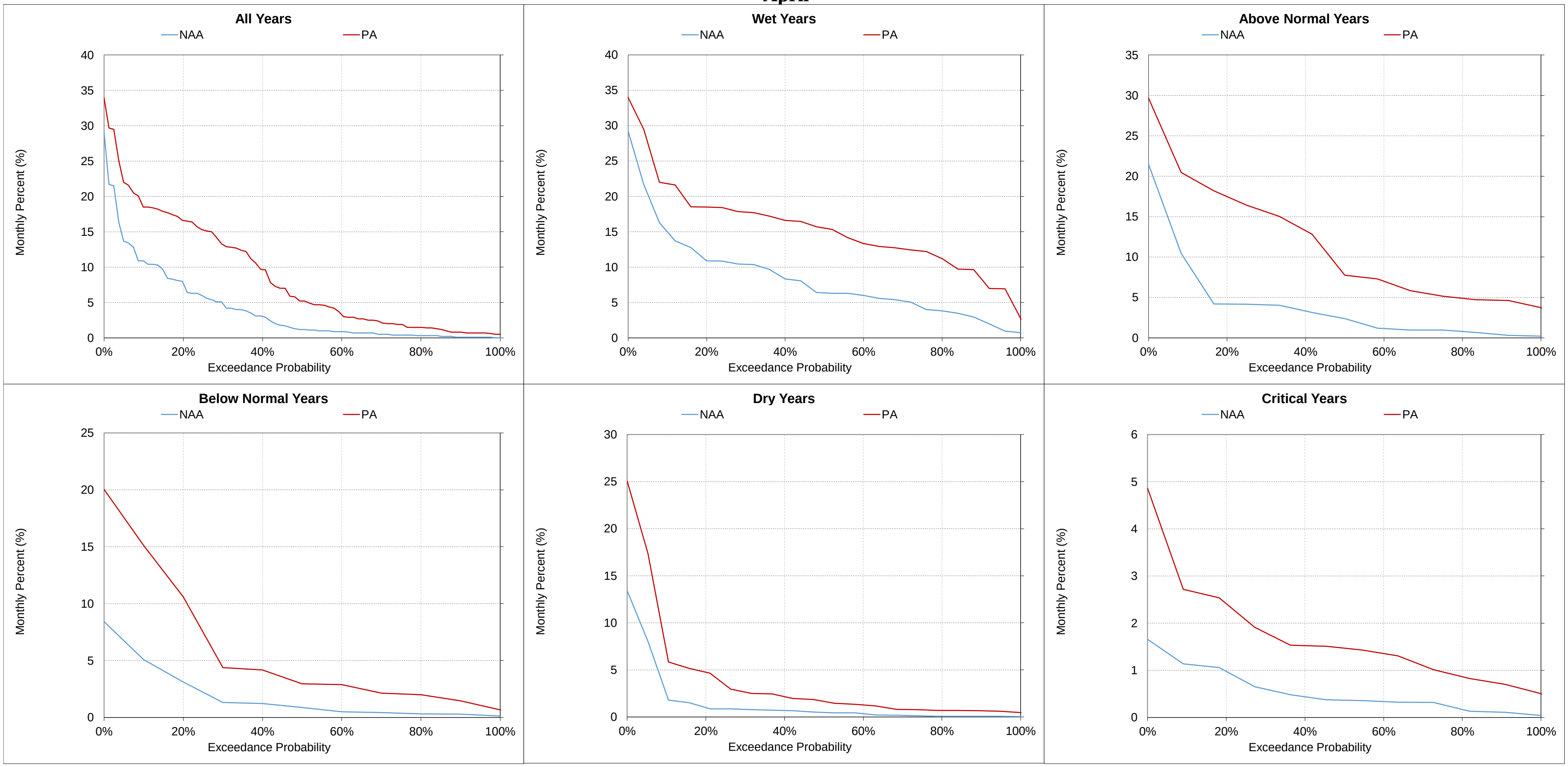
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

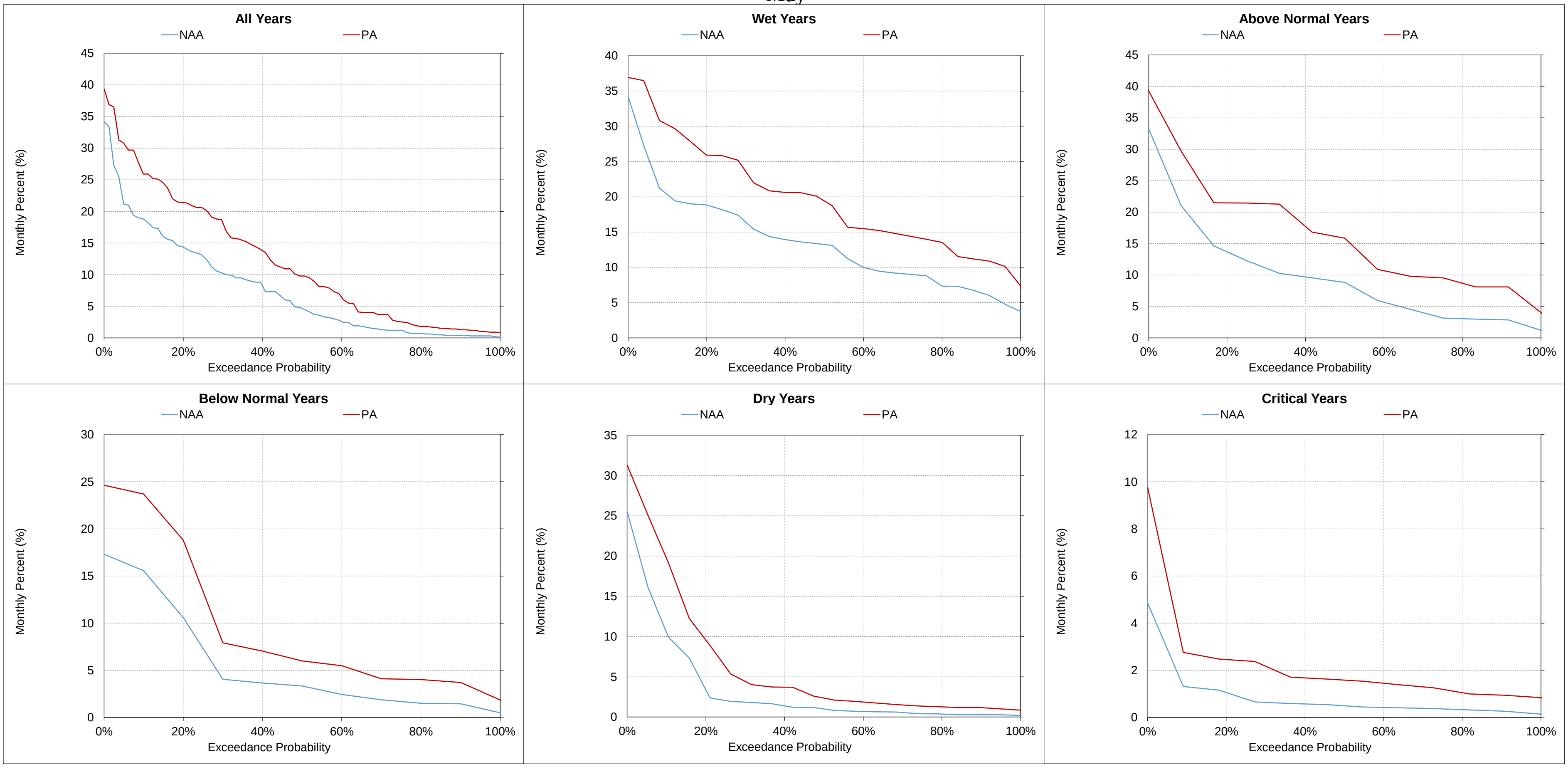
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-14. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent
April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-15. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent May



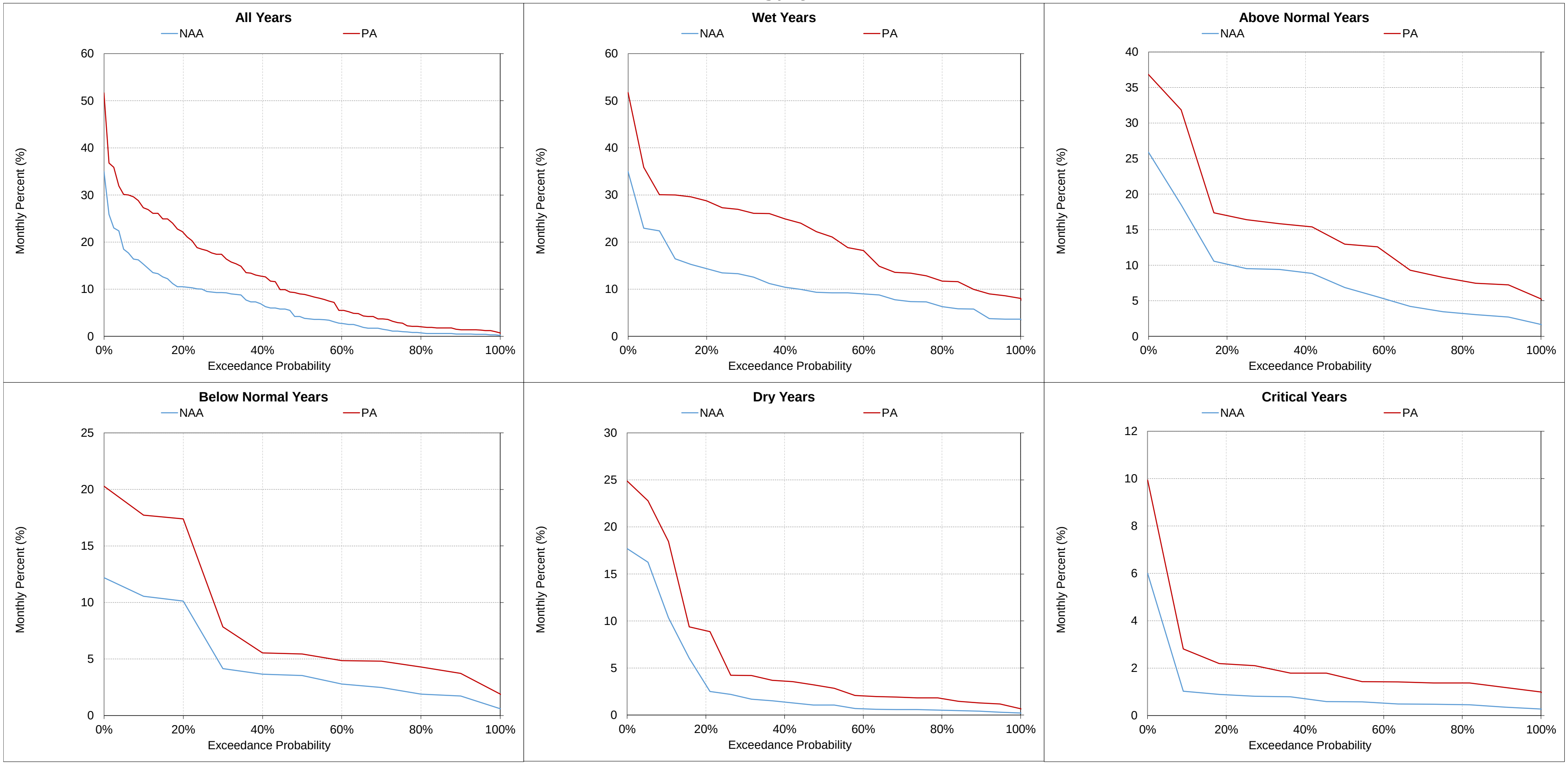
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-16. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent June



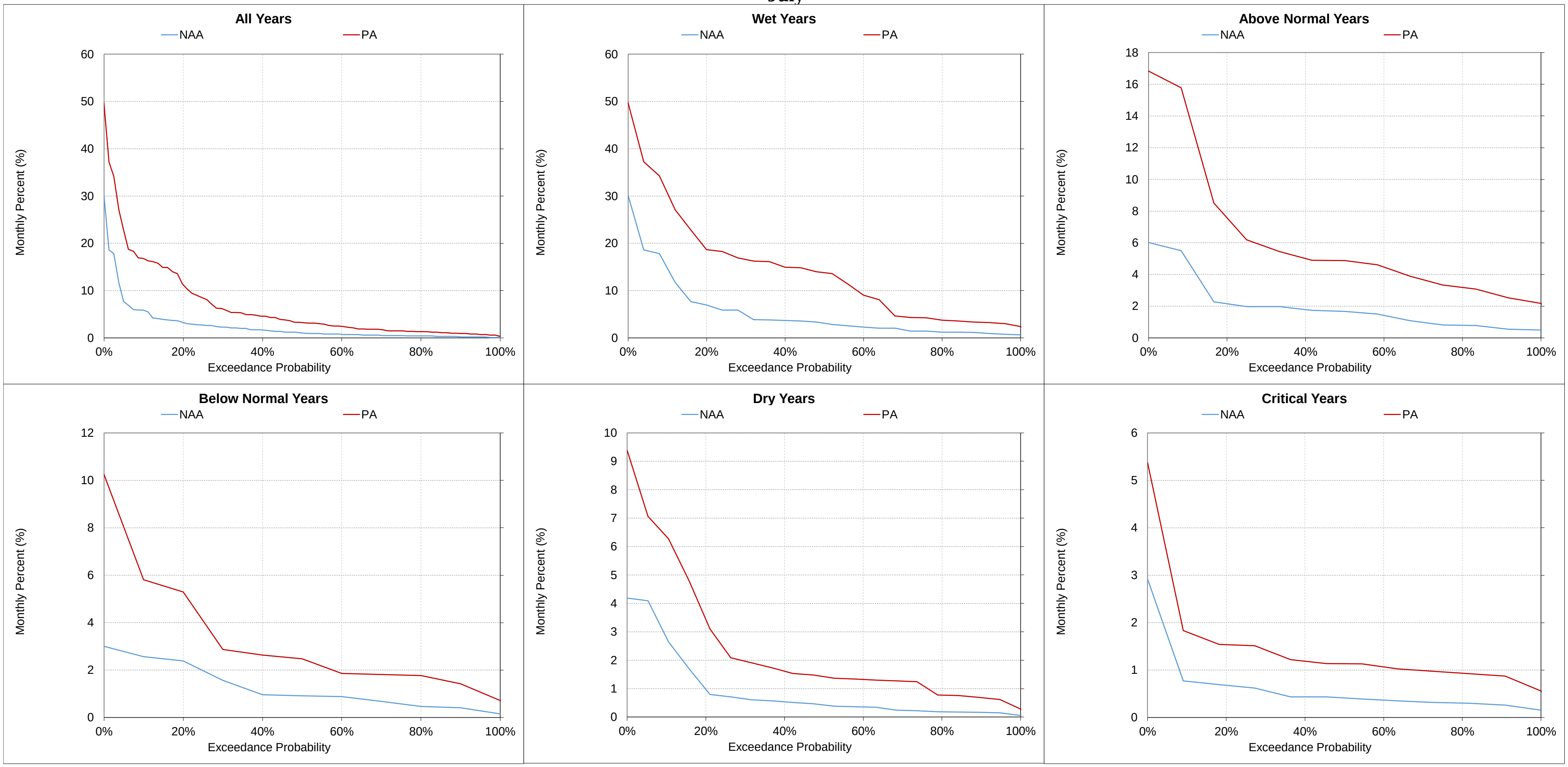
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

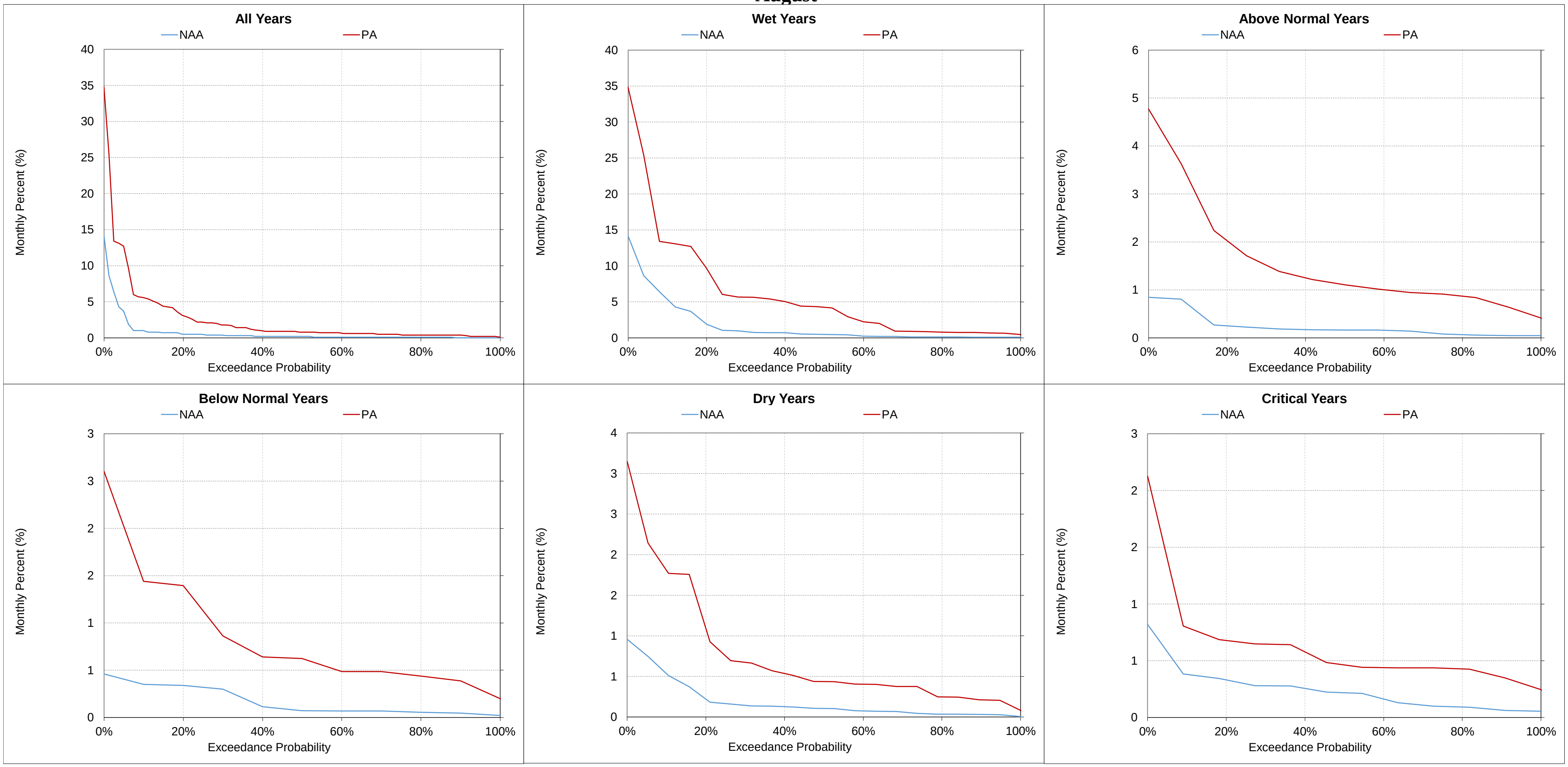
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-17. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent
July



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-18. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent August



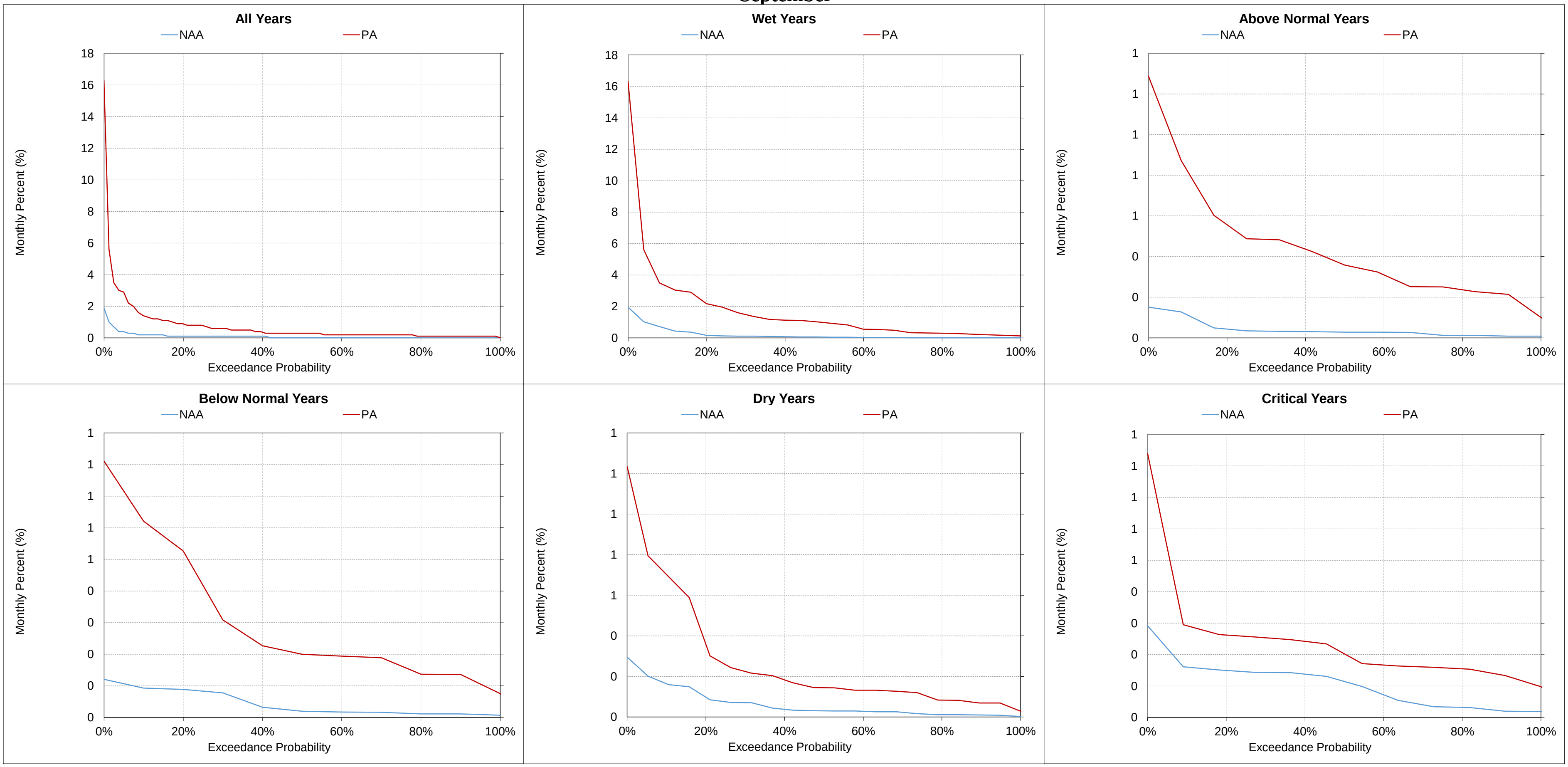
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-22-19. Sacramento River at Collinsville San Joaquin River Volumetric Fingerprinting, Monthly Percent September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-23. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent

Statistic	Monthly Percent (%)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	53	46	-6	-12%	54	50	-4	-8%	45	44	-1	-2%	30	27	-3	-10%	13	13	0	-3%	10	10	0	-2%
20%	48	42	-6	-13%	48	43	-5	-11%	36	37	1	4%	26	23	-2	-8%	9	9	-1	-10%	7	7	0	1%
30%	47	41	-7	-14%	45	41	-5	-11%	28	30	2	7%	20	18	-3	-13%	6	7	0	6%	4	4	1	19%
40%	46	39	-7	-15%	37	37	0	1%	24	24	1	3%	15	12	-3	-22%	5	4	0	-5%	3	3	0	8%
50%	41	36	-5	-12%	23	23	-1	-4%	22	23	1	5%	9	9	-1	-9%	2	2	1	31%	2	2	1	33%
60%	21	20	-1	-5%	21	20	-1	-3%	19	19	-1	-3%	4	4	0	-8%	1	1	0	16%	1	1	0	8%
70%	12	11	-1	-5%	14	14	-1	-4%	10	10	0	-1%	1	1	0	10%	0	0	0	0%	0	0	0	-23%
80%	11	11	0	-1%	11	10	-1	-6%	3	6	3	85%	0	0	0	20%	0	0	0	-	0	0	0	-
90%	10	10	0	-1%	9	9	0	-5%	1	1	0	51%	0	0	0	-	0	0	0	-	0	0	0	-
Long Term Full Simulation Period[b]	31	28	-3	-11%	29	28	-2	-6%	21	22	1	3%	12	11	-1	-11%	5	5	0	-4%	4	4	0	7%
Water Year Types[c]																								
Wet (32%)	10	10	0	-1%	10	10	0	-1%	14	14	0	1%	11	7	-4	-35%	0	0	0	-27%	0	0	0	-1%
Above Normal (16%)	20	19	-2	-8%	20	20	0	-2%	18	19	1	3%	14	13	-1	-9%	2	2	0	-3%	1	1	0	-10%
Below Normal (13%)	43	37	-6	-14%	39	36	-3	-8%	25	26	1	4%	12	13	0	2%	7	6	-1	-16%	4	4	0	3%
Dry (24%)	46	40	-6	-13%	40	37	-3	-8%	23	23	1	2%	11	12	0	3%	7	7	0	-6%	5	6	1	15%
Critical (15%)	53	49	-4	-8%	55	51	-3	-6%	35	37	2	5%	15	15	-1	-3%	13	13	0	4%	11	11	0	4%

Statistic	Monthly Percent (%)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	15	14	0	-2%	21	21	0	0%	27	27	0	0%	37	39	2	5%	43	44	2	4%	46	48	2	4%
20%	11	10	0	-1%	18	17	-1	-7%	24	23	0	-1%	33	34	1	4%	39	41	2	6%	44	47	3	8%
30%	7	8	1	8%	15	15	0	-1%	23	22	-1	-3%	31	32	2	5%	35	38	3	9%	42	46	4	9%
40%	5	5	0	2%	10	10	0	-3%	21	21	0	1%	24	28	4	17%	33	37	3	9%	39	45	6	15%
50%	3	3	0	-6%	6	6	0	-2%	18	17	-1	-6%	20	26	6	29%	30	35	5	15%	36	43	6	18%
60%	1	1	0	0%	4	4	0	-5%	16	16	0	-3%	19	23	4	22%	28	33	4	15%	17	18	0	2%
70%	1	1	0	-4%	2	2	0	-4%	13	12	-1	-7%	16	21	5	28%	27	31	4	13%	12	12	1	5%
80%	0	0	0	-17%	1	1	0	12%	9	8	-1	-10%	14	19	4	29%	26	30	4	17%	9	9	0	5%
90%	0	0	0	-	0	0	0	-	2	2	0	22%	13	15	2	16%	24	29	4	18%	8	8	1	8%
Long Term Full Simulation Period[b]	5	5	0	0%	9	9	0	-3%	18	17	0	-2%	23	27	3	13%	32	35	4	11%	28	30	2	8%
Water Year Types[c]																								
Wet (32%)	1	1	0	-4%	2	2	0	-3%	8	8	0	-4%	14	17	3	19%	28	31	4	13%	8	9	1	10%
Above Normal (16%)	2	1	0	-6%	4	4	0	-3%	16	15	0	-2%	17	23	6	34%	26	30	5	18%	18	18	0	2%
Below Normal (13%)	7	7	0	2%	11	10	0	-3%	20	19	-1	-3%	21	26	6	27%	28	33	5	17%	39	44	6	15%
Dry (24%)	7	7	0	3%	13	13	-1	-6%	21	20	0	-2%	32	34	2	6%	36	39	3	8%	43	47	4	10%
Critical (15%)	15	15	0	-1%	24	24	0	0%	32	32	0	0%	39	40	1	2%	44	45	2	4%	46	48	2	4%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-1. Monthly Percent Ranges For Sacramento River at Collinsville Martinez Volumetric Fingerprinting, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.

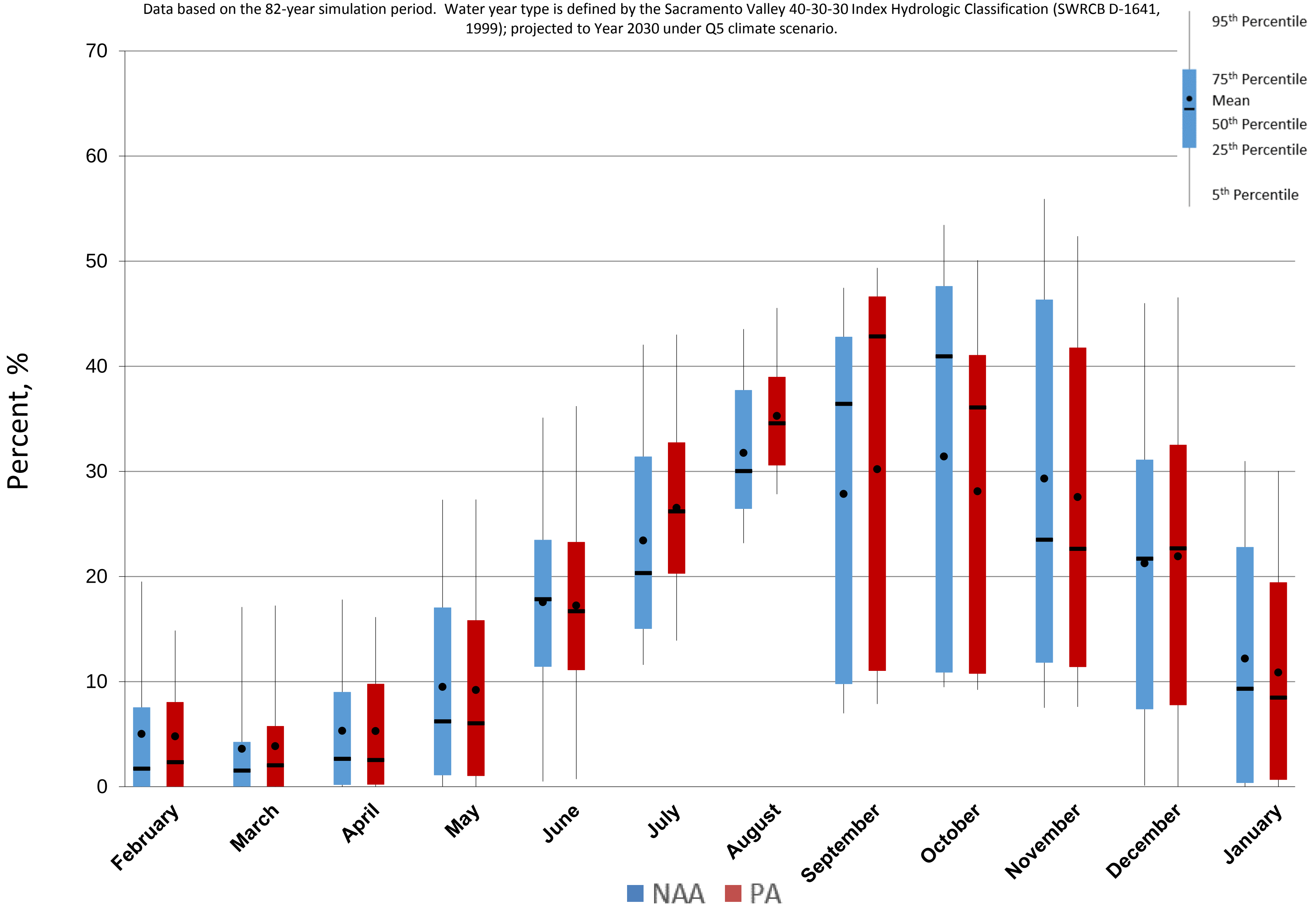


Figure 5.B.5-23-2. Monthly Percent Ranges For Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Wet Years

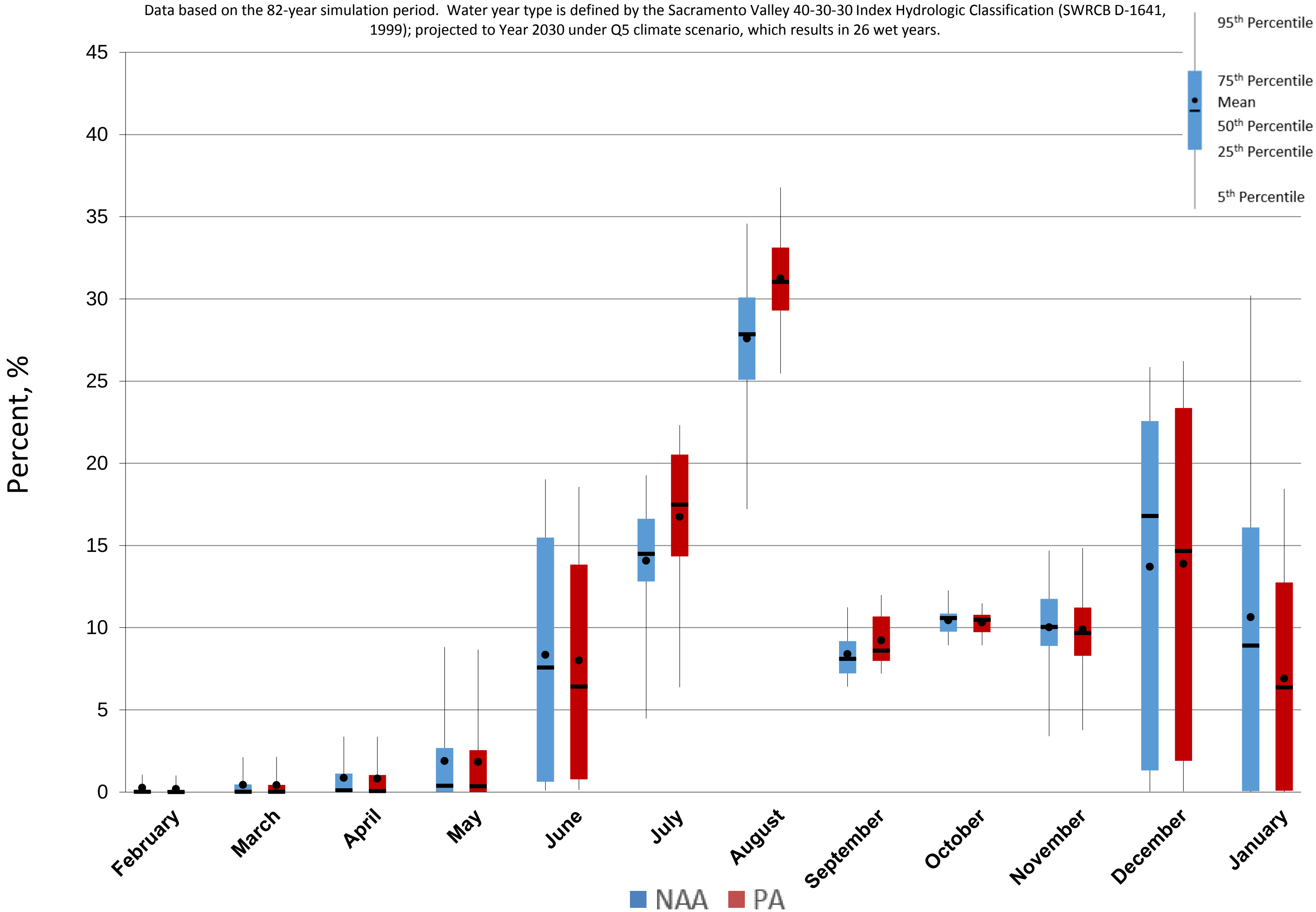


Figure 5.B.5-23-3. Monthly Percent Ranges For Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

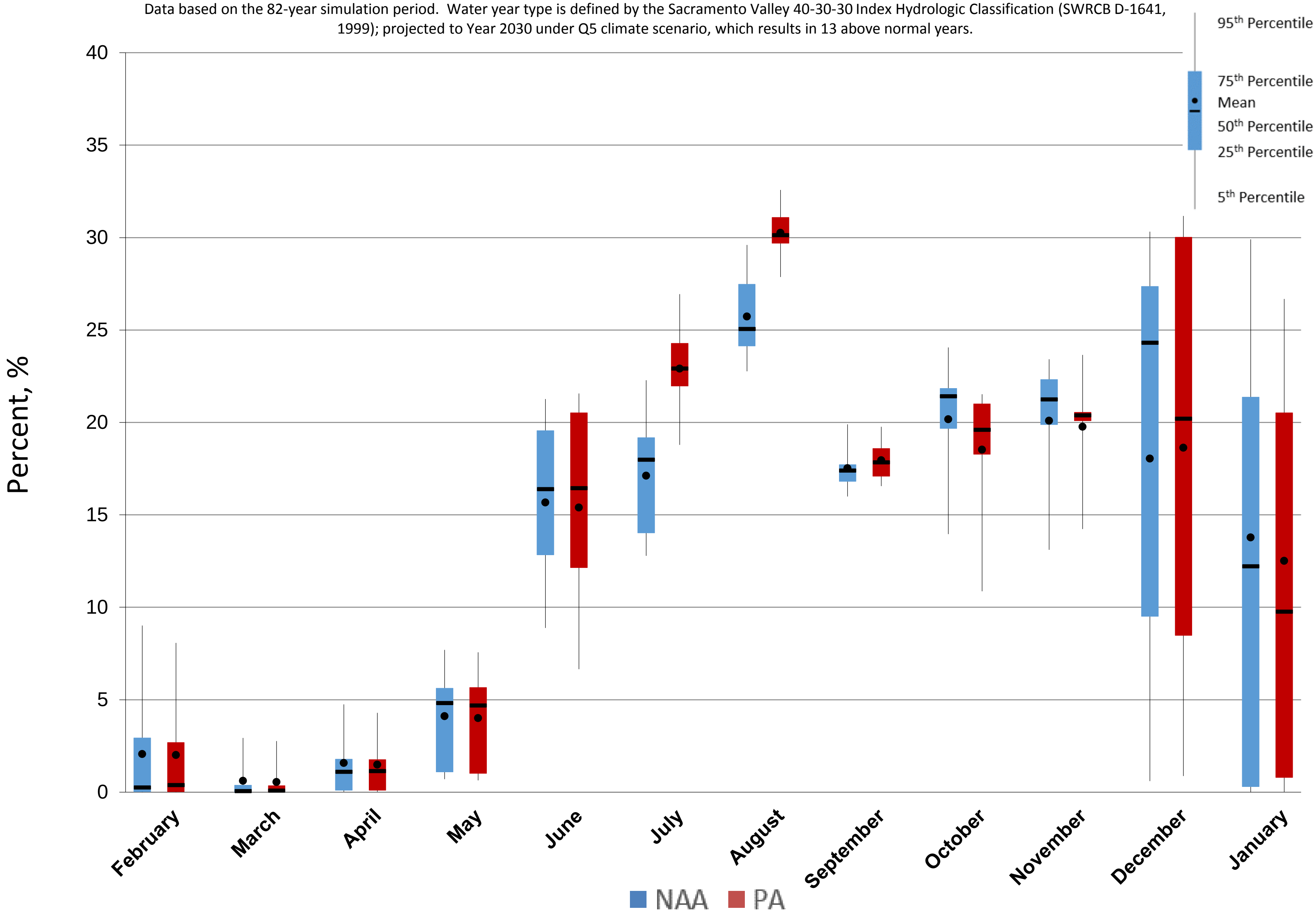


Figure 5.B.5-23-4. Monthly Percent Ranges For Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

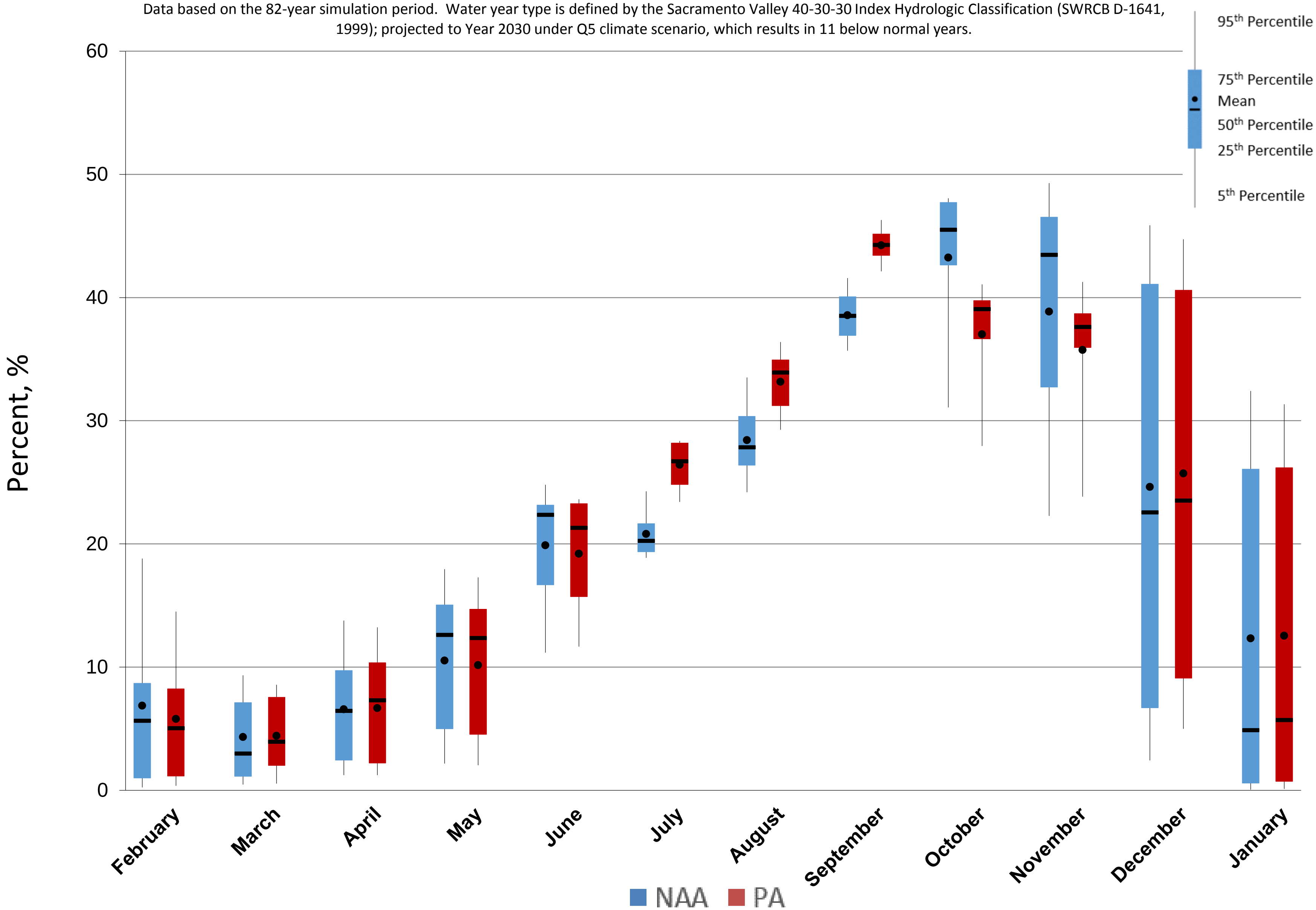


Figure 5.B.5-23-5. Monthly Percent Ranges For Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Dry Years

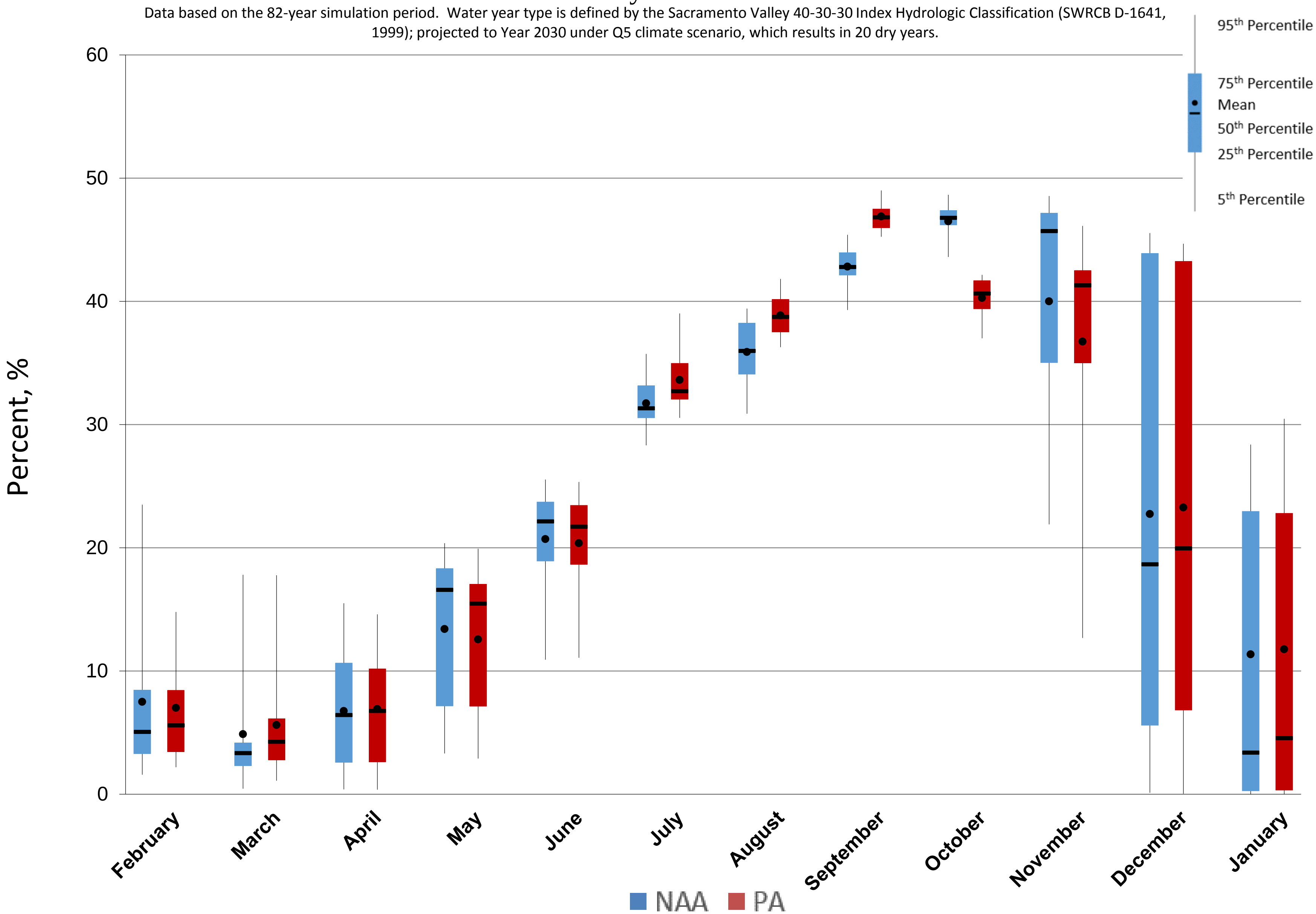


Figure 5.B.5-23-6. Monthly Percent Ranges For Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

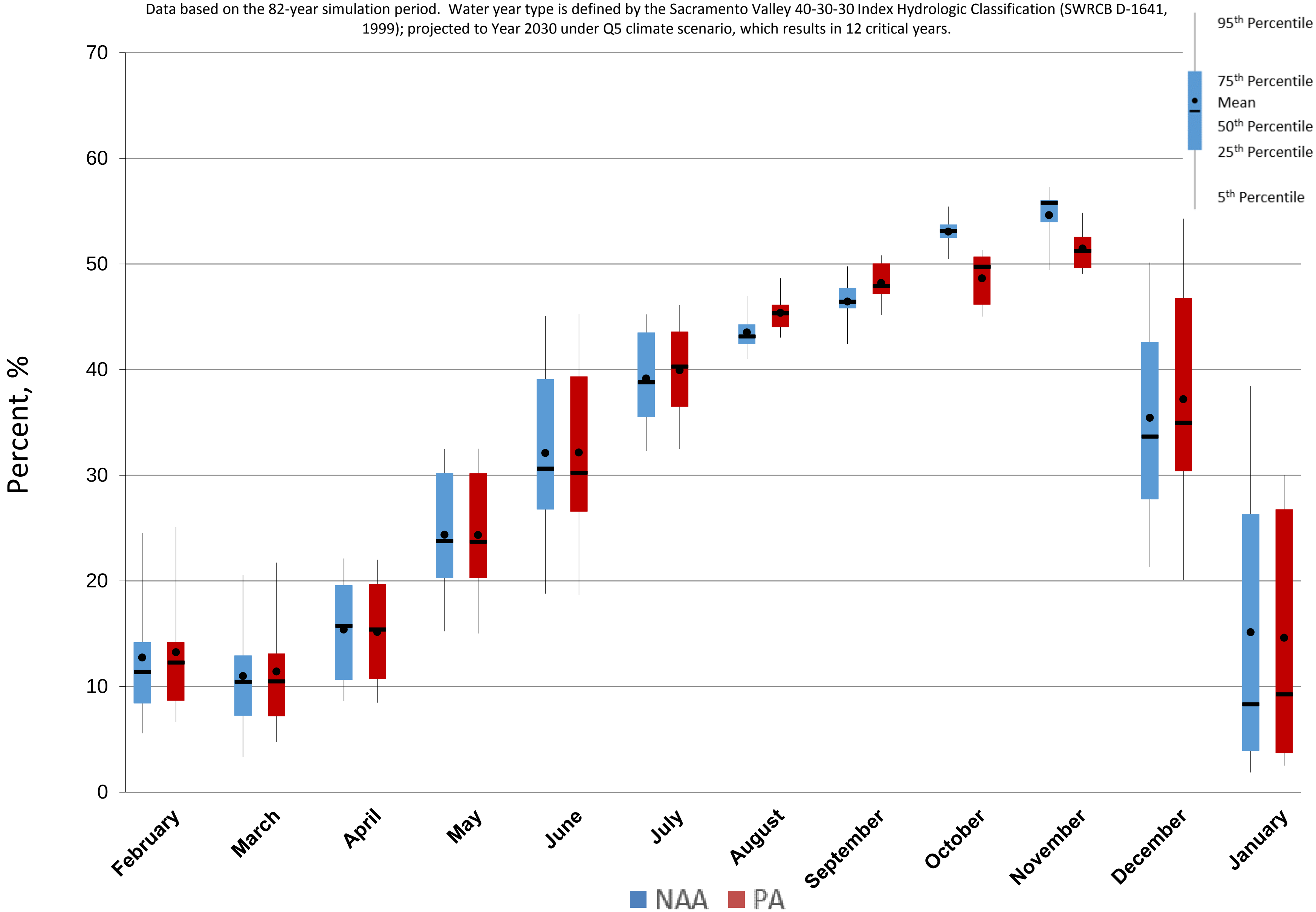
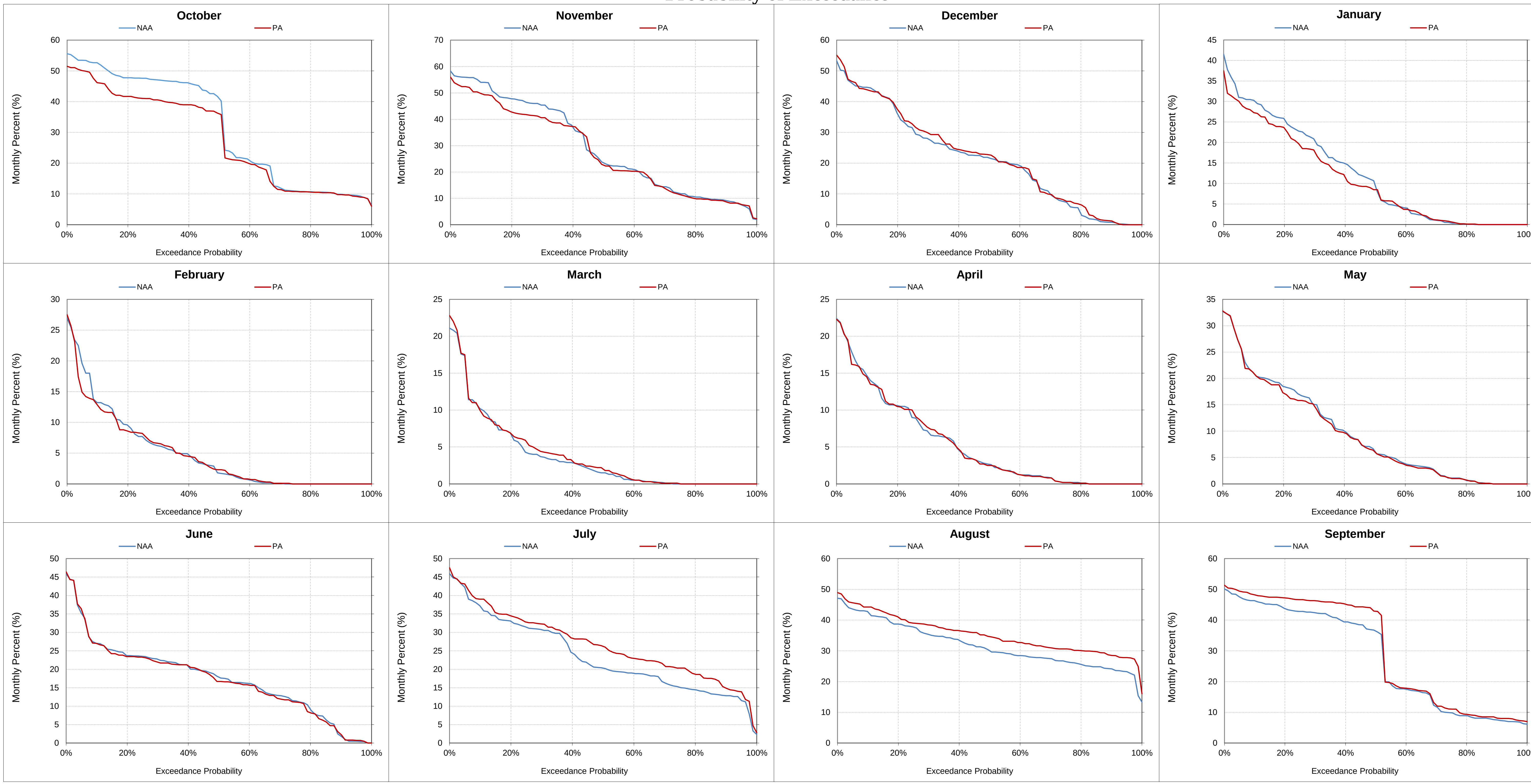
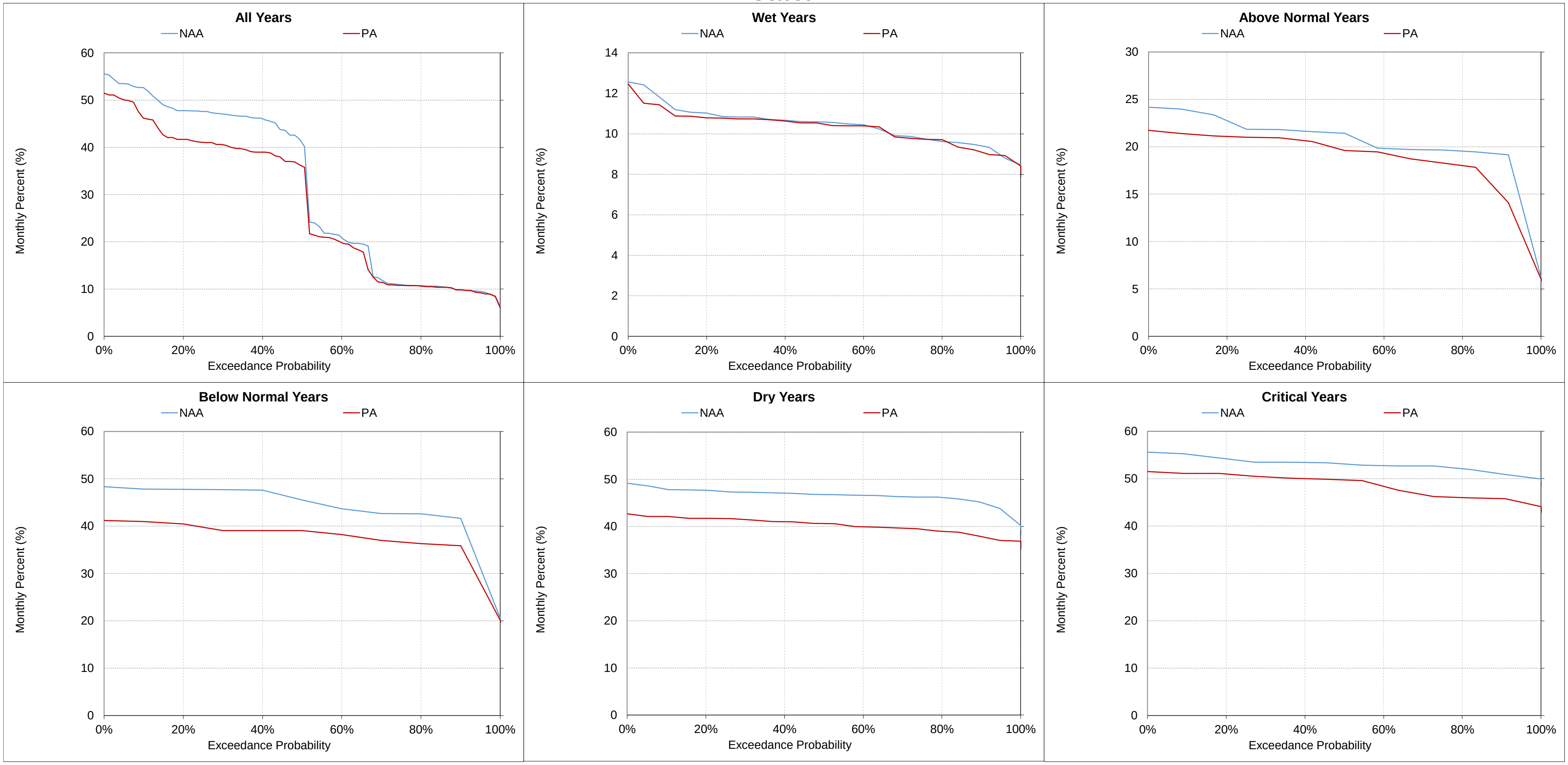


Figure 5.B.5-23-7. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent Probability of Exceedance



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-8. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent October



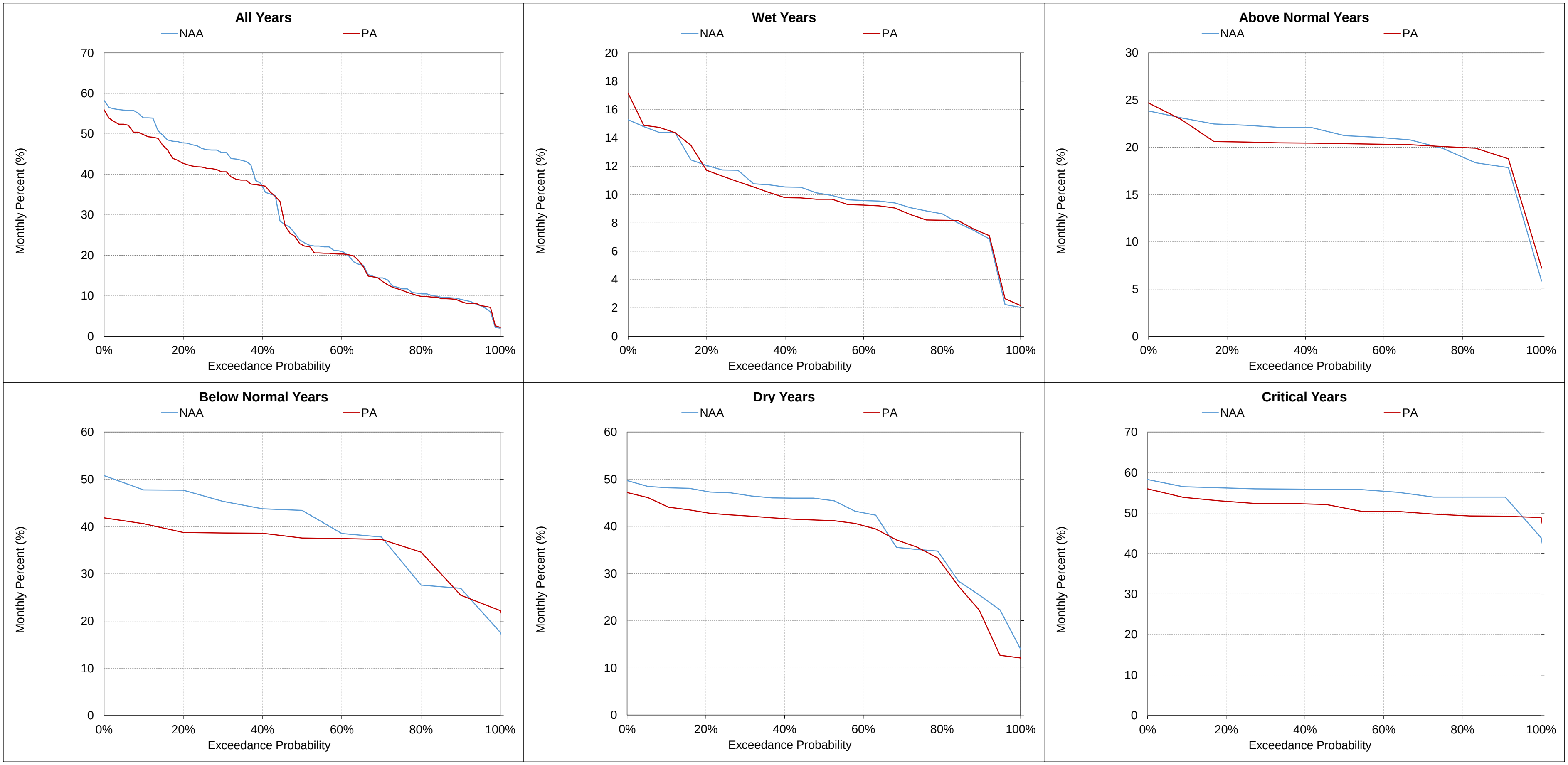
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

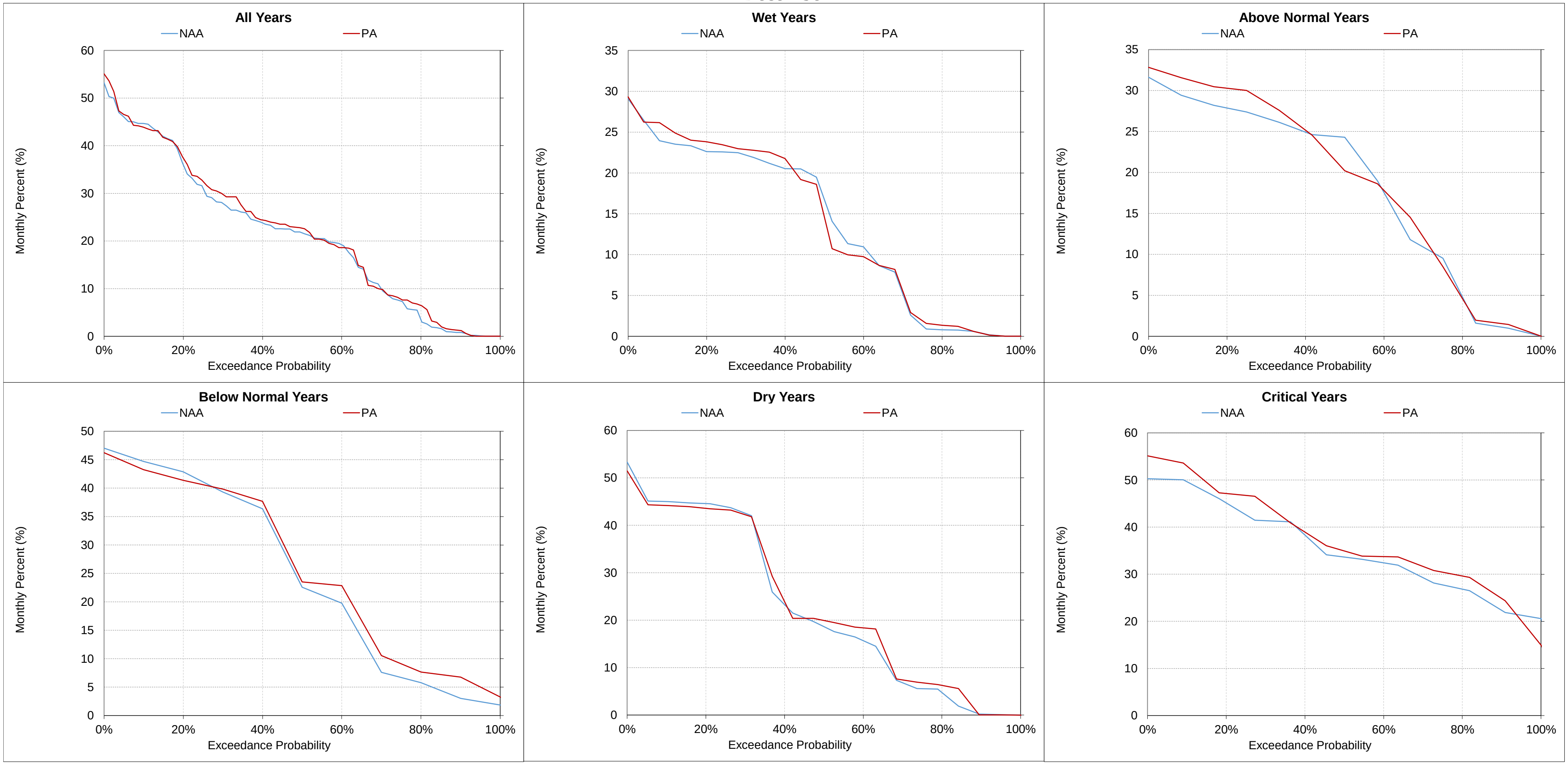
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-9. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-10. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent December



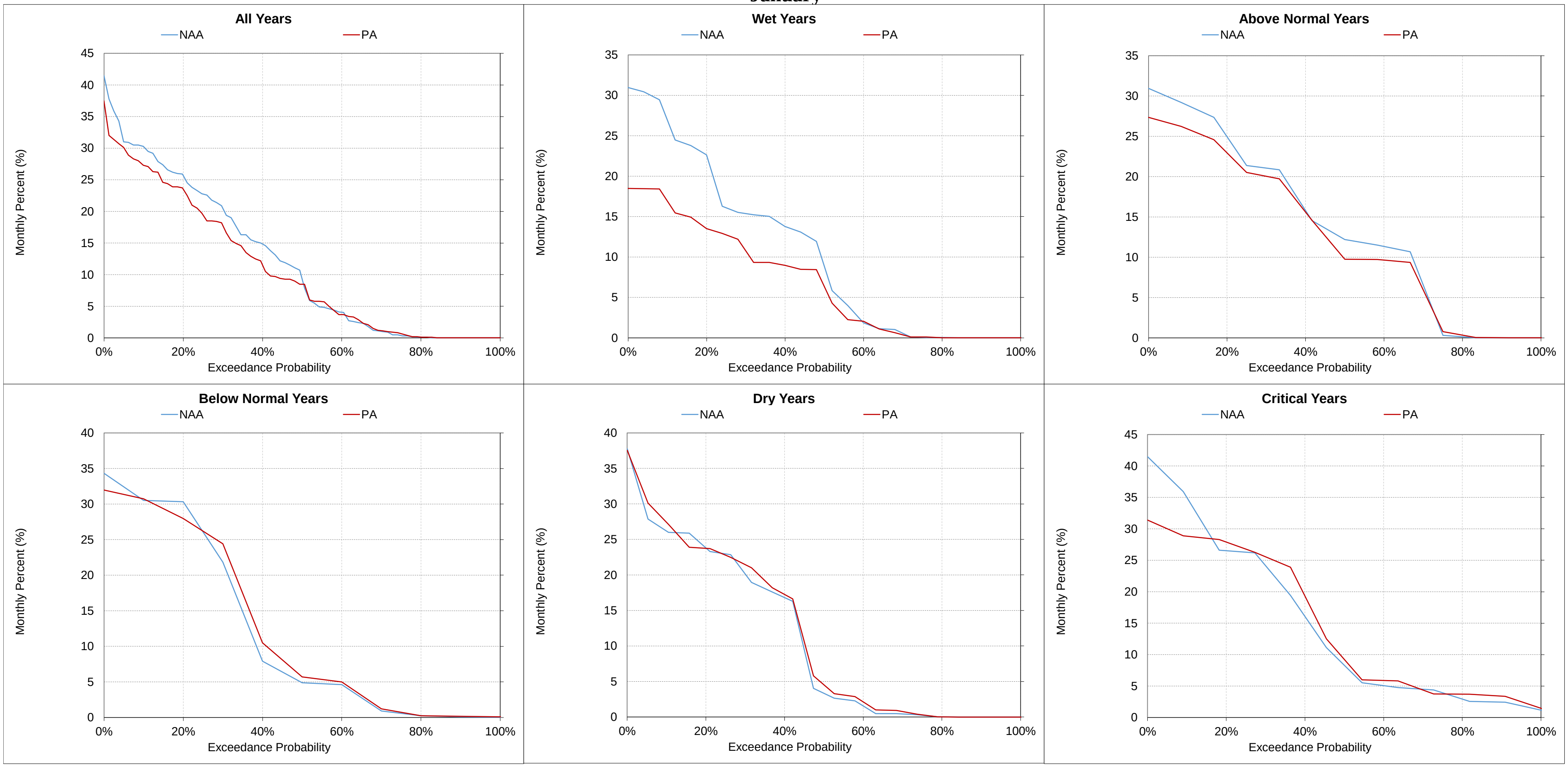
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

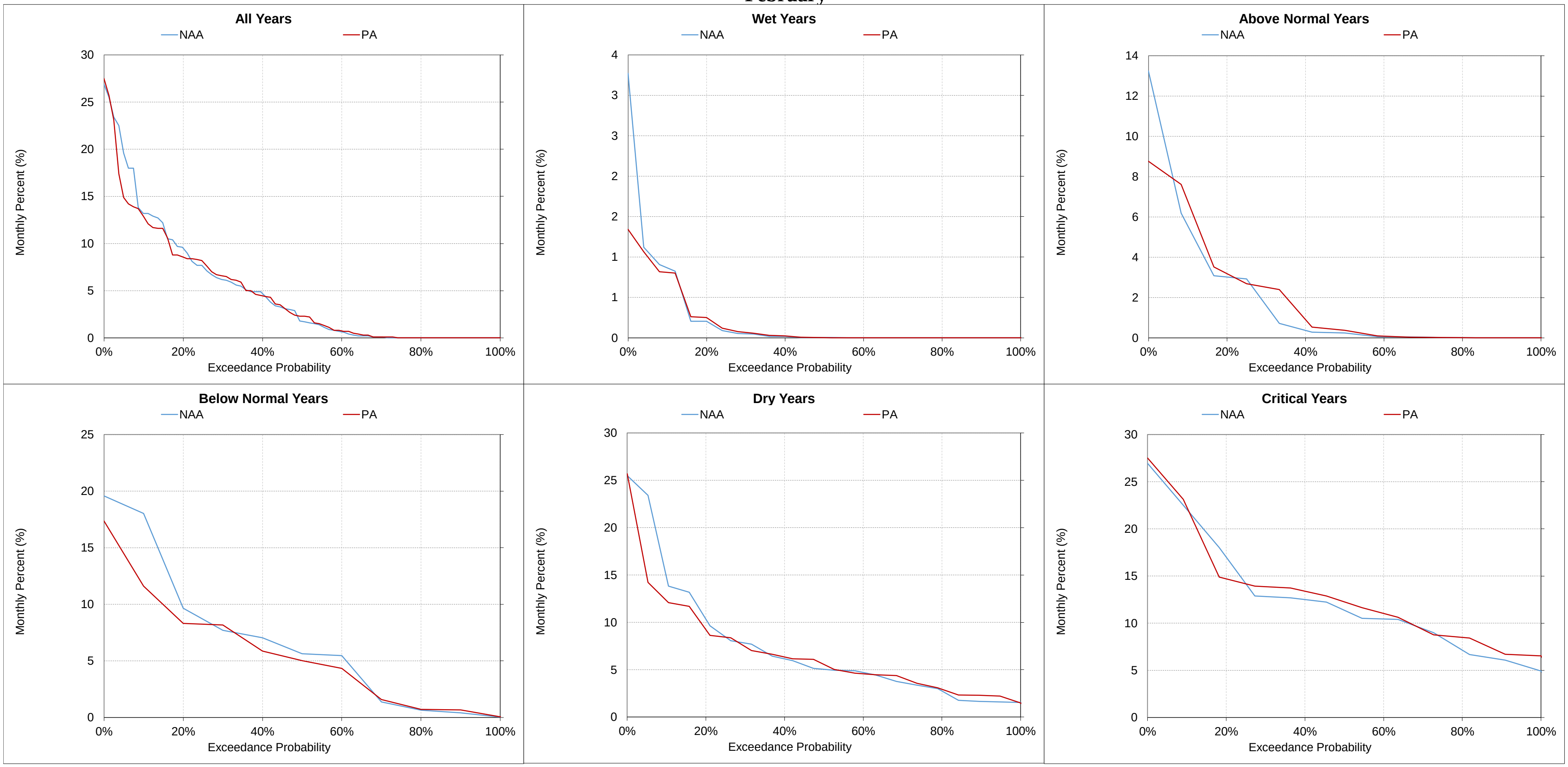
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-11. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent January



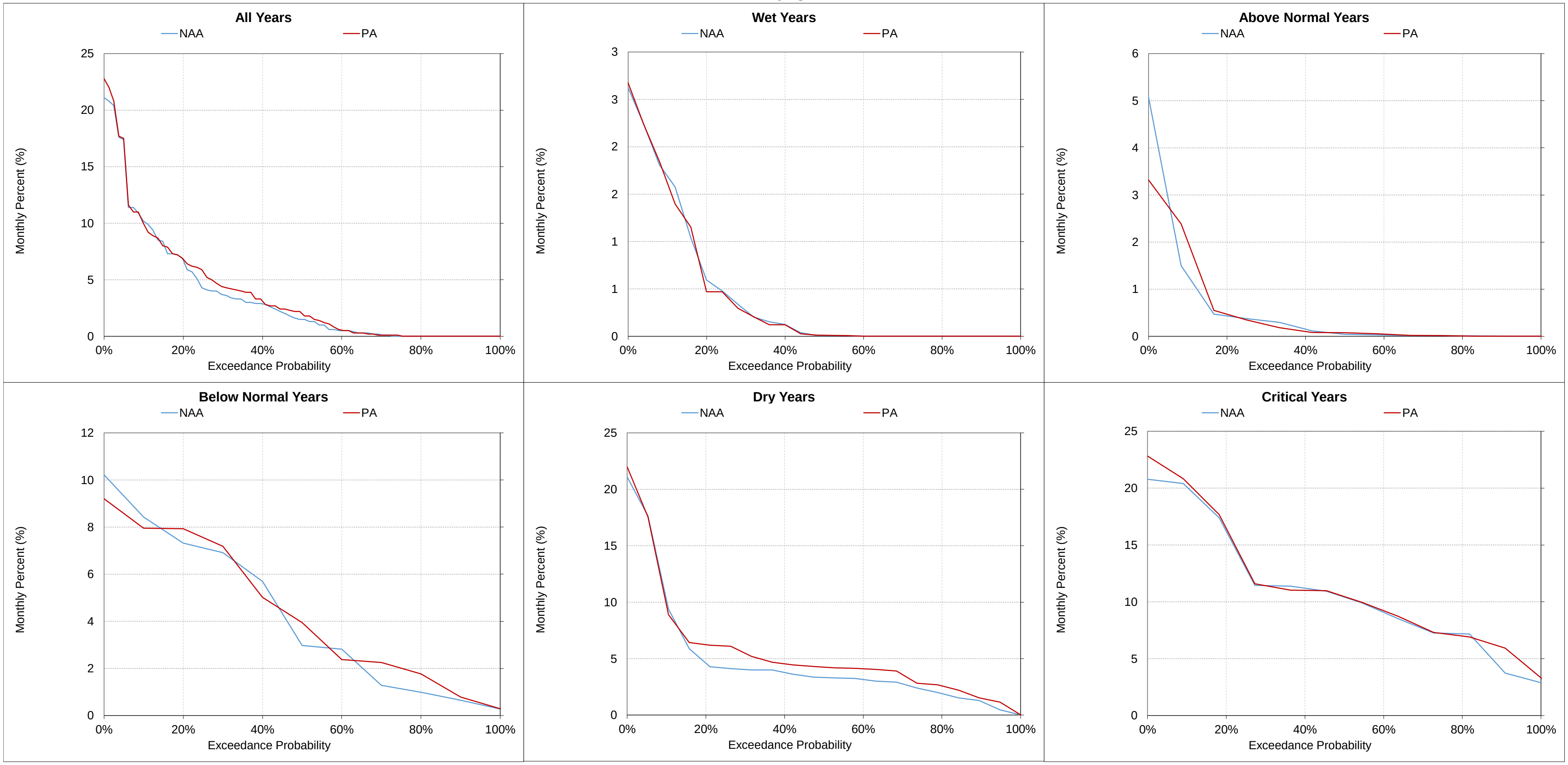
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-12. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent February



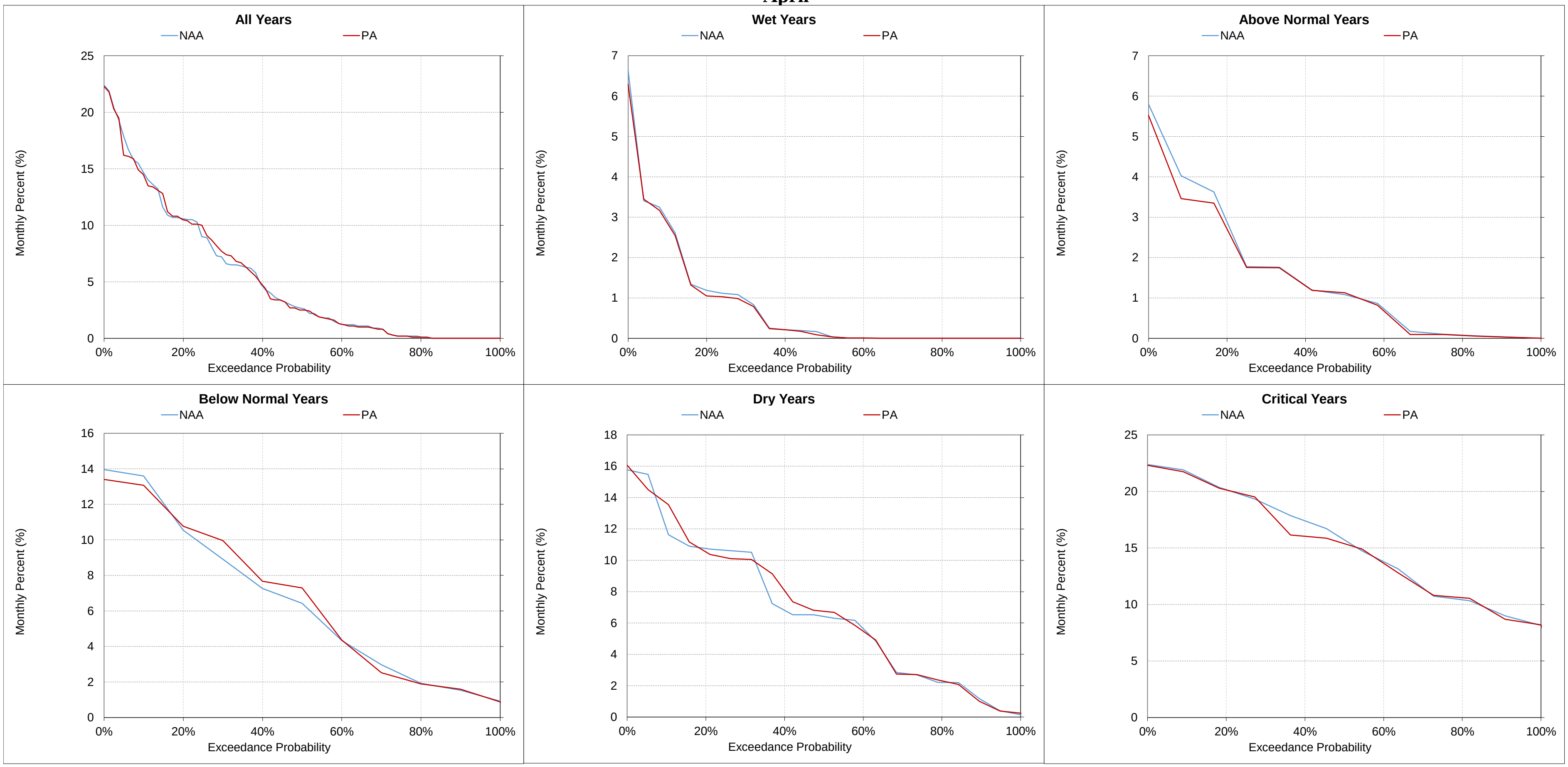
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-13. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent March



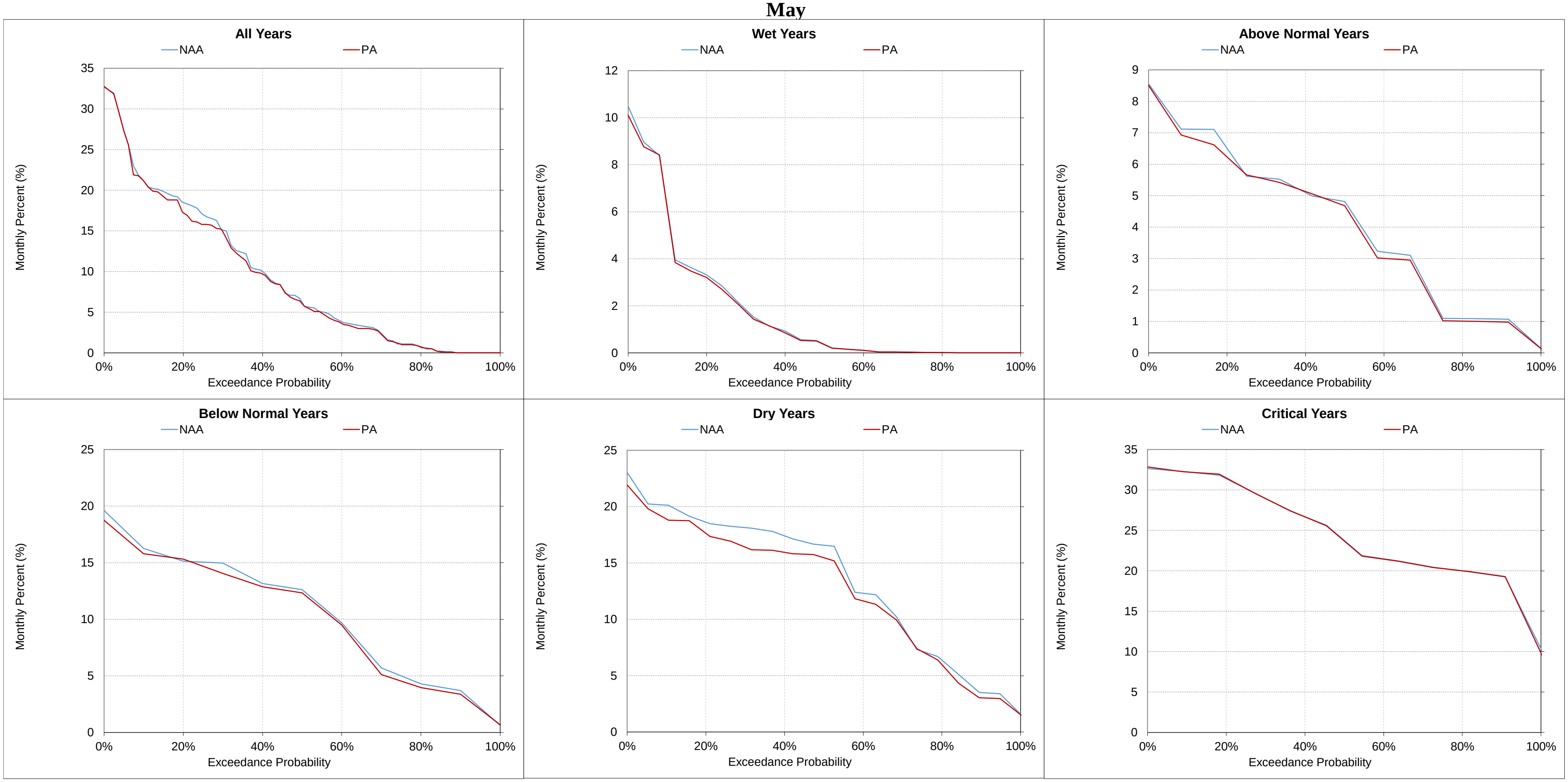
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-14. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-15. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent May



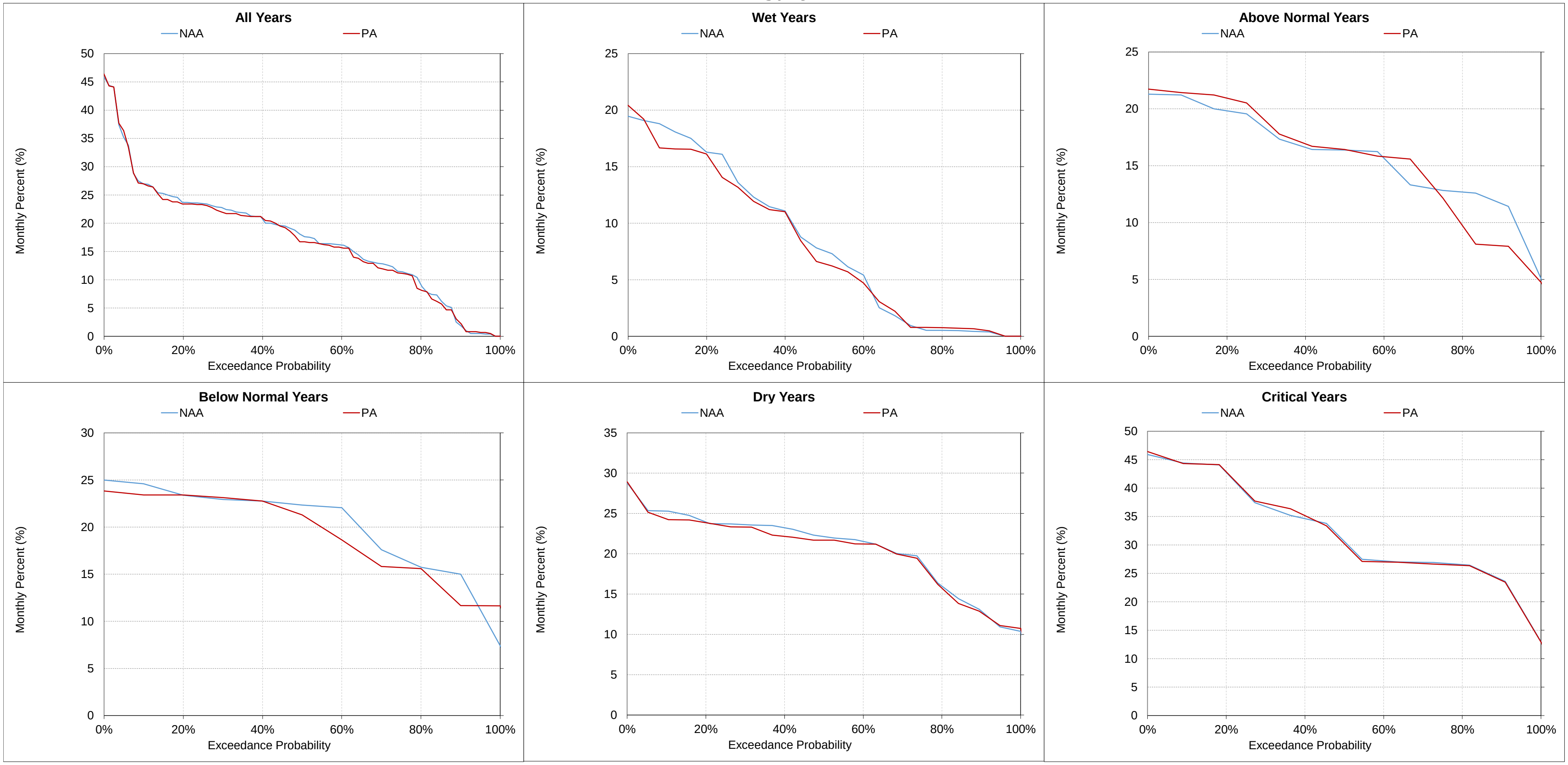
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

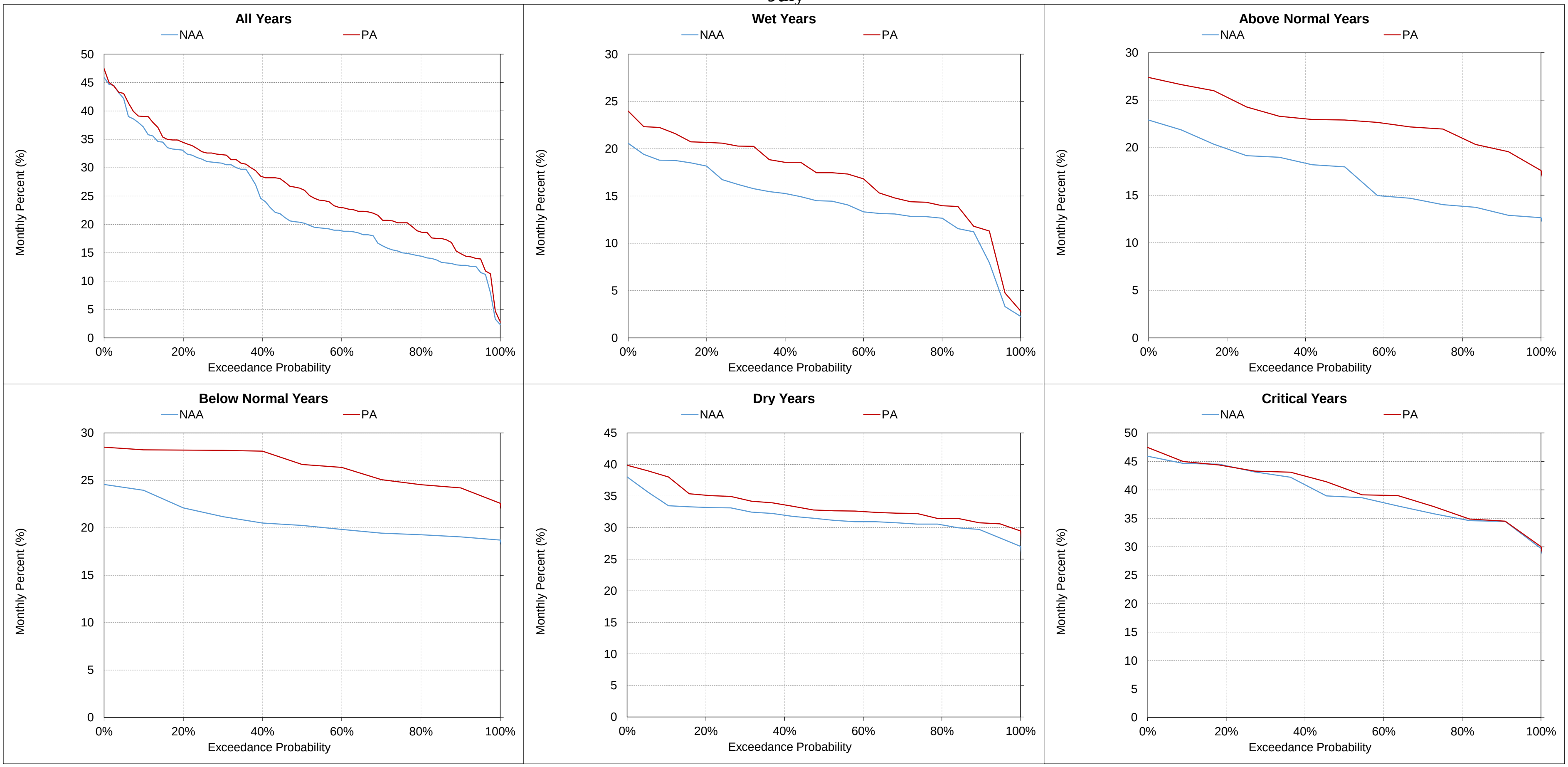
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-16. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent
June



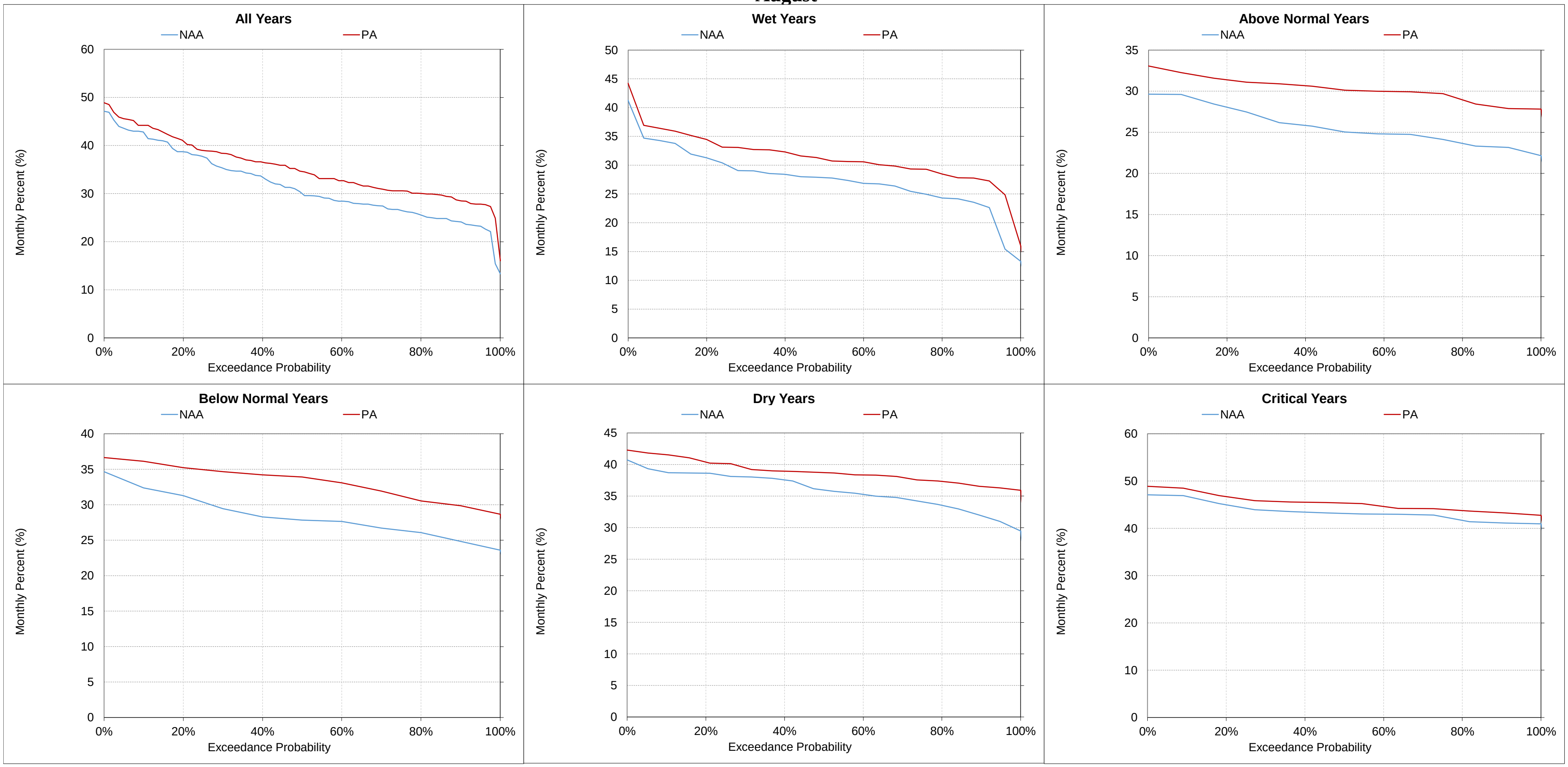
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-17. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent July



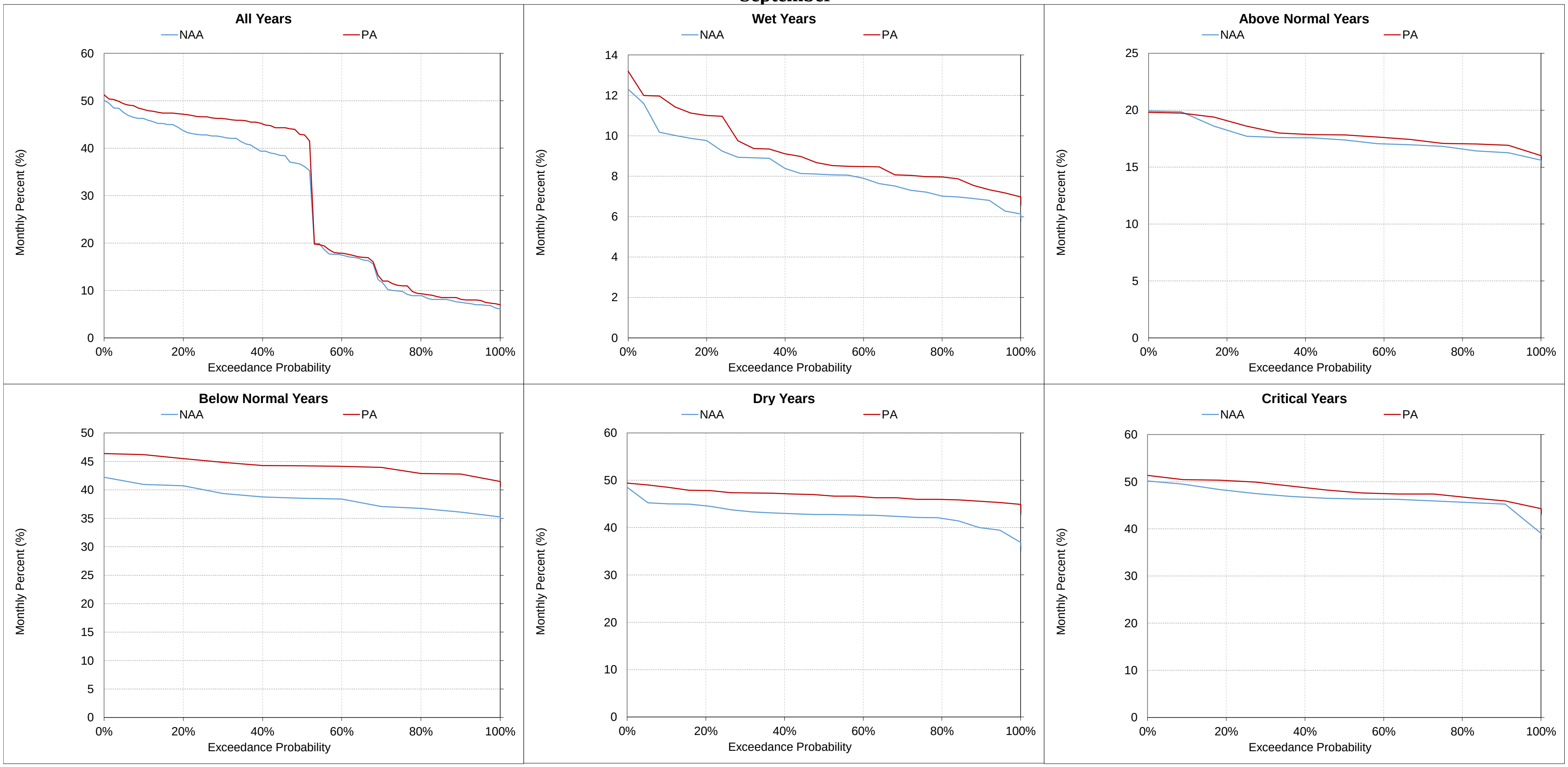
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-18. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-23-19. Sacramento River at Collinsville Martinez Volumetric Fingerprinting, Monthly Percent September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-24. Delta Cross Channel, Average Number of Days Gates Open

Statistic	Average Number of Days Gates Open (days)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	31	31	0	0%	20	20	0	0%	14	14	0	0%	0	0	0	-	0	0	0	-	0	0	0	-
20%	31	31	0	0%	20	20	0	0%	13	14	1	8%	0	0	0	-	0	0	0	-	0	0	0	-
30%	31	31	0	0%	17	20	3	20%	12	13	1	8%	0	0	0	-	0	0	0	-	0	0	0	-
40%	31	31	0	0%	14	16	2	18%	8	8	0	0%	0	0	0	-	0	0	0	-	0	0	0	-
50%	29	31	2	7%	10	15	6	58%	4	5	1	13%	0	0	0	-	0	0	0	-	0	0	0	-
60%	27	30	3	11%	4	11	7	185%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
70%	24	28	4	17%	2	9	7	350%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
80%	18	26	8	43%	0	3	3	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
90%	13	18	5	36%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Long Term **Full Simulation Period**[b]	25	27	2	8%	10	12	3	26%	6	6	0	4%	0	0	0	-	0	0	0	-	0	0	0	-
Water Year Types[c]																								
Wet (32%)	19	24	5	25%	3	7	4	150%	6	6	0	8%	0	0	0	-	0	0	0	-	0	0	0	-
Above Normal (16%)	24	27	3	13%	7	12	5	66%	5	5	0	5%	0	0	0	-	0	0	0	-	0	0	0	-
Below Normal (13%)	28	28	0	1%	15	16	1	8%	7	7	0	-1%	0	0	0	-	0	0	0	-	0	0	0	-
Dry (24%)	29	30	1	2%	12	13	1	11%	5	5	0	2%	0	0	0	-	0	0	0	-	0	0	0	-
Critical (15%)	31	31	0	-1%	19	19	0	0%	8	8	0	2%	0	0	0	-	0	0	0	-	0	0	0	-

Statistic	Average Number of Days Gates Open (days)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	0	0	0	-	0	0	0	-	26	26	0	0%	31	31	0	0%	31	31	0	0%	30	30	0	0%
20%	0	0	0	-	0	0	0	-	26	26	0	0%	31	31	0	0%	31	31	0	0%	30	30	0	0%
30%	0	0	0	-	0	0	0	-	26	26	0	0%	31	31	0	0%	31	31	0	0%	30	30	0	0%
40%	0	0	0	-	0	0	0	-	26	26	0	0%	31	31	0	0%	31	31	0	0%	30	30	0	0%
50%	0	0	0	-	0	0	0	-	26	26	0	0%	31	31	0	0%	31	31	0	0%	30	30	0	0%
60%	0	0	0	-	0	0	0	-	26	26	0	0%	31	31	0	0%	31	31	0	0%	30	30	0	0%
70%	0	0	0	-	0	0	0	-	26	26	0	0%	26	31	5	18%	31	31	0	0%	25	30	5	19%
80%	0	0	0	-	0	0	0	-	26	26	0	0%	23	31	8	34%	31	31	0	0%	0	30	30	-
90%	0	0	0	-	0	0	0	-	25	26	1	4%	19	31	12	62%	31	31	0	0%	0	27	27	-
Long Term **Full Simulation Period**[b]	0	0	0	-	0	0	0	-	24	25	1	6%	28	31	3	12%	31	31	0	0%	21	29	8	36%
Water Year Types[c]																								
Wet (32%)	0	0	0	-	0	0	0	-	19	23	4	23%	26	31	5	19%	31	31	0	0%	3	27	24	686%
Above Normal (16%)	0	0	0	-	0	0	0	-	26	26	0	2%	24	31	7	28%	31	31	0	0%	29	30	1	3%
Below Normal (13%)	0	0	0	-	0	0	0	-	26	26	0	0%	27	31	4	17%	31	31	0	0%	30	30	0	0%
Dry (24%)	0	0	0	-	0	0	0	-	26	26	0	0%	31	31	0	1%	31	31	0	0%	30	30	0	0%
Critical (15%)	0	0	0	-	0	0	0	-	26	26	0	0%	31	31	0	0%	31	31	0	0%	30	30	0	0%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

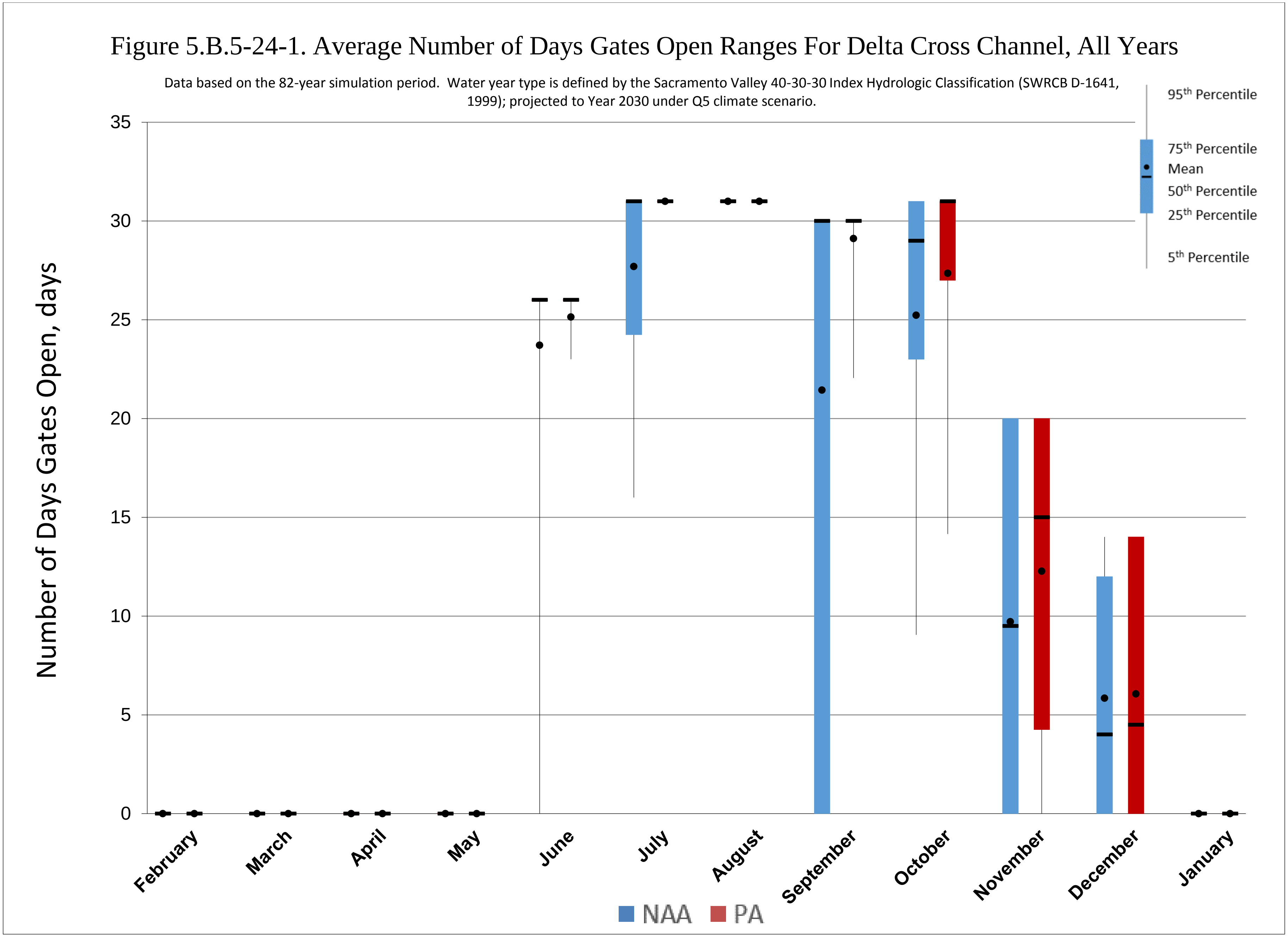


Figure 5.B.5-24-1. Average Number of Days Gates Open Ranges For Delta Cross Channel, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
Number of Days Gates Open, days
35
30
25
20
15
10
5
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-24-2. Average Number of Days Gates Open Ranges For Delta Cross Channel, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

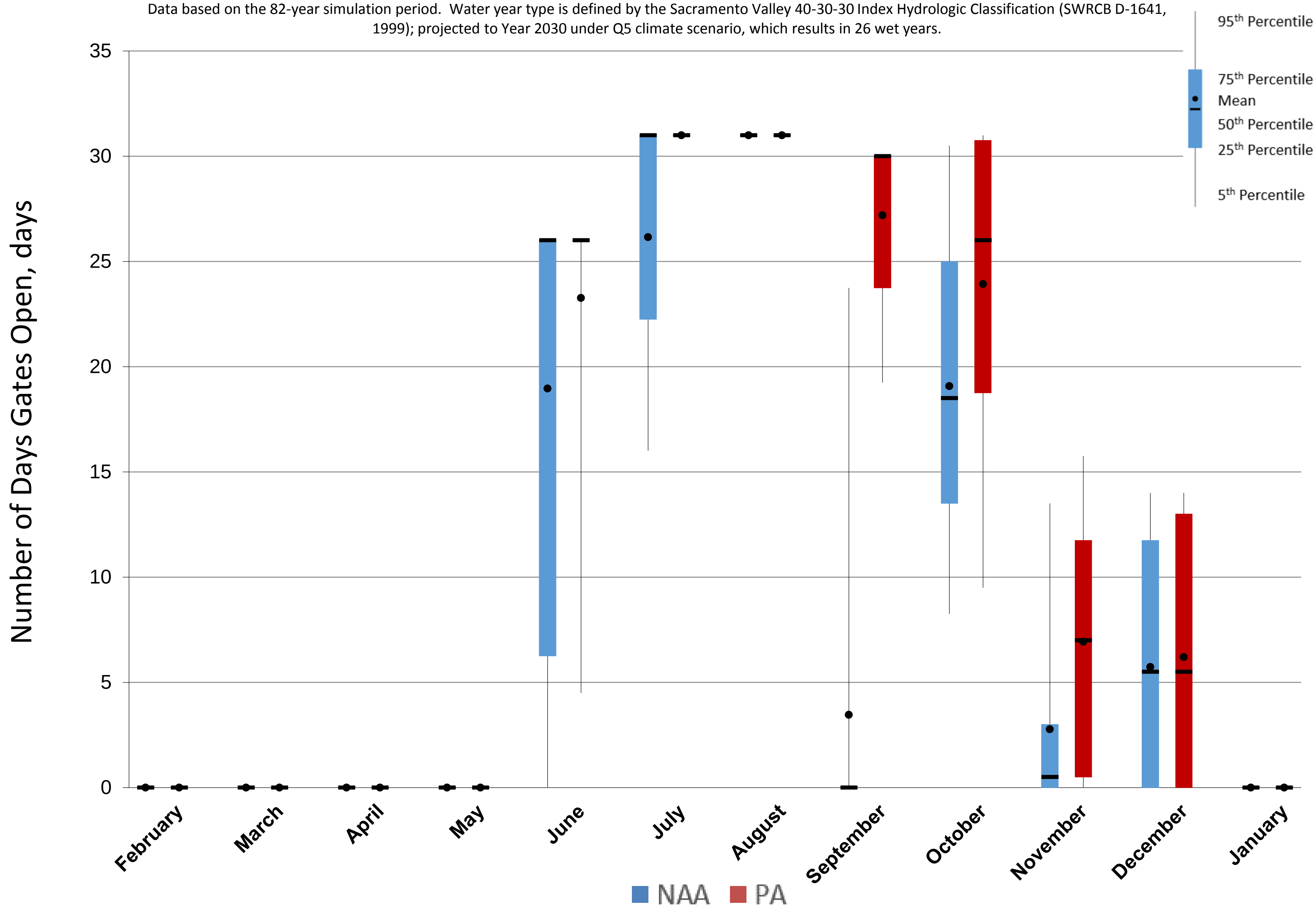


Figure 5.B.5-24-3. Average Number of Days Gates Open Ranges For Delta Cross Channel, Above Normal Years

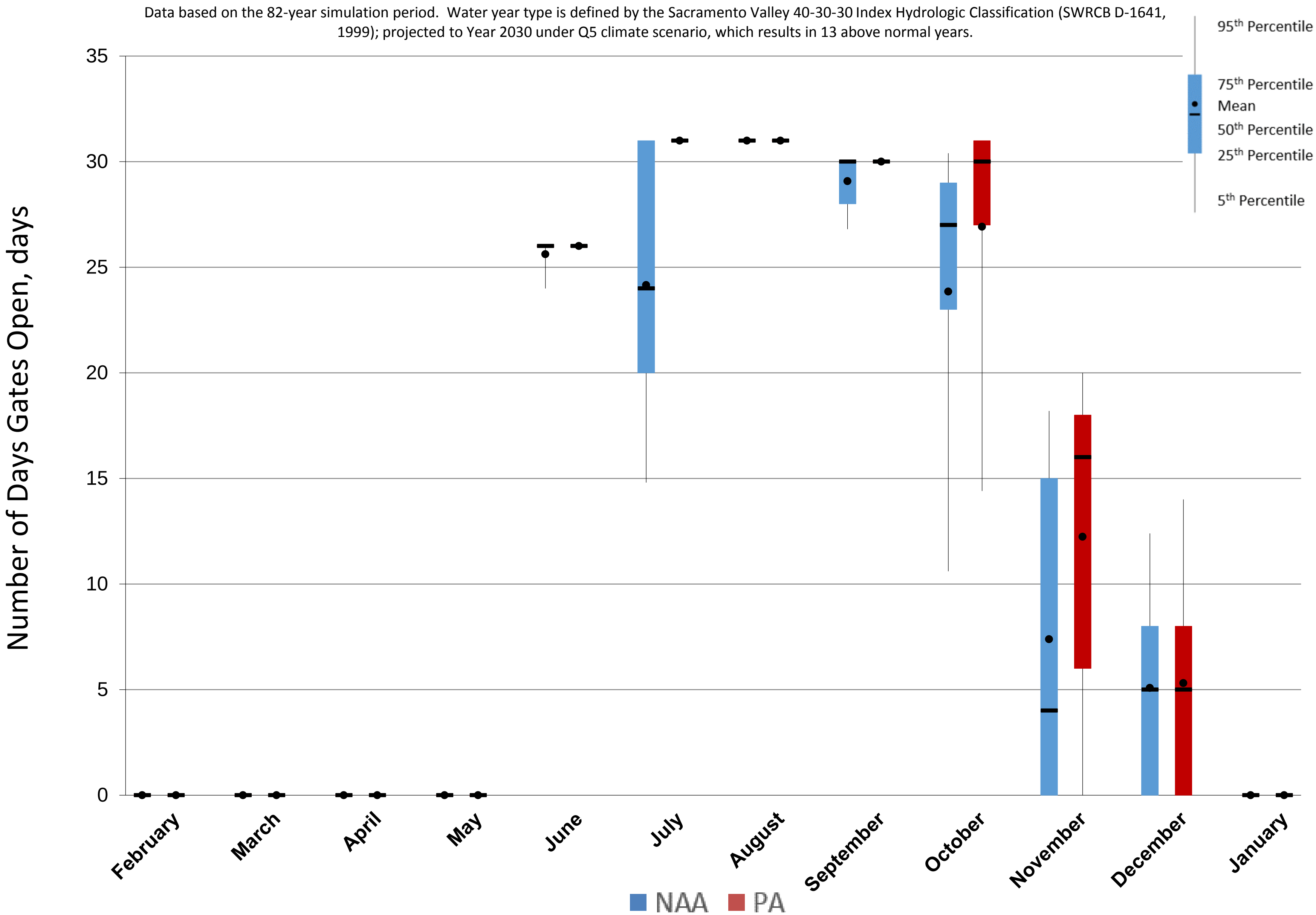


Figure 5.B.5-24-4. Average Number of Days Gates Open Ranges For Delta Cross Channel, Below Normal Years

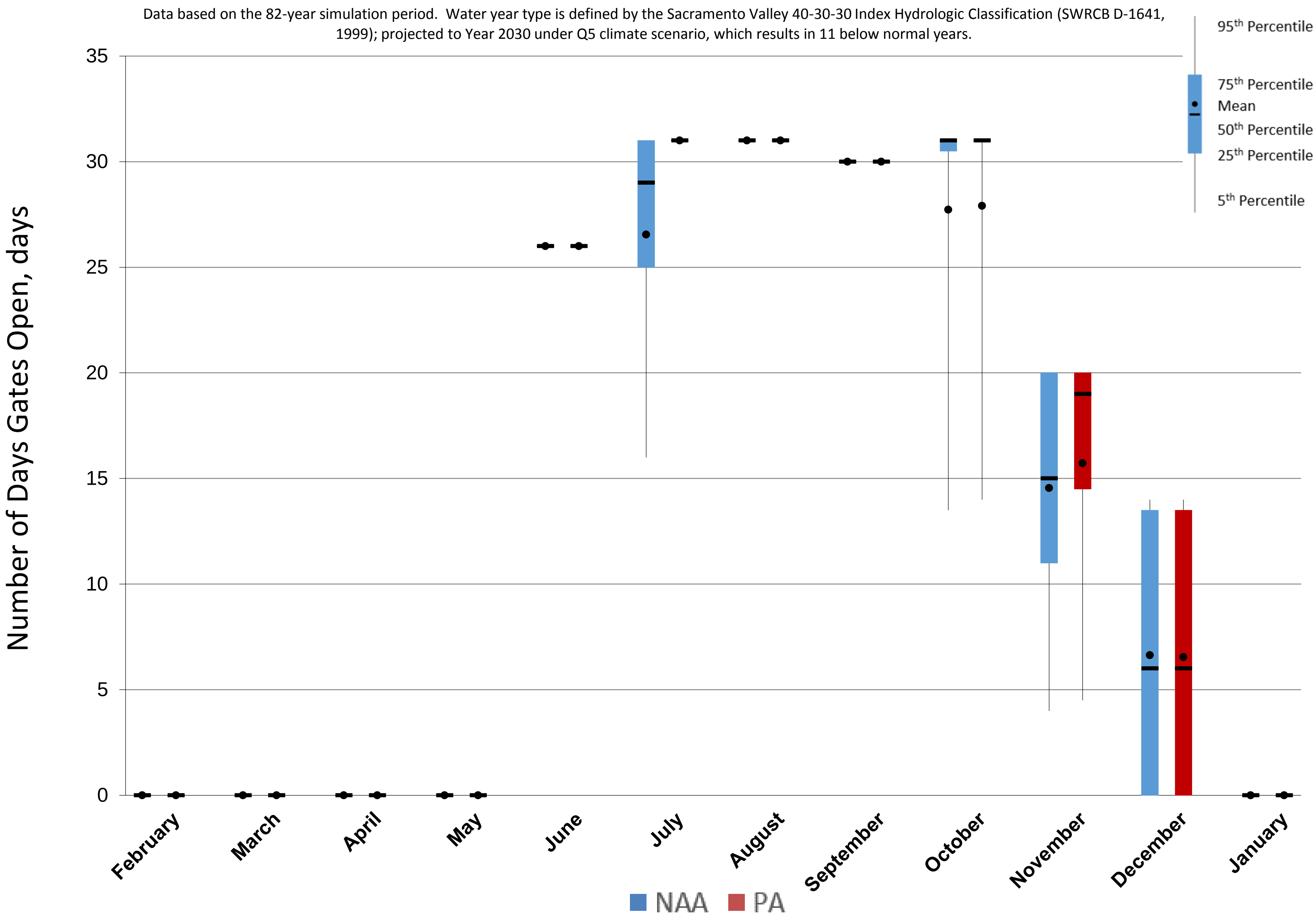


Figure 5.B.5-24-5. Average Number of Days Gates Open Ranges For Delta Cross Channel, Dry Years

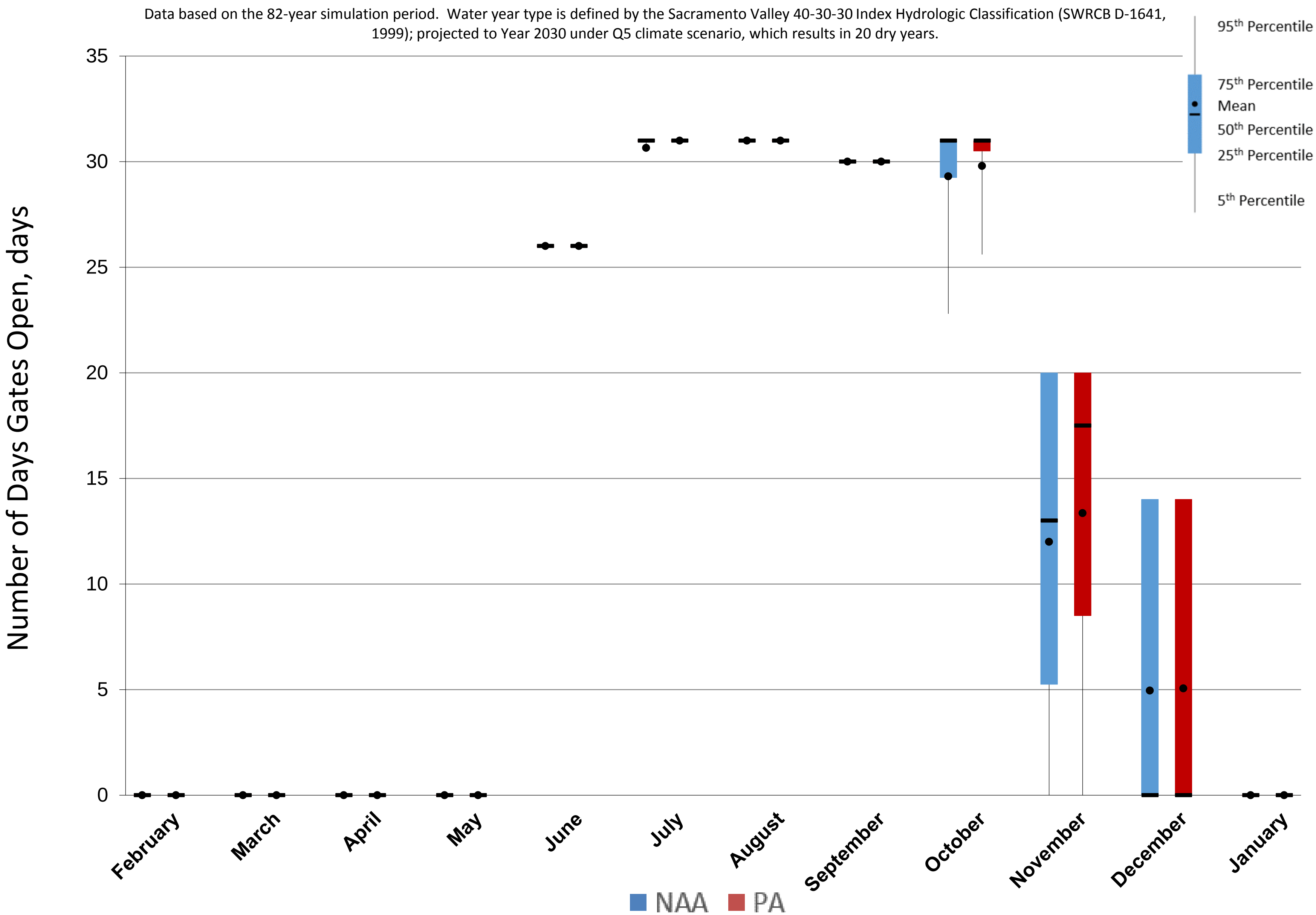


Figure 5.B.5-24-6. Average Number of Days Gates Open Ranges For Delta Cross Channel, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

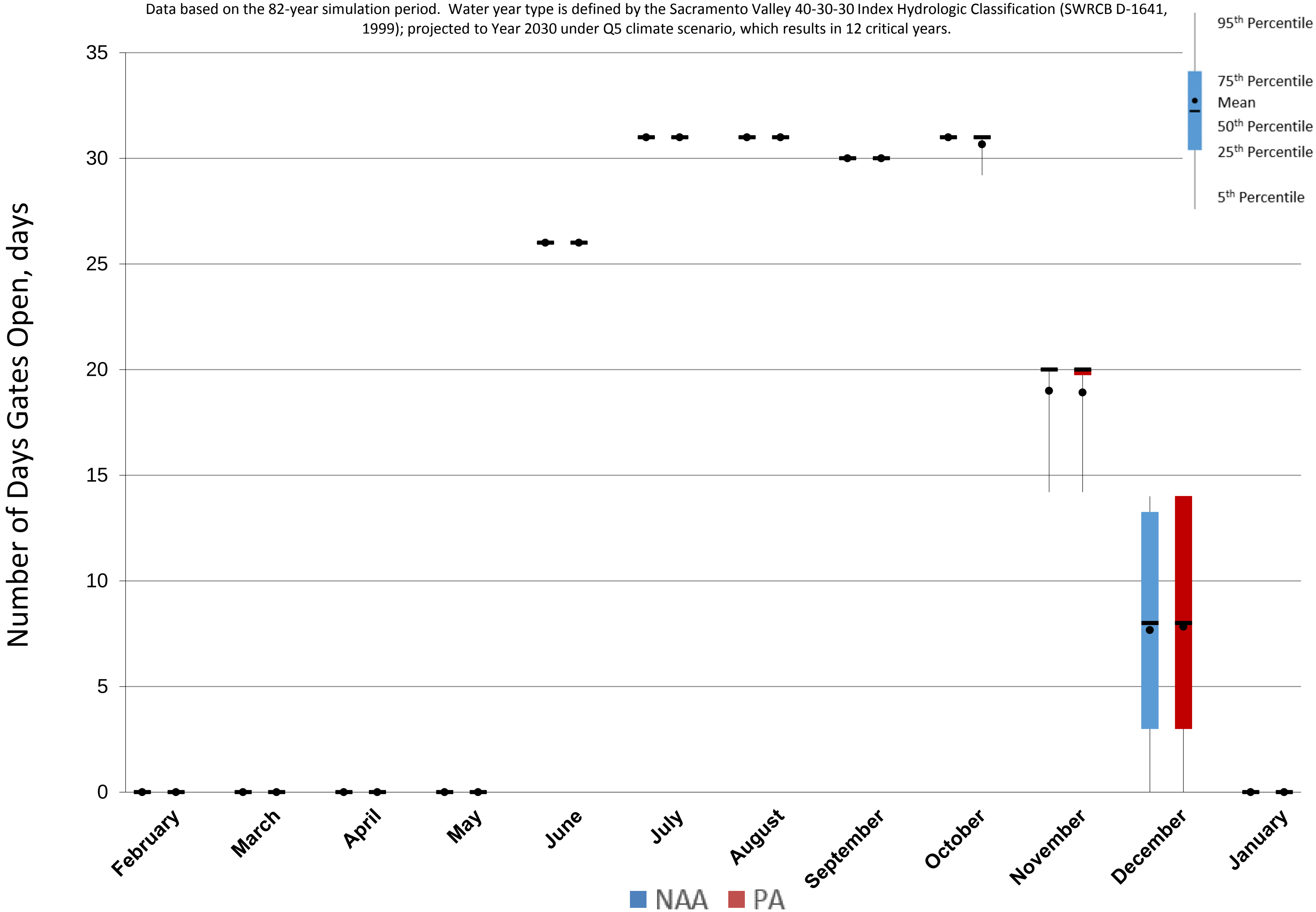
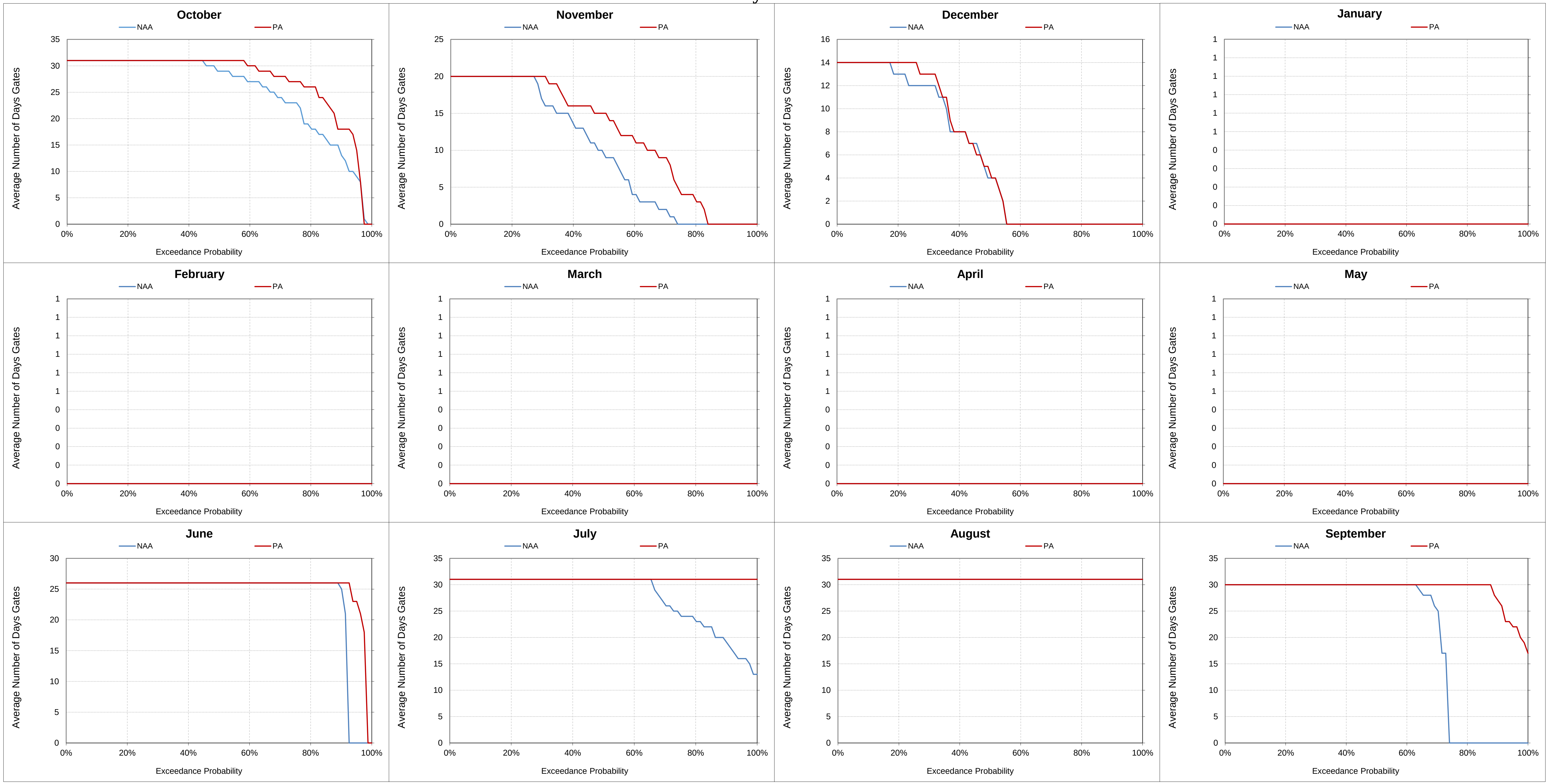
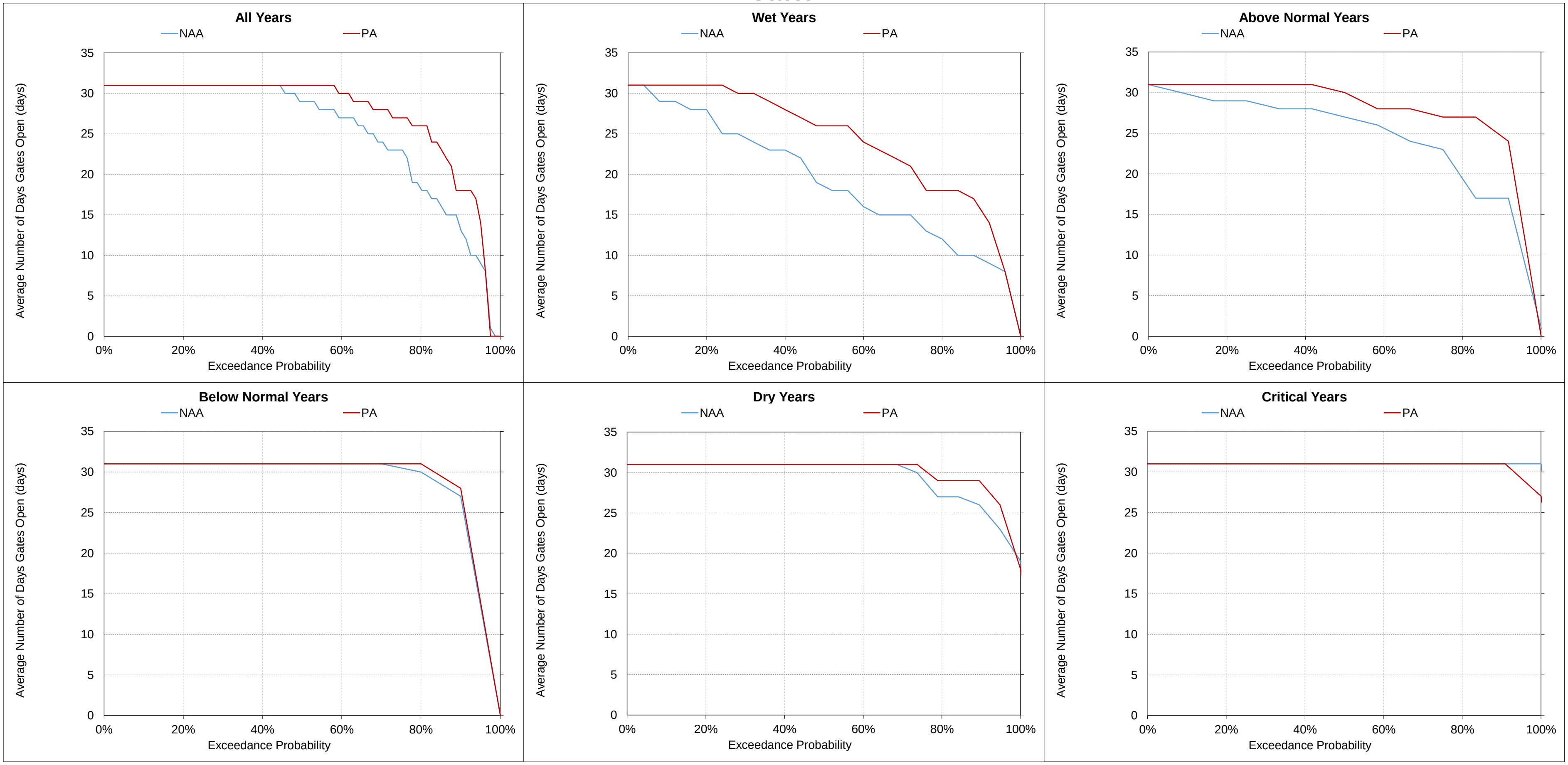


Figure 5.B.5-24-7. Delta Cross Channel, Average Number of Days Gates Open Probability of Exceedance



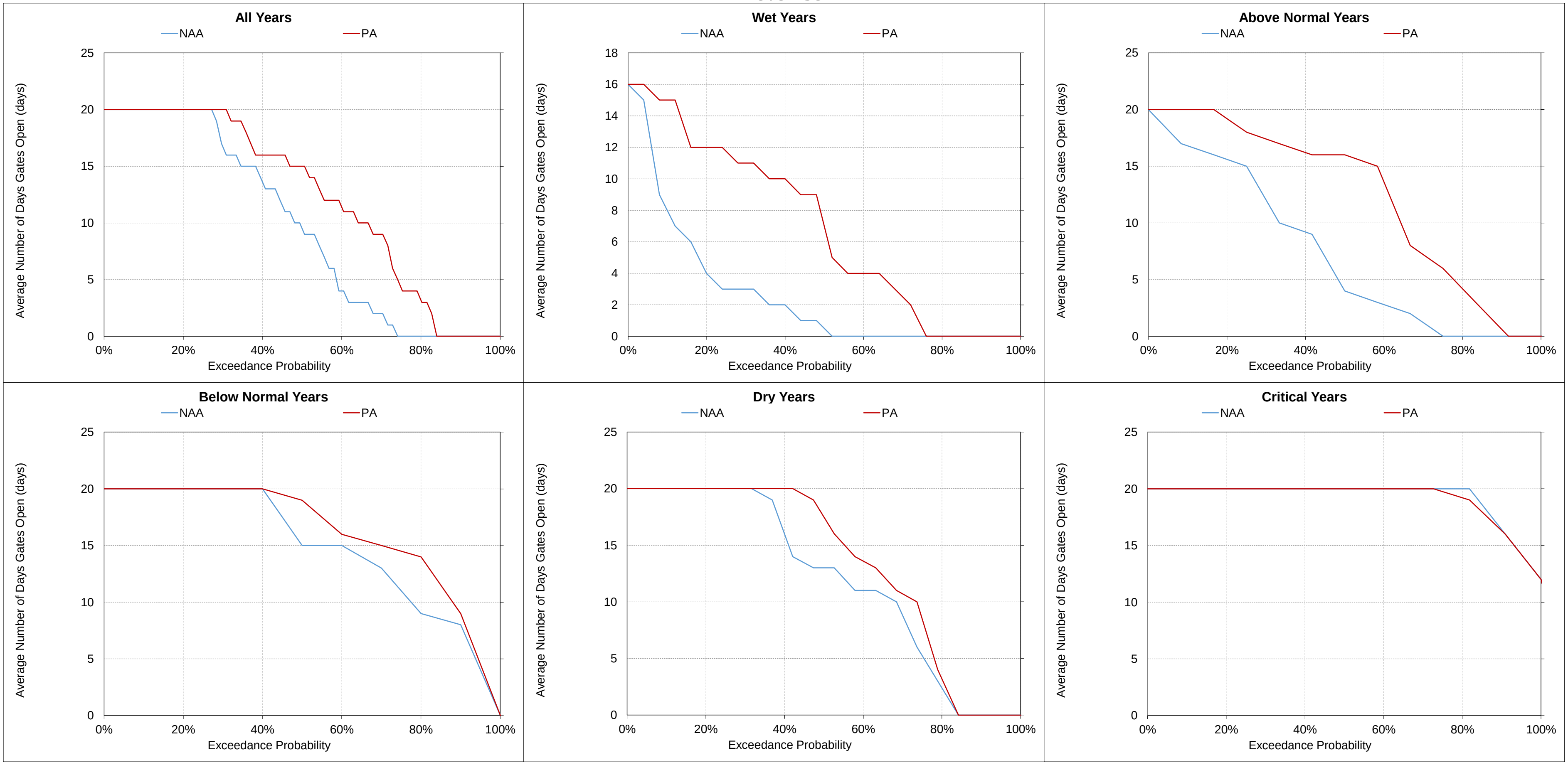
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-8. Delta Cross Channel, Average Number of Days Gates Open
October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-9. Delta Cross Channel, Average Number of Days Gates Open November



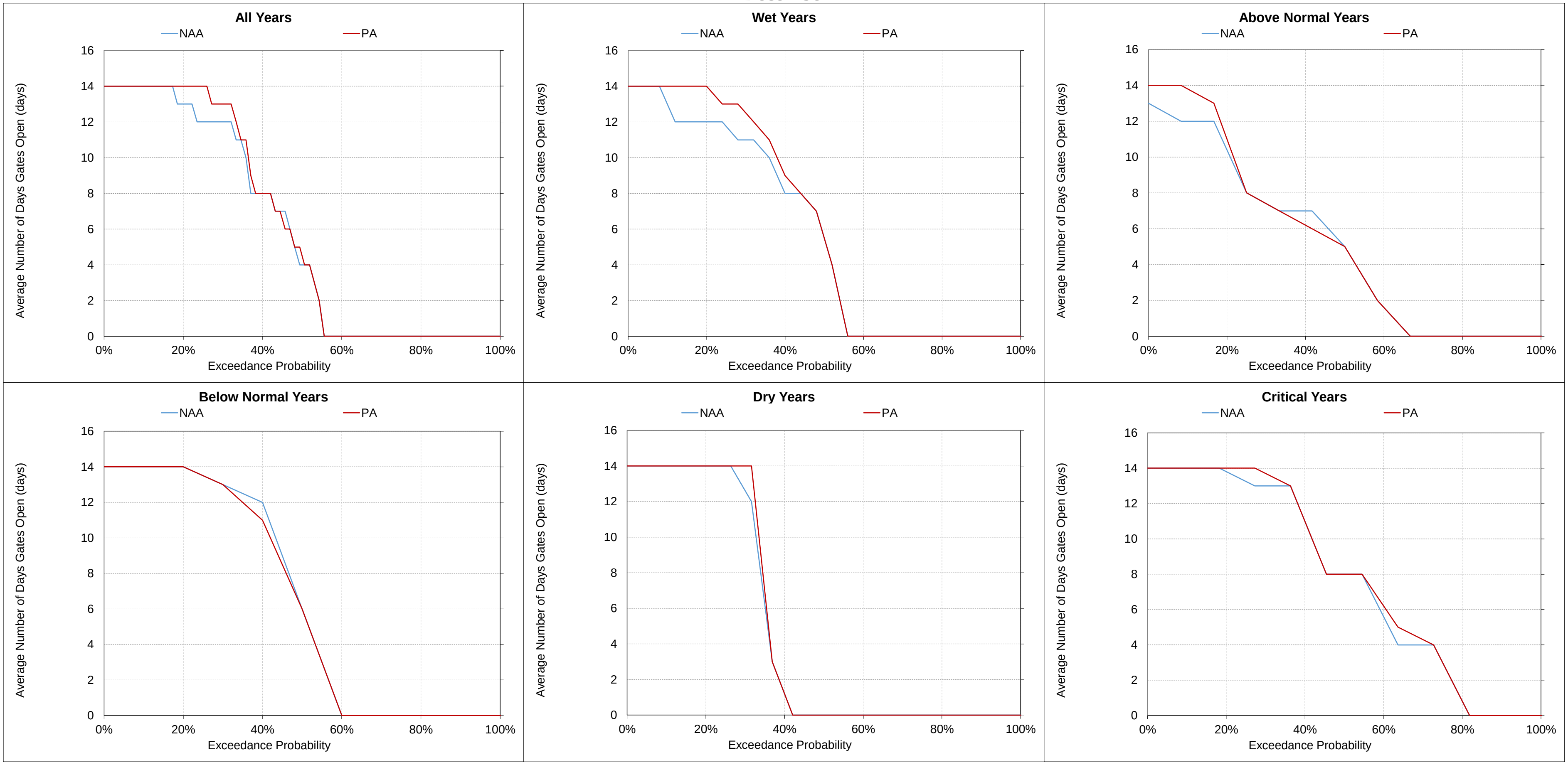
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

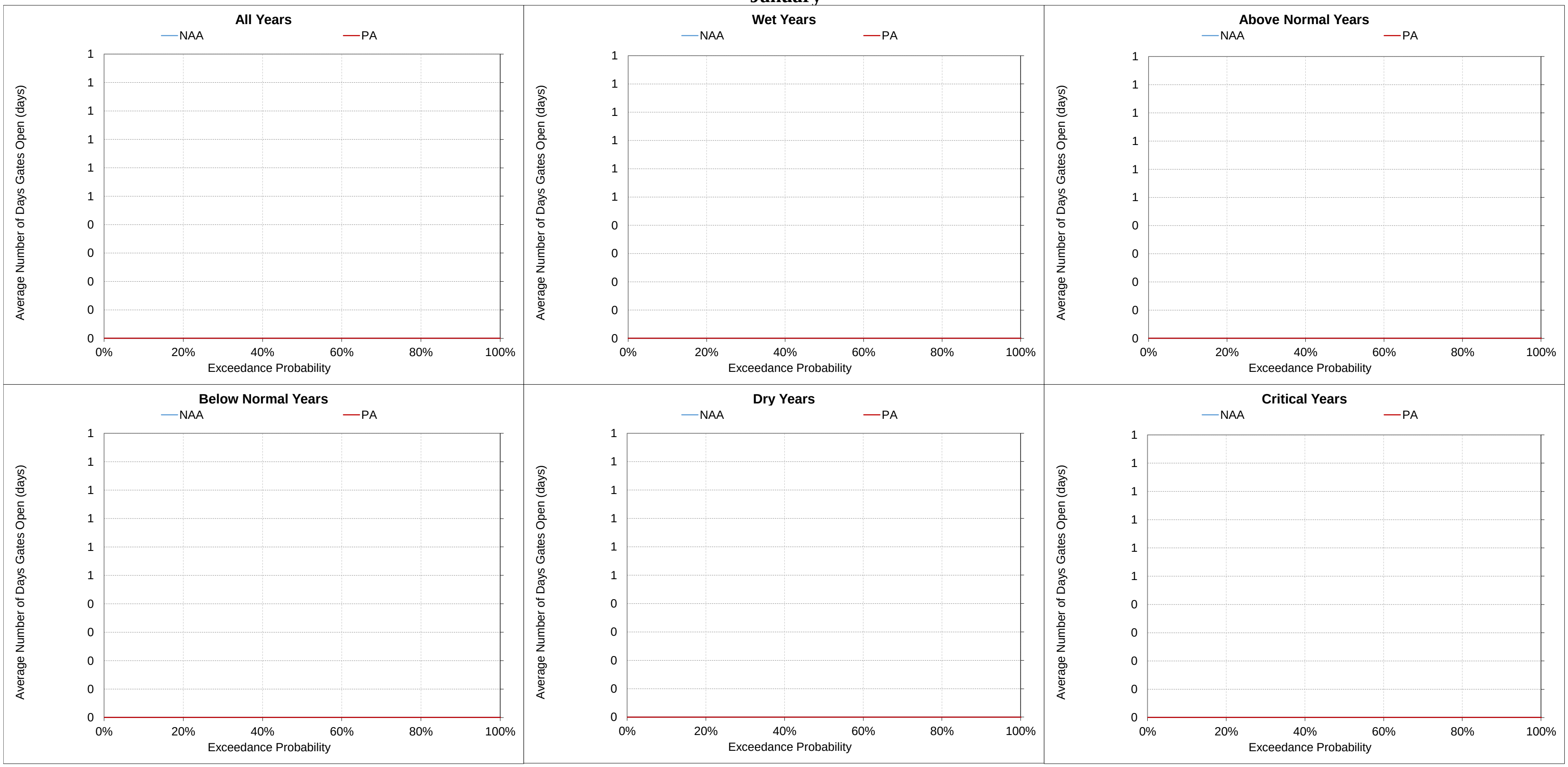
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-10. Delta Cross Channel, Average Number of Days Gates Open December



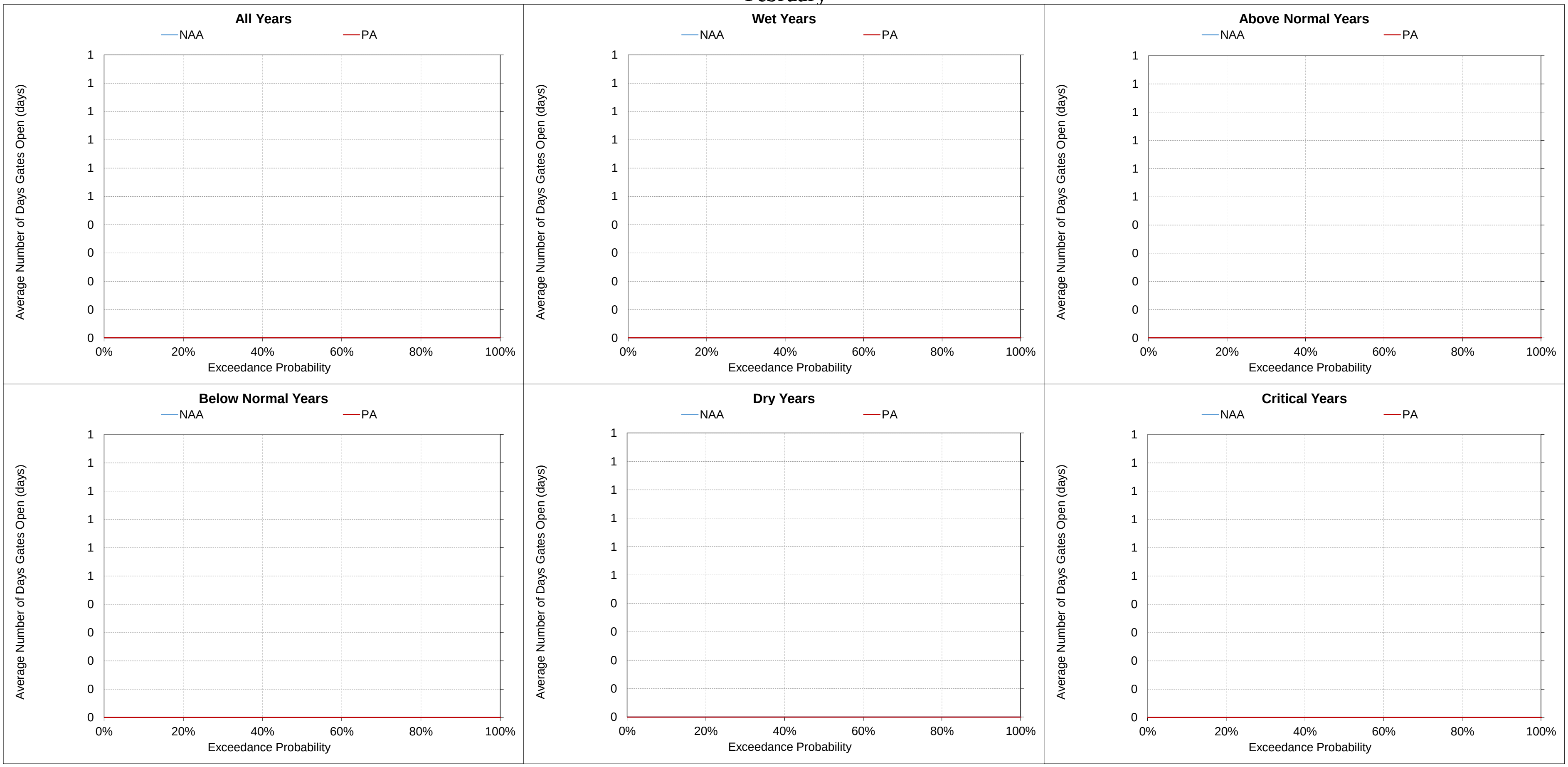
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-11. Delta Cross Channel, Average Number of Days Gates Open January



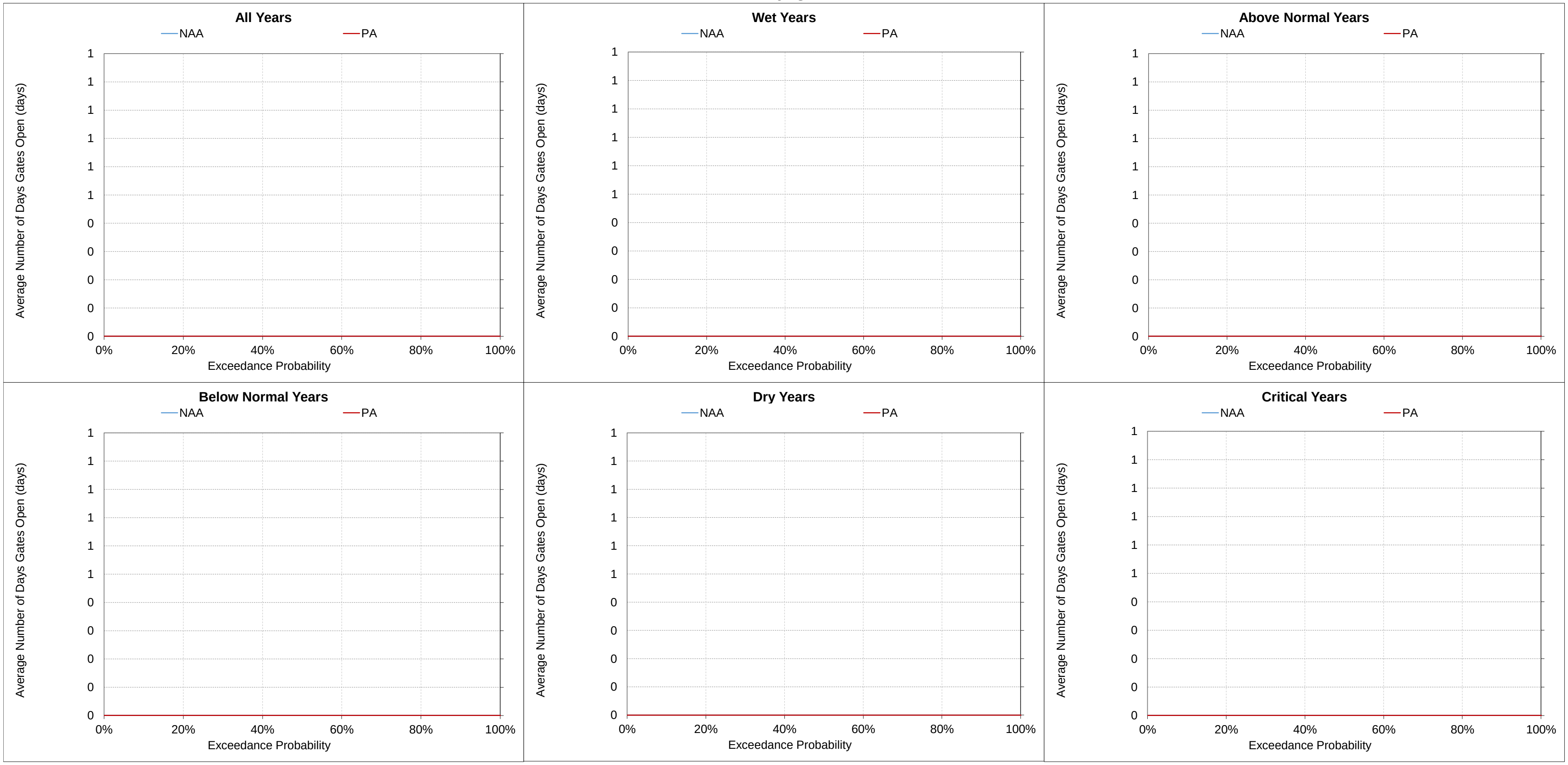
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-12. Delta Cross Channel, Average Number of Days Gates Open February



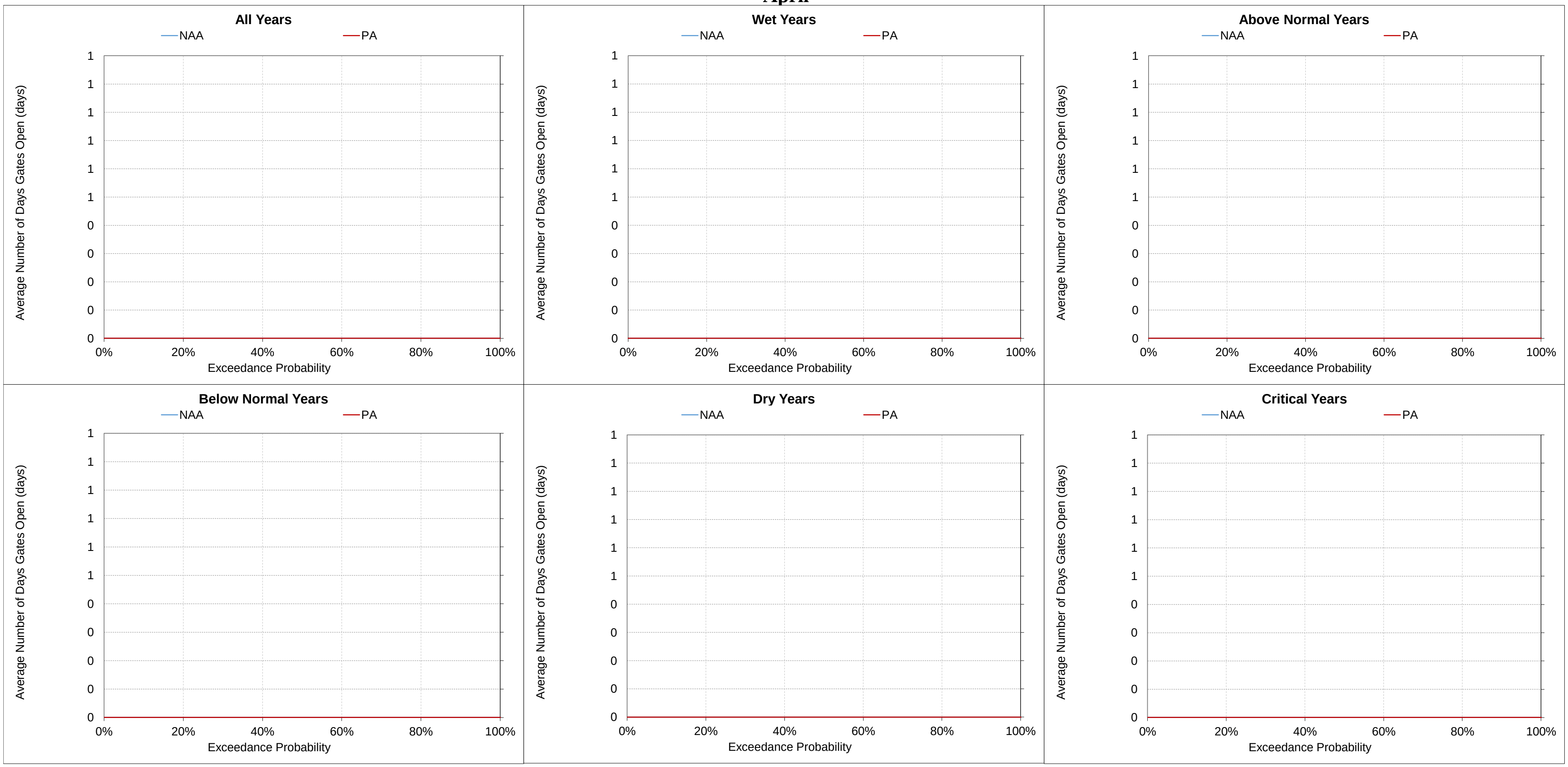
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-13. Delta Cross Channel, Average Number of Days Gates Open March



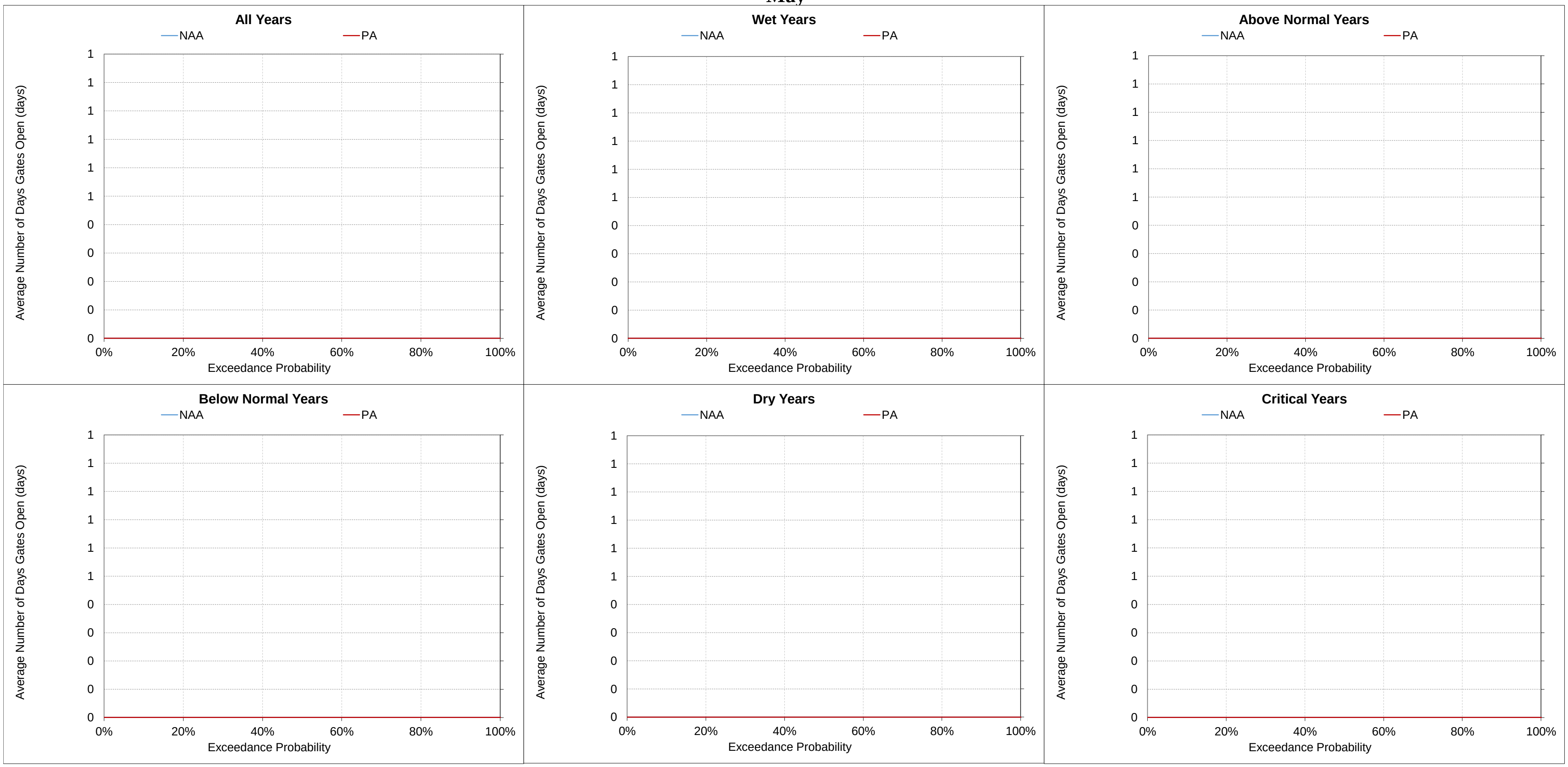
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-14. Delta Cross Channel, Average Number of Days Gates Open April



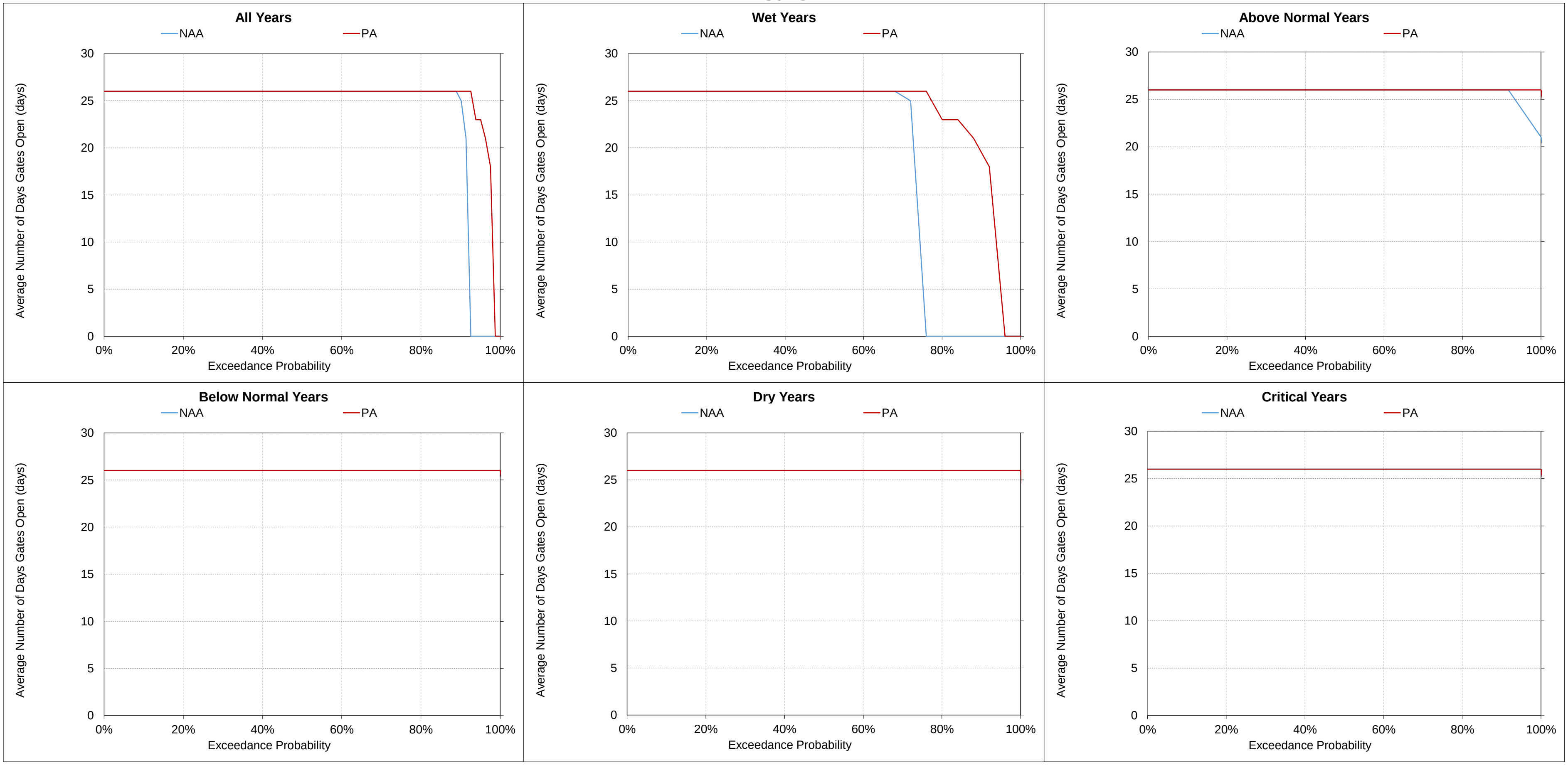
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-15. Delta Cross Channel, Average Number of Days Gates Open May



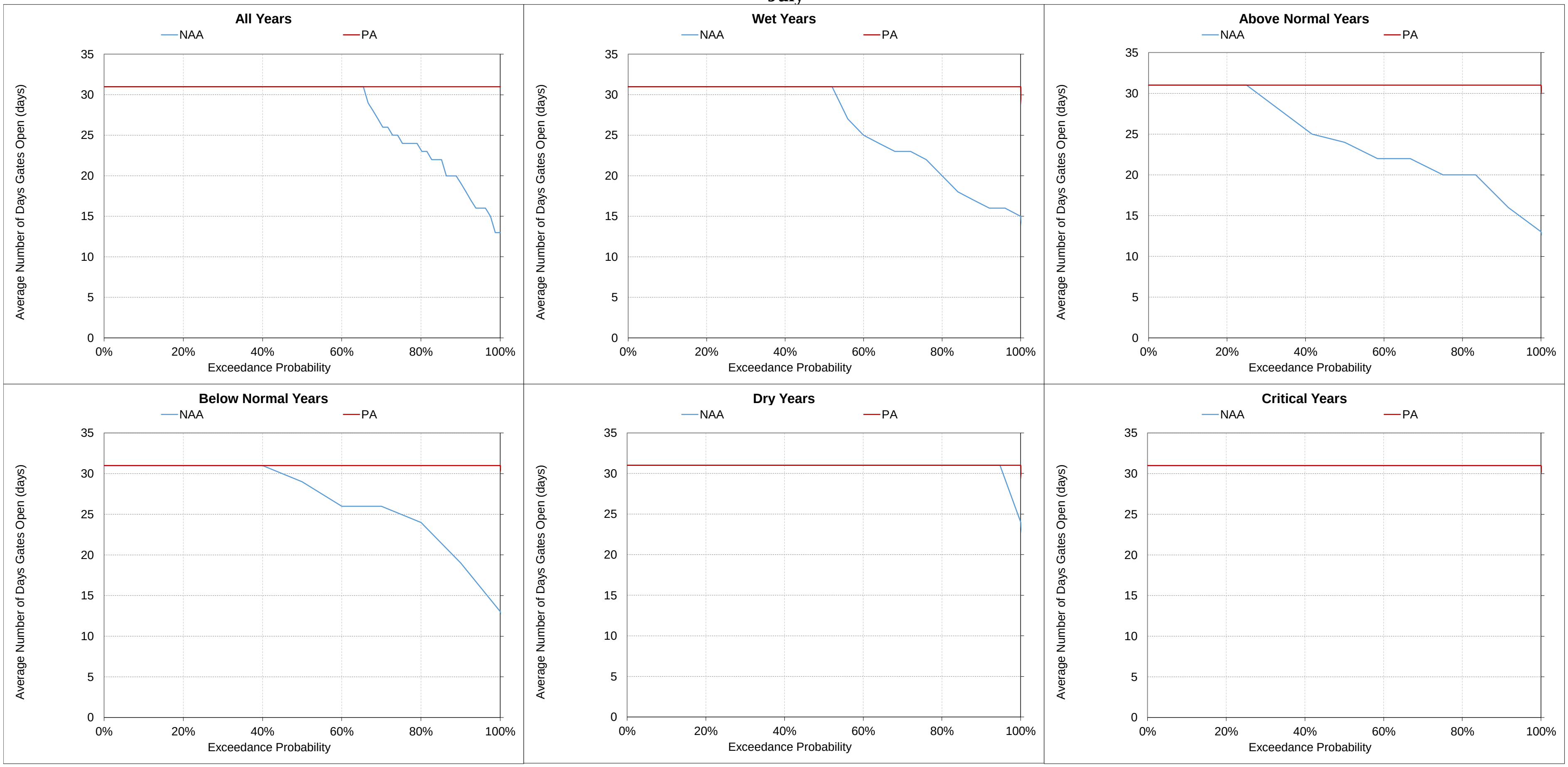
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-16. Delta Cross Channel, Average Number of Days Gates Open
June



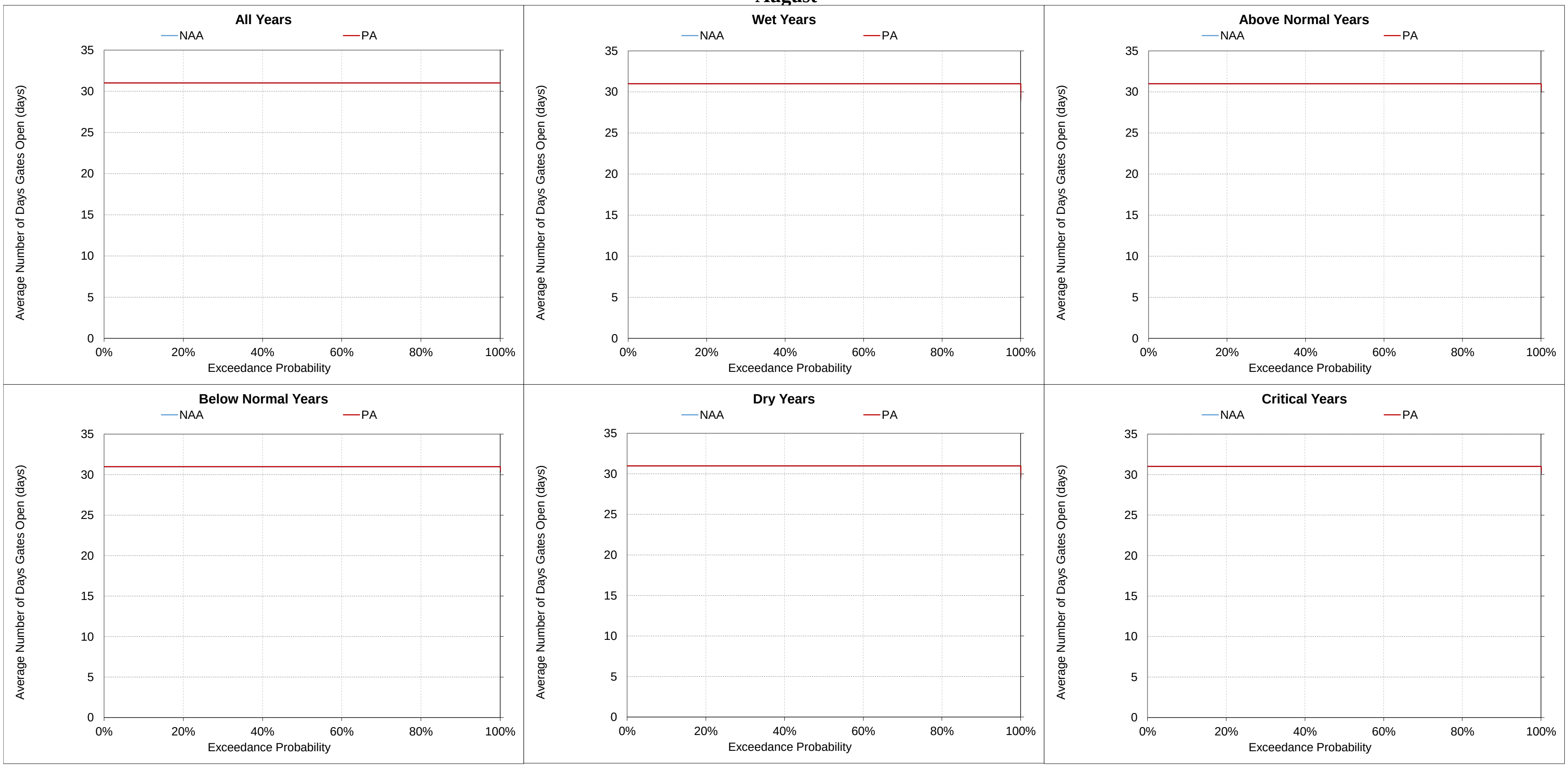
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-17. Delta Cross Channel, Average Number of Days Gates Open
July



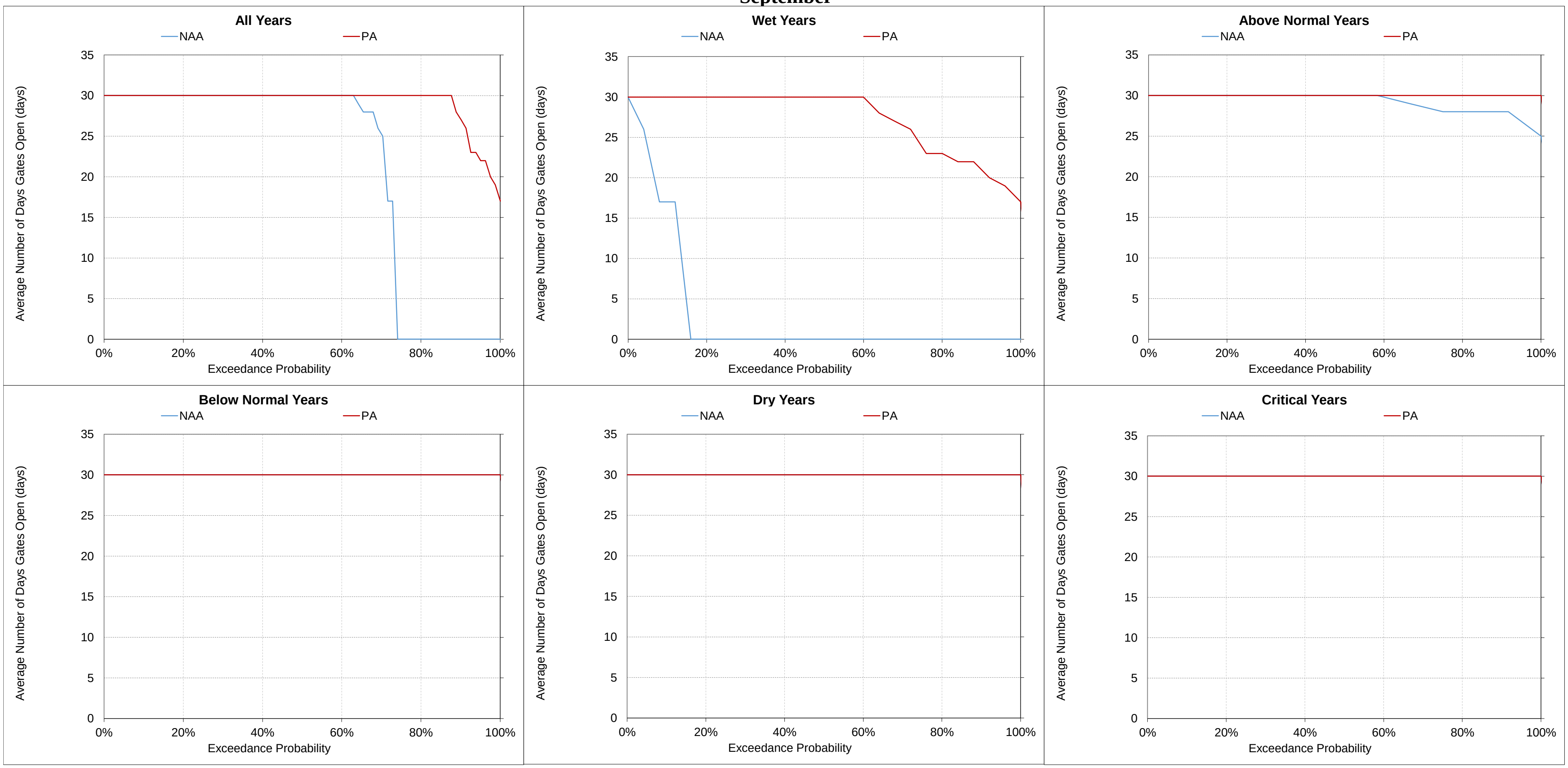
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-18. Delta Cross Channel, Average Number of Days Gates Open August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-24-19. Delta Cross Channel, Average Number of Days Gates Open September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-25. Chadborne Sl at Sunrise Duck Club, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	15,595	15,530	-64	0%	15,104	14,087	-1,016	-7%	13,146	12,742	-405	-3%	10,979	10,742	-237	-2%	7,696	7,166	-530	-7%	6,069	6,252	183	3%
20%	14,693	14,580	-113	-1%	13,661	12,561	-1,099	-8%	12,677	11,930	-748	-6%	8,952	9,084	133	1%	6,726	6,364	-362	-5%	5,183	4,915	-268	-5%
30%	14,505	14,362	-144	-1%	13,040	11,927	-1,113	-9%	11,289	10,687	-602	-5%	8,110	8,214	104	1%	5,375	5,136	-238	-4%	3,703	3,900	197	5%
40%	13,906	13,934	28	0%	12,545	11,281	-1,264	-10%	8,772	8,776	4	0%	7,429	7,267	-162	-2%	4,600	4,180	-420	-9%	2,888	2,962	75	3%
50%	12,590	13,214	624	5%	10,735	9,315	-1,420	-13%	7,313	7,505	192	3%	6,787	6,544	-242	-4%	3,339	3,251	-88	-3%	2,076	2,376	300	14%
60%	8,818	8,983	165	2%	7,978	7,736	-242	-3%	6,205	6,316	111	2%	5,394	5,243	-151	-3%	2,705	2,671	-33	-1%	1,377	1,424	47	3%
70%	6,483	6,647	165	3%	6,088	6,130	42	1%	5,769	5,786	18	0%	3,361	3,881	520	15%	1,787	1,804	17	1%	1,130	1,185	55	5%
80%	6,277	6,429	153	2%	5,711	5,664	-47	-1%	5,127	4,953	-174	-3%	2,193	2,406	212	10%	1,046	1,079	33	3%	632	687	55	9%
90%	6,068	6,256	188	3%	5,438	5,400	-38	-1%	3,492	3,544	52	1%	1,425	1,401	-24	-2%	682	725	43	6%	435	455	21	5%
Long Term																								
Full Simulation Period[b]	10,912	10,986	74	1%	9,971	9,353	-618	-6%	8,222	8,094	-128	-2%	6,191	6,116	-75	-1%	3,913	3,760	-153	-4%	2,793	2,845	52	2%
Water Year Types[c]																								
Wet (32%)	6,104	6,271	167	3%	5,490	5,500	10	0%	4,682	4,728	46	1%	4,631	4,335	-296	-6%	1,370	1,346	-24	-2%	793	808	16	2%
Above Normal (16%)	8,539	8,651	112	1%	7,708	7,484	-224	-3%	6,591	6,646	55	1%	6,064	5,991	-73	-1%	2,557	2,482	-75	-3%	1,429	1,430	2	0%
Below Normal (13%)	13,304	13,554	250	2%	12,048	10,947	-1,102	-9%	9,969	9,721	-248	-2%	6,960	7,005	45	1%	4,753	4,258	-496	-10%	3,471	3,362	-110	-3%
Dry (24%)	14,441	14,400	-41	0%	12,965	11,741	-1,223	-9%	9,804	9,476	-329	-3%	6,428	6,425	-4	0%	5,574	5,400	-174	-3%	3,784	3,932	148	4%
Critical (15%)	15,825	15,688	-137	-1%	15,238	14,285	-952	-6%	13,422	13,160	-262	-2%	8,608	8,778	170	2%	7,352	7,185	-167	-2%	6,329	6,504	176	3%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	7,816	7,530	-285	-4%	8,842	8,688	-154	-2%	10,796	10,813	17	0%	12,624	12,627	4	0%	15,059	15,070	12	0%	16,686	17,098	412	2%
20%	4,874	5,167	294	6%	7,221	7,215	-5	0%	9,242	8,956	-286	-3%	11,442	11,382	-60	-1%	13,581	13,641	60	0%	15,593	15,992	399	3%
30%	3,758	4,230	472	13%	6,228	6,348	120	2%	8,381	8,254	-126	-2%	10,607	10,594	-14	0%	13,010	13,260	250	2%	15,236	15,734	499	3%
40%	3,010	3,278	268	9%	4,277	4,213	-63	-1%	6,886	6,857	-29	0%	9,687	10,042	356	4%	11,509	12,253	745	6%	14,248	15,001	753	5%
50%	2,377	2,365	-12	0%	3,341	3,317	-24	-1%	5,421	5,281	-140	-3%	8,338	8,686	348	4%	10,610	11,570	960	9%	13,240	14,226	985	7%
60%	1,129	1,248	119	10%	2,180	2,175	-5	0%	4,231	4,189	-41	-1%	7,891	8,150	259	3%	9,221	10,519	1,298	14%	11,068	11,697	629	6%
70%	888	856	-33	-4%	1,315	1,317	2	0%	3,566	3,490	-77	-2%	7,156	7,365	209	3%	8,815	9,914	1,099	12%	10,149	10,464	315	3%
80%	661	658	-3	0%	736	743	6	1%	2,274	2,240	-35	-2%	5,636	5,966	330	6%	8,469	9,394	925	11%	9,464	10,167	703	7%
90%	368	390	22	6%	320	325	5	2%	704	786	82	12%	3,380	3,515	136	4%	8,088	8,418	329	4%	9,269	9,754	485	5%
Long Term																								
Full Simulation Period[b]	3,014	3,114	100	3%	4,033	4,049	16	0%	5,852	5,795	-58	-1%	8,559	8,695	135	2%	10,942	11,565	623	6%	12,704	13,290	587	5%
Water Year Types[c]																								
Wet (32%)	756	776	19	3%	1,102	1,103	1	0%	2,251	2,245	-7	0%	4,881	5,067	186	4%	8,045	8,724	678	8%	9,142	9,654	512	6%
Above Normal (16%)	1,253	1,233	-20	-2%	2,044	2,022	-22	-1%	4,217	4,168	-49	-1%	7,410	7,810	399	5%	9,046	10,310	1,264	14%	10,977	11,757	780	7%
Below Normal (13%)	4,058	4,109	51	1%	4,984	5,003	19	0%	6,940	6,824	-116	-2%	9,320	9,509	189	2%	10,866	11,826	960	9%	13,659	14,584	925	7%
Dry (24%)	3,761	4,082	321	9%	5,414	5,470	56	1%	7,580	7,446	-134	-2%	10,659	10,590	-69	-1%	13,168	13,394	226	2%	15,326	15,851	525	3%
Critical (15%)	7,613	7,695	81	1%	9,362	9,382	20	0%	11,549	11,553	4	0%	13,577	13,609	31	0%	15,634	15,797	163	1%	17,045	17,375	330	2%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-1. Monthly EC Ranges For Chadborne Sl at Sunrise Duck Club, All Years

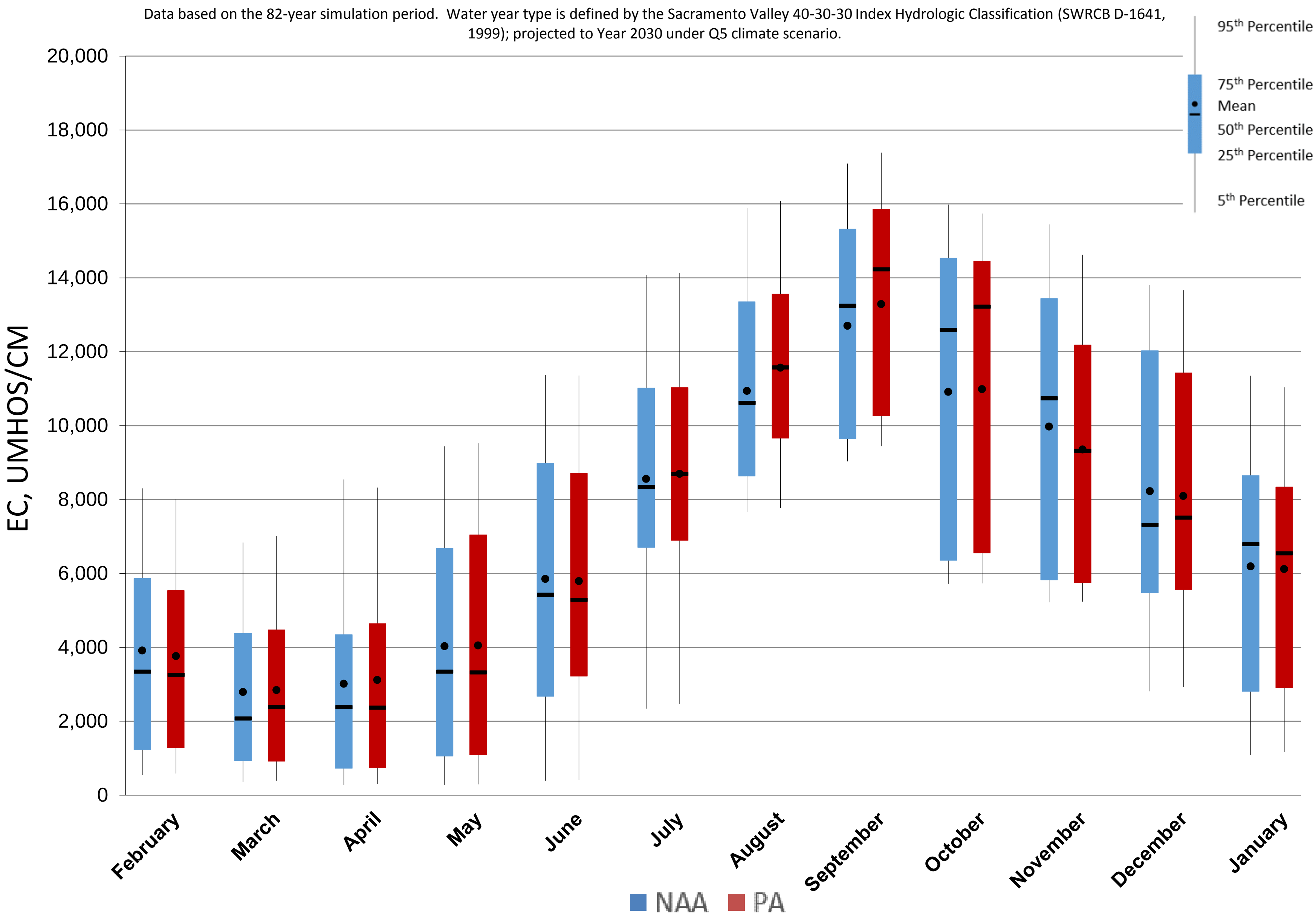


Figure 5.B.5-25-2. Monthly EC Ranges For Chadborne Sl at Sunrise Duck Club, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

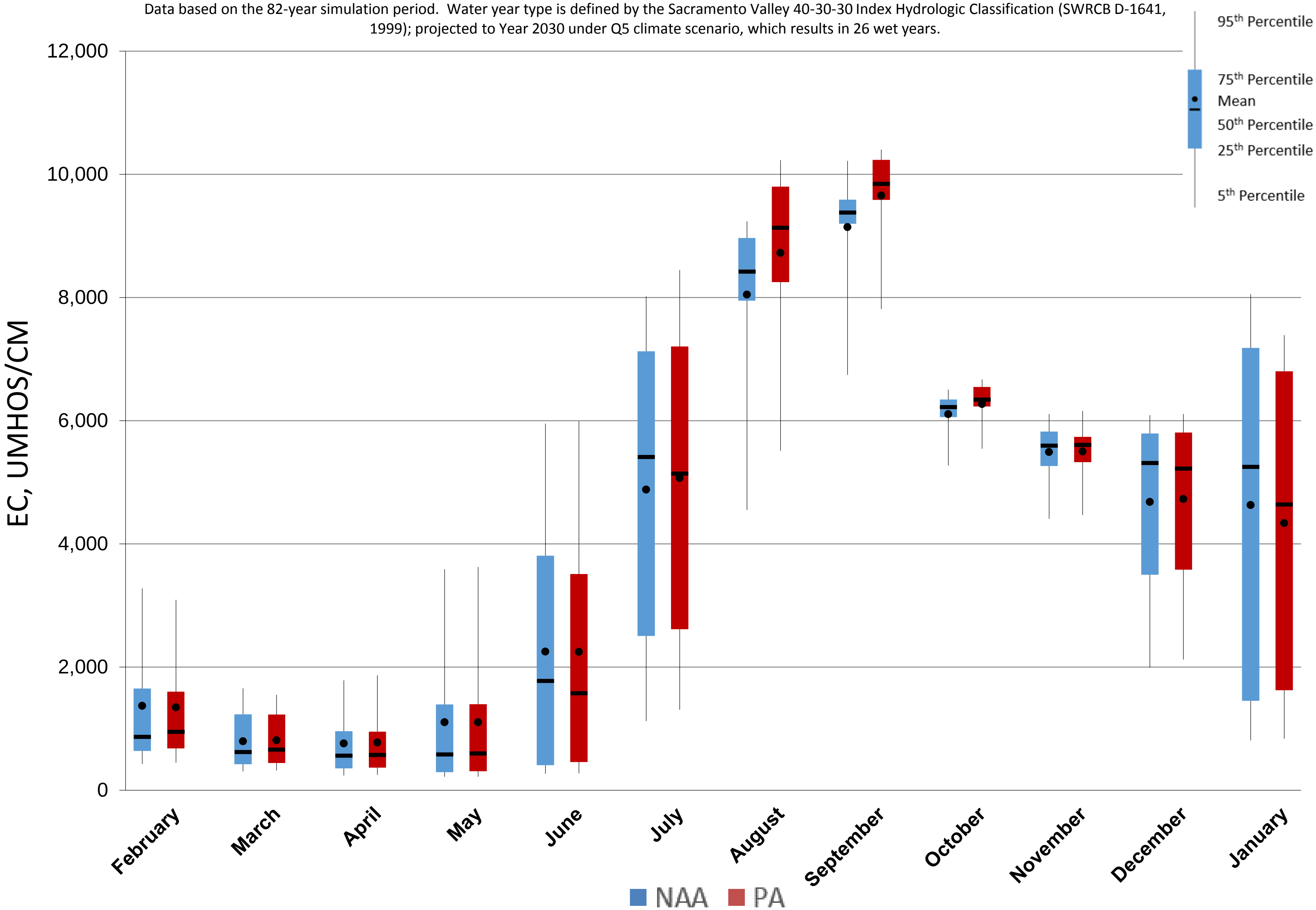
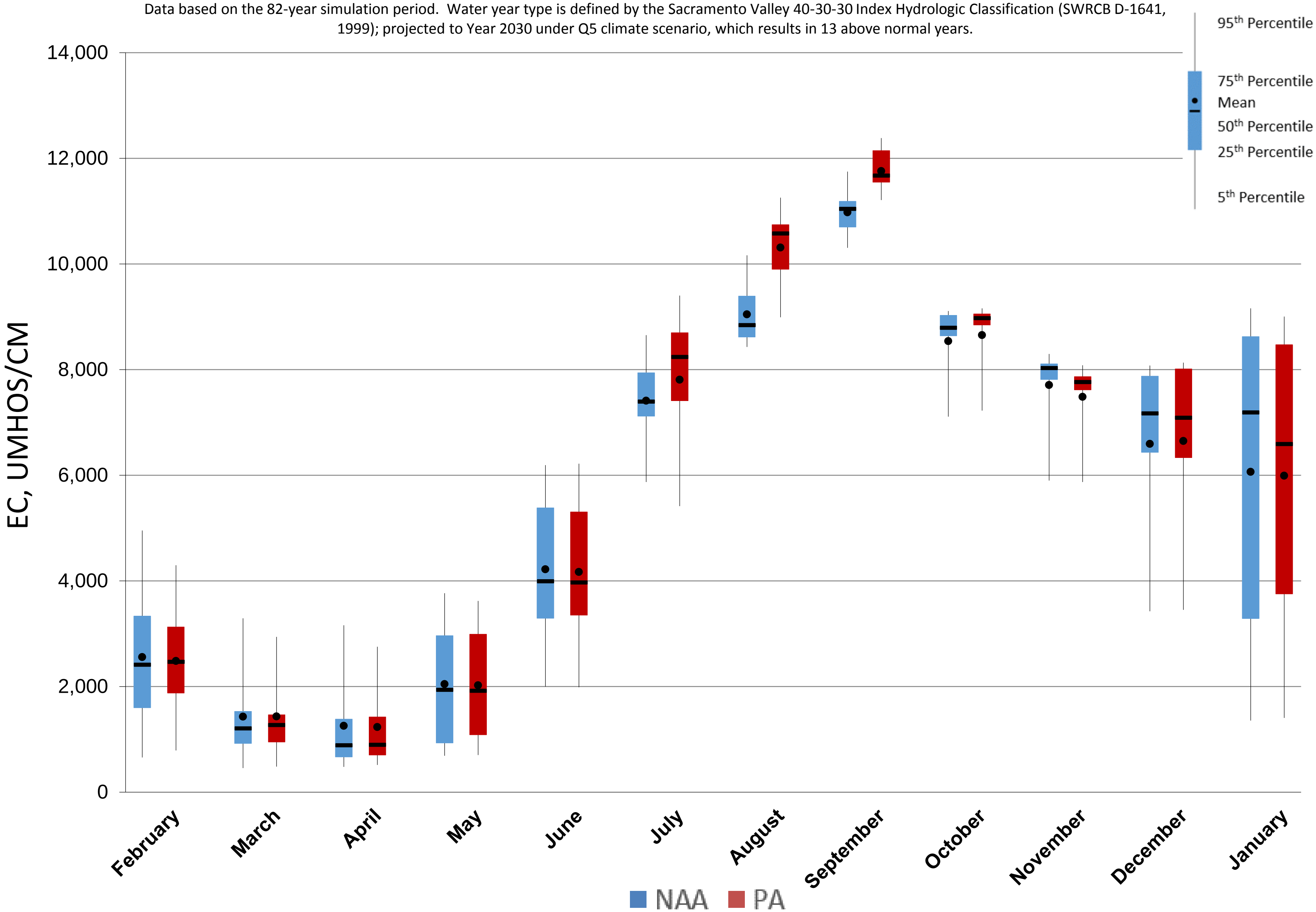


Figure 5.B.5-25-3. Monthly EC Ranges For Chadborne Sl at Sunrise Duck Club, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.



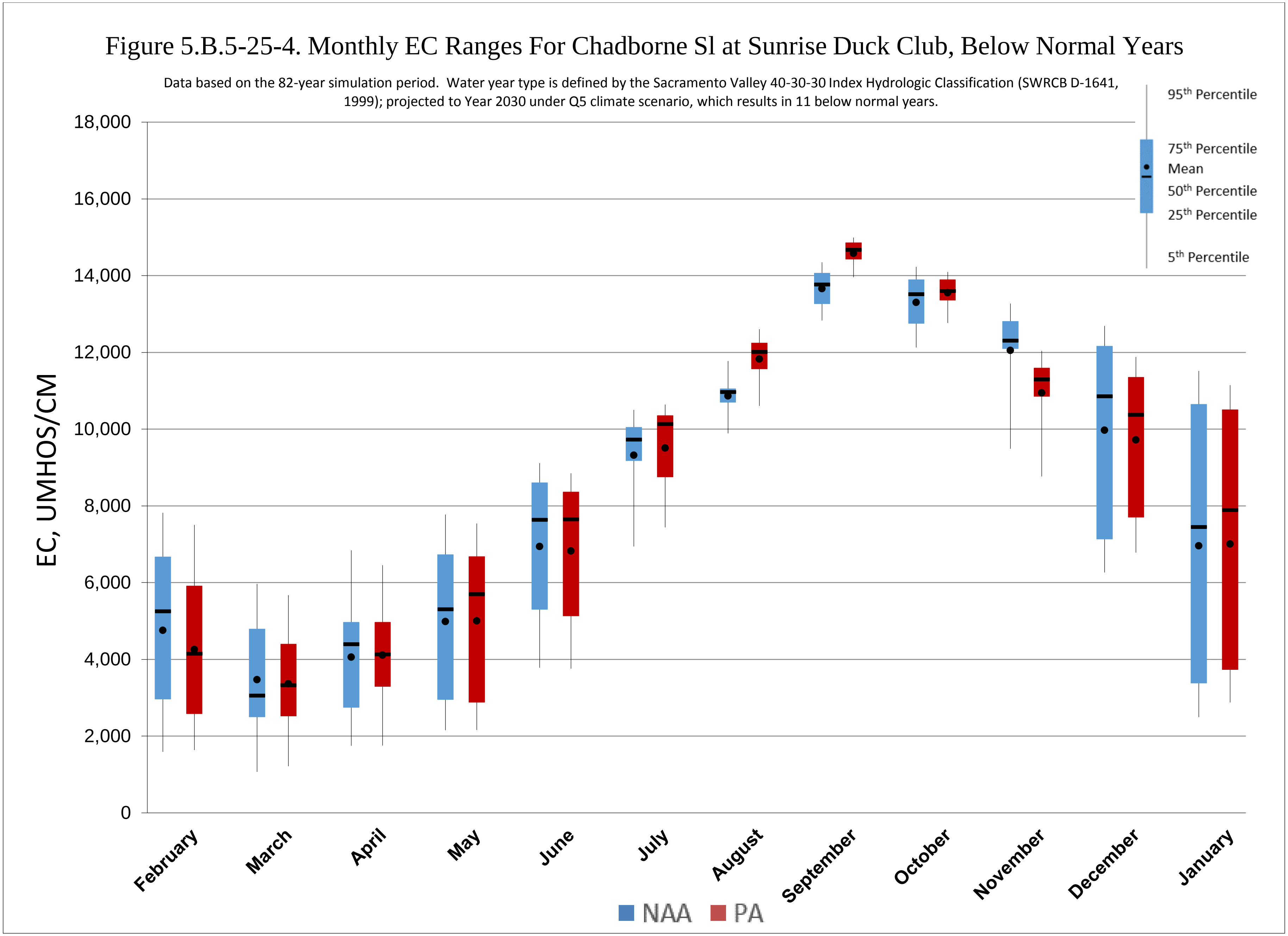
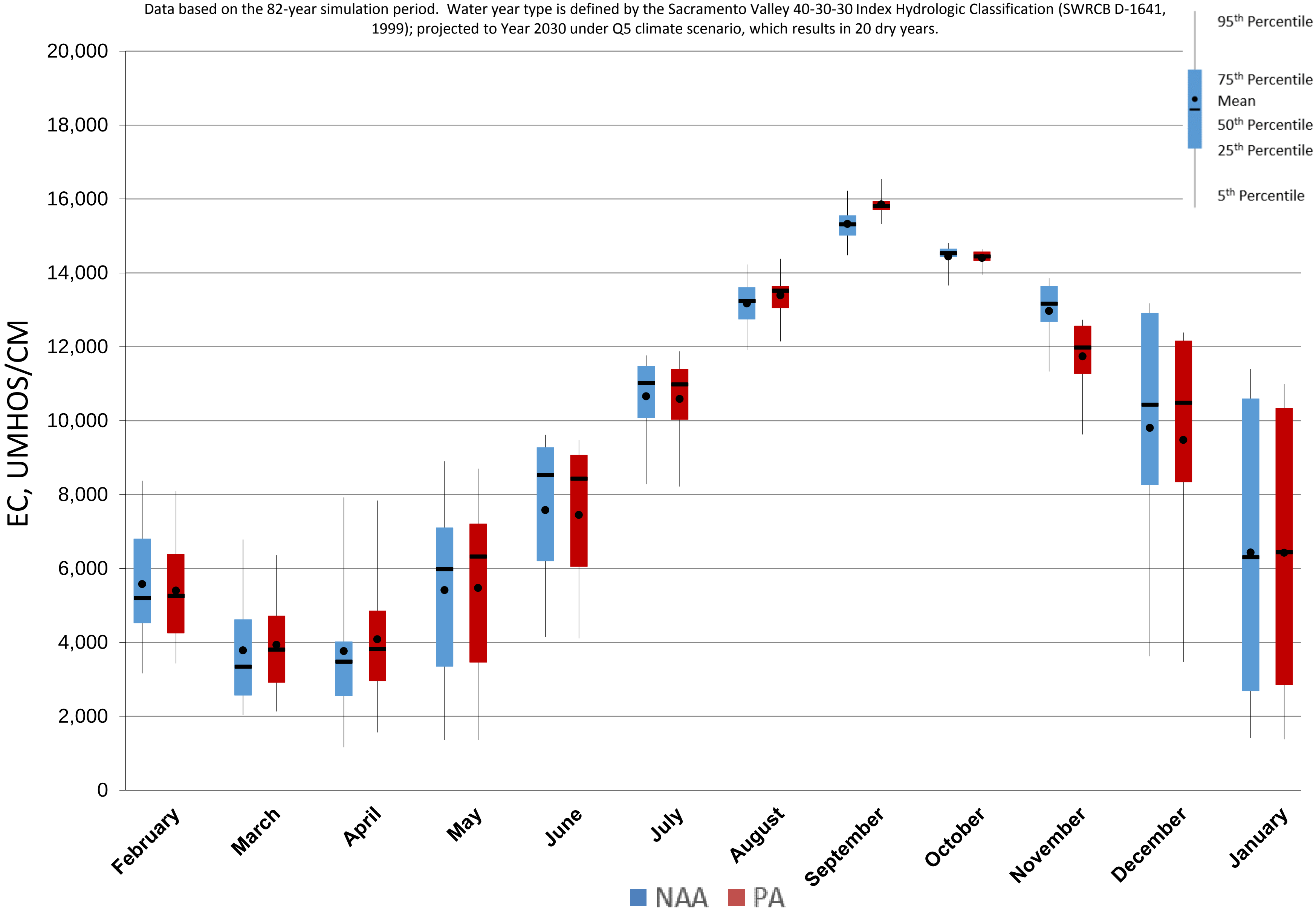


Figure 5.B.5-25-4. Monthly EC Ranges For Chadborne Sl at Sunrise Duck Club, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
EC, UMHOS/CM
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-25-5. Monthly EC Ranges For Chadborne Sl at Sunrise Duck Club, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.



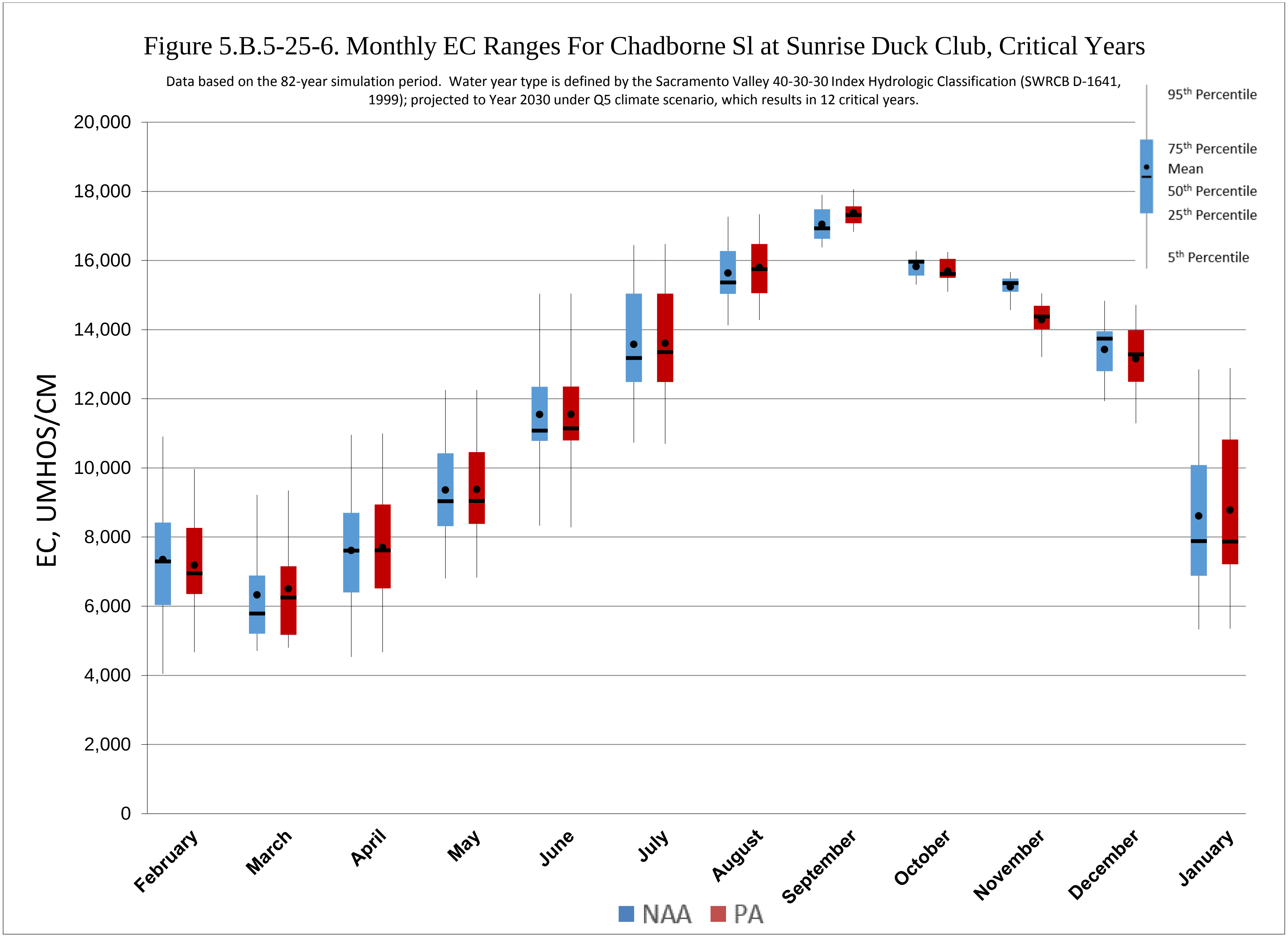
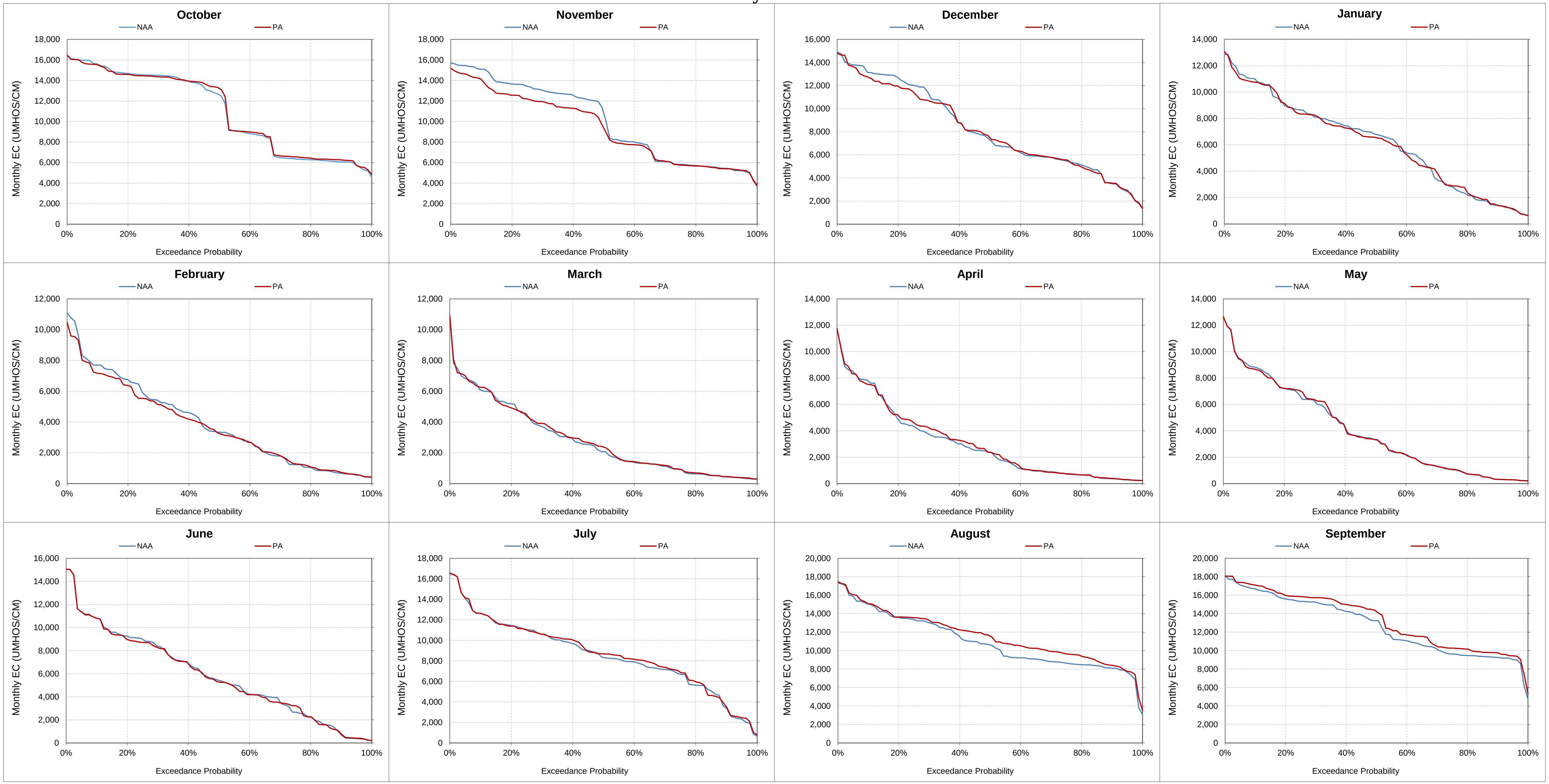


Figure 5.B.5-25-6. Monthly EC Ranges For Chadborne Sl at Sunrise Duck Club, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
EC, UMHOS/CM
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile

Figure 5.B.5-25-7. Chadborne Sl at Sunrise Duck Club, Monthly EC Probability of Exceedance



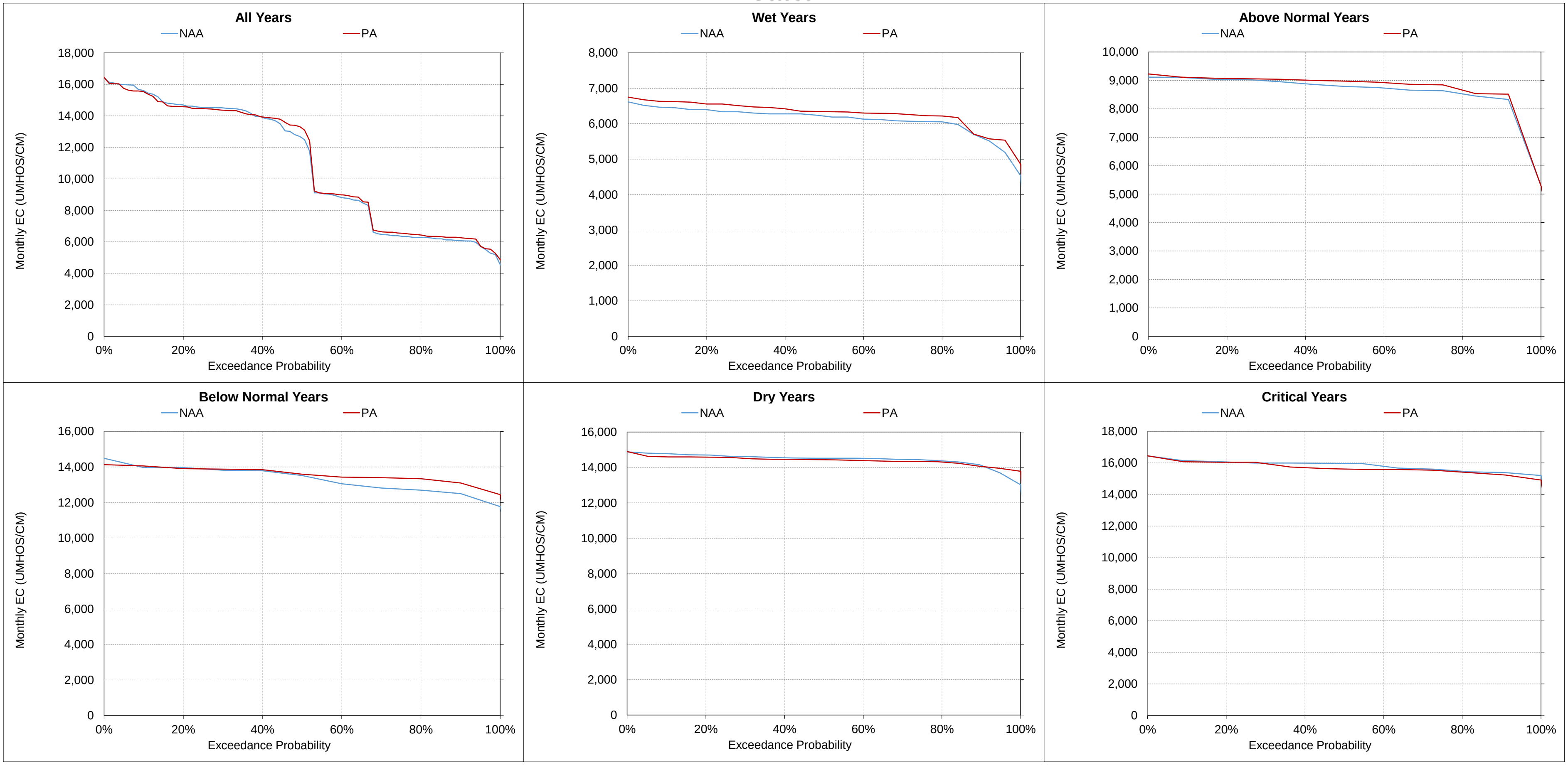
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

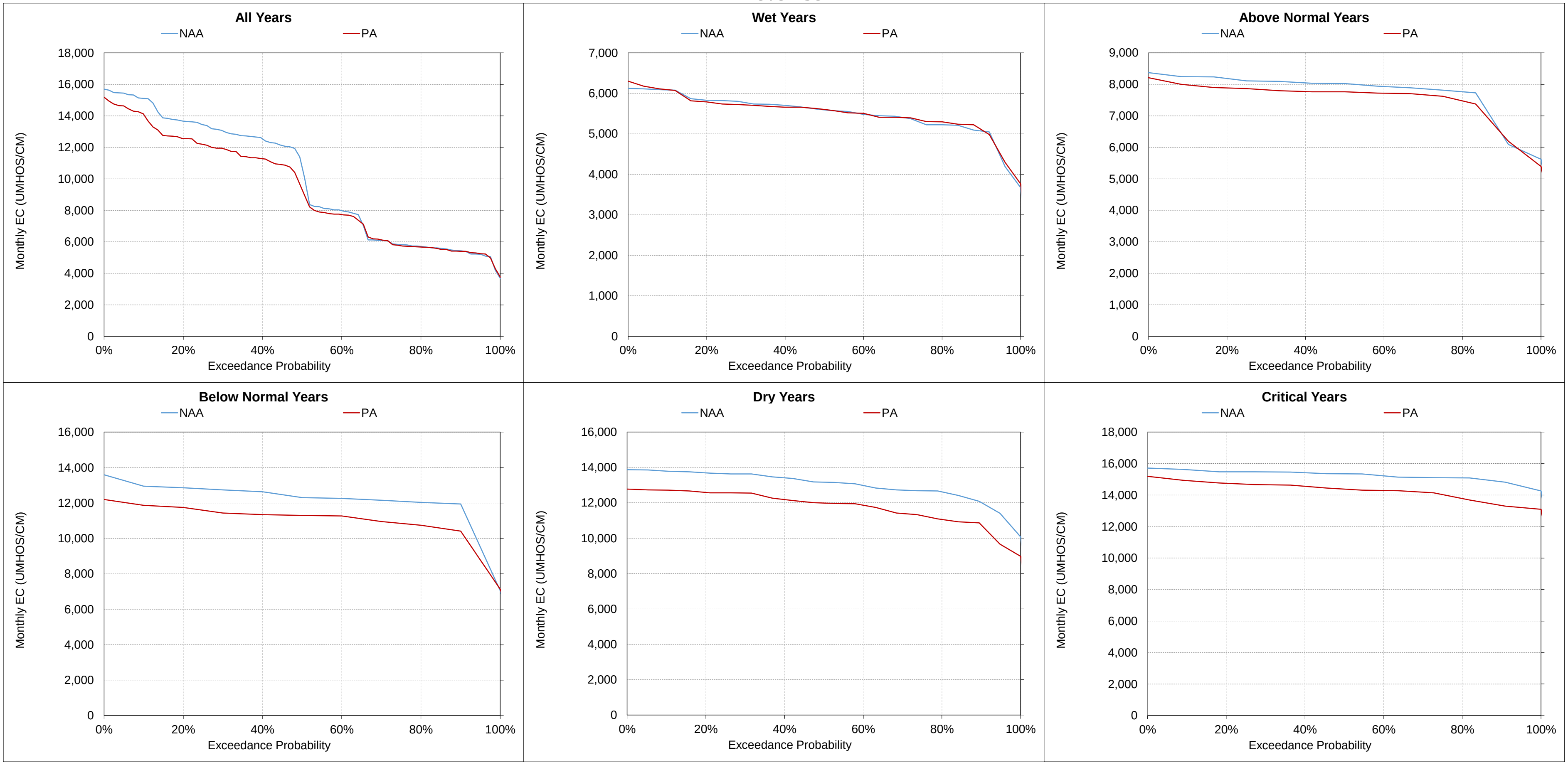
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-8. Chadborne Sl at Sunrise Duck Club, Monthly EC
October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-9. Chadborne Sl at Sunrise Duck Club, Monthly EC November



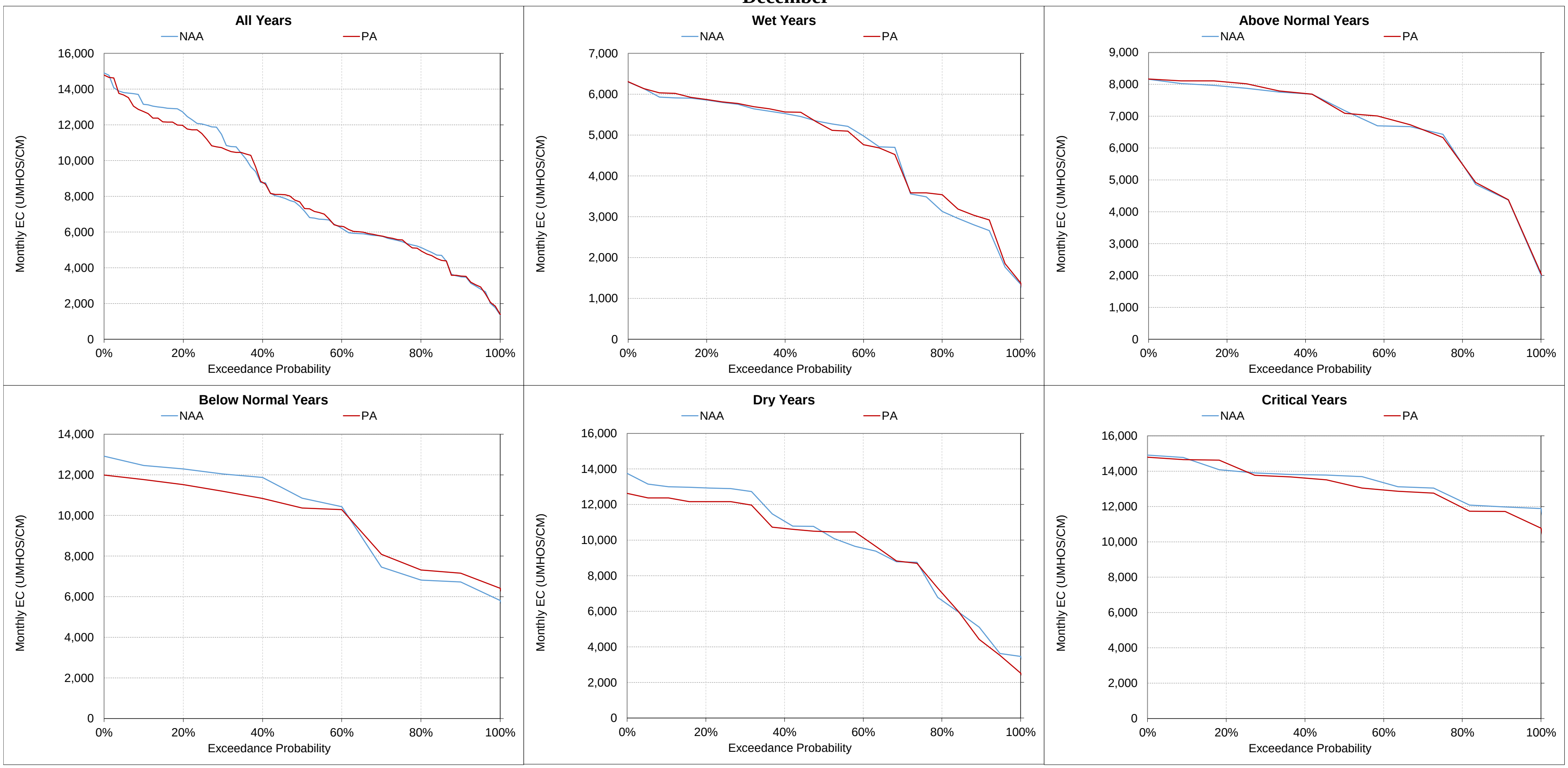
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

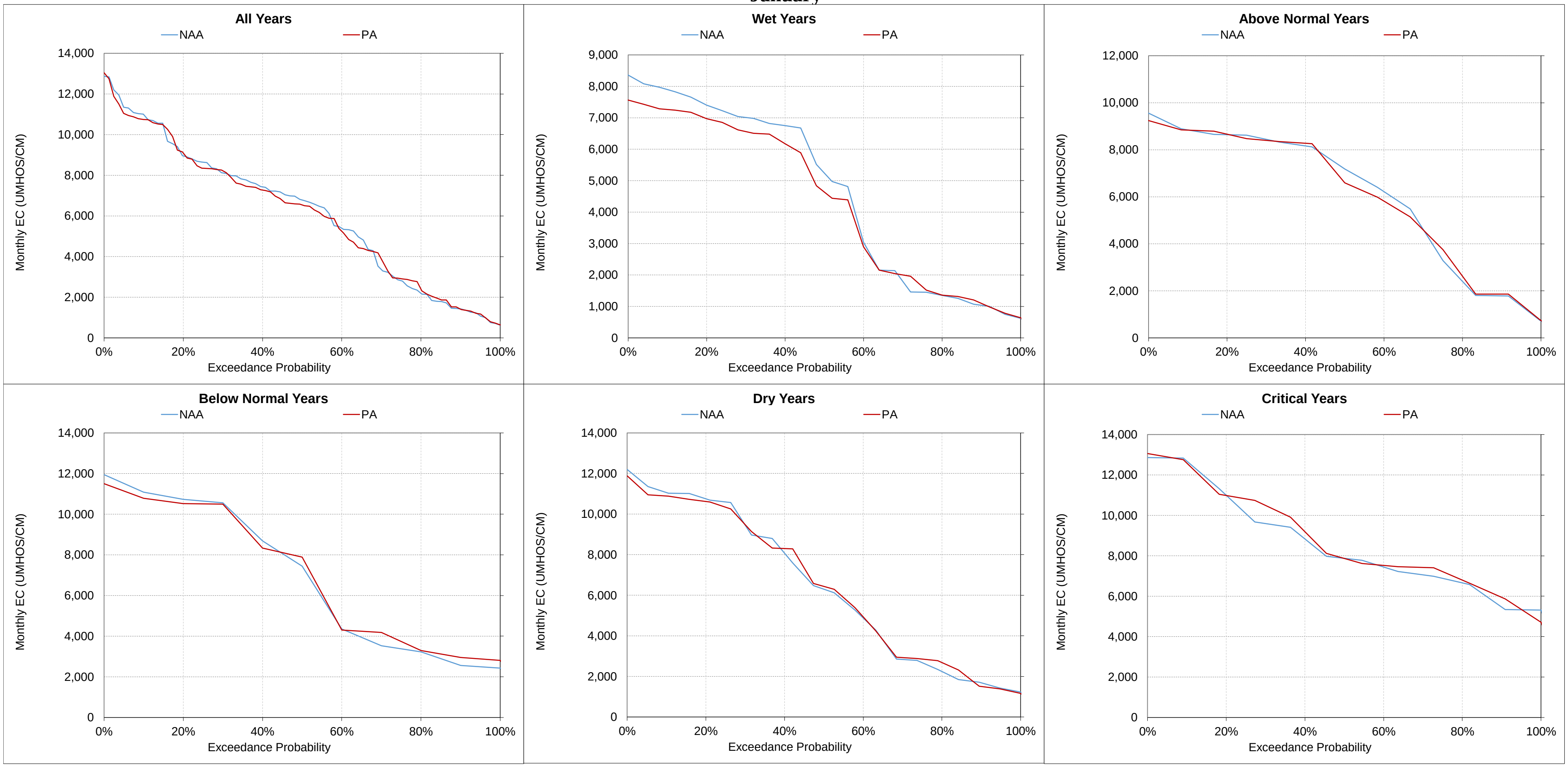
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-10. Chadborne Sl at Sunrise Duck Club, Monthly EC December



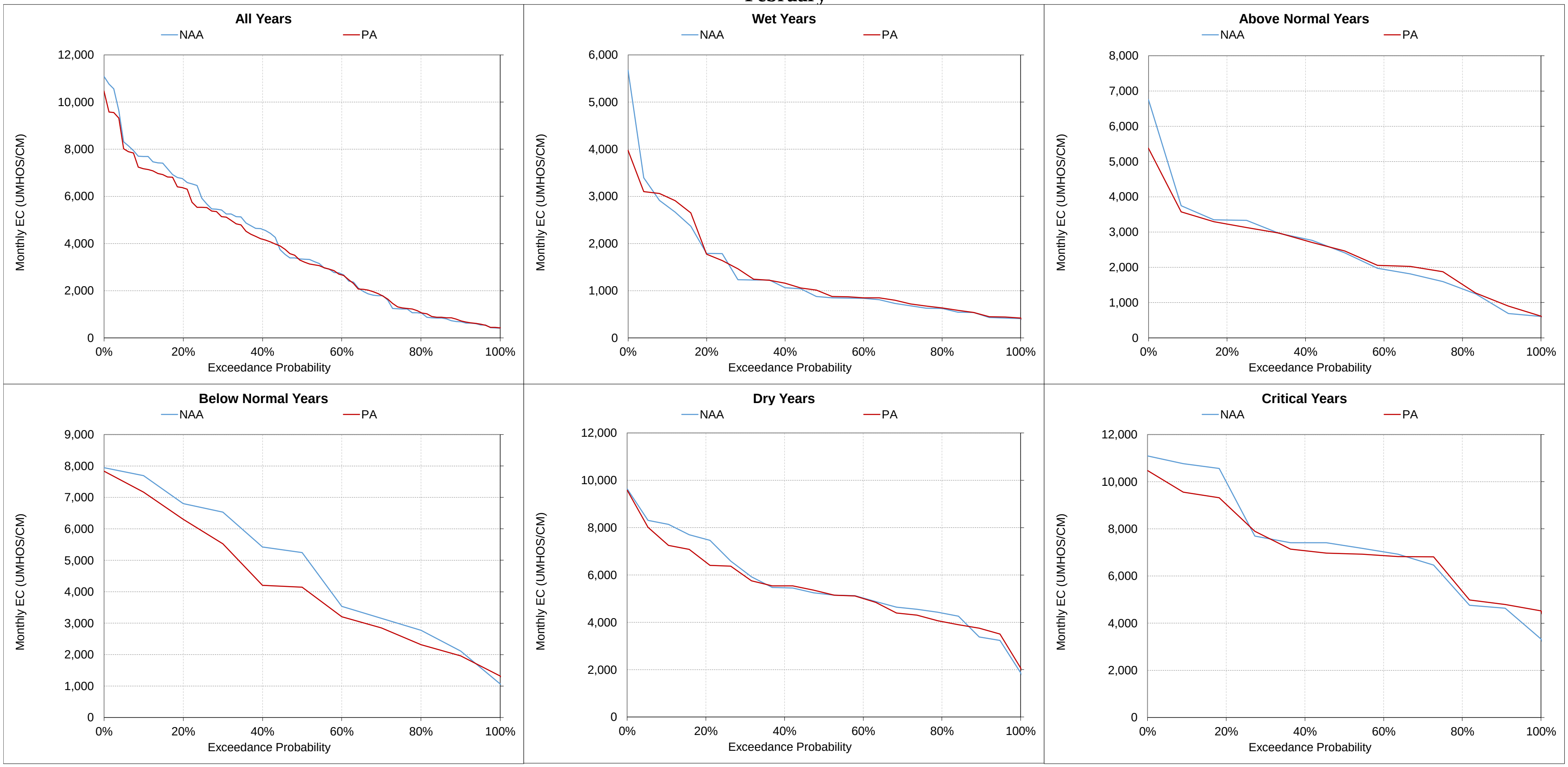
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-11. Chadborne Sl at Sunrise Duck Club, Monthly EC
January



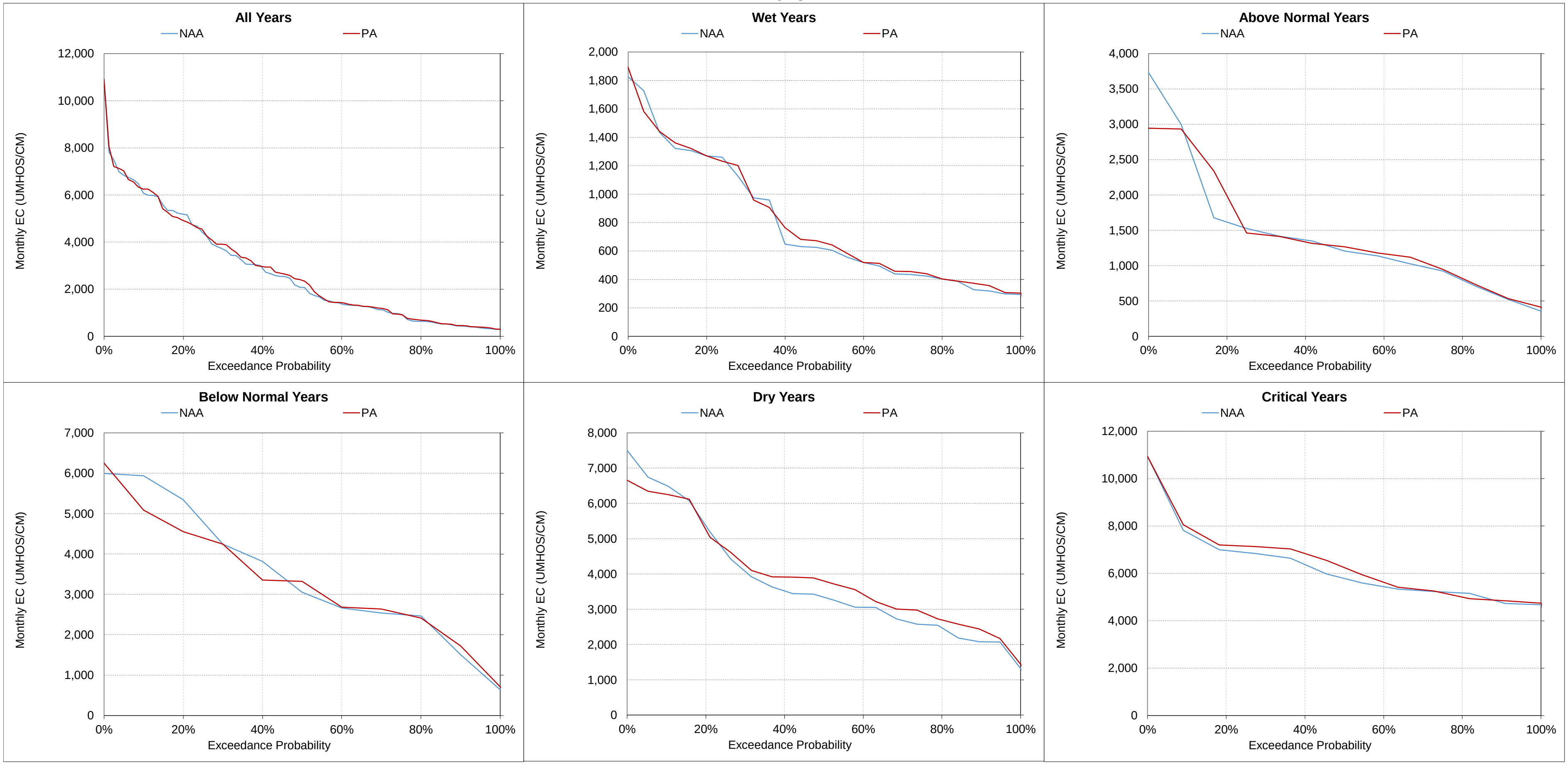
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-12. Chadborne Sl at Sunrise Duck Club, Monthly EC February



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-13. Chadborne Sl at Sunrise Duck Club, Monthly EC
March



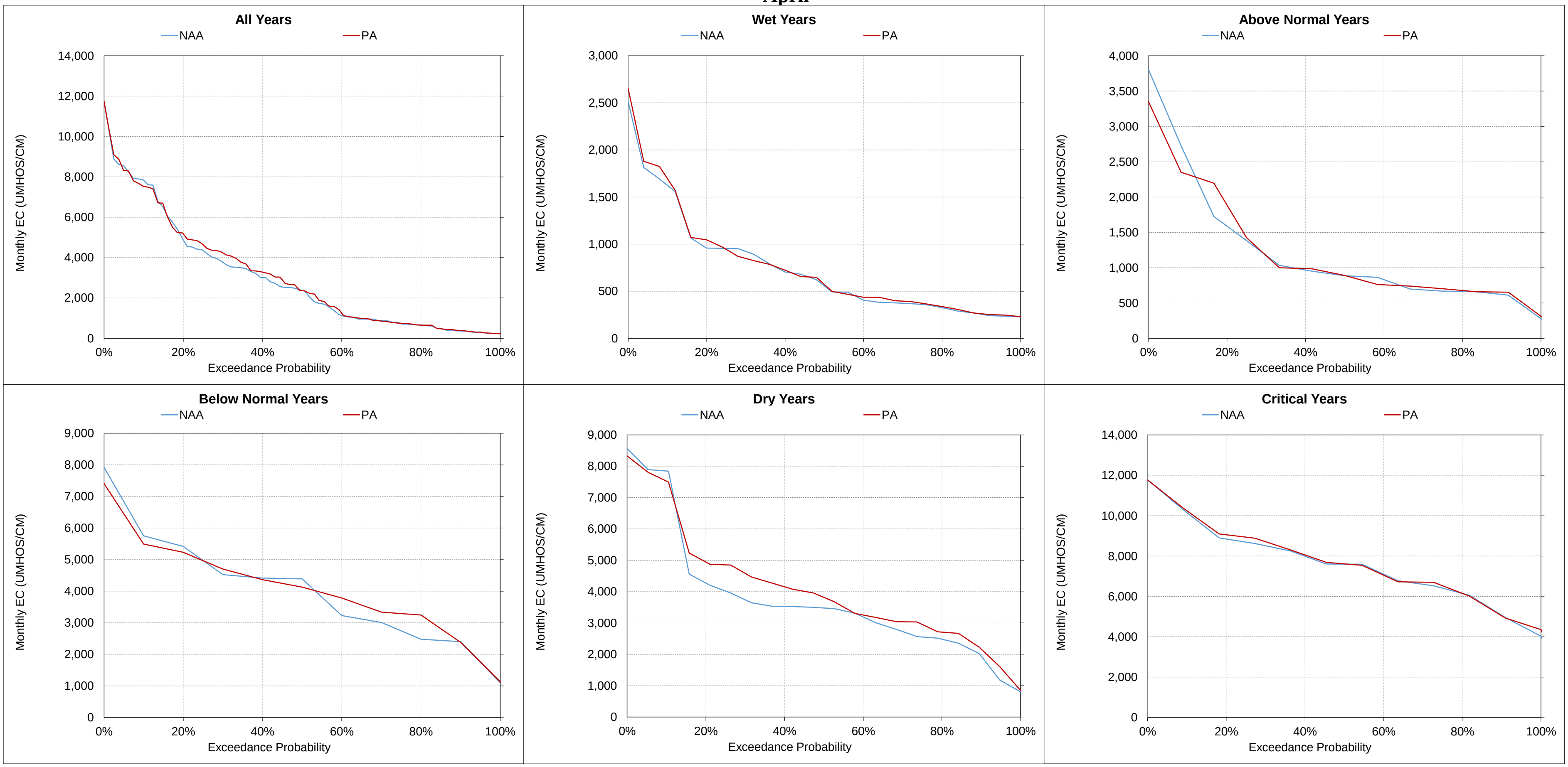
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

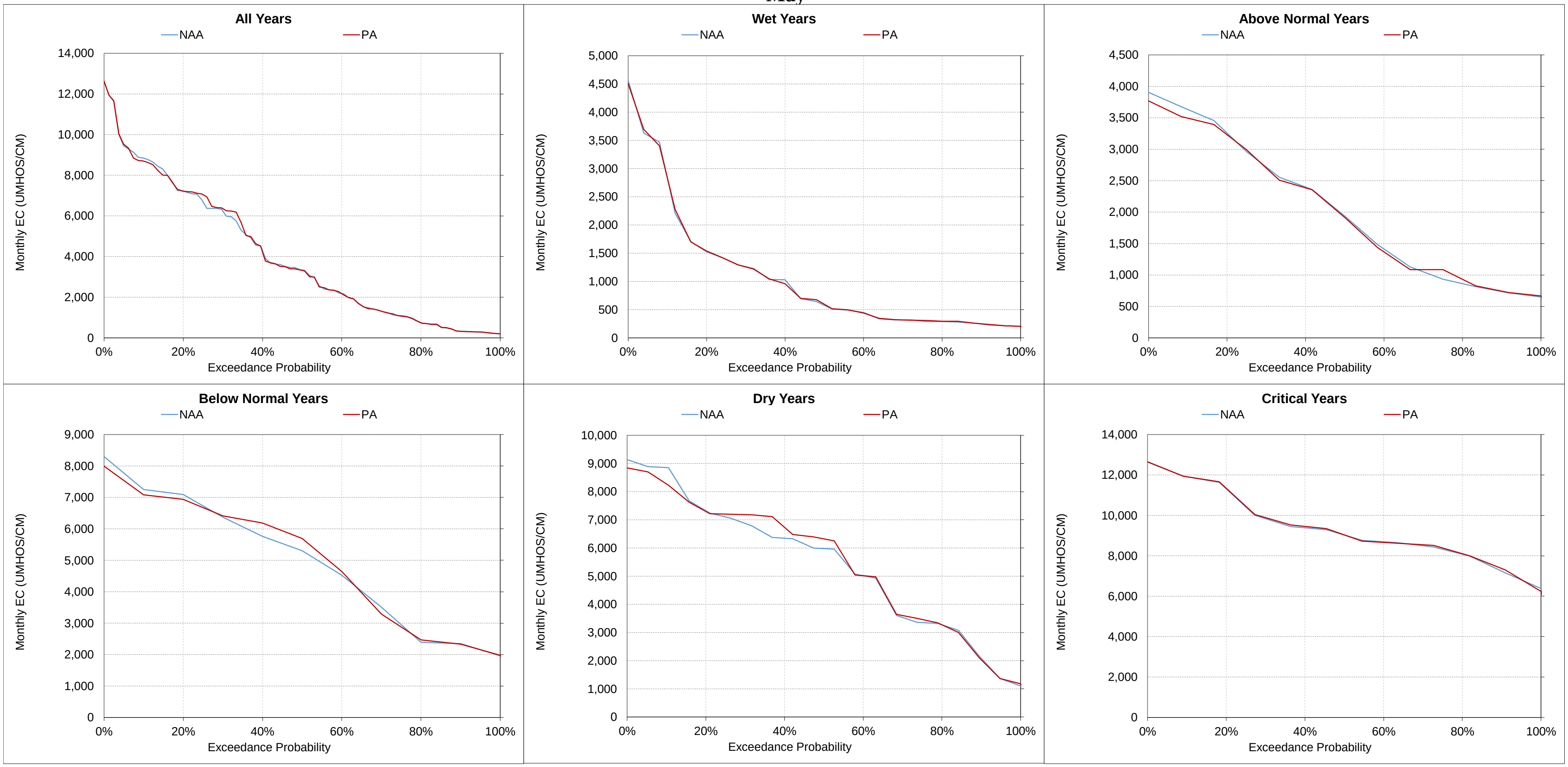
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-14. Chadborne Sl at Sunrise Duck Club, Monthly EC
April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-15. Chadborne Sl at Sunrise Duck Club, Monthly EC May



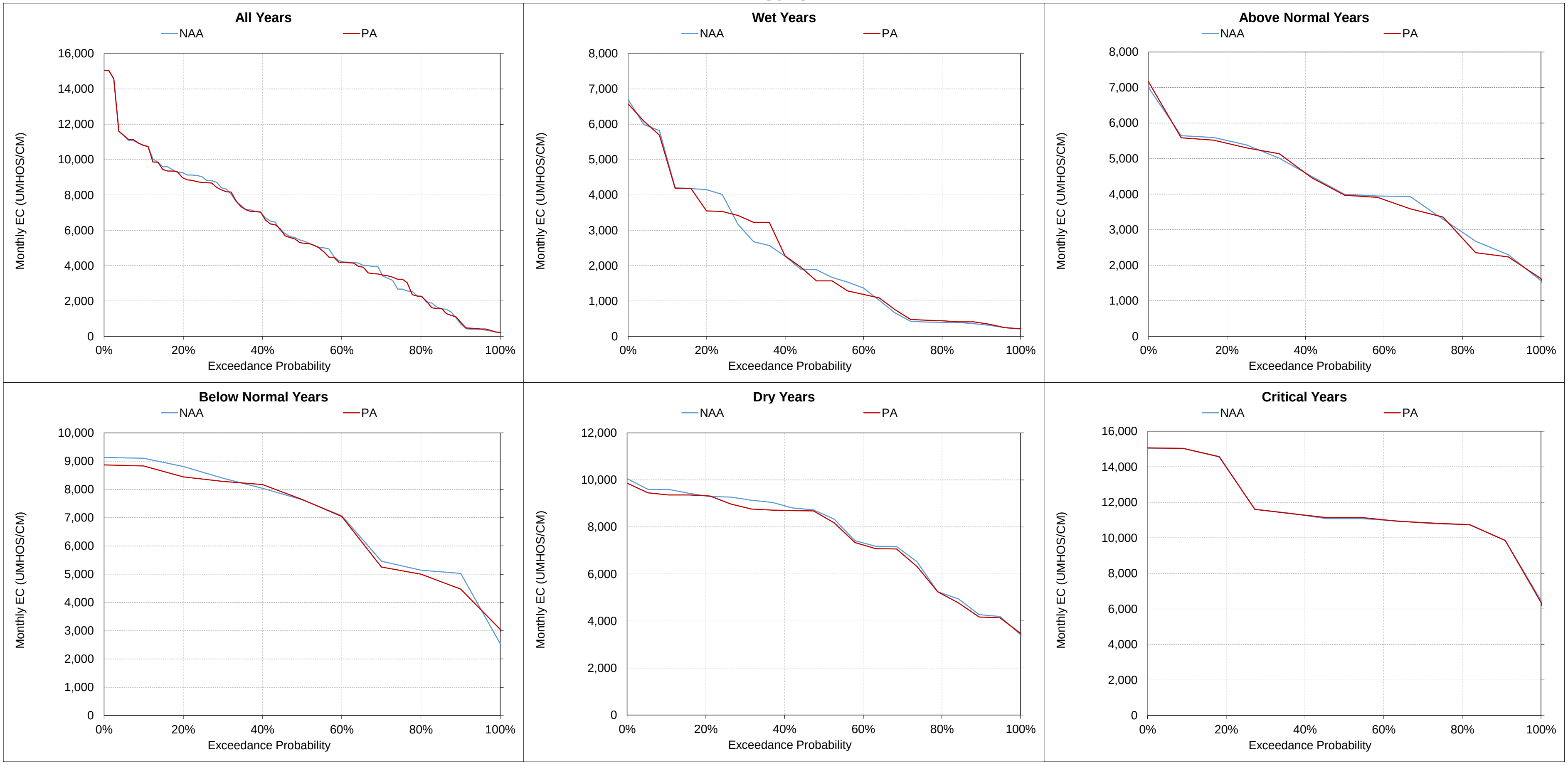
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

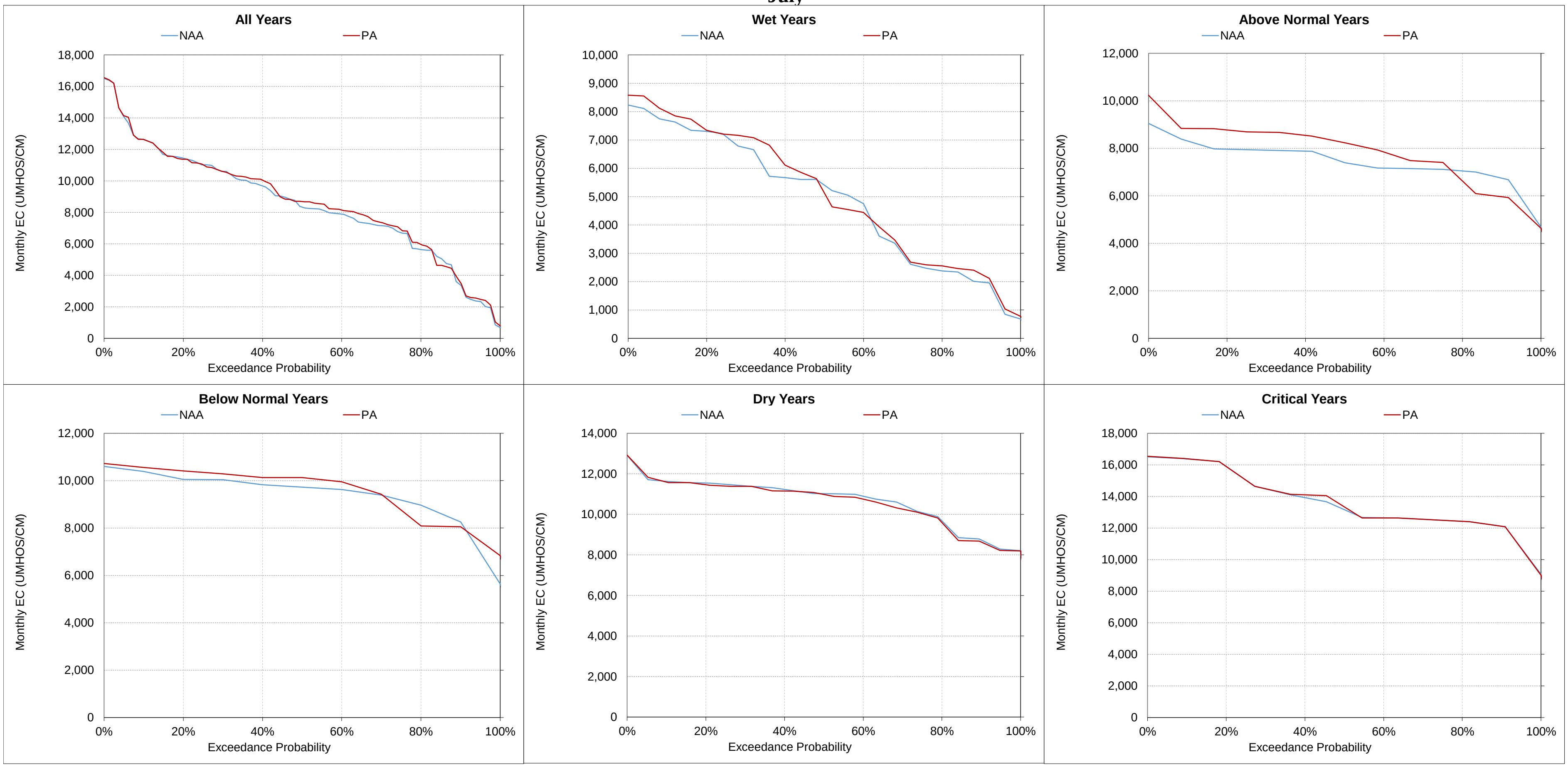
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-16. Chadborne Sl at Sunrise Duck Club, Monthly EC
June



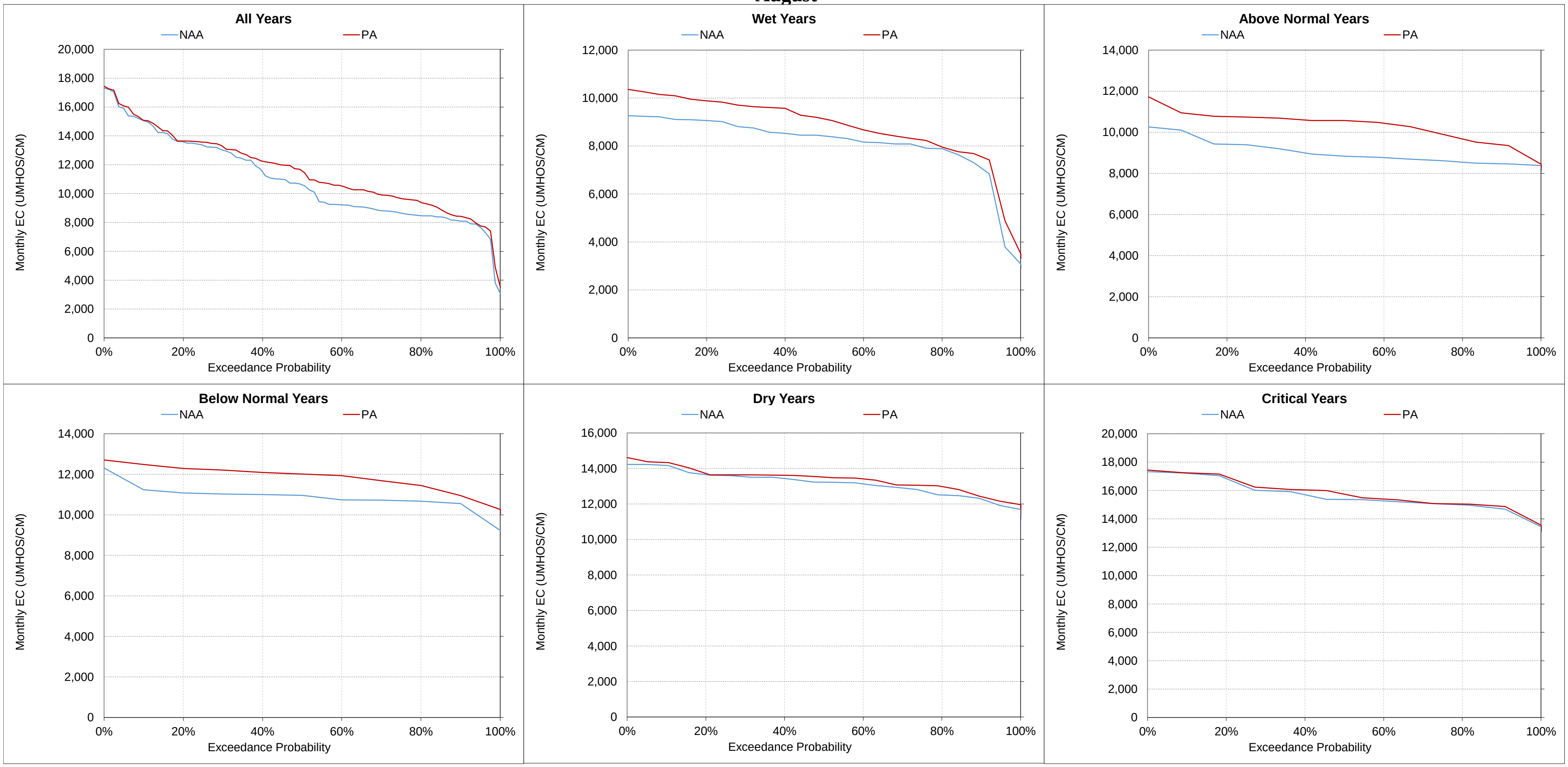
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-17. Chadborne Sl at Sunrise Duck Club, Monthly EC
July



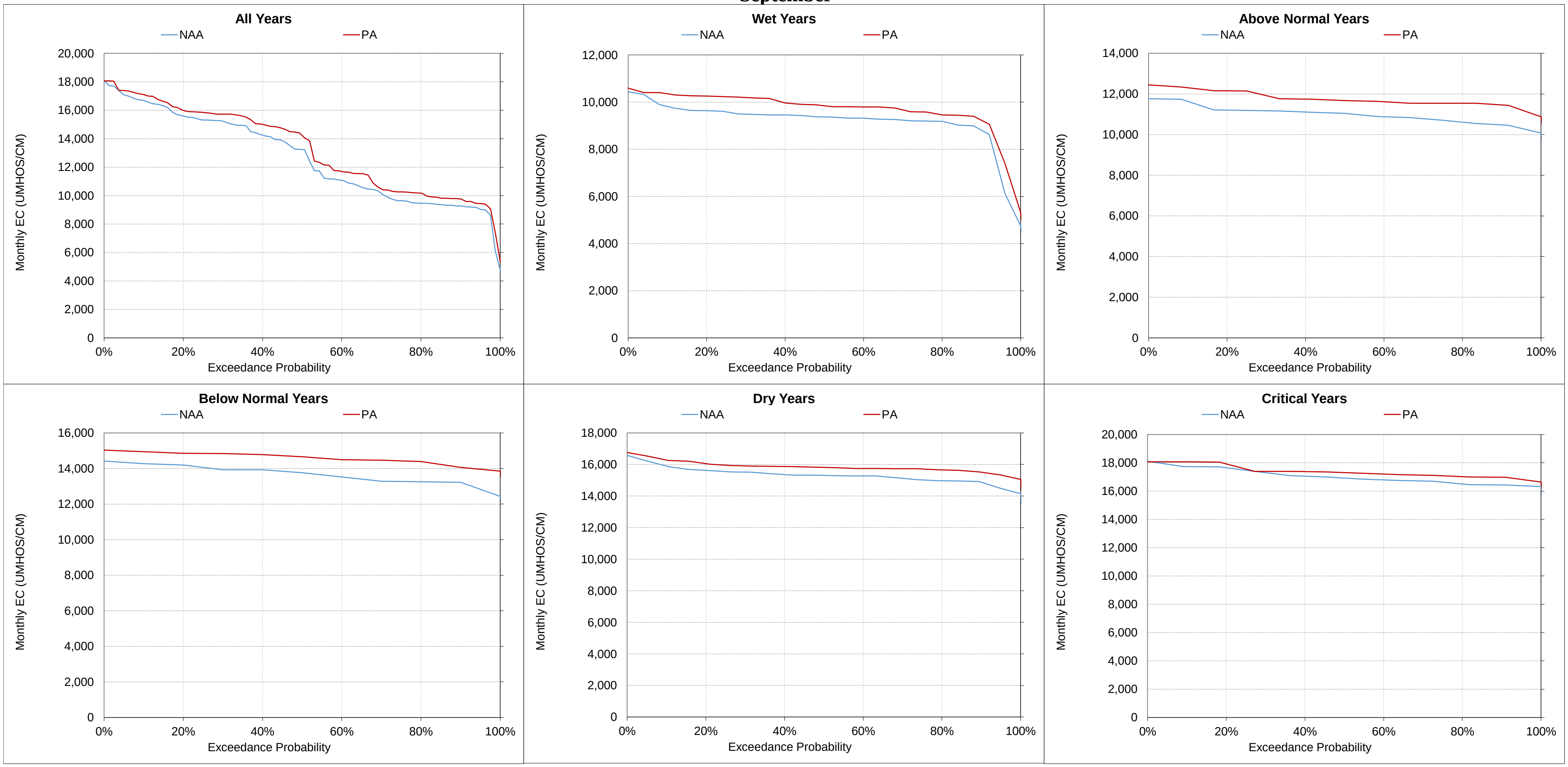
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-18. Chadborne Sl at Sunrise Duck Club, Monthly EC
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-25-19. Chadborne Sl at Sunrise Duck Club, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-26. Suisun Sl near Volanti Intake , Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	14,735	14,663	-72	0%	14,038	12,863	-1,174	-8%	12,043	11,485	-558	-5%	9,851	9,593	-258	-3%	6,989	6,576	-414	-6%	6,169	5,955	-214	-3%
20%	13,829	13,697	-132	-1%	12,517	11,249	-1,268	-10%	11,396	10,758	-638	-6%	7,959	8,004	44	1%	6,109	5,880	-229	-4%	4,858	4,705	-154	-3%
30%	13,627	13,507	-121	-1%	12,072	10,681	-1,391	-12%	10,256	9,584	-672	-7%	7,527	7,231	-296	-4%	5,075	4,905	-170	-3%	3,570	3,796	226	6%
40%	13,085	13,063	-22	0%	11,540	10,105	-1,435	-12%	7,997	8,290	293	4%	6,707	6,440	-267	-4%	4,301	3,805	-496	-12%	2,850	2,950	100	3%
50%	11,768	12,436	668	6%	10,234	8,909	-1,325	-13%	6,555	6,778	224	3%	6,291	6,021	-269	-4%	3,405	3,221	-184	-5%	2,147	2,335	188	9%
60%	8,218	8,366	148	2%	7,097	6,865	-232	-3%	5,540	5,655	115	2%	5,121	4,872	-250	-5%	2,546	2,609	63	2%	1,495	1,499	3	0%
70%	6,165	6,304	139	2%	5,630	5,694	64	1%	5,024	5,042	17	0%	3,245	3,662	417	13%	1,660	1,871	211	13%	1,131	1,172	41	4%
80%	5,951	6,108	157	3%	5,224	5,153	-71	-1%	4,632	4,496	-136	-3%	2,163	2,376	213	10%	1,067	1,178	111	10%	673	731	58	9%
90%	5,754	5,938	184	3%	4,906	4,887	-20	0%	3,453	3,456	3	0%	1,494	1,477	-17	-1%	731	764	33	5%	473	504	31	6%
Long Term																								
Full Simulation Period[b]	10,300	10,371	71	1%	9,155	8,512	-643	-7%	7,428	7,322	-107	-1%	5,657	5,598	-59	-1%	3,687	3,543	-144	-4%	2,744	2,794	50	2%
Water Year Types[c]																								
Wet (32%)	5,797	5,963	166	3%	5,046	5,052	6	0%	4,198	4,245	47	1%	4,195	3,976	-218	-5%	1,349	1,325	-24	-2%	800	812	12	2%
Above Normal (16%)	7,992	8,143	150	2%	6,905	6,694	-211	-3%	5,787	5,860	73	1%	5,482	5,434	-49	-1%	2,525	2,455	-70	-3%	1,463	1,468	5	0%
Below Normal (13%)	12,535	12,773	238	2%	10,973	9,825	-1,147	-10%	8,957	8,734	-223	-2%	6,382	6,410	28	0%	4,460	4,041	-419	-9%	3,407	3,292	-115	-3%
Dry (24%)	13,576	13,514	-63	0%	11,941	10,678	-1,263	-11%	8,946	8,670	-277	-3%	5,930	5,896	-34	-1%	5,228	5,067	-161	-3%	3,740	3,886	146	4%
Critical (15%)	15,046	14,896	-151	-1%	14,185	13,166	-1,020	-7%	12,272	12,029	-243	-2%	7,894	8,047	153	2%	6,736	6,531	-206	-3%	6,074	6,246	172	3%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	7,648	7,446	-202	-3%	8,697	8,528	-170	-2%	10,374	10,400	26	0%	12,319	12,321	2	0%	14,821	14,896	75	1%	16,409	16,910	501	3%
20%	4,825	5,071	245	5%	7,039	7,021	-18	0%	8,997	8,763	-234	-3%	11,158	11,162	4	0%	13,418	13,489	71	1%	15,401	15,815	414	3%
30%	3,723	4,061	337	9%	5,864	6,142	279	5%	8,163	8,093	-70	-1%	10,466	10,406	-59	-1%	12,828	12,941	113	1%	15,073	15,612	540	4%
40%	2,957	3,246	289	10%	4,158	4,065	-93	-2%	6,427	6,419	-8	0%	9,406	9,749	343	4%	11,342	12,008	666	6%	13,920	14,726	806	6%
50%	2,291	2,343	52	2%	3,242	3,222	-21	-1%	5,192	5,052	-140	-3%	8,126	8,511	385	5%	10,407	11,122	715	7%	13,116	14,100	985	8%
60%	1,173	1,211	38	3%	2,146	2,163	17	1%	4,048	3,990	-59	-1%	7,719	7,841	122	2%	9,044	10,307	1,263	14%	10,911	11,669	758	7%
70%	916	855	-61	-7%	1,276	1,277	1	0%	3,281	3,217	-64	-2%	6,995	7,163	168	2%	8,569	9,658	1,089	13%	10,142	10,539	397	4%
80%	690	692	2	0%	695	710	14	2%	2,135	2,167	32	1%	5,488	5,759	272	5%	8,271	9,227	956	12%	9,498	10,217	720	8%
90%	391	403	12	3%	353	358	5	1%	656	735	78	12%	3,238	3,371	134	4%	7,882	8,179	297	4%	9,283	9,690	407	4%
Long Term																								
Full Simulation Period[b]	2,964	3,064	100	3%	3,920	3,939	19	0%	5,641	5,587	-54	-1%	8,343	8,460	117	1%	10,712	11,332	619	6%	12,597	13,184	587	5%
Water Year Types[c]																								
Wet (32%)	758	776	18	2%	1,073	1,074	2	0%	2,143	2,137	-7	0%	4,735	4,901	167	4%	7,822	8,501	679	9%	9,155	9,674	519	6%
Above Normal (16%)	1,259	1,242	-17	-1%	1,964	1,942	-22	-1%	3,977	3,929	-48	-1%	7,226	7,574	348	5%	8,819	10,082	1,263	14%	10,919	11,716	797	7%
Below Normal (13%)	4,014	4,060	46	1%	4,872	4,892	20	0%	6,699	6,593	-106	-2%	9,097	9,257	160	2%	10,644	11,595	951	9%	13,473	14,380	907	7%
Dry (24%)	3,717	4,041	325	9%	5,271	5,337	66	1%	7,314	7,187	-127	-2%	10,364	10,292	-71	-1%	12,929	13,149	220	2%	15,128	15,647	519	3%
Critical (15%)	7,376	7,456	79	1%	9,081	9,104	23	0%	11,265	11,270	6	0%	13,313	13,343	30	0%	15,393	15,549	156	1%	16,851	17,177	326	2%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

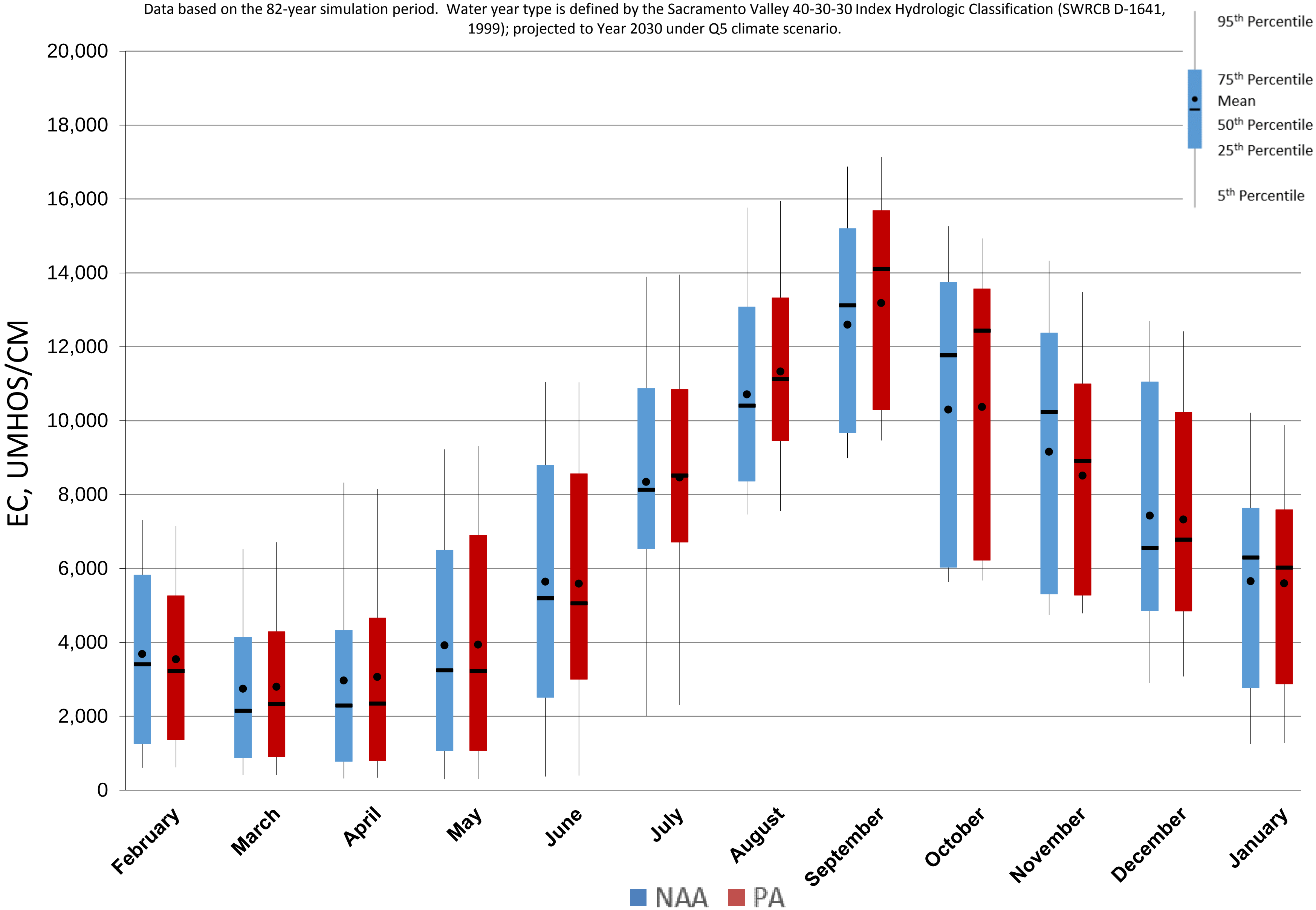
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-1. Monthly EC Ranges For Suisun Sl near Volanti Intake , All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.



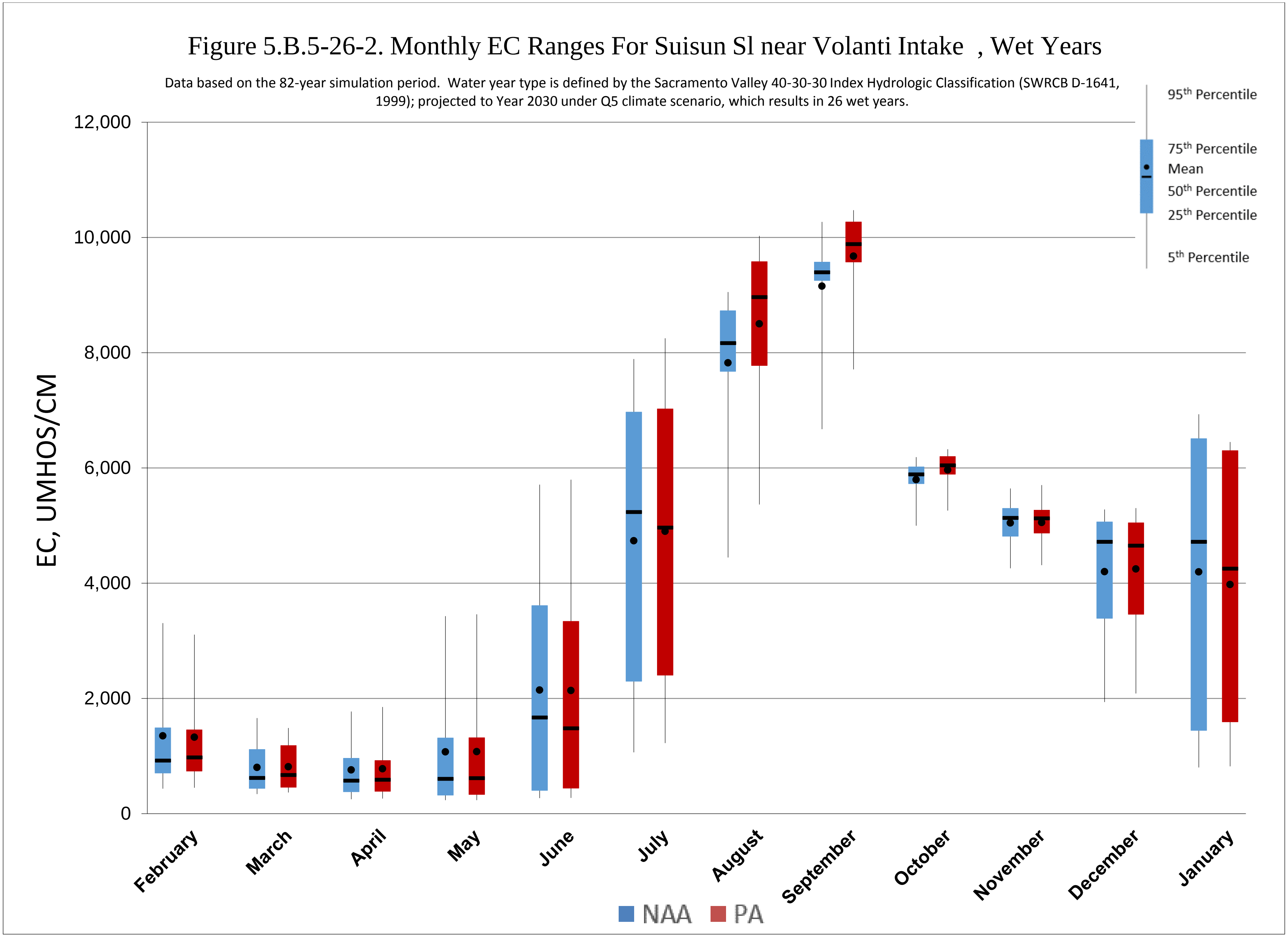
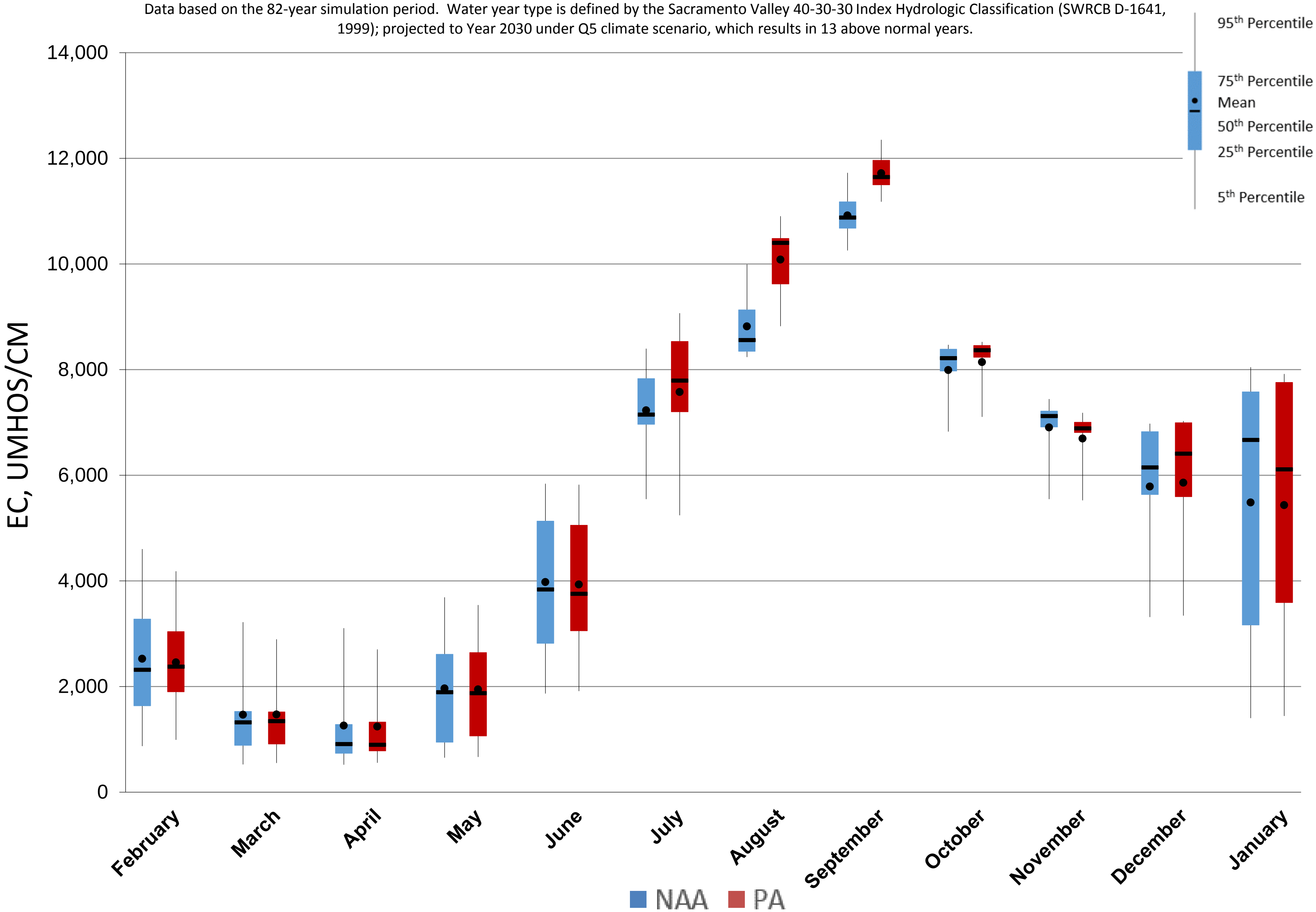


Figure 5.B.5-26-2. Monthly EC Ranges For Suisun Sl near Volanti Intake , Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
EC, UMHOS/CM
12,000
10,000
8,000
6,000
4,000
2,000
0
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-26-3. Monthly EC Ranges For Suisun Sl near Volanti Intake , Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.



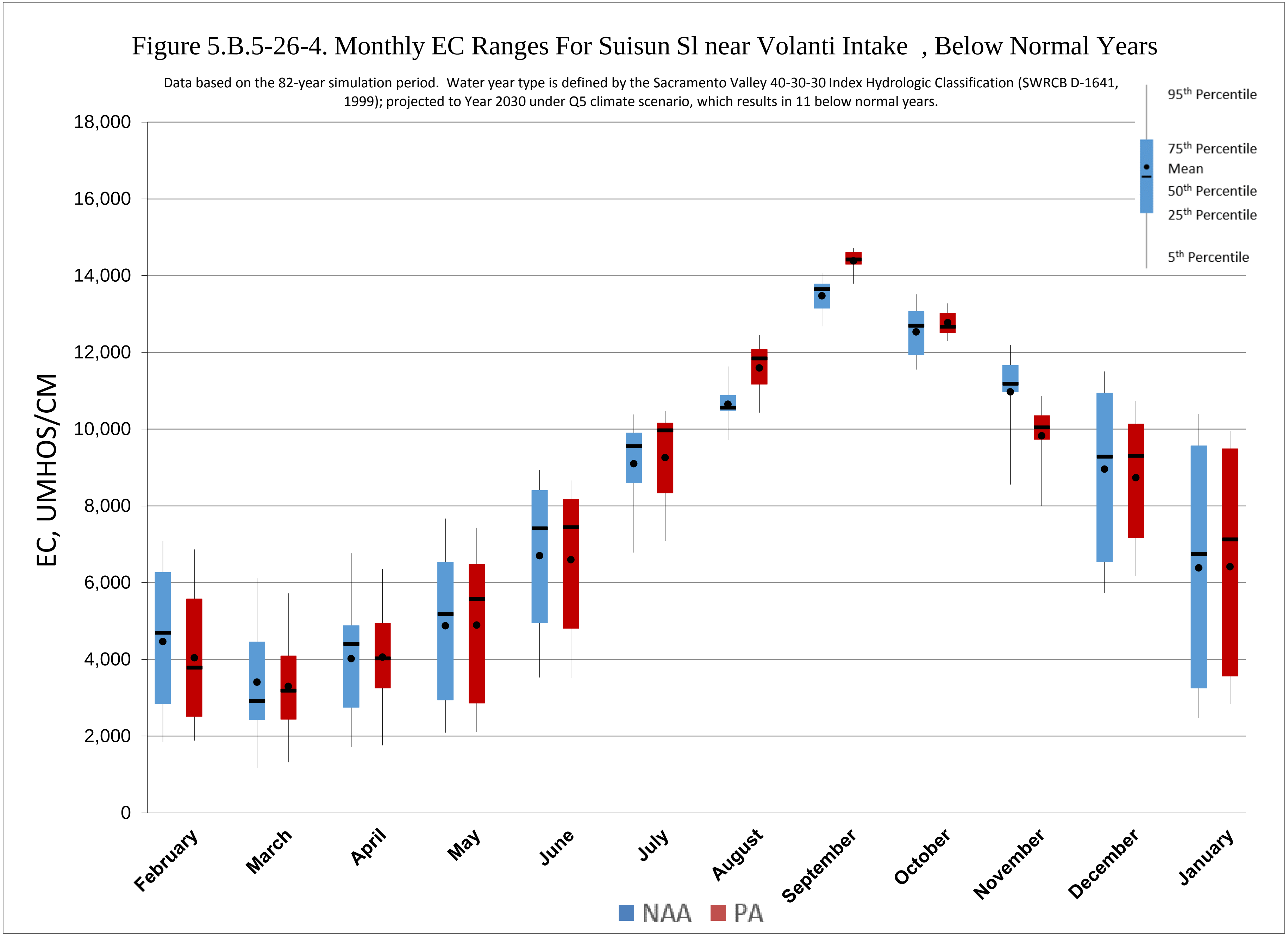


Figure 5.B.5-26-4. Monthly EC Ranges For Suisun Sl near Volanti Intake , Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

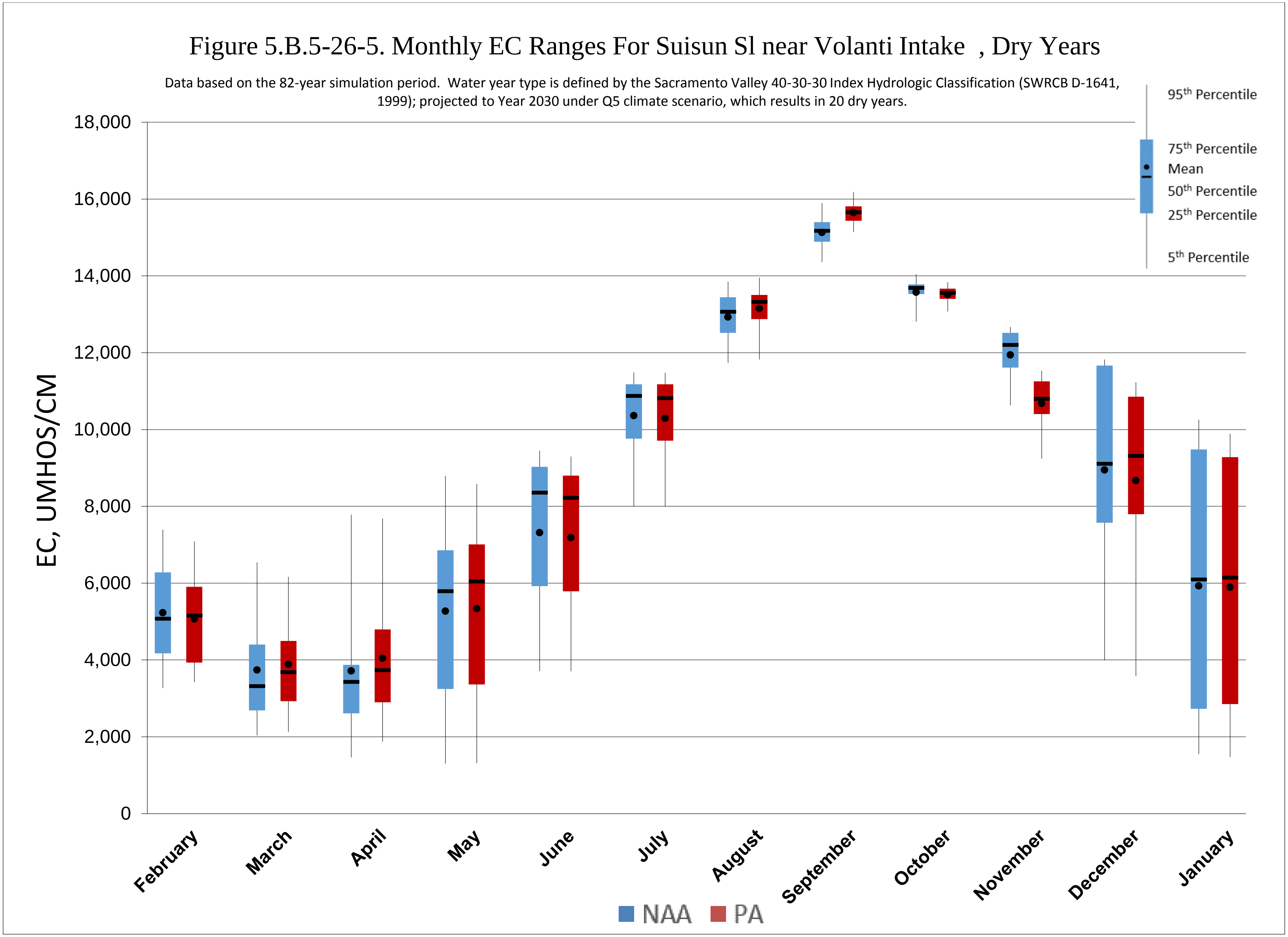


Figure 5.B.5-26-5. Monthly EC Ranges For Suisun Sl near Volanti Intake , Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-26-6. Monthly EC Ranges For Suisun Sl near Volanti Intake , Critical Years

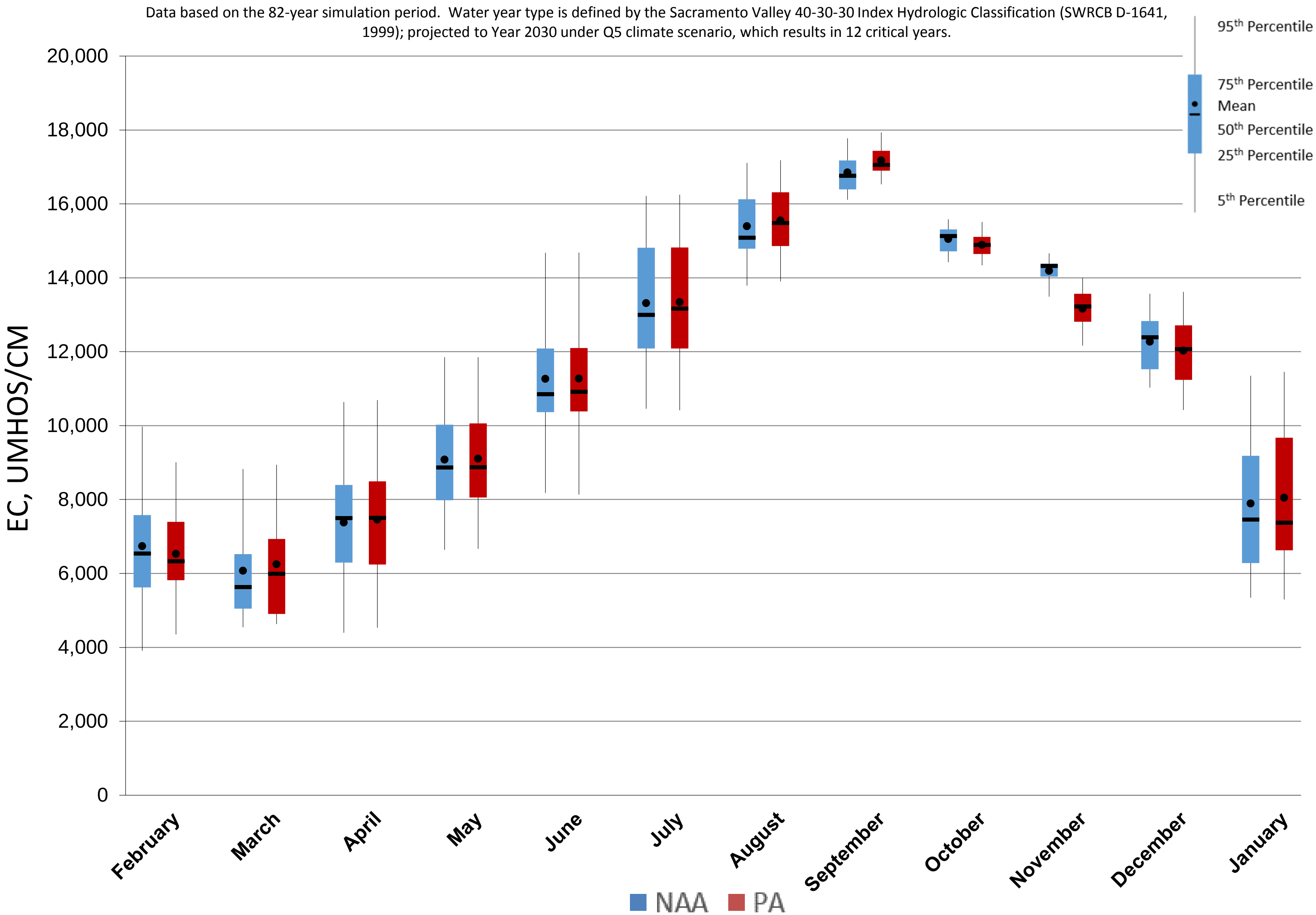
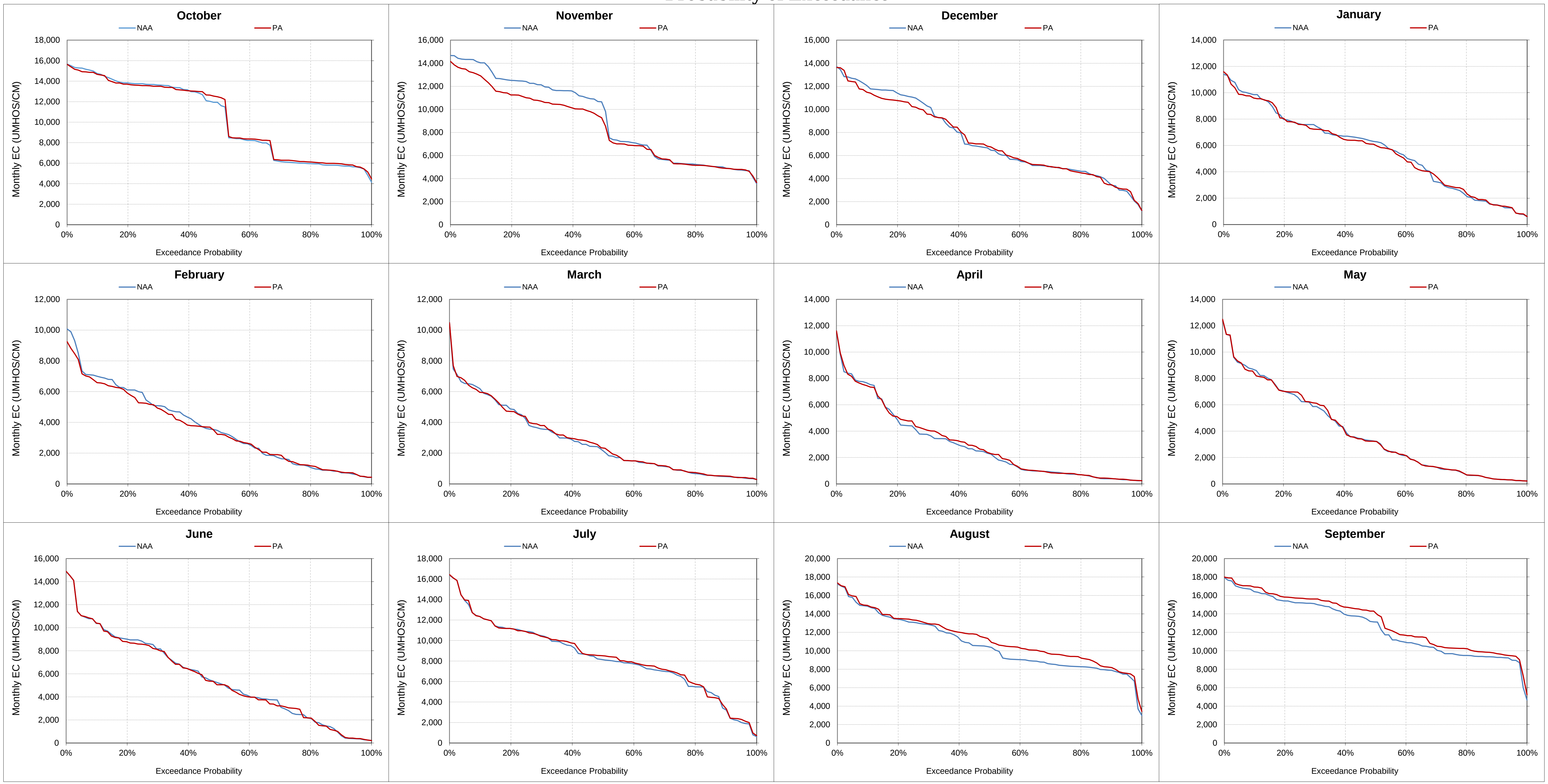
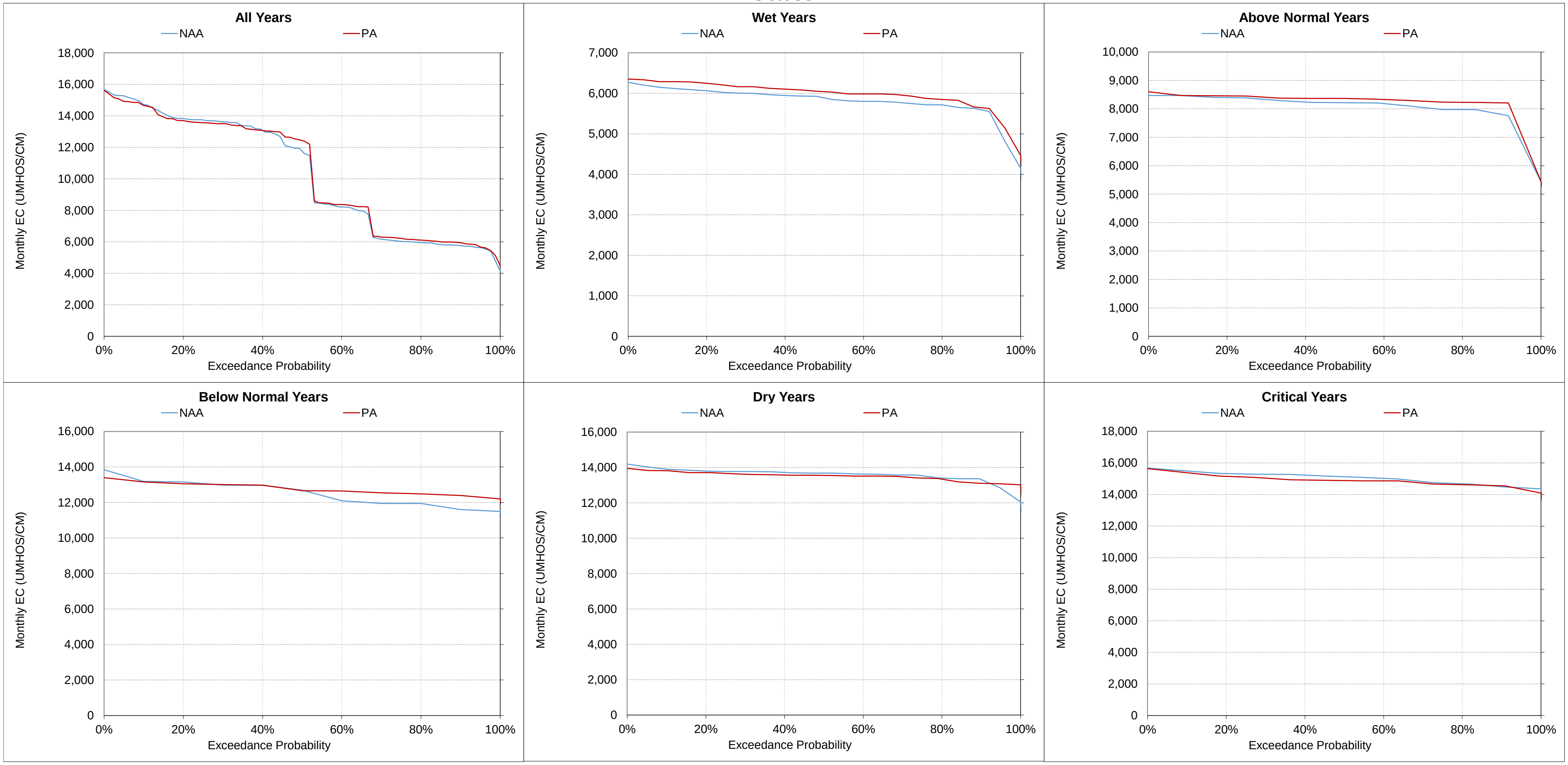


Figure 5.B.5-26-7. Suisun Sl near Volanti Intake , Monthly EC Probability of Exceedance



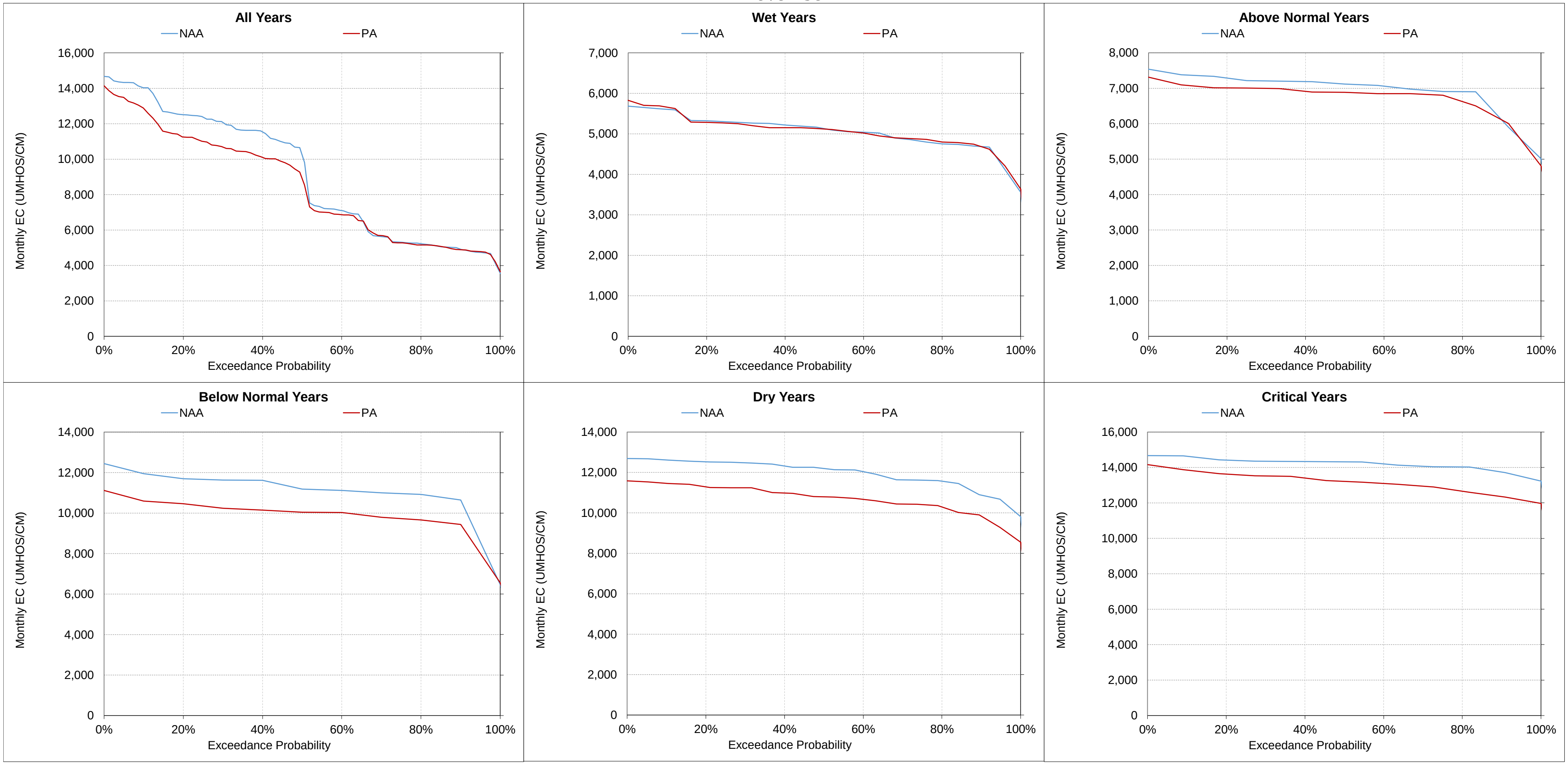
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-8. Suisun Sl near Volanti Intake , Monthly EC October



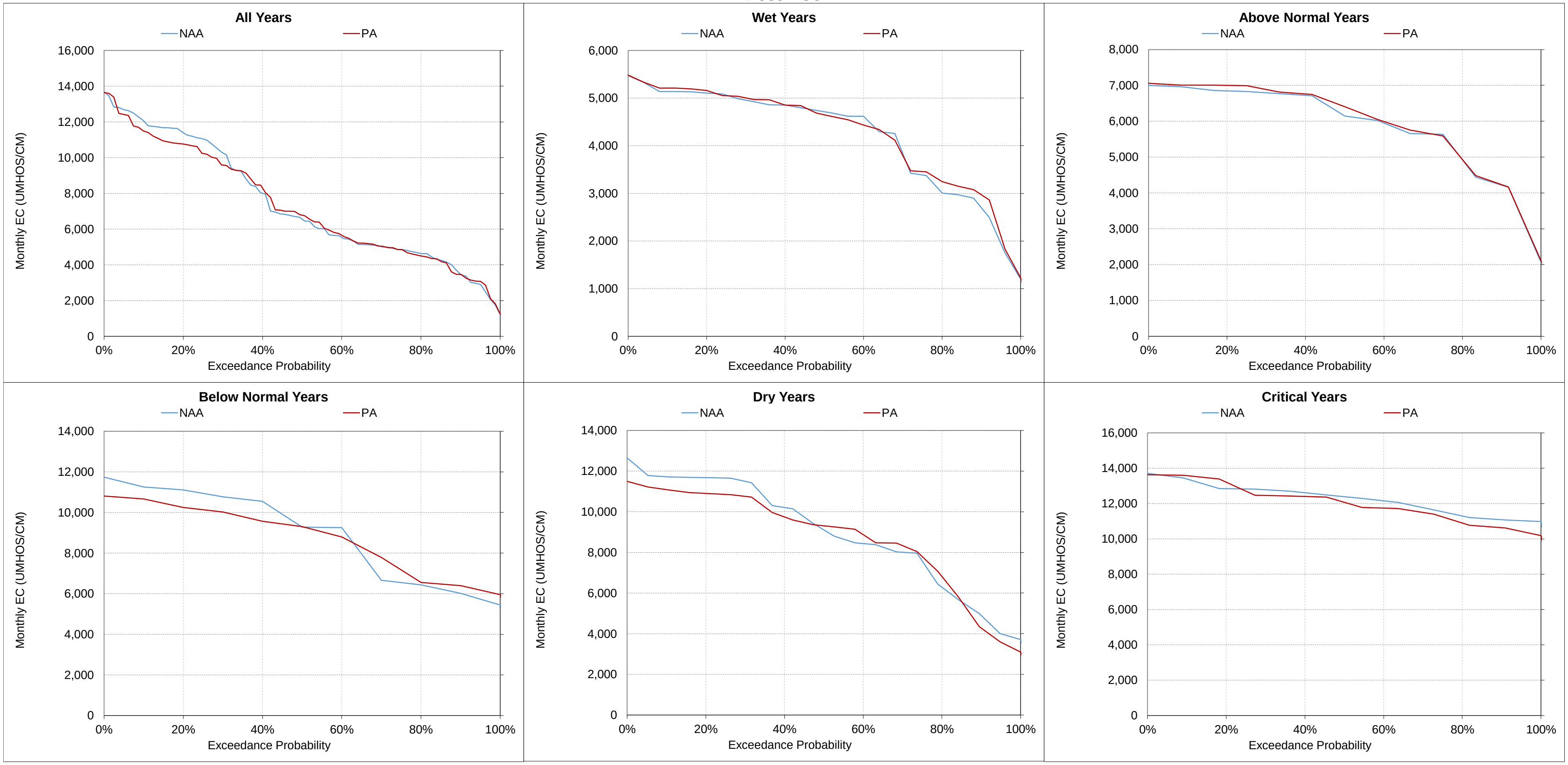
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-9. Suisun Sl near Volanti Intake , Monthly EC
November



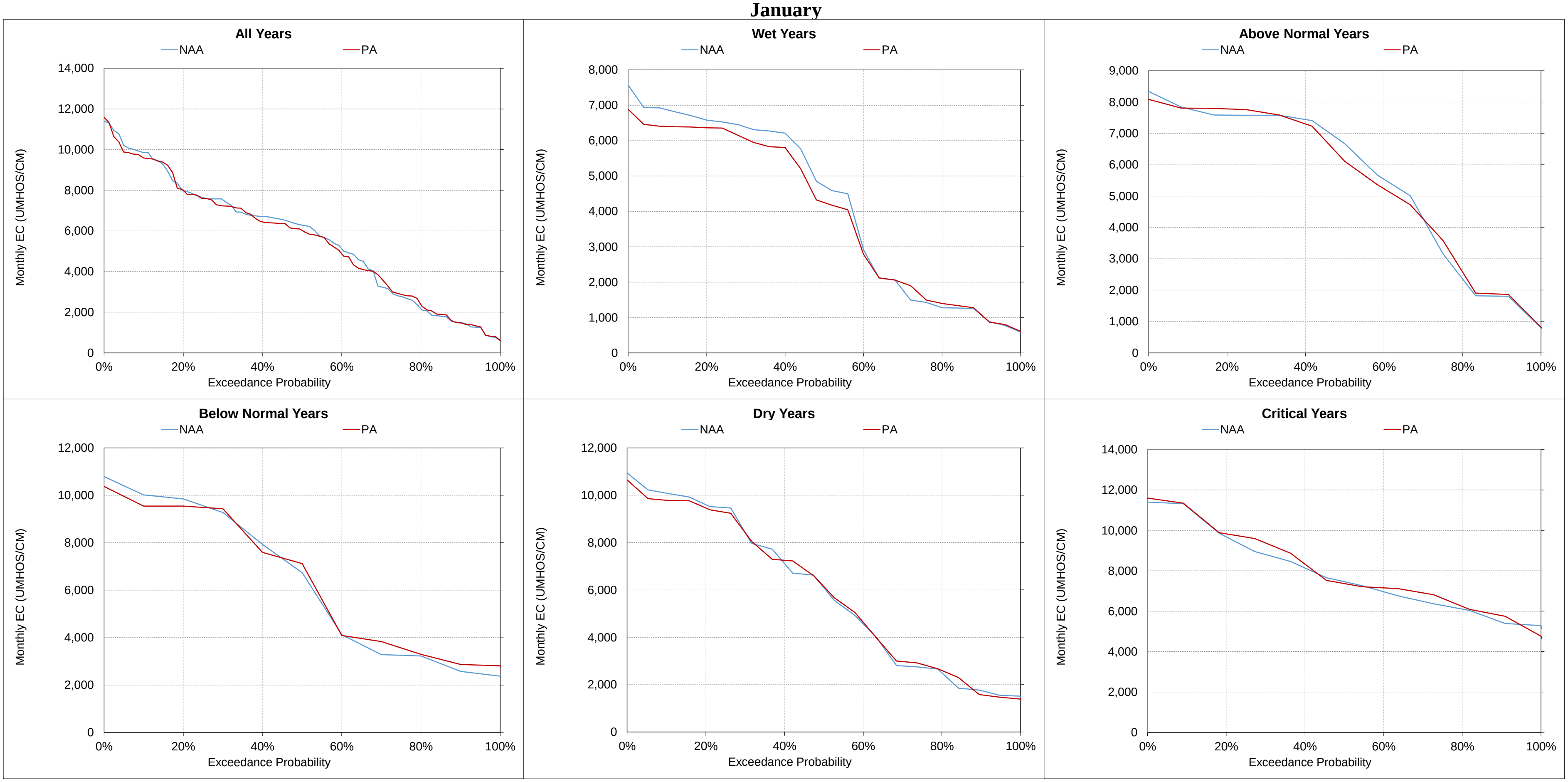
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-10. Suisun Sl near Volanti Intake , Monthly EC December



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-11. Suisun Sl near Volanti Intake , Monthly EC
January



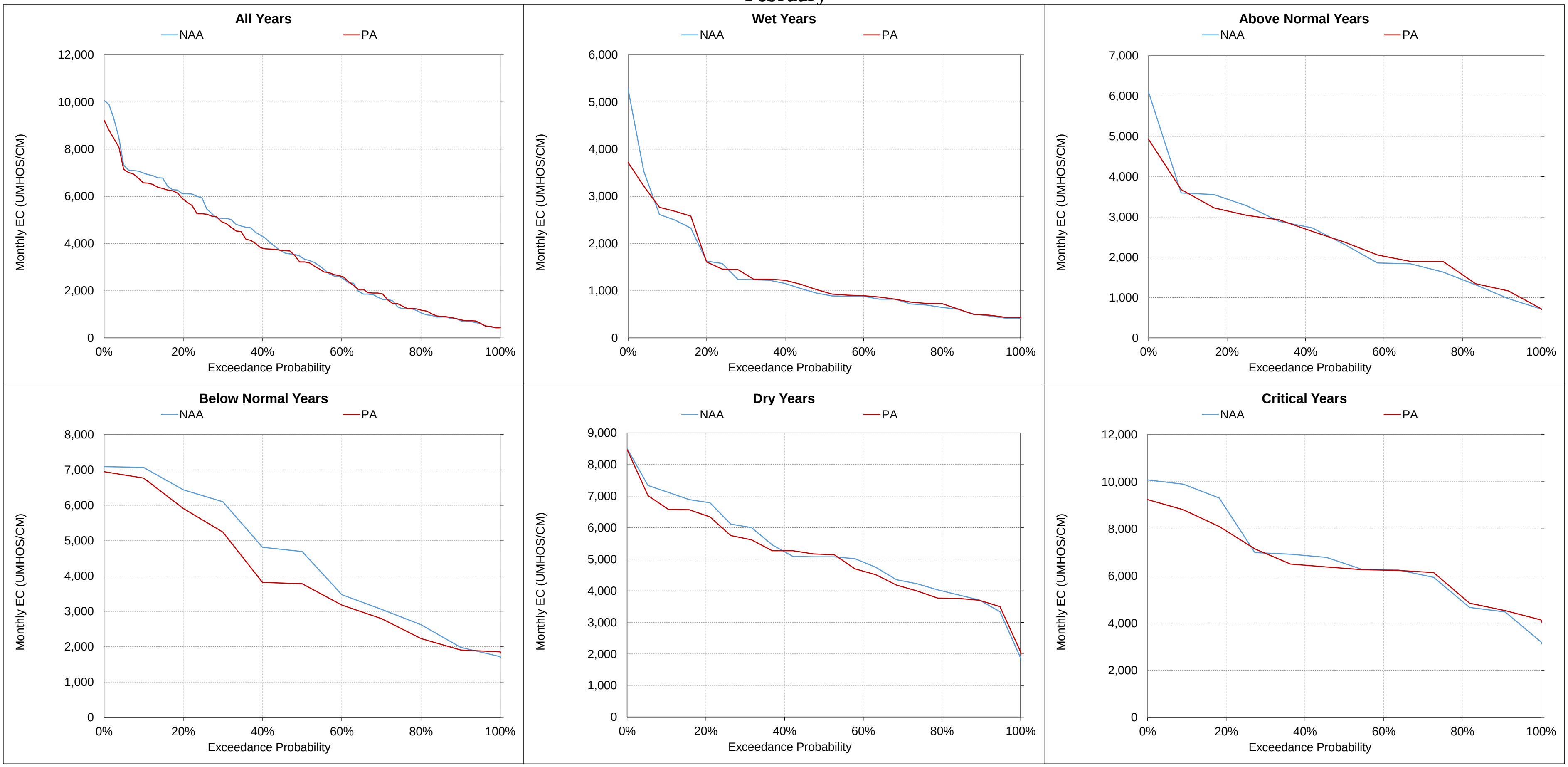
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-12. Suisun Sl near Volanti Intake , Monthly EC February



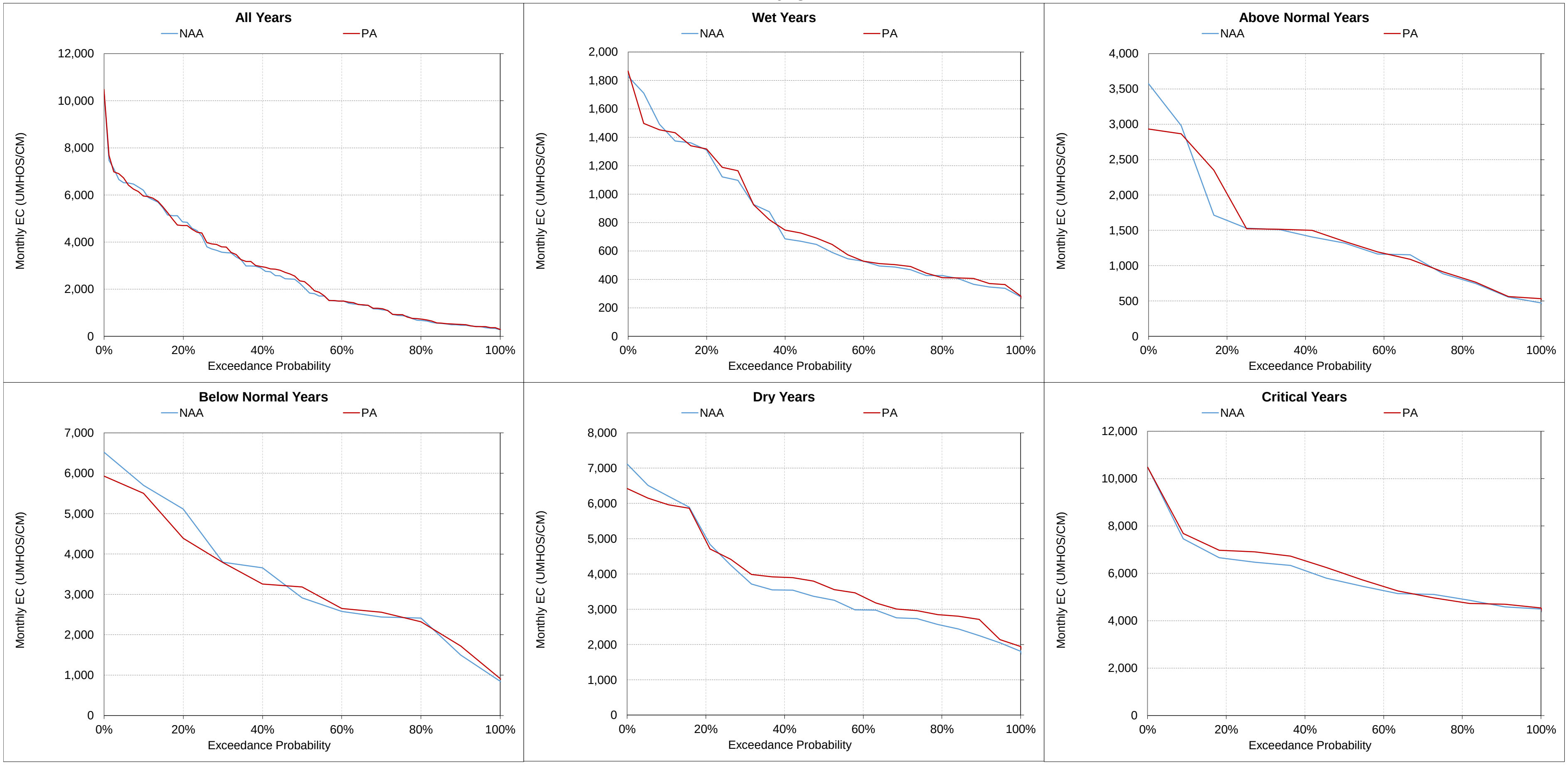
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-13. Suisun Sl near Volanti Intake , Monthly EC March



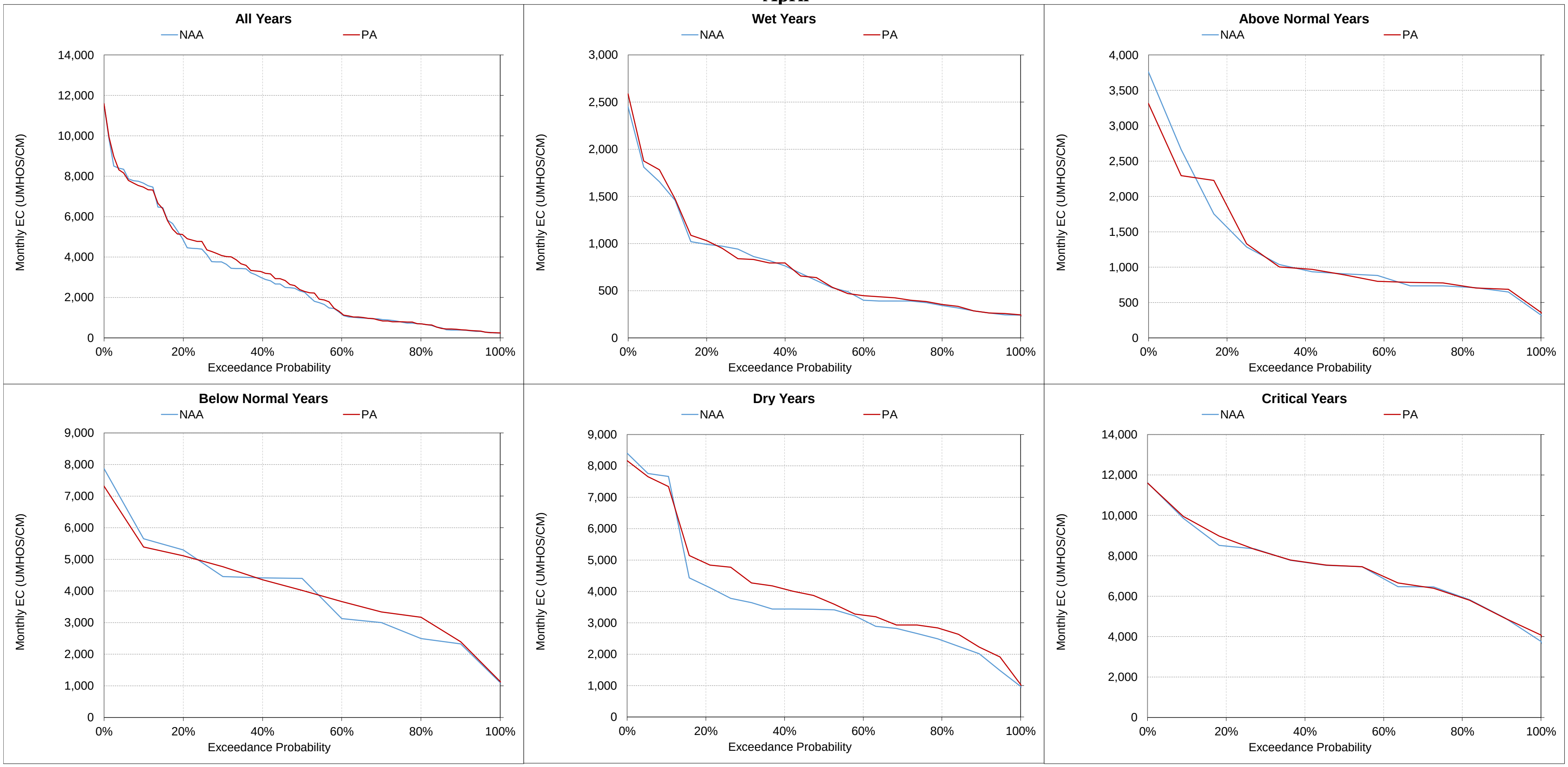
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

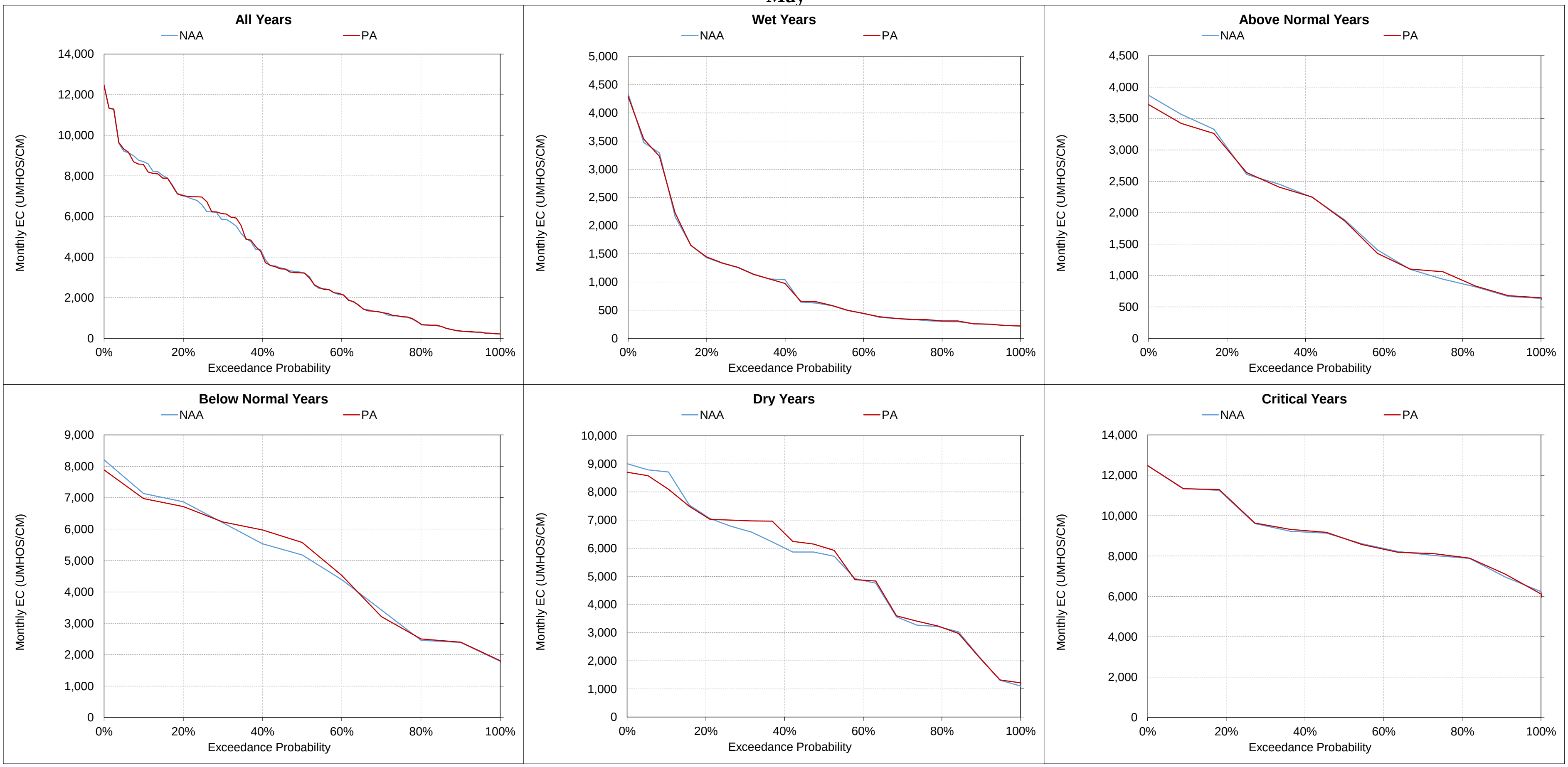
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-14. Suisun Sl near Volanti Intake , Monthly EC
April



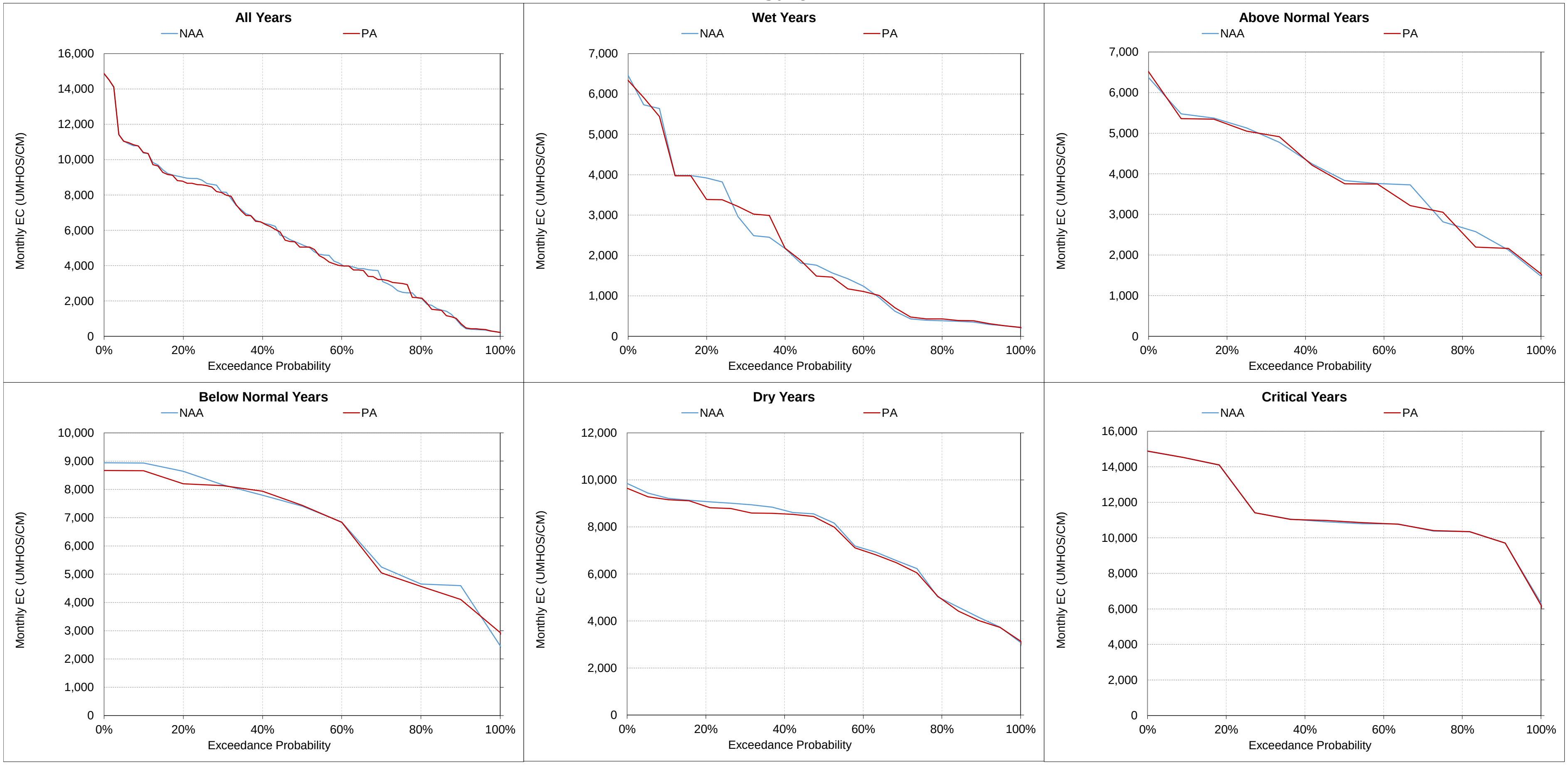
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-15. Suisun Sl near Volanti Intake , Monthly EC
May



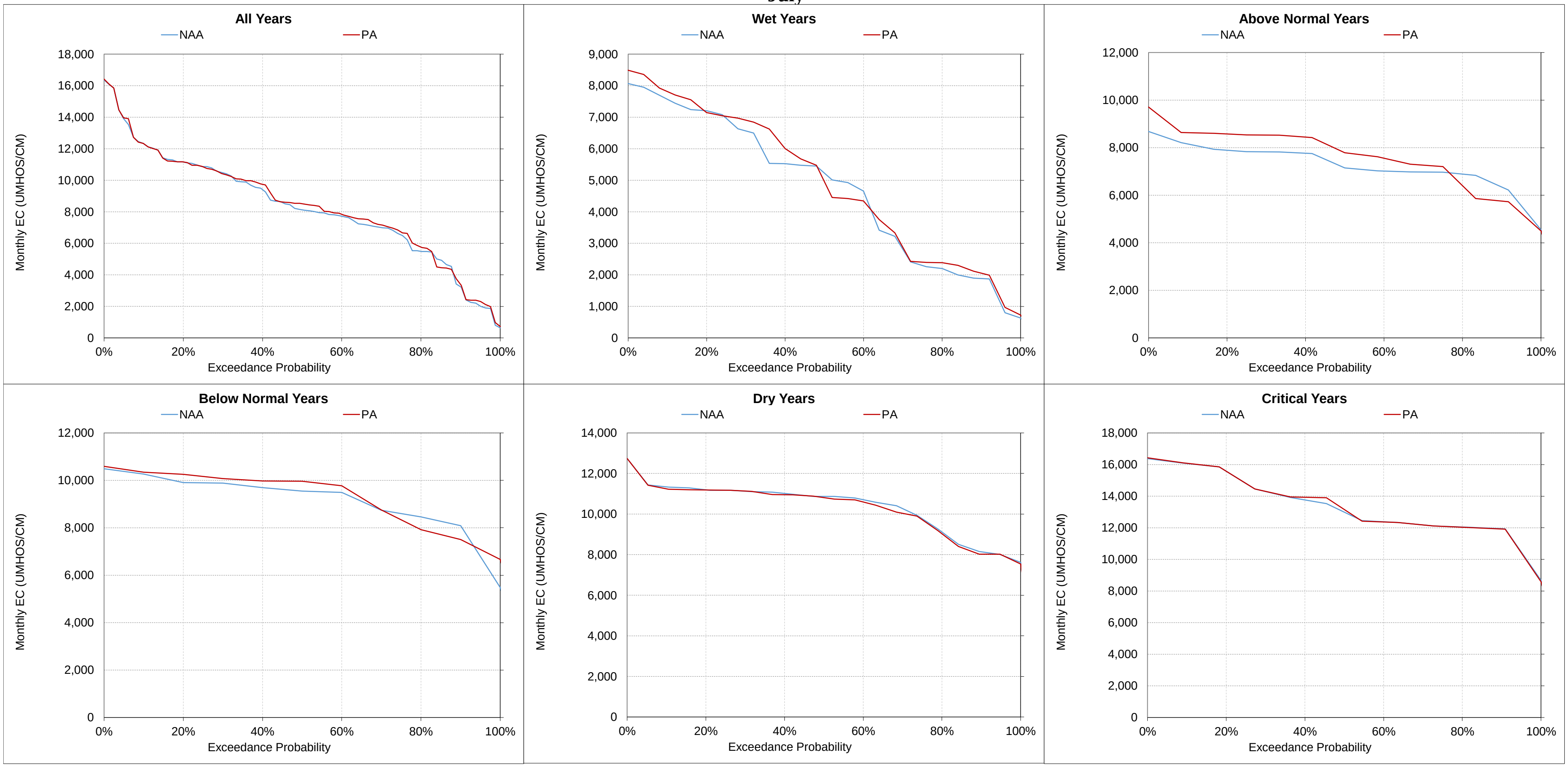
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-16. Suisun Sl near Volanti Intake , Monthly EC
June



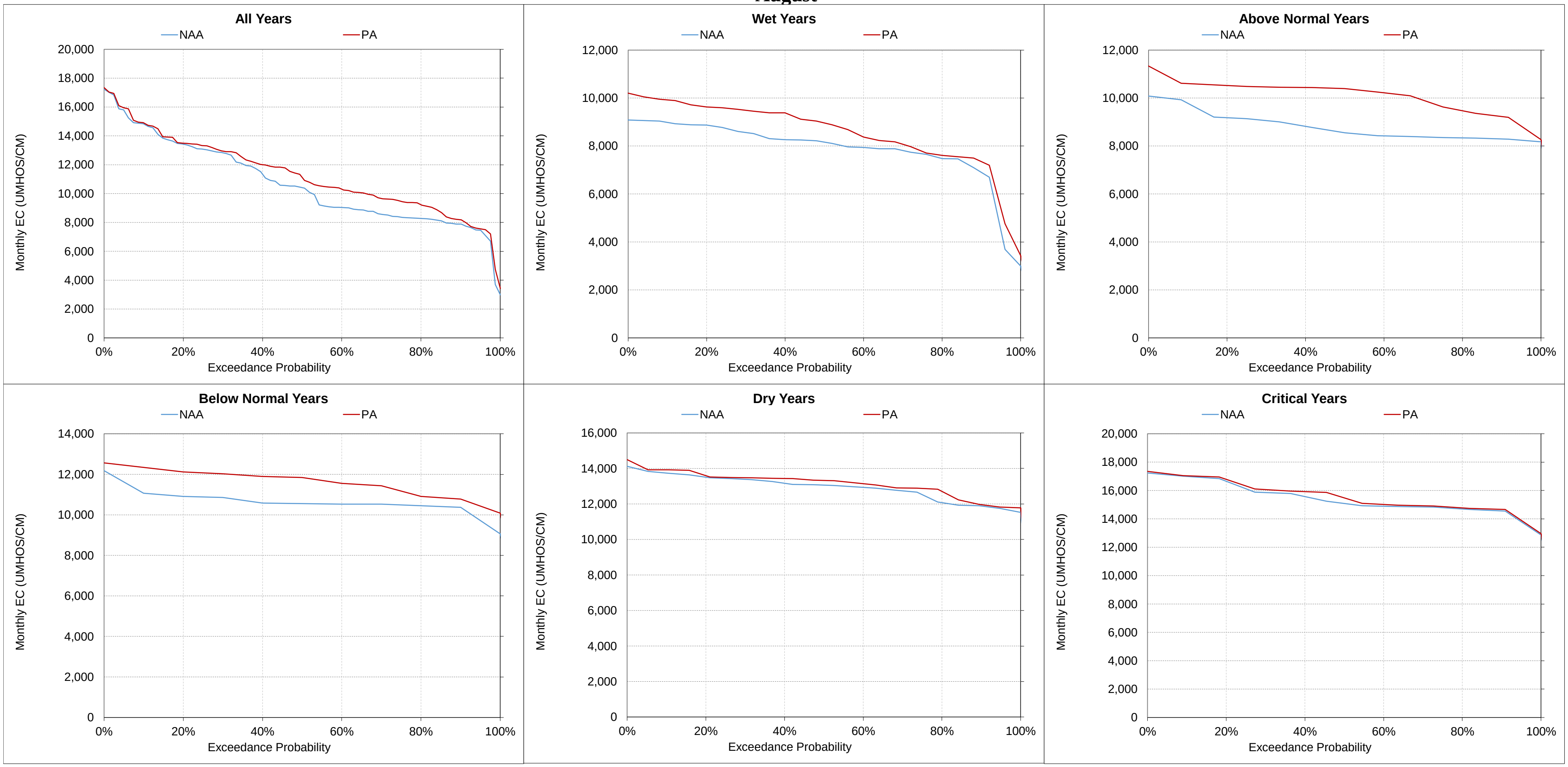
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-17. Suisun Sl near Volanti Intake , Monthly EC
July



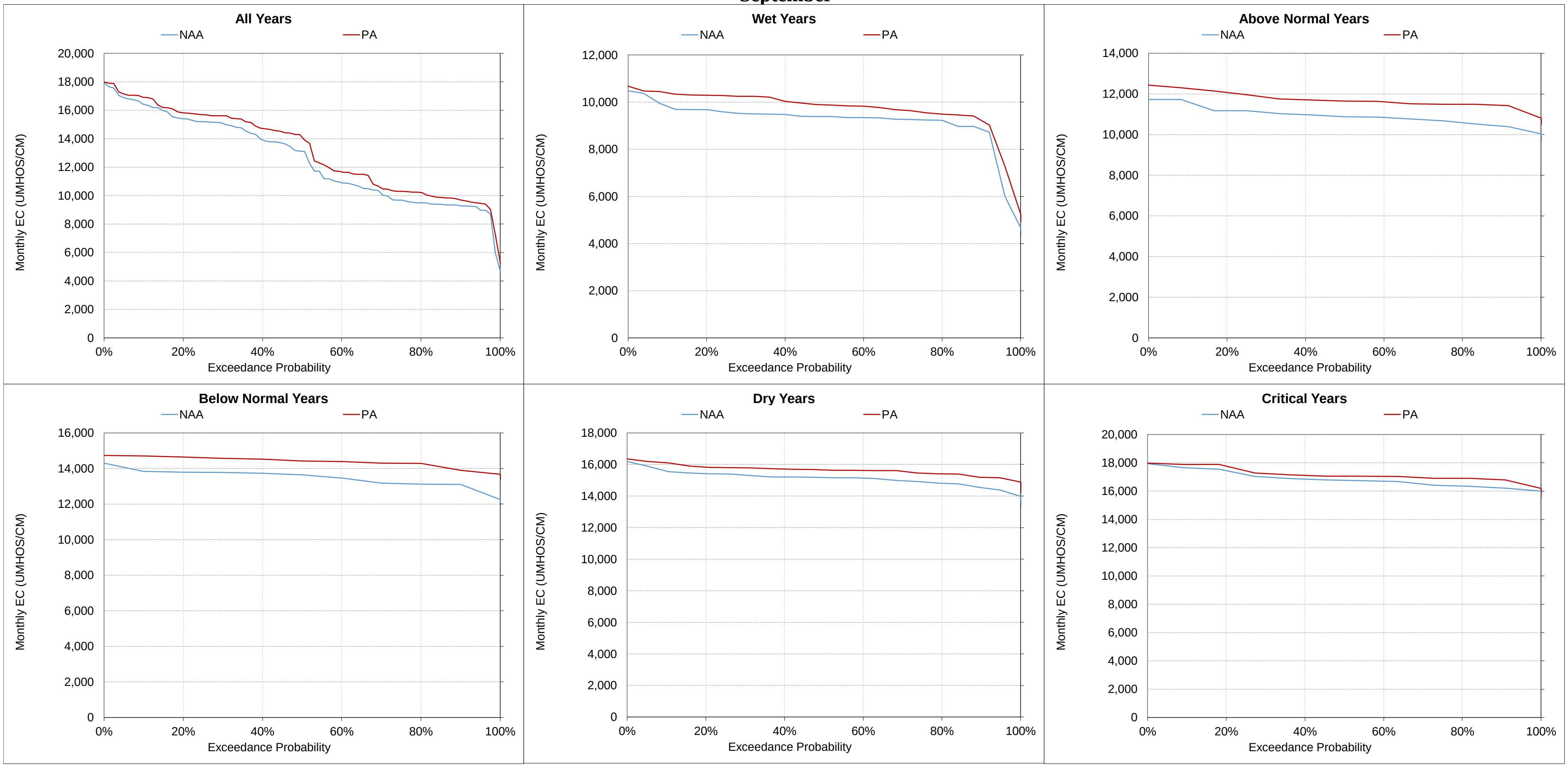
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-18. Suisun Sl near Volanti Intake , Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-26-19. Suisun Sl near Volanti Intake , Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-27. Montezuma Slough at Beldon's Landing, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	11,189	10,301	-888	-8%	11,667	10,138	-1,529	-13%	8,920	8,454	-466	-5%	5,631	5,615	-16	0%	3,246	2,858	-387	-12%	4,627	4,577	-50	-1%
20%	10,072	9,180	-892	-9%	9,722	8,364	-1,358	-14%	7,770	7,654	-116	-1%	5,005	4,900	-105	-2%	2,604	2,436	-168	-6%	3,274	3,316	41	1%
30%	9,887	8,879	-1,007	-10%	9,202	7,633	-1,569	-17%	5,451	5,855	405	7%	4,419	4,002	-417	-9%	2,174	2,183	10	0%	2,135	2,380	245	11%
40%	9,748	8,503	-1,245	-13%	8,468	6,932	-1,536	-18%	4,220	4,598	378	9%	3,693	3,429	-265	-7%	1,700	1,561	-139	-8%	1,527	1,620	93	6%
50%	8,226	7,891	-335	-4%	6,081	4,876	-1,205	-20%	3,321	3,848	527	16%	2,719	2,411	-309	-11%	1,380	1,296	-84	-6%	1,057	1,152	95	9%
60%	4,156	4,050	-105	-3%	3,985	3,664	-321	-8%	2,981	3,161	179	6%	1,958	2,025	67	3%	608	680	72	12%	453	569	117	26%
70%	3,098	3,102	4	0%	3,201	3,191	-10	0%	2,618	2,783	165	6%	905	1,077	172	19%	325	370	45	14%	331	325	-5	-2%
80%	2,795	2,786	-9	0%	2,618	2,379	-238	-9%	1,925	1,892	-33	-2%	512	594	82	16%	233	249	16	7%	232	247	15	6%
90%	2,502	2,552	51	2%	2,256	2,252	-4	0%	958	1,159	201	21%	256	267	11	4%	213	227	14	7%	200	218	17	9%
Long Term																								
Full Simulation Period[b]	6,780	6,325	-454	-7%	6,326	5,640	-686	-11%	4,370	4,471	101	2%	2,903	2,797	-106	-4%	1,558	1,460	-98	-6%	1,709	1,809	100	6%
Water Year Types[c]																								
Wet (32%)	2,670	2,690	21	1%	2,467	2,437	-31	-1%	2,215	2,272	56	3%	2,408	2,070	-339	-14%	400	366	-35	-9%	376	396	20	5%
Above Normal (16%)	4,040	3,911	-129	-3%	3,901	3,664	-237	-6%	3,136	3,303	167	5%	3,133	3,007	-126	-4%	824	778	-46	-6%	590	606	16	3%
Below Normal (13%)	9,086	8,323	-763	-8%	7,947	6,686	-1,262	-16%	5,474	5,571	97	2%	3,190	3,220	30	1%	1,999	1,789	-210	-11%	2,184	2,160	-24	-1%
Dry (24%)	9,813	8,883	-930	-9%	8,759	7,515	-1,245	-14%	5,244	5,304	61	1%	2,738	2,780	42	2%	2,276	2,178	-98	-4%	2,268	2,490	222	10%
Critical (15%)	11,483	10,721	-762	-7%	11,774	10,639	-1,135	-10%	7,908	8,105	198	2%	3,736	3,783	47	1%	3,257	3,070	-187	-6%	4,444	4,718	274	6%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	6,877	6,696	-181	-3%	7,913	7,737	-175	-2%	9,622	9,640	18	0%	11,583	11,584	1	0%	14,366	14,544	178	1%	15,964	16,536	573	4%
20%	3,835	4,318	482	13%	6,611	6,519	-91	-1%	8,382	8,158	-224	-3%	10,749	10,644	-105	-1%	13,066	13,275	209	2%	15,033	15,530	498	3%
30%	2,841	3,192	351	12%	5,381	5,555	174	3%	7,620	7,488	-133	-2%	10,033	10,011	-22	0%	12,452	12,837	385	3%	14,761	15,446	685	5%
40%	2,088	2,439	351	17%	3,607	3,620	13	0%	6,002	5,995	-7	0%	8,907	9,358	450	5%	11,108	11,810	702	6%	13,779	14,538	759	6%
50%	1,579	1,647	67	4%	2,649	2,679	30	1%	4,891	4,872	-19	0%	7,845	8,294	449	6%	9,731	10,704	973	10%	12,868	14,037	1,169	9%
60%	810	929	118	15%	1,515	1,539	24	2%	3,872	3,771	-101	-3%	7,204	7,588	384	5%	8,993	10,007	1,015	11%	10,188	10,810	622	6%
70%	464	480	16	4%	962	967	5	1%	2,994	2,937	-57	-2%	6,701	7,093	392	6%	8,307	9,415	1,108	13%	9,318	9,387	69	1%
80%	279	314	35	13%	516	524	9	2%	1,925	1,993	68	4%	5,477	5,739	261	5%	7,969	9,154	1,184	15%	8,299	8,733	433	5%
90%	201	210	8	4%	212	215	3	2%	584	666	82	14%	3,380	3,499	119	4%	7,660	8,534	874	11%	8,011	8,392	381	5%
Long Term																								
Full Simulation Period[b]	2,397	2,495	98	4%	3,490	3,491	1	0%	5,288	5,220	-68	-1%	8,018	8,223	205	3%	10,407	11,163	756	7%	11,947	12,547	600	5%
Water Year Types[c]																								
Wet (32%)	501	518	17	3%	855	855	0	0%	2,015	1,999	-16	-1%	4,609	4,859	250	5%	7,852	8,653	800	10%	8,018	8,459	442	6%
Above Normal (16%)	846	834	-12	-1%	1,631	1,612	-19	-1%	3,756	3,705	-51	-1%	6,867	7,413	546	8%	8,359	9,816	1,456	17%	10,184	10,881	697	7%
Below Normal (13%)	3,279	3,348	69	2%	4,268	4,278	10	0%	6,227	6,097	-130	-2%	8,541	8,861	320	4%	10,047	11,208	1,161	12%	13,286	14,285	999	8%
Dry (24%)	2,935	3,246	311	11%	4,768	4,773	5	0%	6,810	6,653	-156	-2%	10,045	10,002	-43	0%	12,547	12,890	343	3%	14,827	15,477	650	4%
Critical (15%)	6,479	6,544	65	1%	8,371	8,384	13	0%	10,643	10,647	4	0%	12,792	12,838	46	0%	14,925	15,142	217	1%	16,340	16,728	388	2%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-1. Monthly EC Ranges For Montezuma Slough at Beldon's Landing, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.

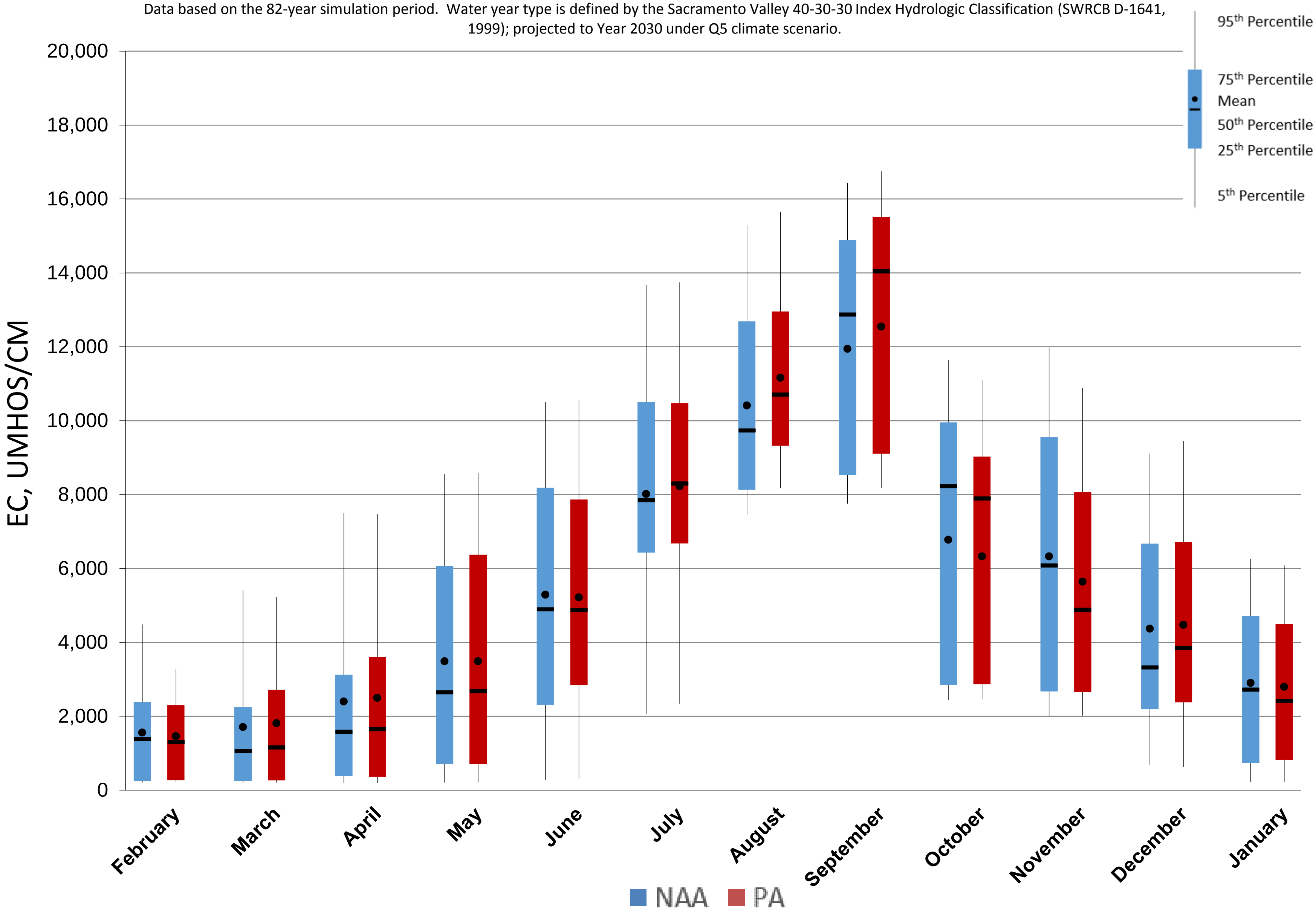


Figure 5.B.5-27-2. Monthly EC Ranges For Montezuma Slough at Beldon's Landing, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

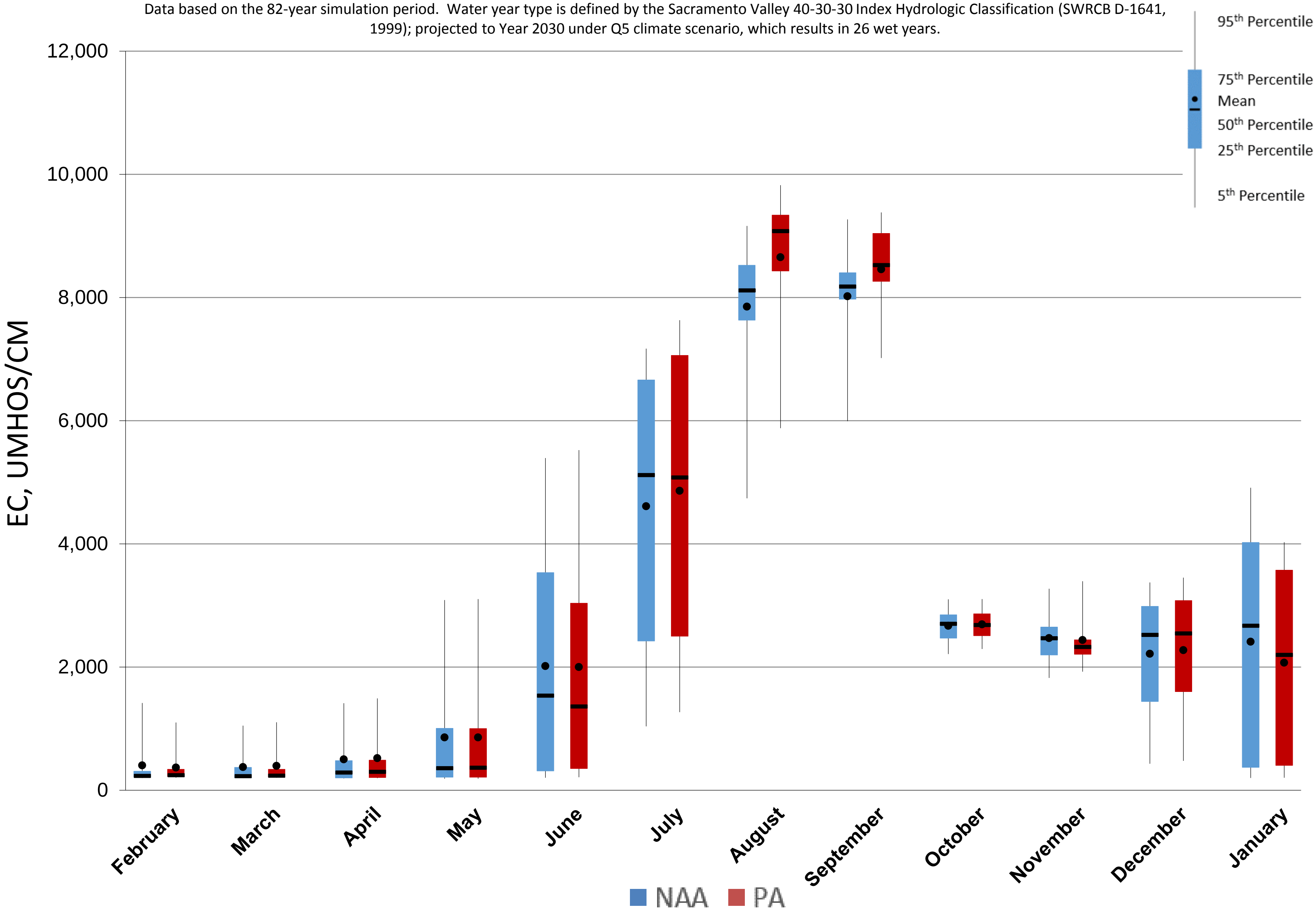
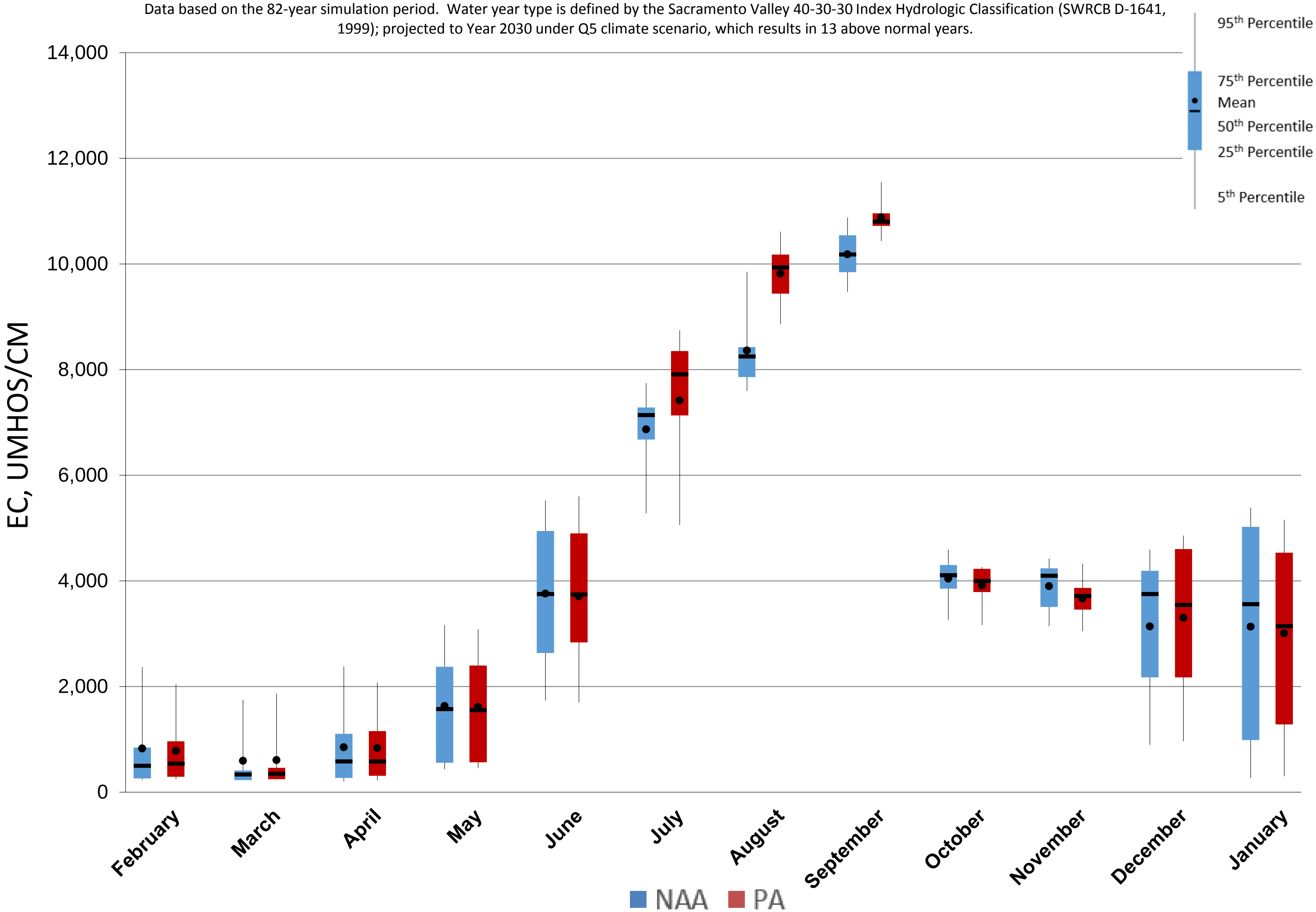


Figure 5.B.5-27-3. Monthly EC Ranges For Montezuma Slough at Beldon's Landing, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.



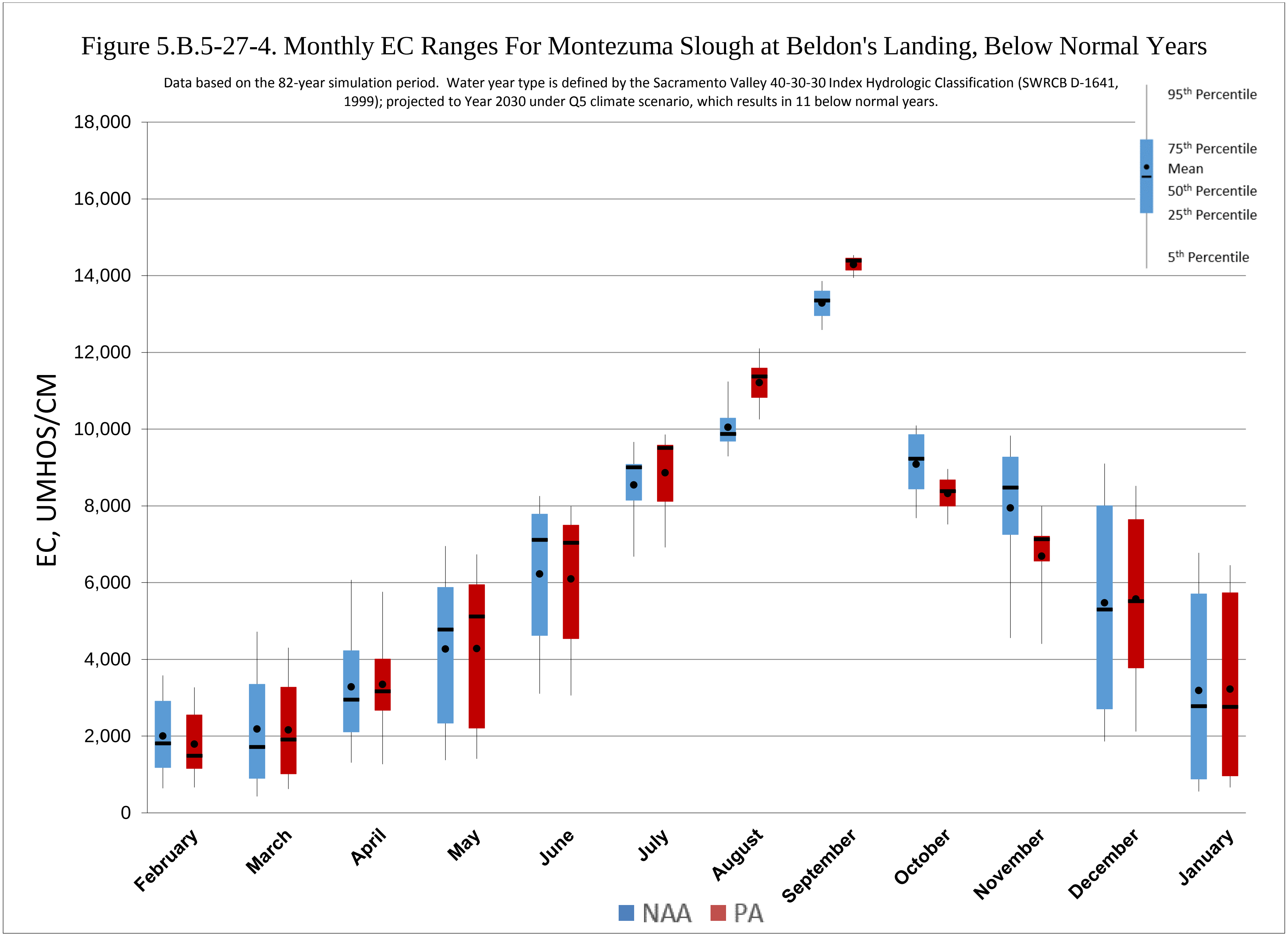


Figure 5.B.5-27-4. Monthly EC Ranges For Montezuma Slough at Beldon's Landing, Below Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.
EC, UMHOS/CM
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

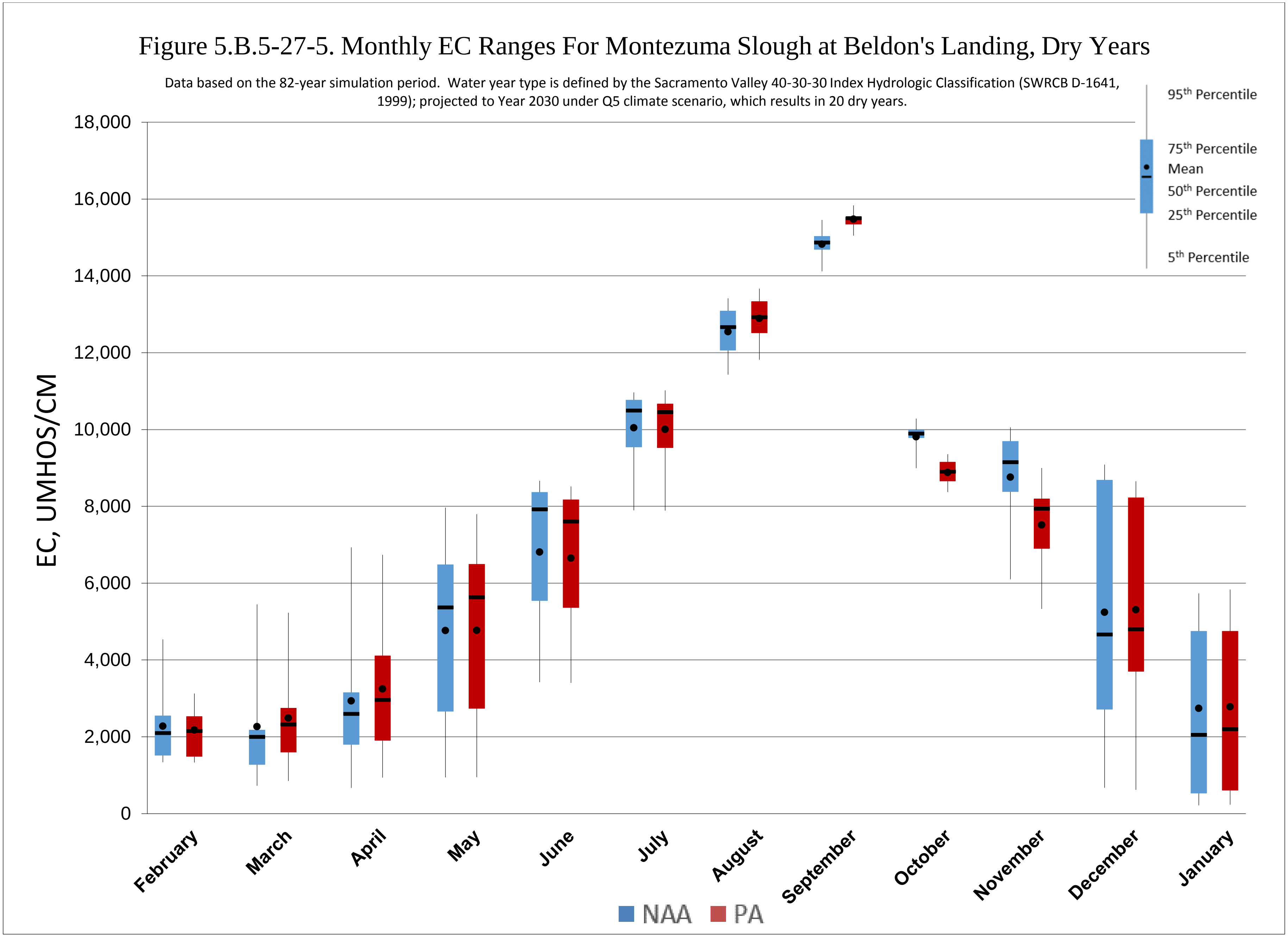


Figure 5.B.5-27-5. Monthly EC Ranges For Montezuma Slough at Beldon's Landing, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

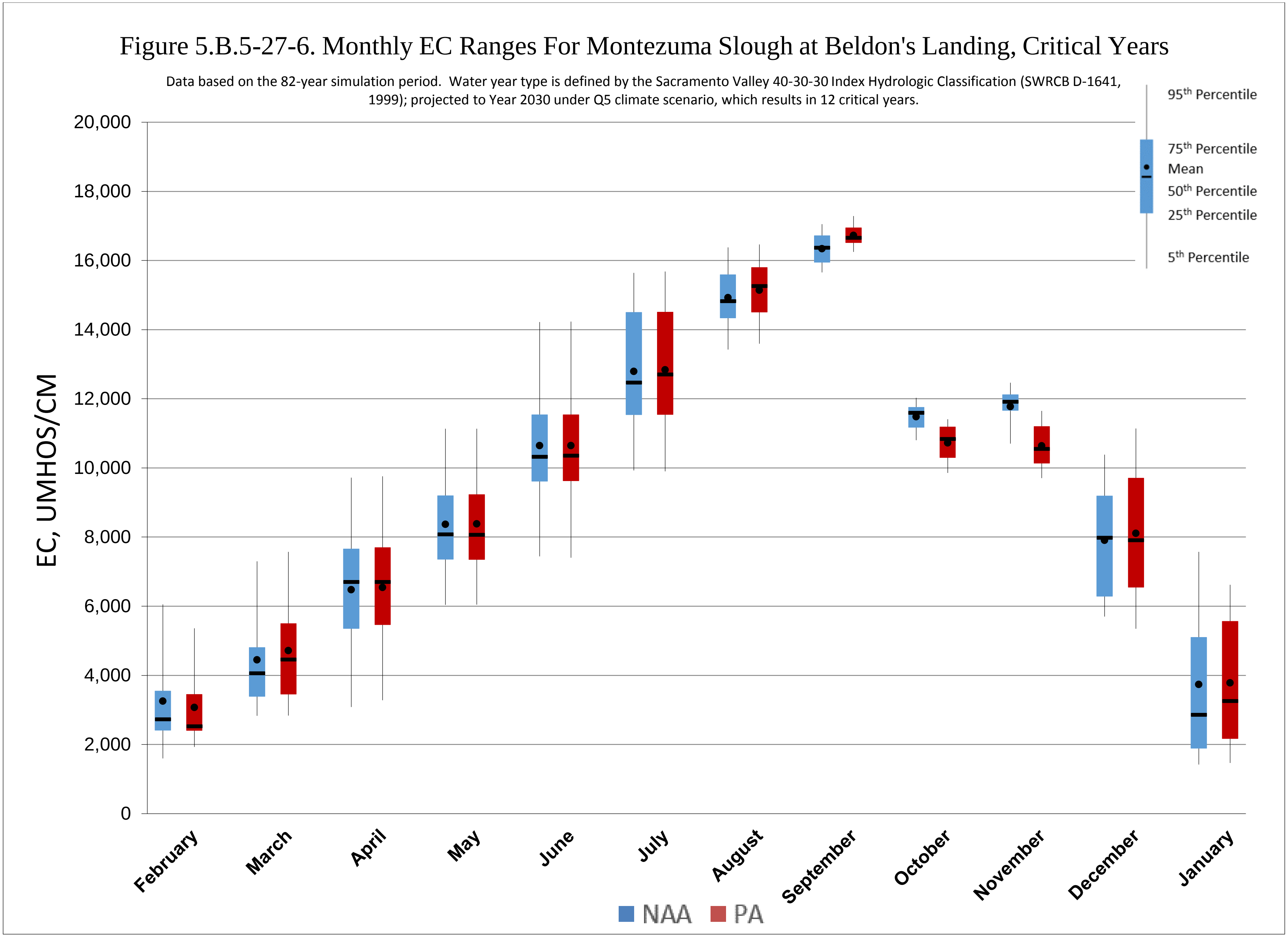
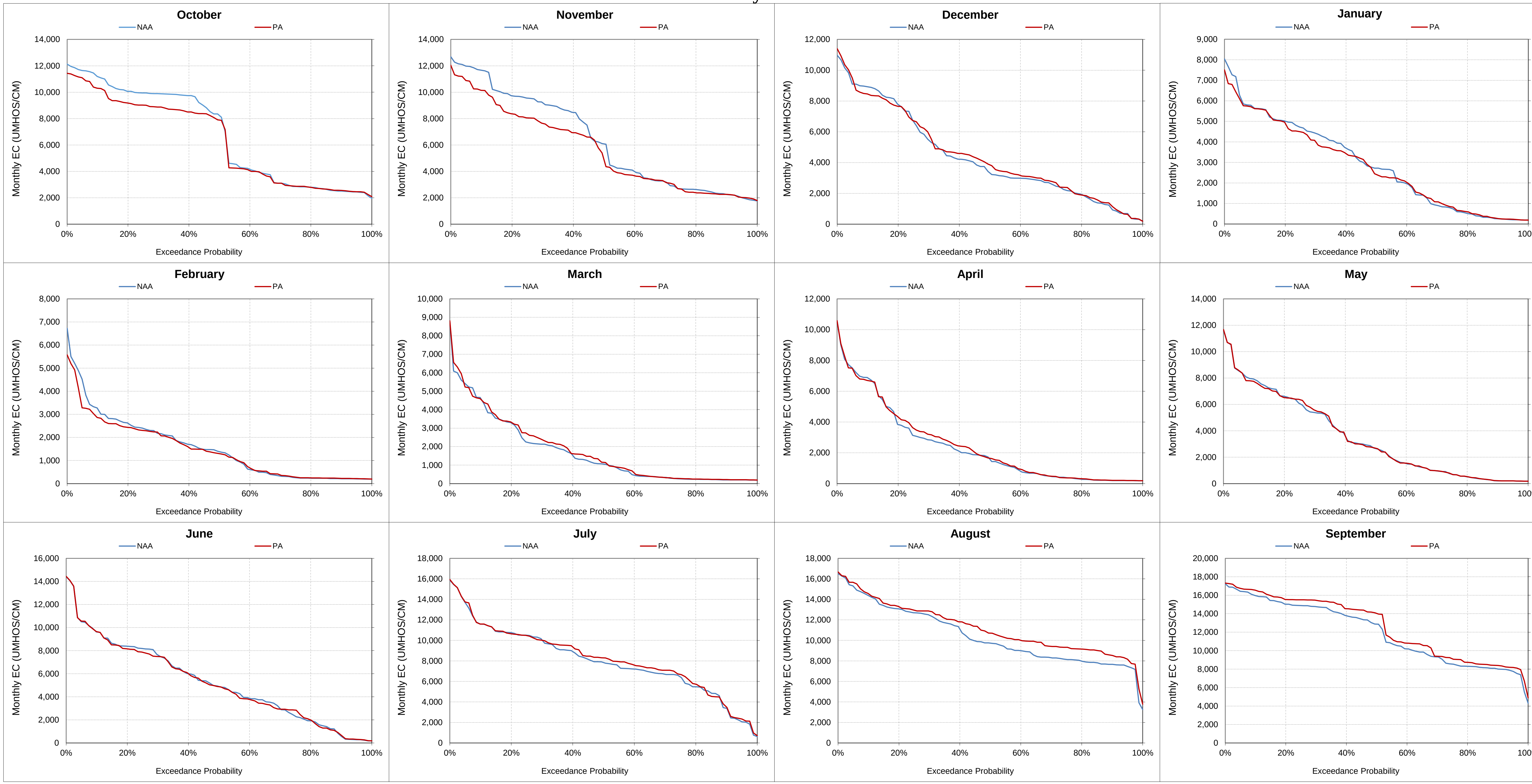


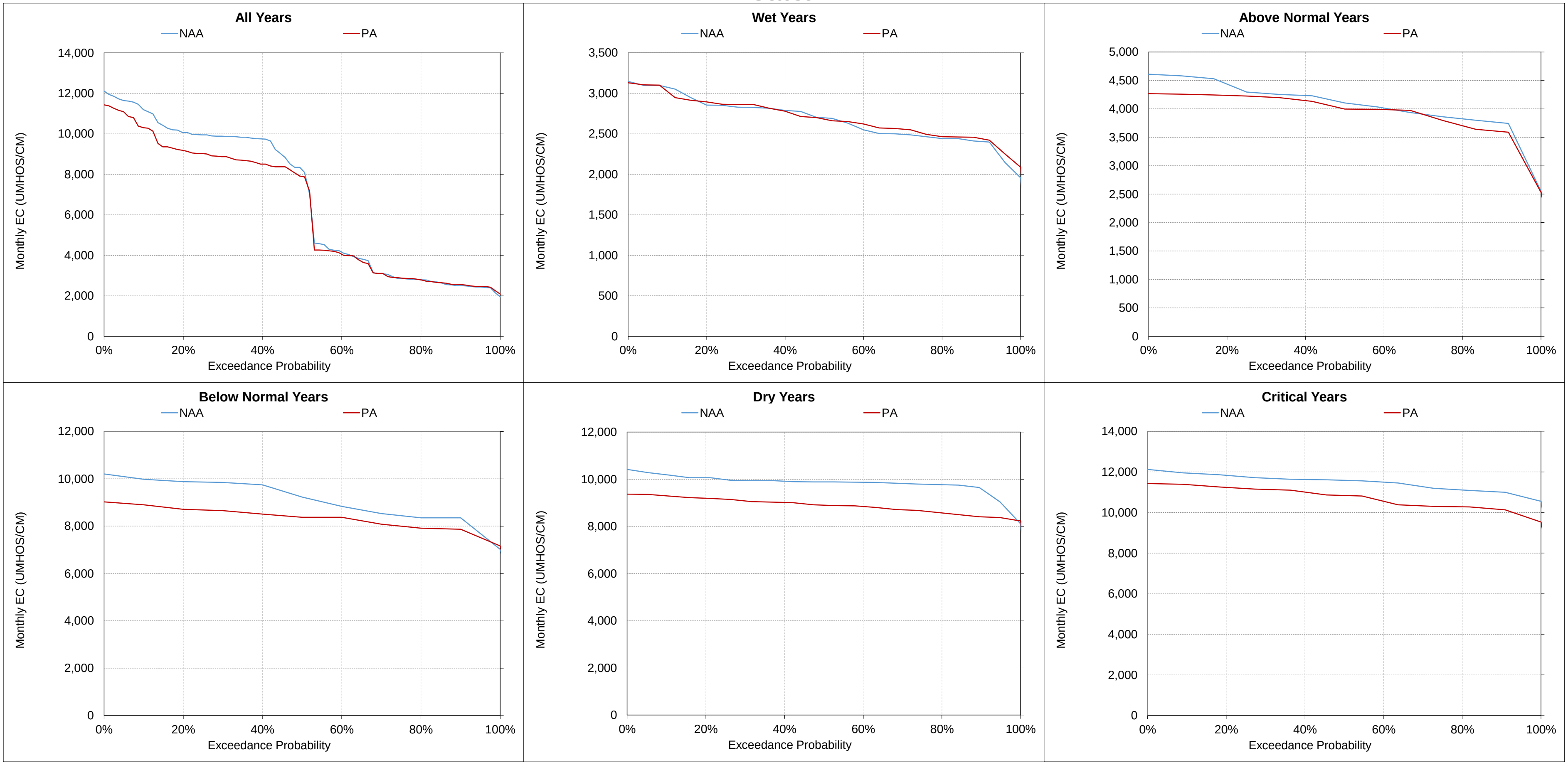
Figure 5.B.5-27-6. Monthly EC Ranges For Montezuma Slough at Beldon's Landing, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
EC, UMHOS/CM
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-27-7. Montezuma Slough at Beldon's Landing, Monthly EC Probability of Exceedance



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-8. Montezuma Slough at Beldon's Landing, Monthly EC October



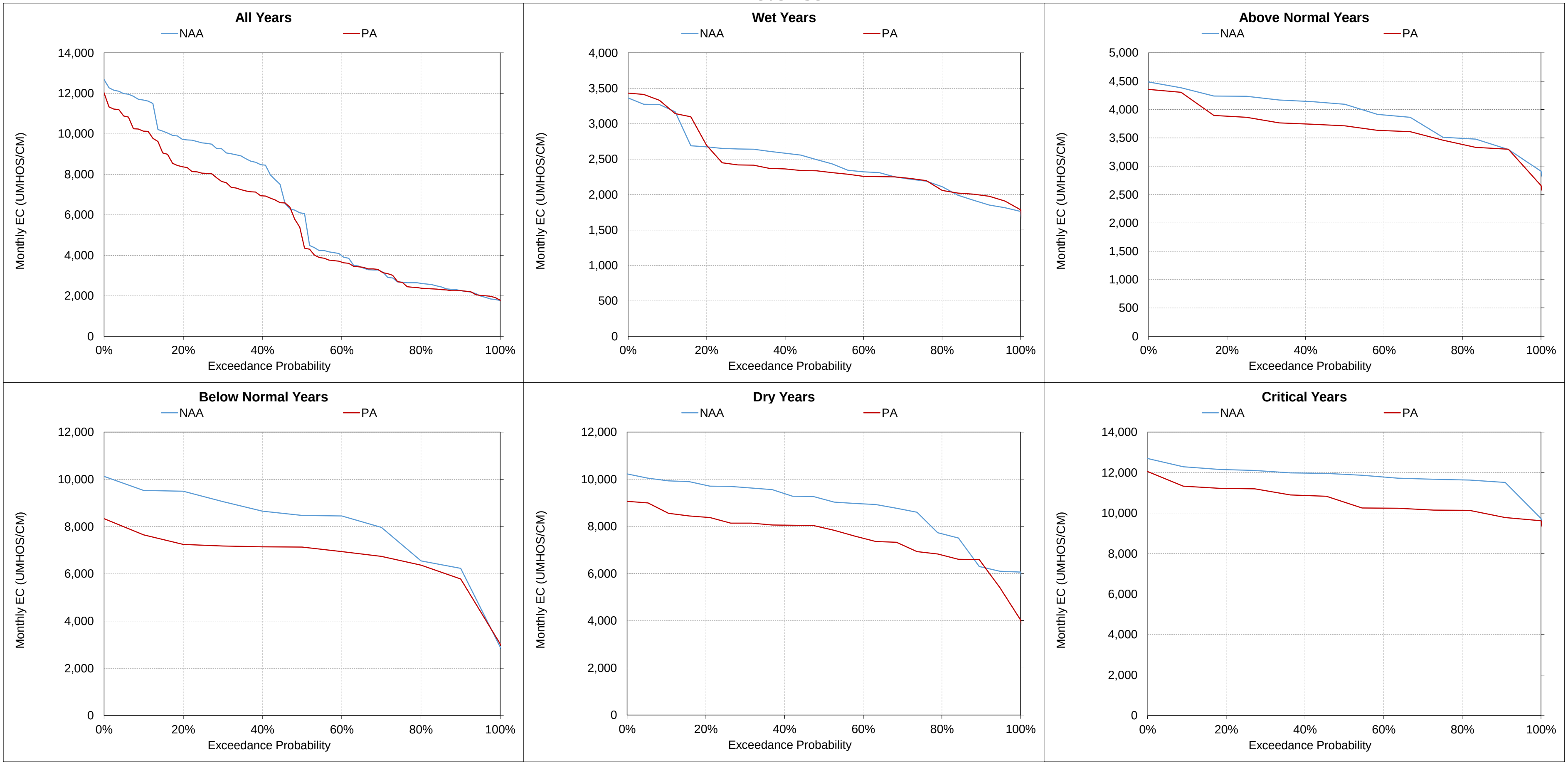
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

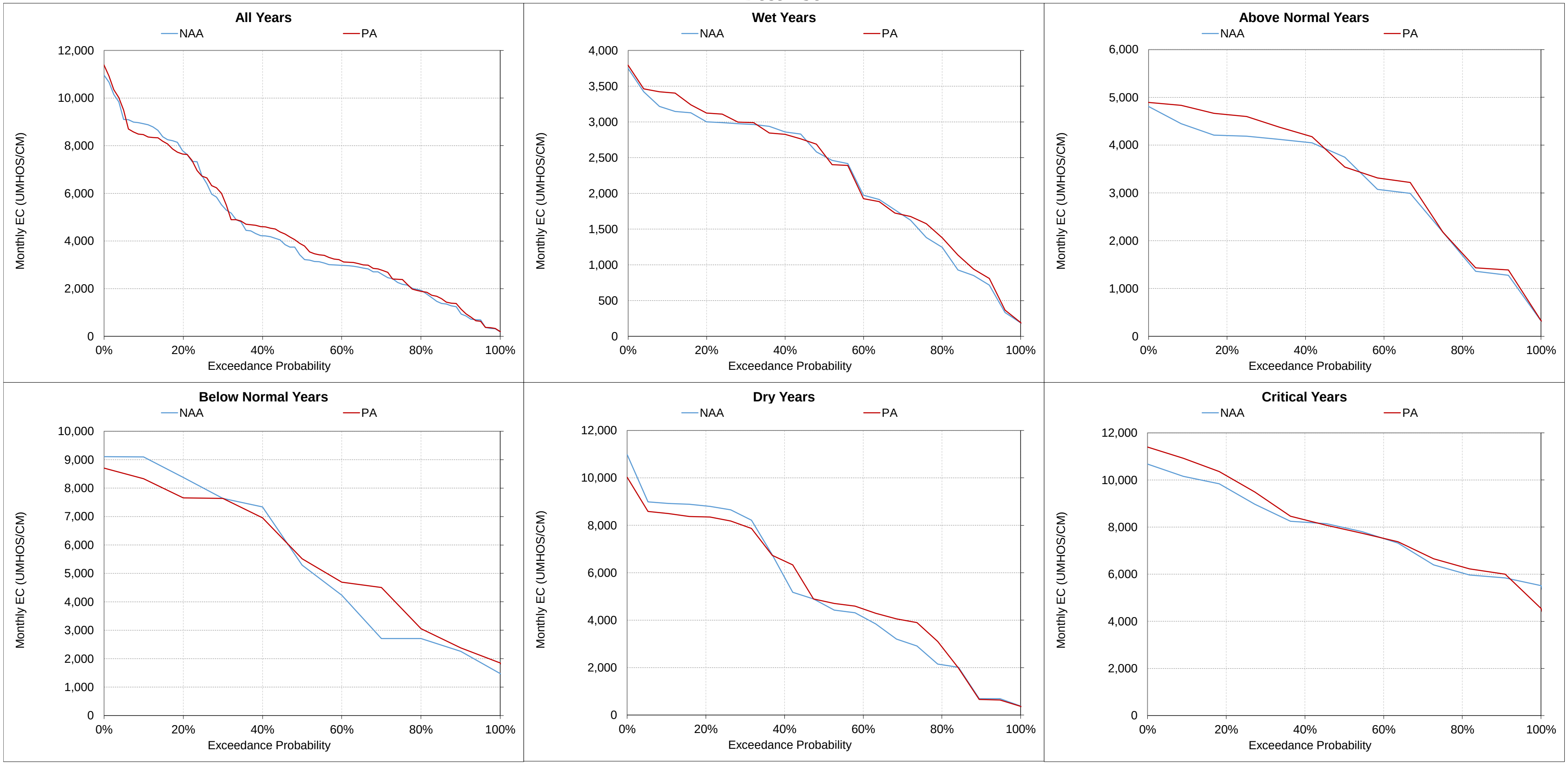
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-9. Montezuma Slough at Beldon's Landing, Monthly EC November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-10. Montezuma Slough at Beldon's Landing, Monthly EC December



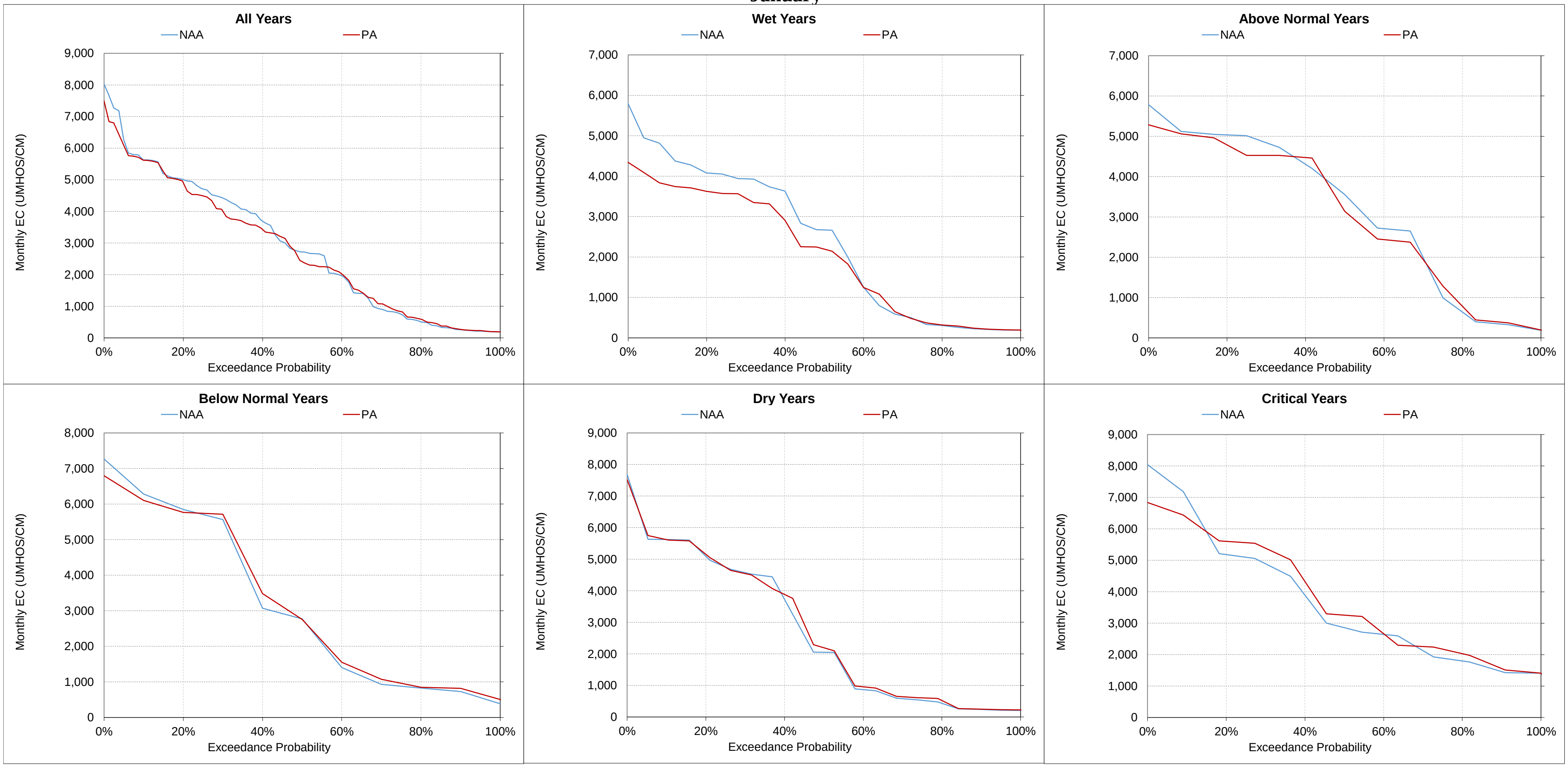
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

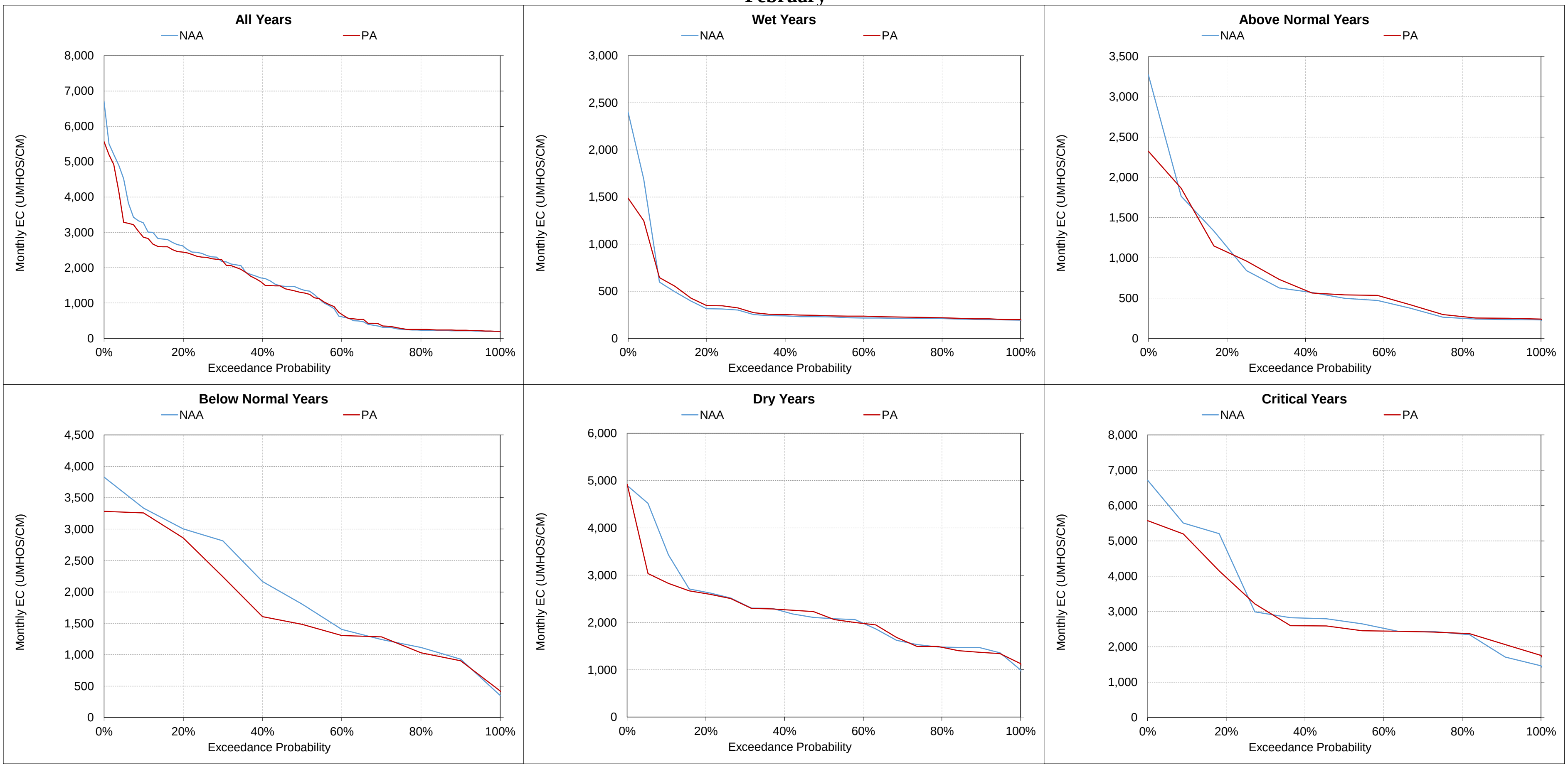
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-11. Montezuma Slough at Beldon's Landing, Monthly EC January



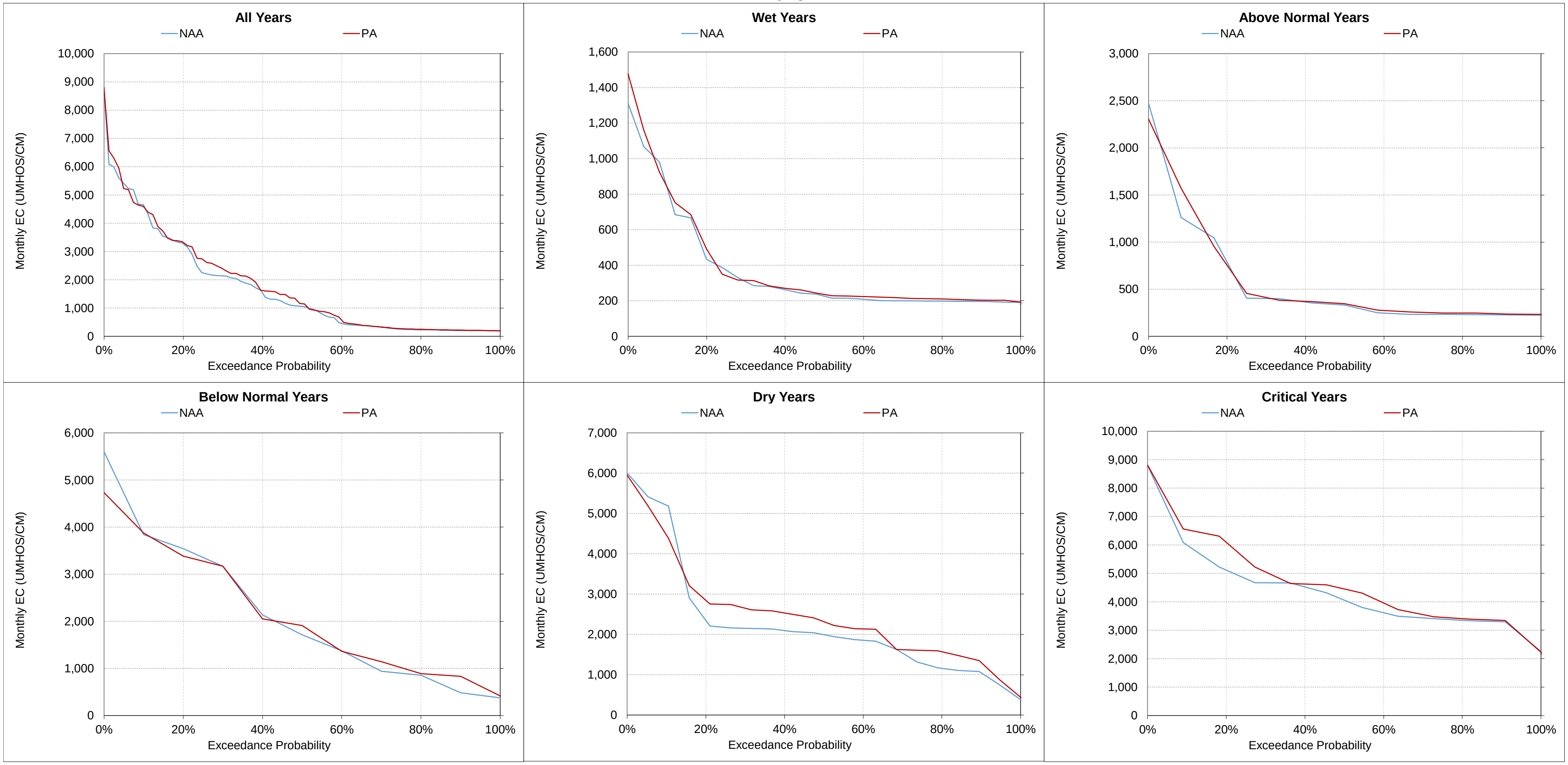
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-12. Montezuma Slough at Beldon's Landing, Monthly EC February



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-13. Montezuma Slough at Beldon's Landing, Monthly EC March



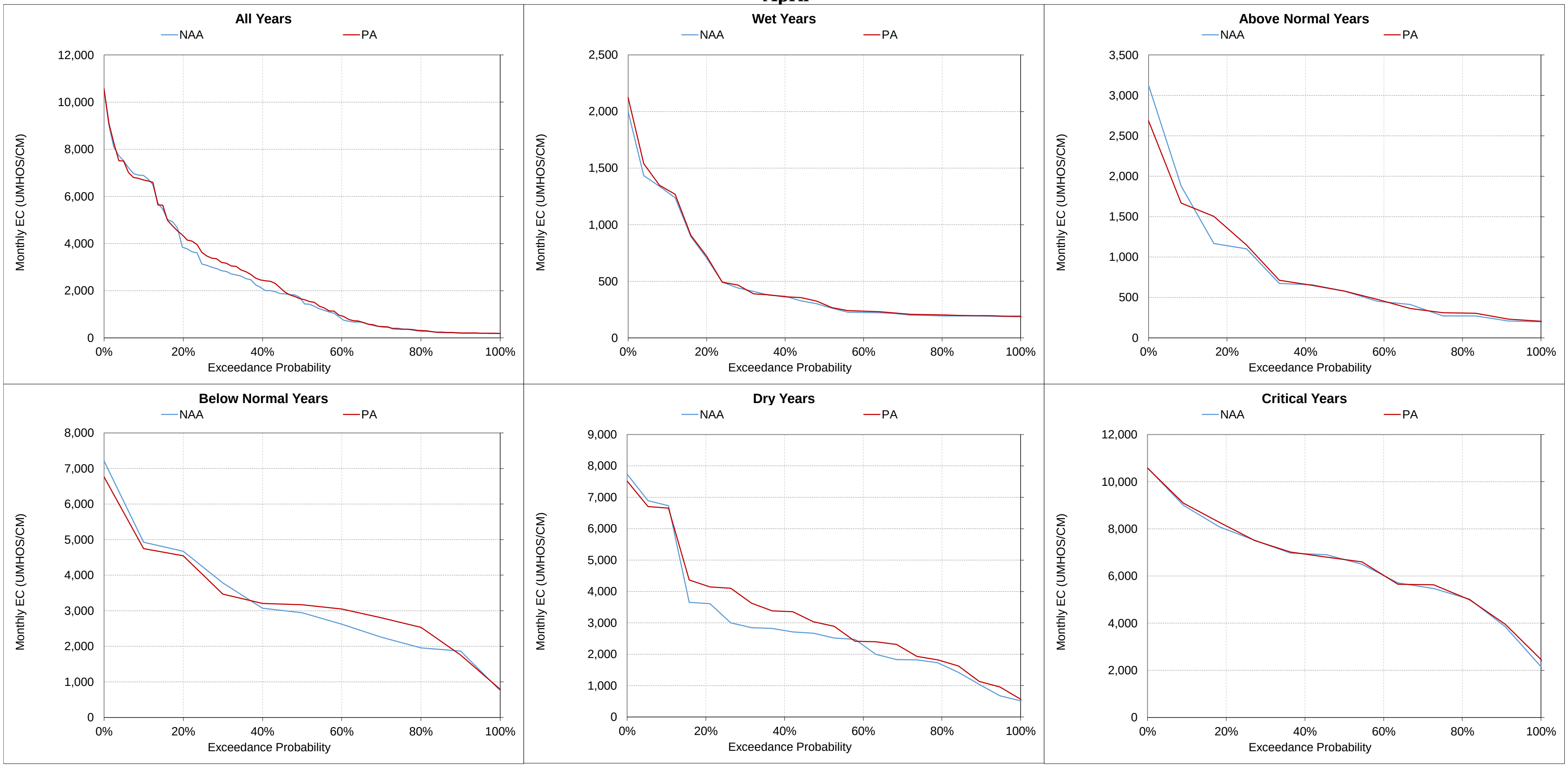
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

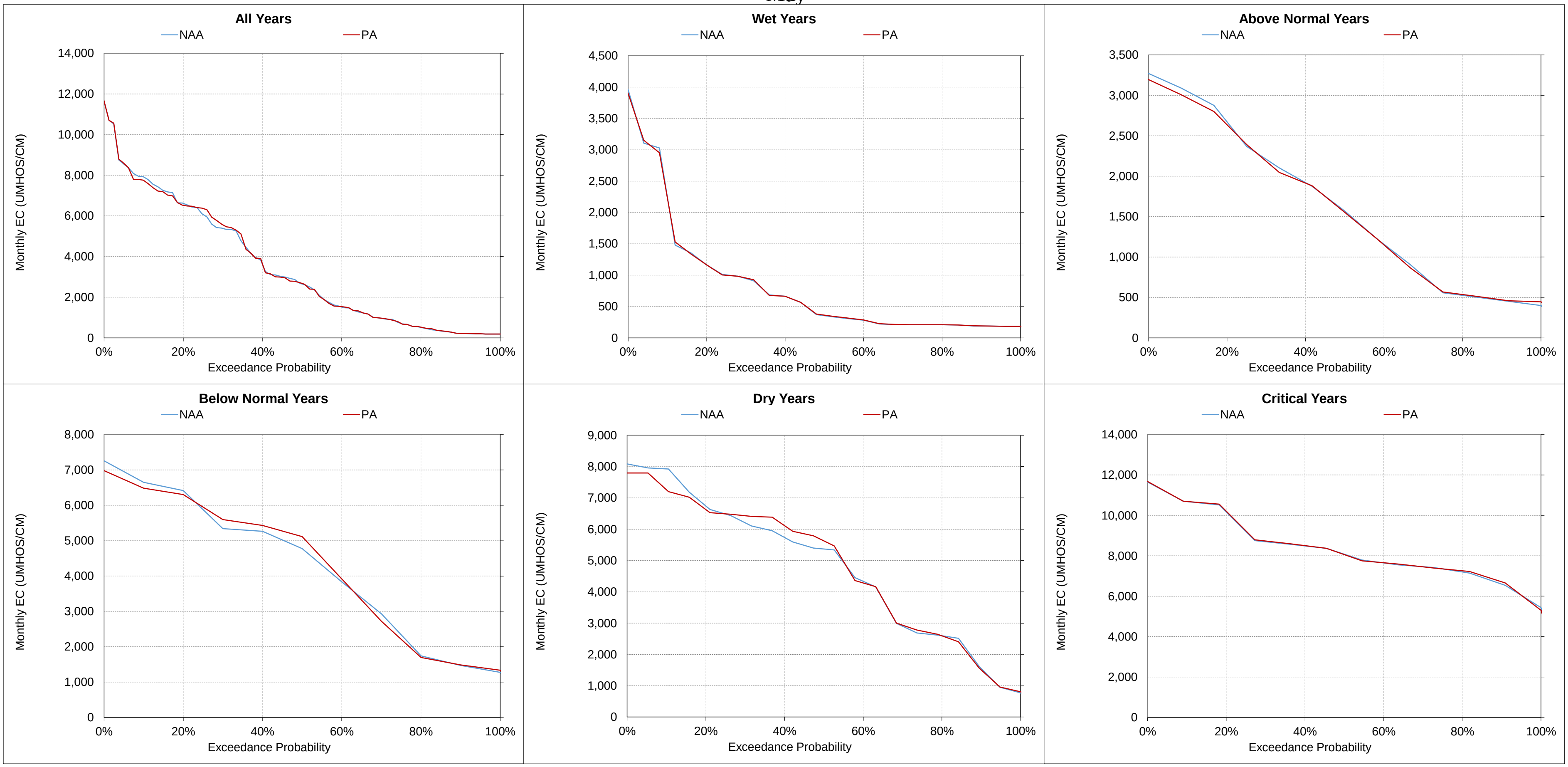
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-14. Montezuma Slough at Beldon's Landing, Monthly EC
April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-15. Montezuma Slough at Beldon's Landing, Monthly EC May



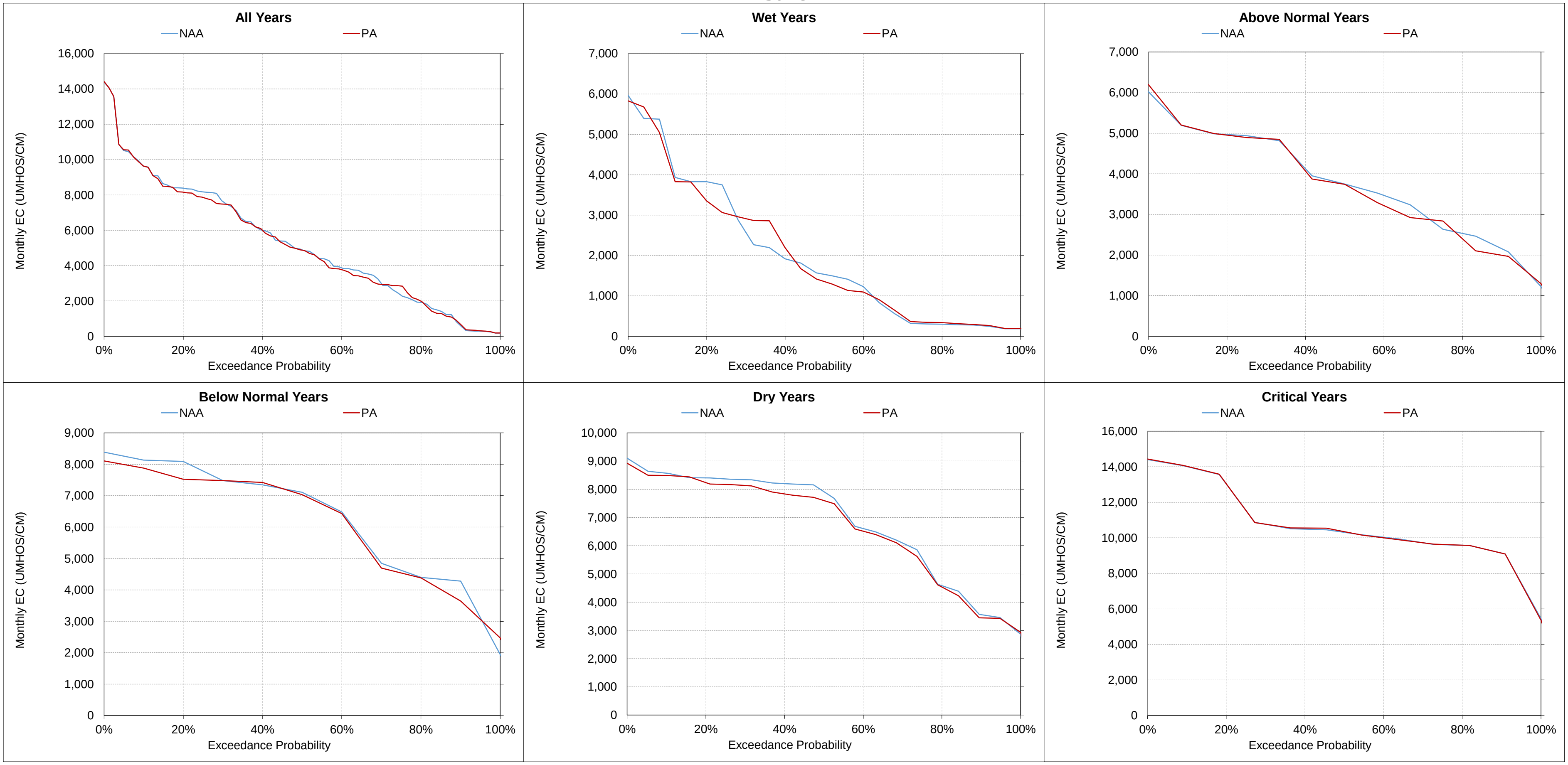
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

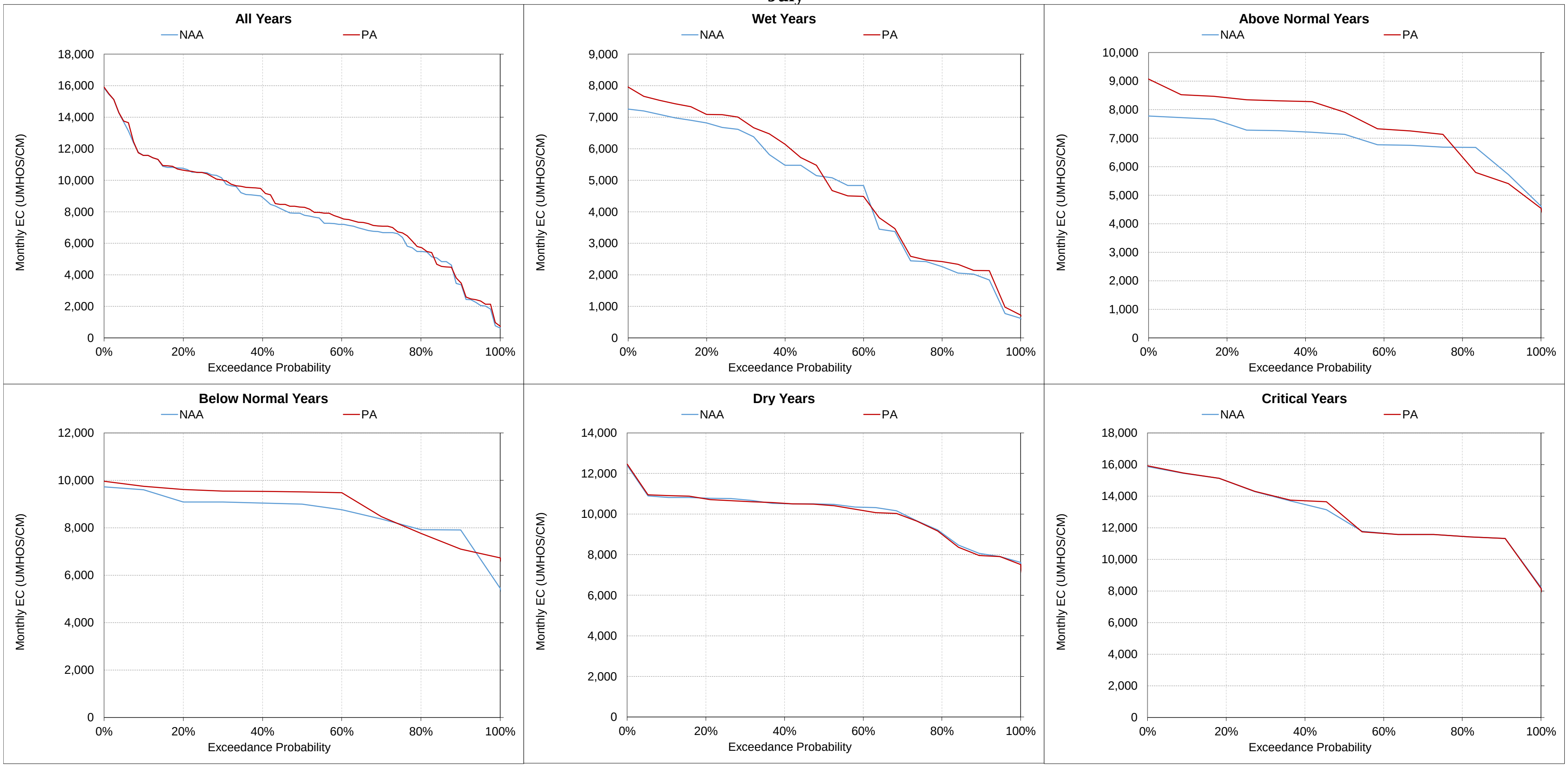
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-16. Montezuma Slough at Beldon's Landing, Monthly EC
June



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-17. Montezuma Slough at Beldon's Landing, Monthly EC July



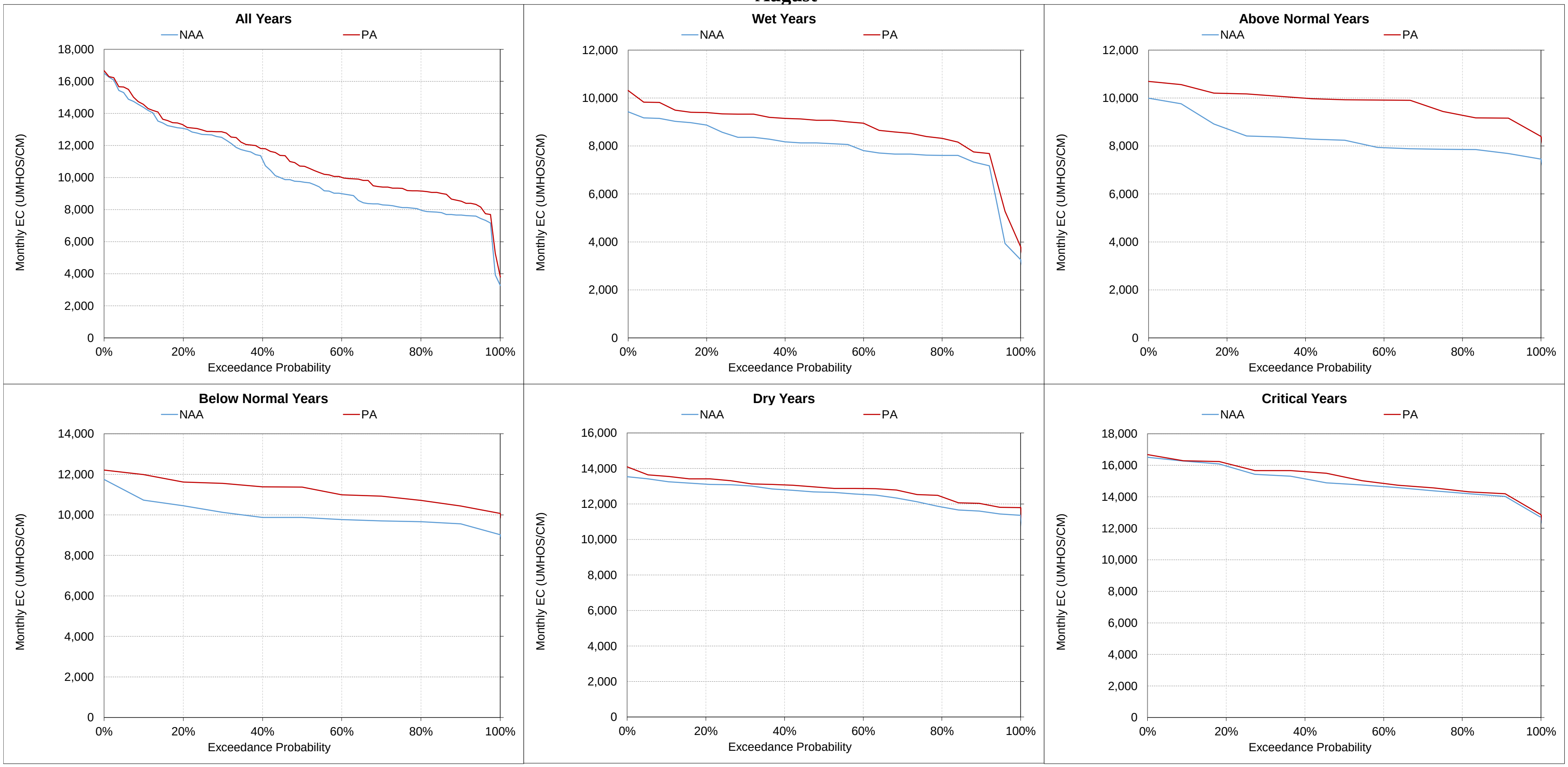
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

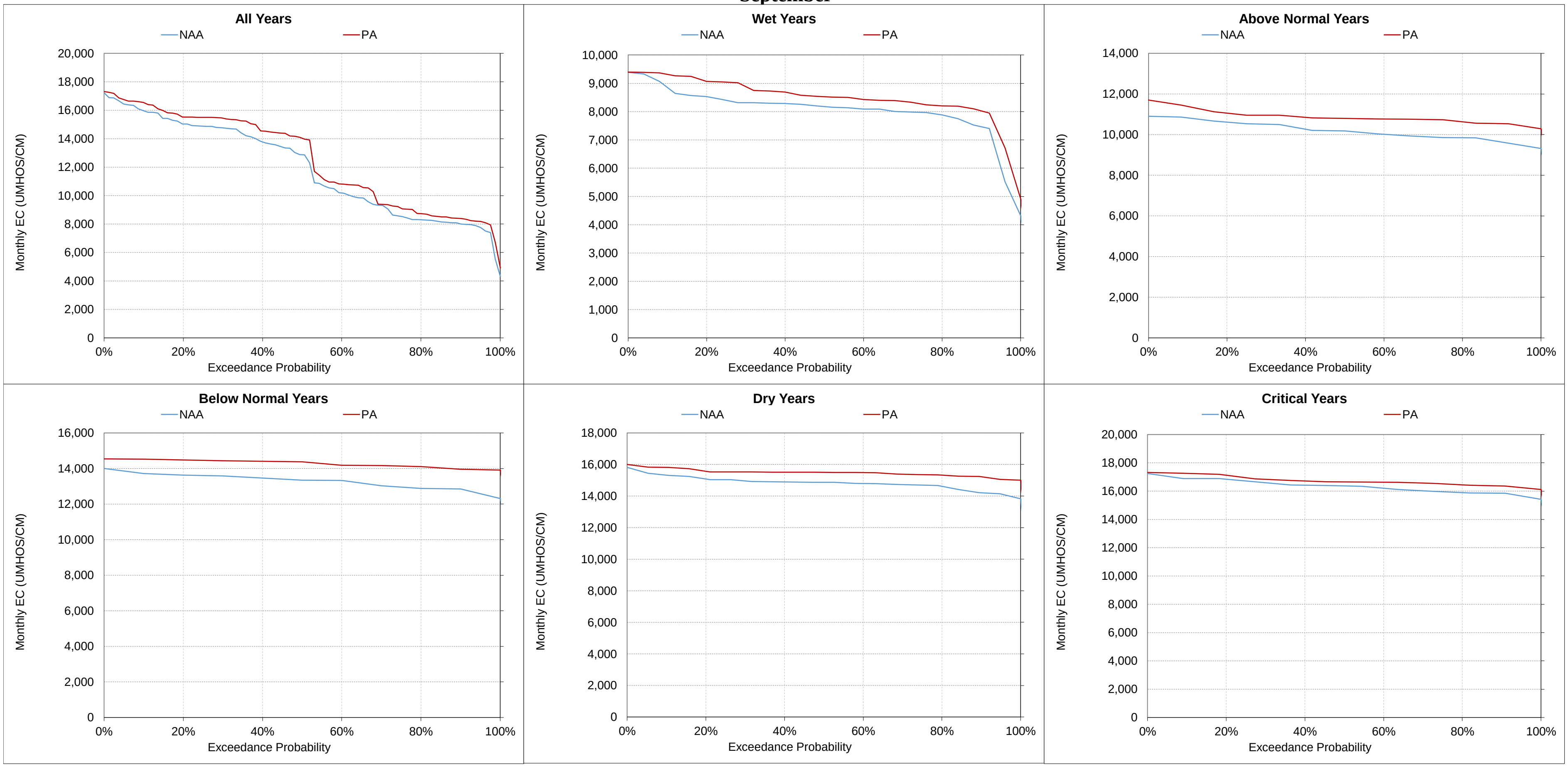
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-18. Montezuma Slough at Beldon's Landing, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-27-19. Montezuma Slough at Beldon's Landing, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-28. Montezuma Slough at National Steel, Monthly EC

Statistic	Monthly EC (UMHOS/CM) October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	10,892	9,731	-1,161	-11%	11,568	10,195	-1,373	-12%	8,855	8,406	-449	-5%	5,213	5,042	-171	-3%	2,514	2,219	-296	-12%	2,400	2,184	-216	-9%
20%	9,684	8,487	-1,197	-12%	9,591	8,372	-1,219	-13%	7,287	7,379	93	1%	4,759	4,139	-619	-13%	1,758	1,670	-88	-5%	1,446	1,512	66	5%
30%	9,469	8,184	-1,285	-14%	9,149	7,789	-1,360	-15%	4,745	5,092	347	7%	3,826	3,136	-690	-18%	1,085	987	-98	-9%	817	970	152	19%
40%	9,315	7,804	-1,512	-16%	7,662	6,889	-773	-10%	4,061	4,074	13	0%	2,520	2,175	-344	-14%	834	831	-3	0%	673	677	5	1%
50%	7,937	7,207	-730	-9%	4,533	4,073	-461	-10%	3,294	3,459	165	5%	1,749	1,459	-290	-17%	503	533	29	6%	379	489	111	29%
60%	3,525	3,321	-204	-6%	3,578	3,316	-261	-7%	2,935	3,015	80	3%	909	1,012	103	11%	250	299	49	19%	241	281	40	16%
70%	1,868	1,833	-35	-2%	2,296	2,313	17	1%	1,615	1,870	255	16%	334	401	67	20%	212	223	12	5%	206	222	16	8%
80%	1,637	1,625	-13	-1%	1,746	1,687	-58	-3%	1,149	1,229	80	7%	221	239	18	8%	196	209	12	6%	195	211	16	8%
90%	1,427	1,489	63	4%	1,503	1,503	0	0%	334	362	27	8%	195	207	12	6%	190	202	12	6%	191	201	11	6%
Long Term Full Simulation Period[b]	6,108	5,478	-630	-10%	5,802	5,254	-549	-9%	3,976	4,064	88	2%	2,360	2,160	-200	-8%	1,031	958	-73	-7%	864	926	62	7%
Water Year Types[c]																								
Wet (32%)	1,583	1,571	-12	-1%	1,642	1,651	9	1%	1,974	2,016	42	2%	1,912	1,367	-544	-28%	255	240	-15	-6%	235	255	20	8%
Above Normal (16%)	3,341	3,090	-252	-8%	3,437	3,319	-119	-3%	2,939	3,064	125	4%	2,536	2,344	-193	-8%	463	412	-51	-11%	288	306	18	6%
Below Normal (13%)	8,579	7,481	-1,099	-13%	7,655	6,626	-1,029	-13%	4,927	5,007	80	2%	2,547	2,555	8	0%	1,313	1,113	-200	-15%	1,014	995	-19	-2%
Dry (24%)	9,396	8,175	-1,222	-13%	8,239	7,225	-1,014	-12%	4,667	4,680	13	0%	2,283	2,324	41	2%	1,397	1,287	-110	-8%	1,076	1,186	110	10%
Critical (15%)	11,161	10,199	-962	-9%	11,620	10,614	-1,007	-9%	7,416	7,696	280	4%	3,100	3,043	-57	-2%	2,463	2,417	-45	-2%	2,357	2,553	196	8%

Statistic	Monthly EC (UMHOS/CM) April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	3,952	3,874	-78	-2%	4,826	4,643	-183	-4%	6,506	6,519	13	0%	8,794	8,814	20	0%	11,319	11,617	298	3%	12,812	13,245	433	3%
20%	2,005	2,160	155	8%	4,101	3,964	-137	-3%	5,492	5,333	-159	-3%	7,772	7,752	-19	0%	9,849	10,165	316	3%	11,748	12,485	737	6%
30%	1,260	1,446	186	15%	3,127	3,260	133	4%	4,844	4,820	-24	-1%	7,018	7,028	9	0%	9,067	9,575	508	6%	11,468	12,303	834	7%
40%	969	1,108	139	14%	1,778	1,818	40	2%	3,820	3,835	16	0%	5,696	6,464	768	13%	7,848	8,923	1,074	14%	10,518	11,513	995	9%
50%	689	711	22	3%	1,263	1,265	2	0%	2,984	2,938	-46	-2%	5,046	5,564	517	10%	6,704	7,672	968	14%	9,538	11,085	1,547	16%
60%	359	391	32	9%	674	675	2	0%	2,397	2,253	-144	-6%	4,102	4,831	729	18%	6,222	7,141	918	15%	6,132	6,607	475	8%
70%	253	279	26	10%	446	436	-10	-2%	1,676	1,728	52	3%	3,878	4,577	698	18%	5,818	6,837	1,020	18%	4,850	5,014	164	3%
80%	204	222	18	9%	270	280	10	4%	998	1,058	60	6%	3,212	3,570	359	11%	5,403	6,496	1,093	20%	4,205	4,333	129	3%
90%	190	198	9	5%	191	192	1	1%	304	347	43	14%	1,953	2,088	135	7%	5,141	6,126	985	19%	3,803	3,987	184	5%
Long Term Full Simulation Period[b]	1,284	1,335	50	4%	2,069	2,061	-8	0%	3,462	3,407	-55	-2%	5,386	5,737	350	7%	7,522	8,289	767	10%	8,291	8,891	600	7%
Water Year Types[c]																								
Wet (32%)	286	300	14	5%	448	450	2	0%	1,205	1,184	-21	-2%	2,669	3,005	336	13%	5,430	6,195	765	14%	3,940	4,229	289	7%
Above Normal (16%)	408	414	6	2%	773	770	-3	0%	2,275	2,251	-25	-1%	4,043	4,821	778	19%	5,651	6,945	1,294	23%	6,121	6,621	500	8%
Below Normal (13%)	1,595	1,627	32	2%	2,360	2,351	-9	0%	3,973	3,846	-127	-3%	5,375	6,009	635	12%	6,967	8,122	1,156	17%	10,022	11,242	1,220	12%
Dry (24%)	1,473	1,621	149	10%	2,775	2,740	-36	-1%	4,361	4,242	-119	-3%	7,178	7,268	90	1%	9,272	9,755	483	5%	11,560	12,378	817	7%
Critical (15%)	3,800	3,828	27	1%	5,540	5,552	12	0%	7,675	7,685	9	0%	9,754	9,845	91	1%	11,673	11,992	319	3%	13,036	13,488	452	3%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-1. Monthly EC Ranges For Montezuma Slough at National Steel, All Years

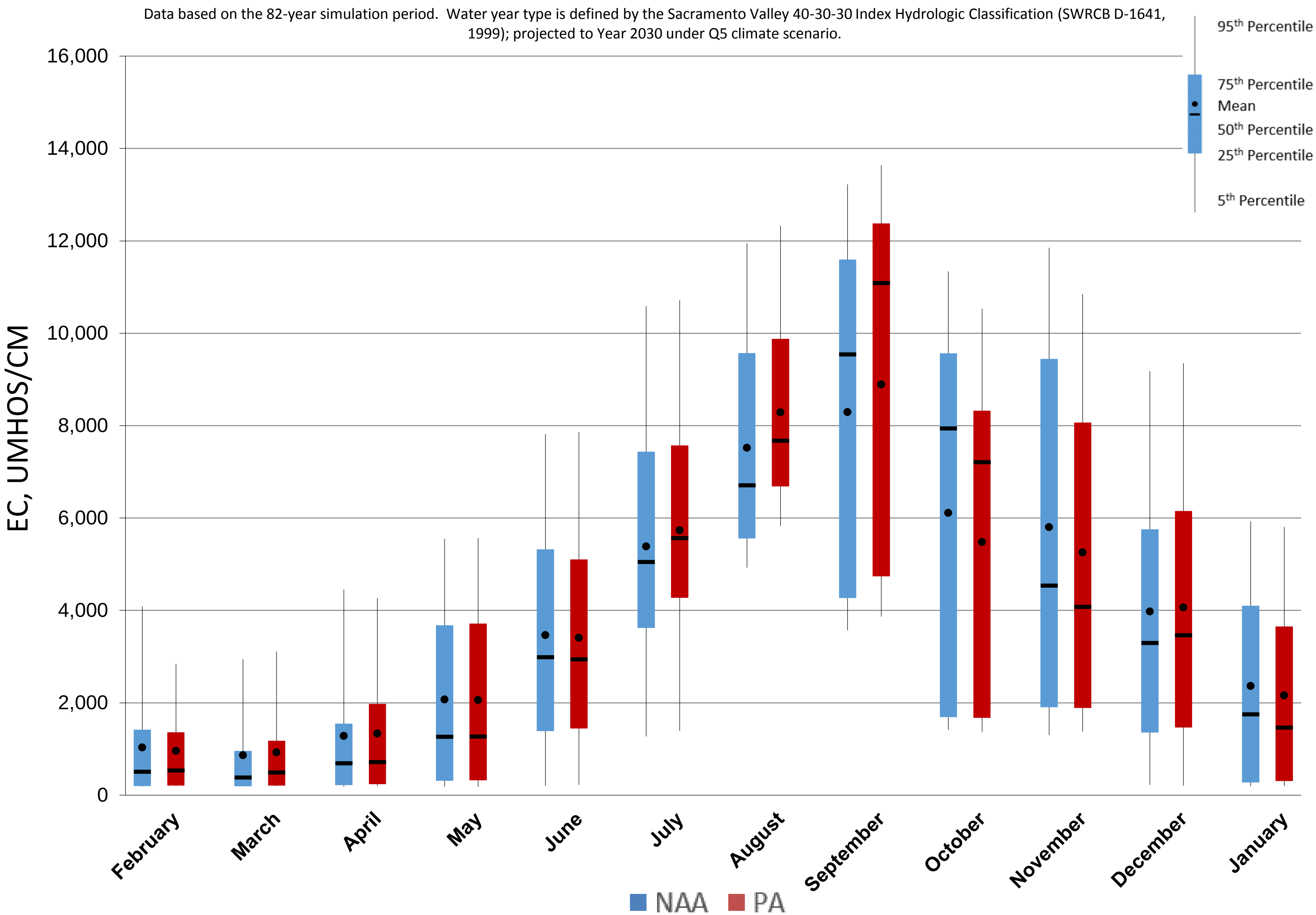


Figure 5.B.5-28-2. Monthly EC Ranges For Montezuma Slough at National Steel, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

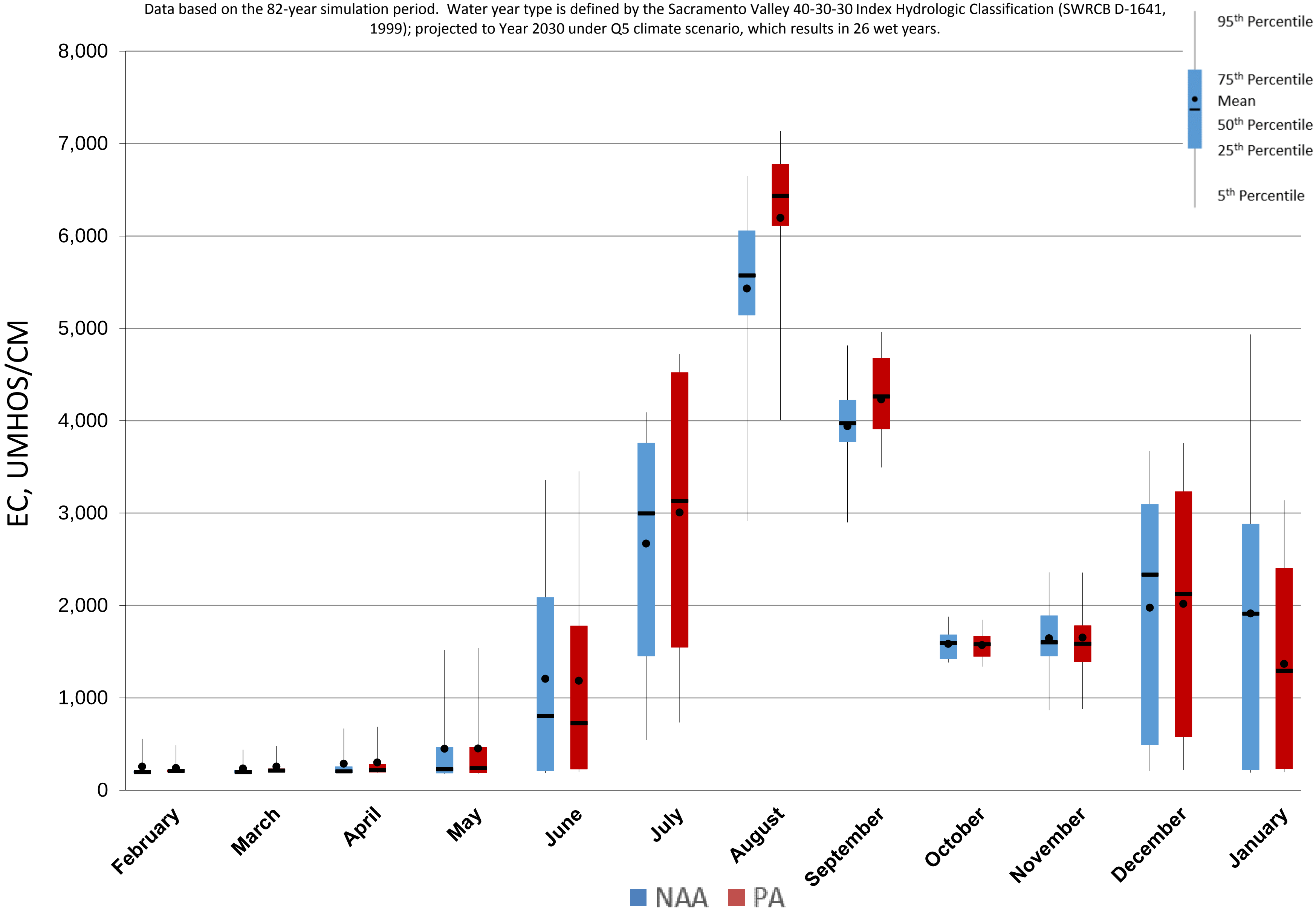


Figure 5.B.5-28-3. Monthly EC Ranges For Montezuma Slough at National Steel, Above Normal Years

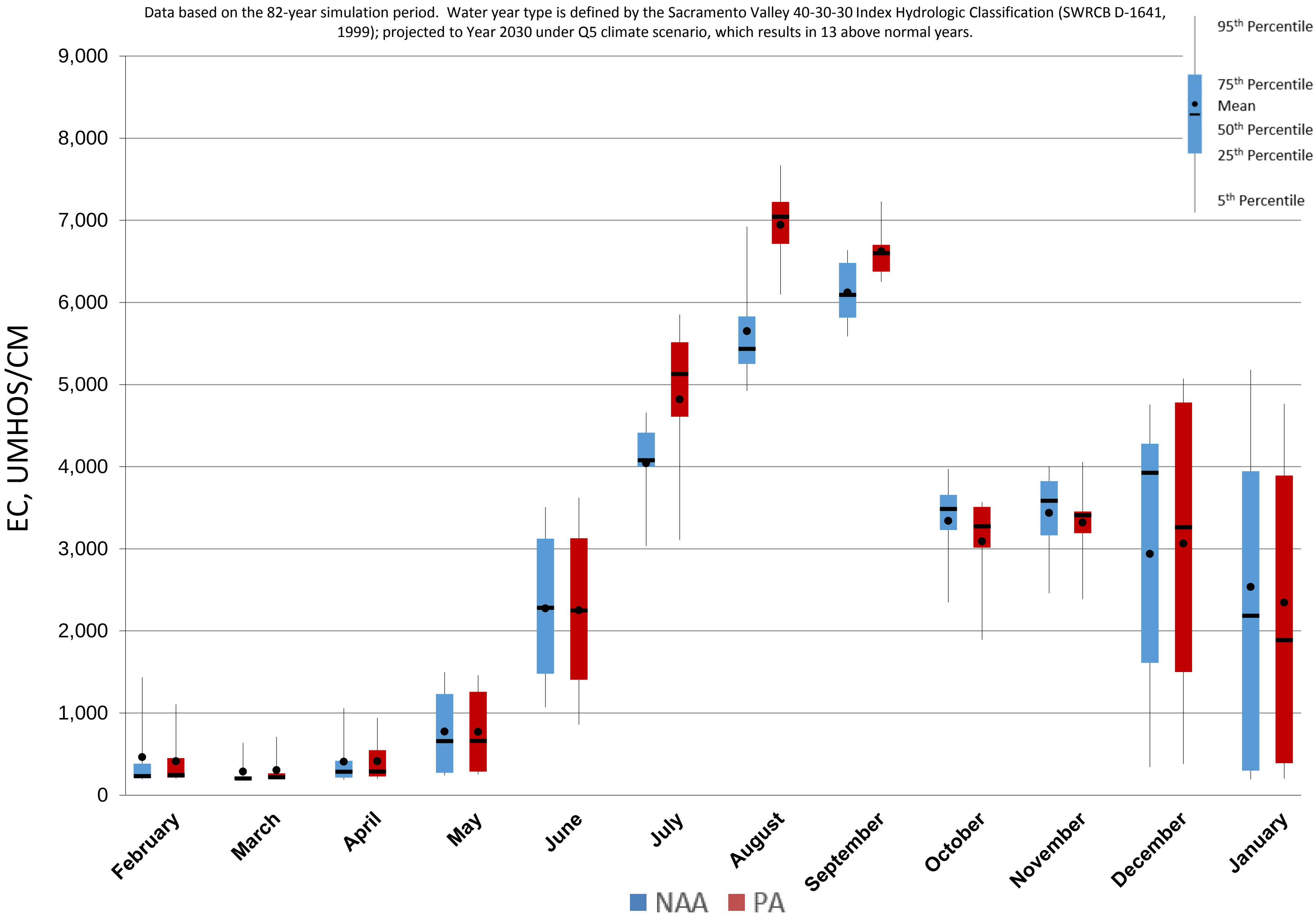


Figure 5.B.5-28-4. Monthly EC Ranges For Montezuma Slough at National Steel, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

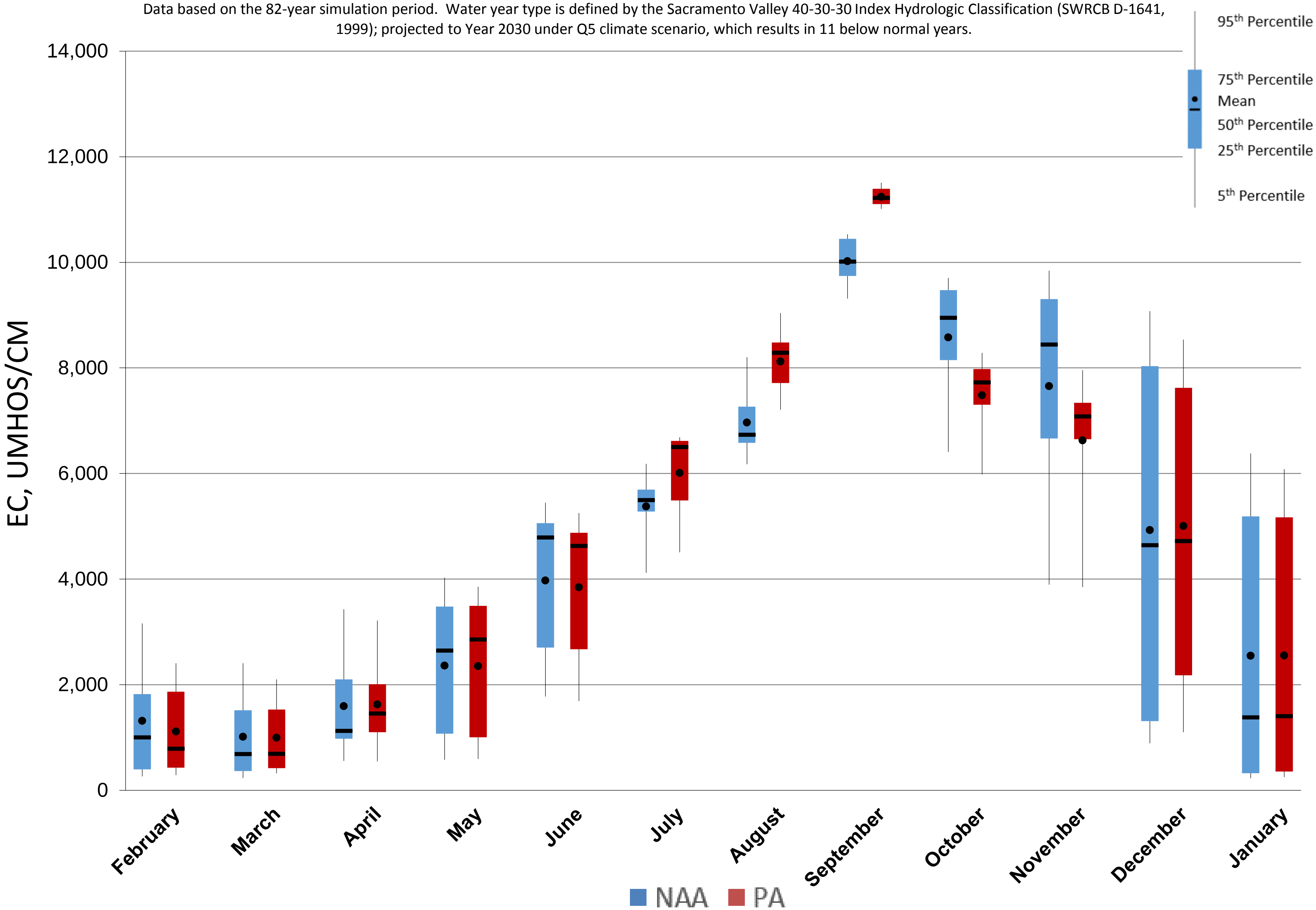
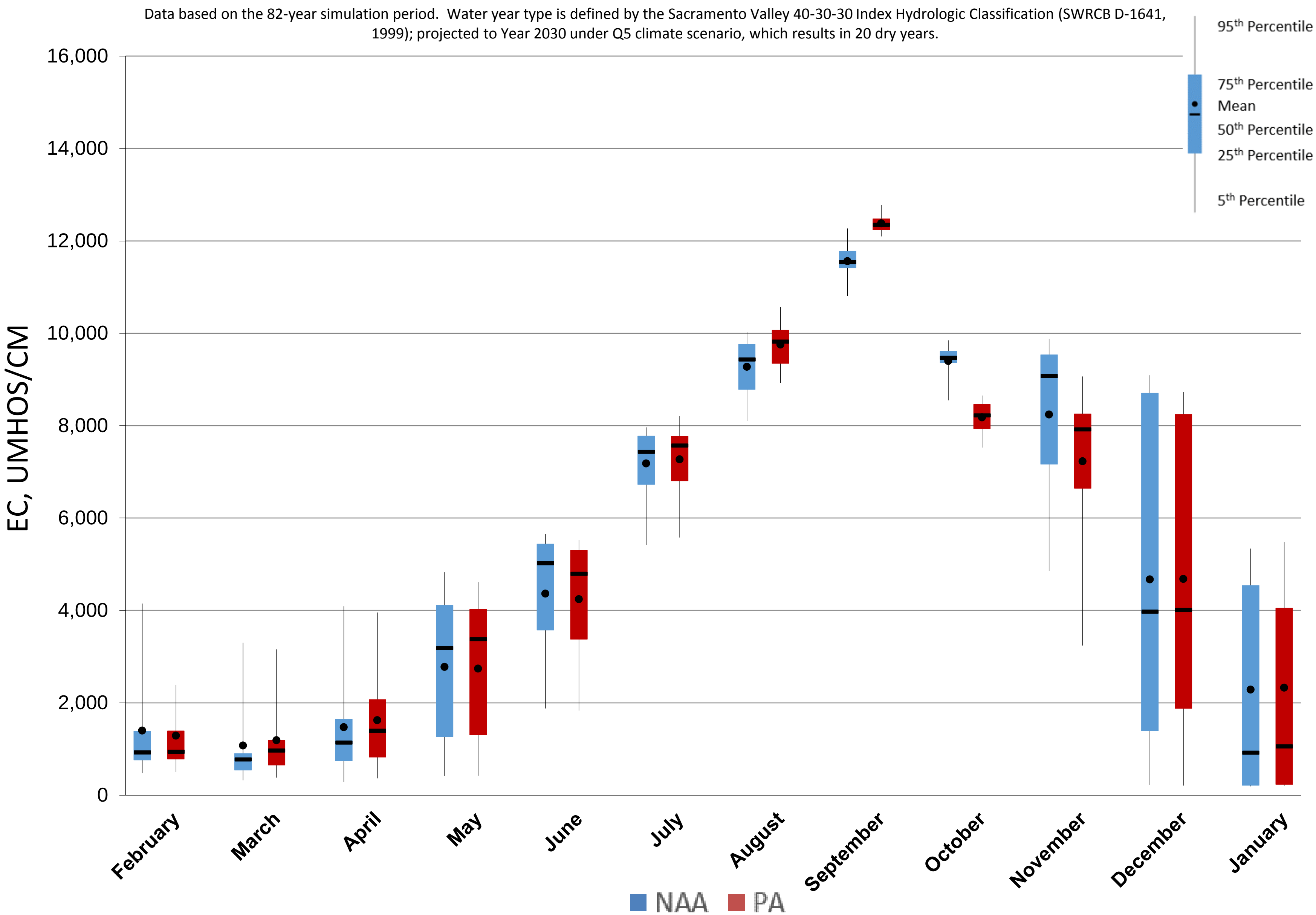


Figure 5.B.5-28-5. Monthly EC Ranges For Montezuma Slough at National Steel, Dry Years



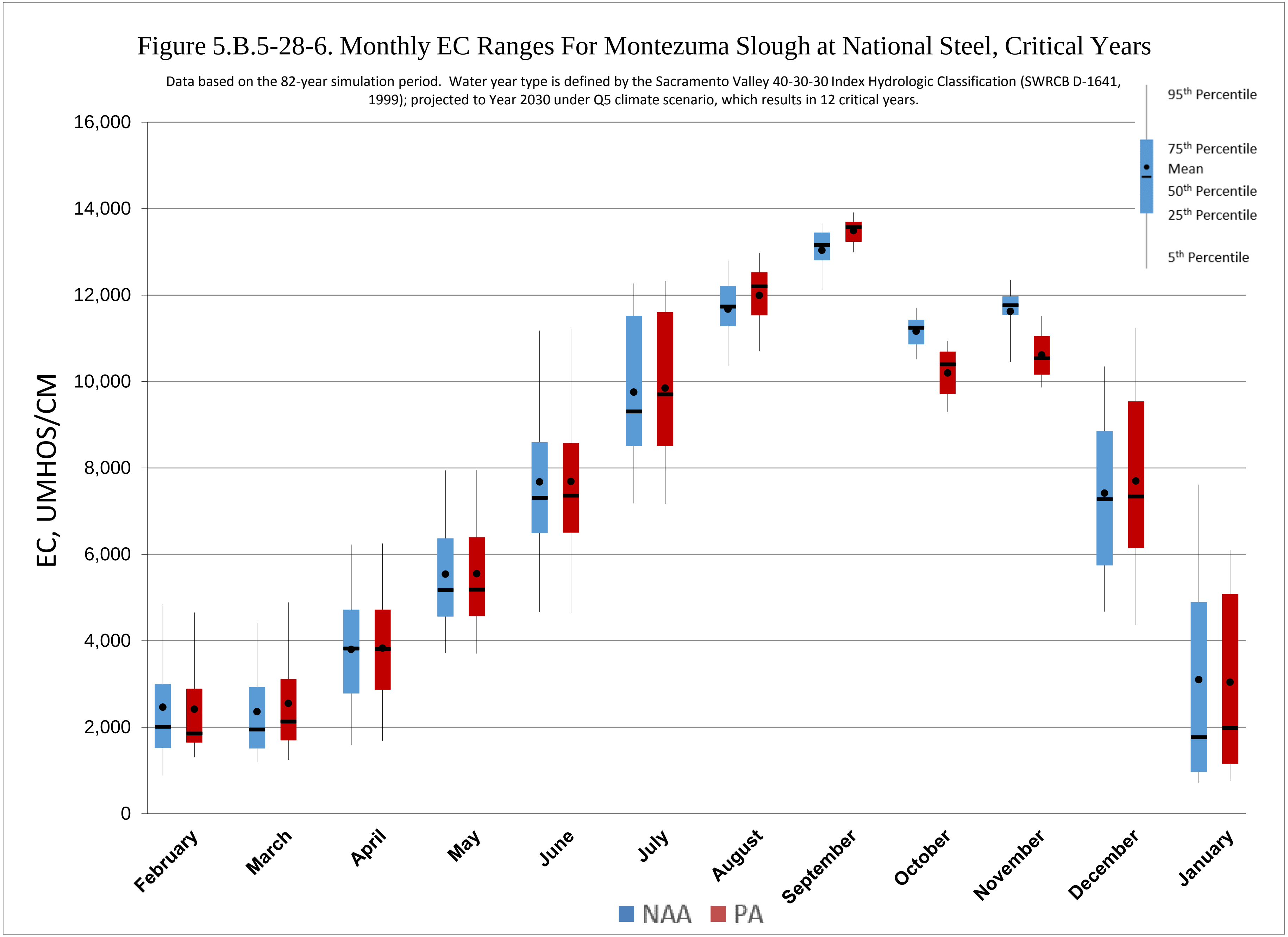
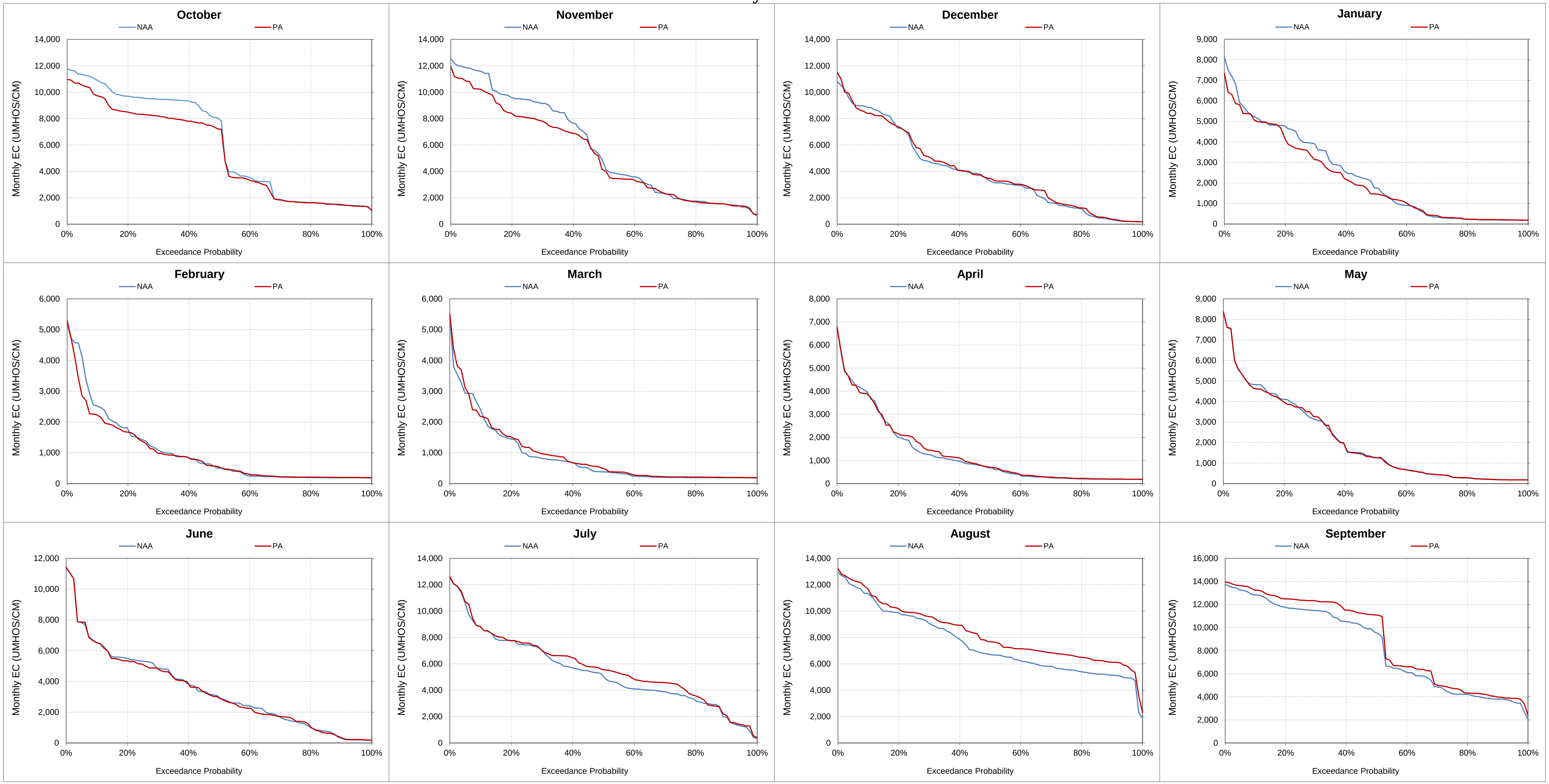


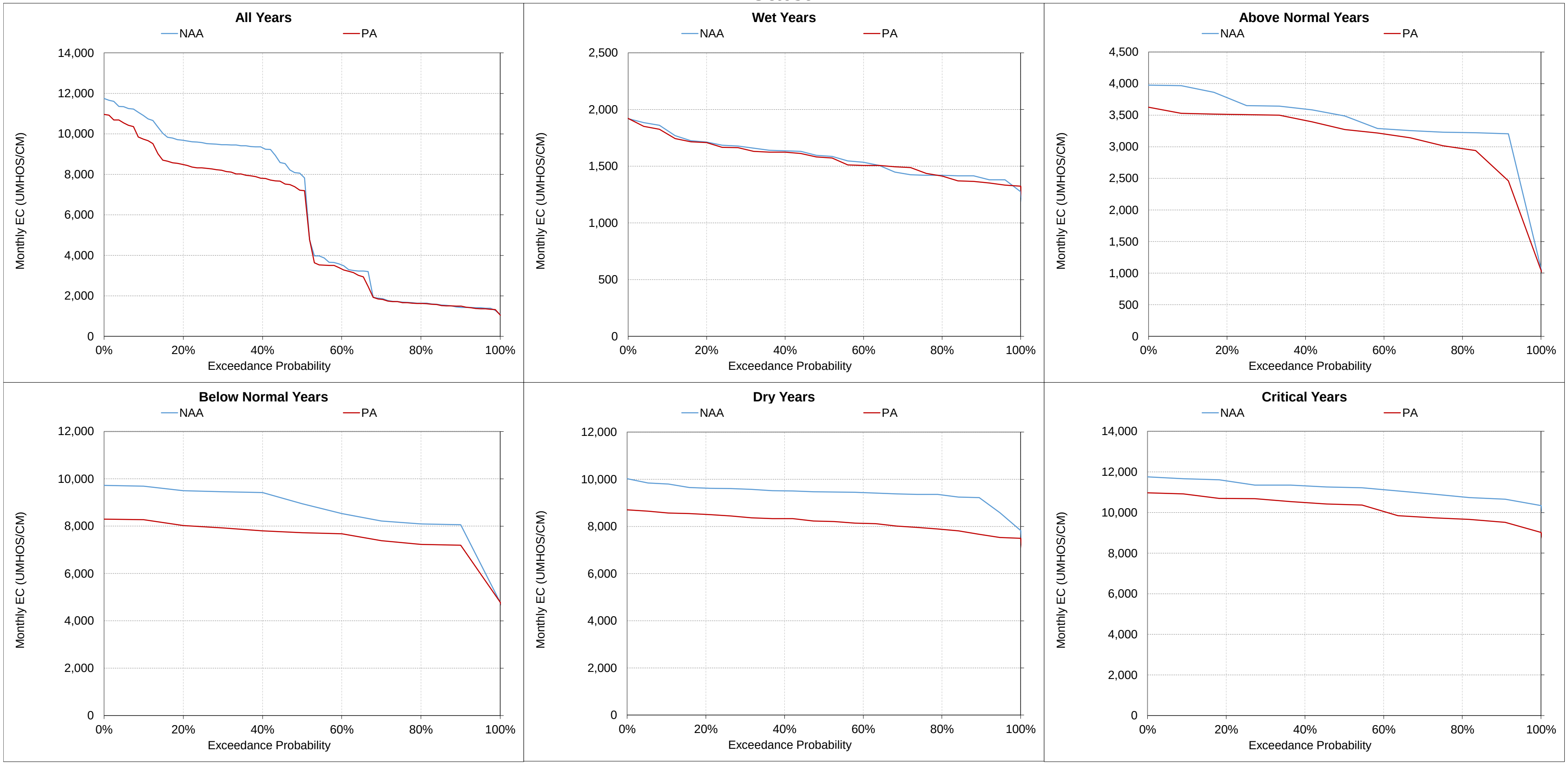
Figure 5.B.5-28-6. Monthly EC Ranges For Montezuma Slough at National Steel, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-28-7. Montezuma Slough at National Steel, Monthly EC Probability of Exceedance



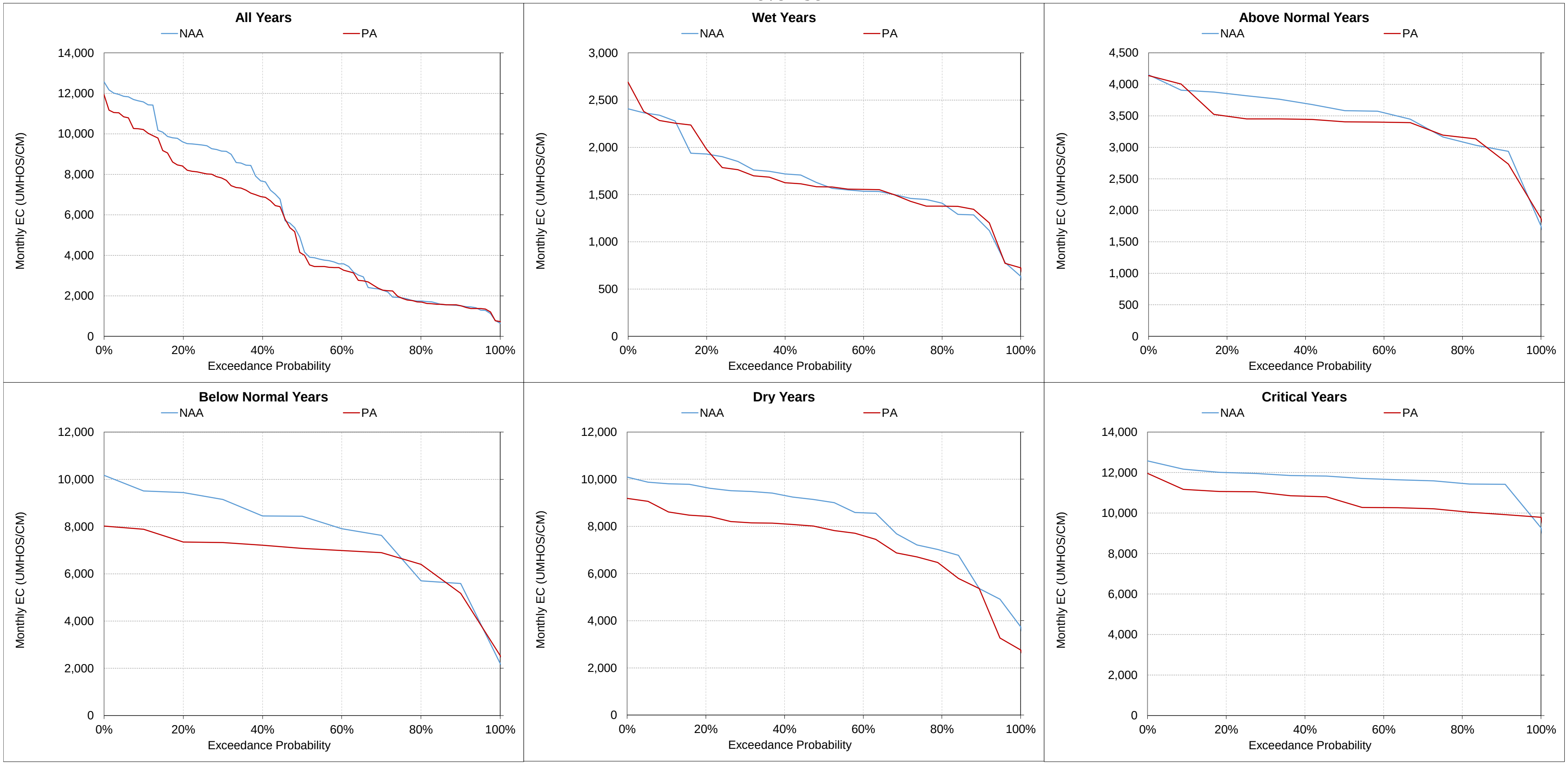
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-8. Montezuma Slough at National Steel, Monthly EC
October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-9. Montezuma Slough at National Steel, Monthly EC November



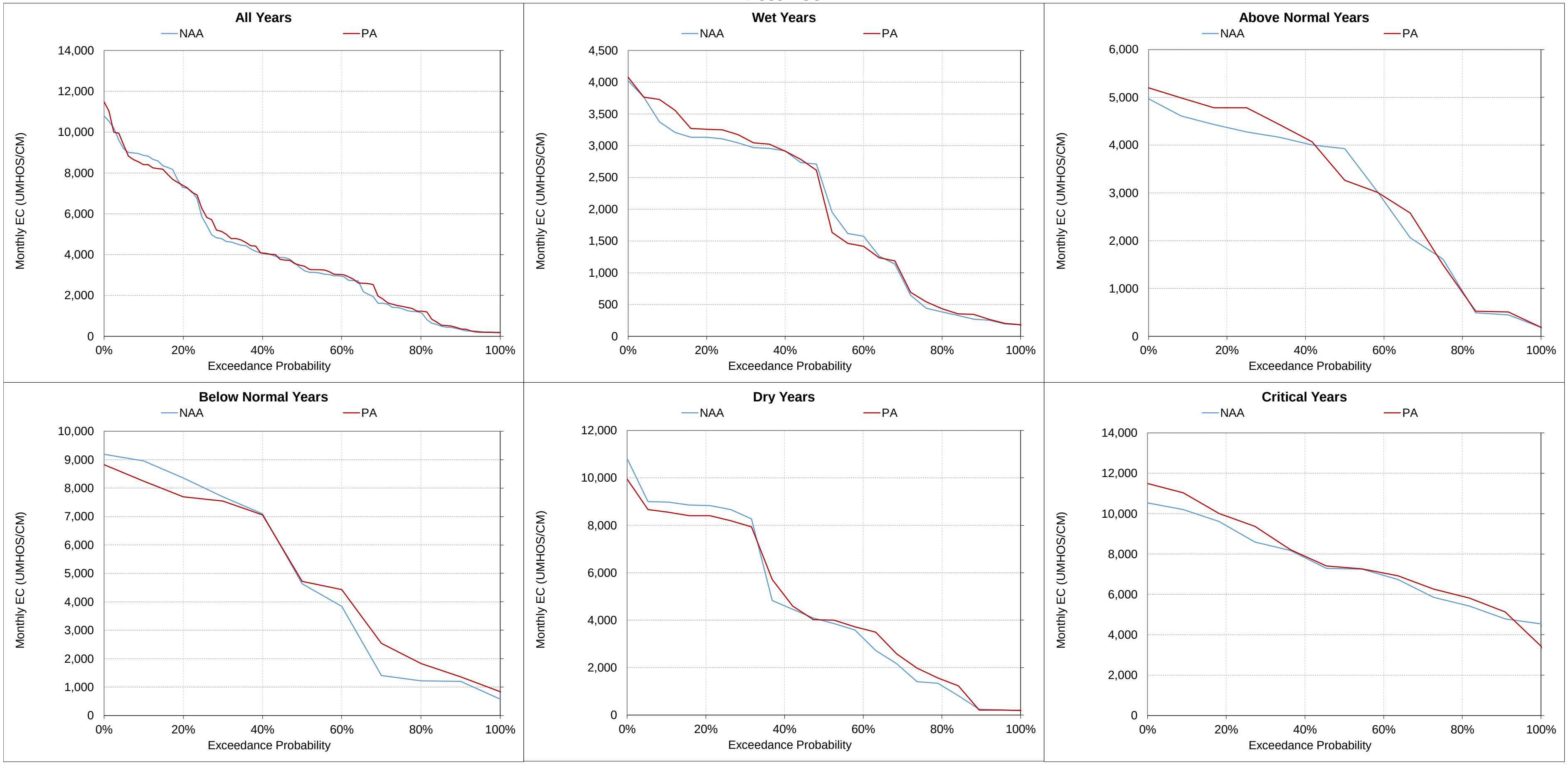
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

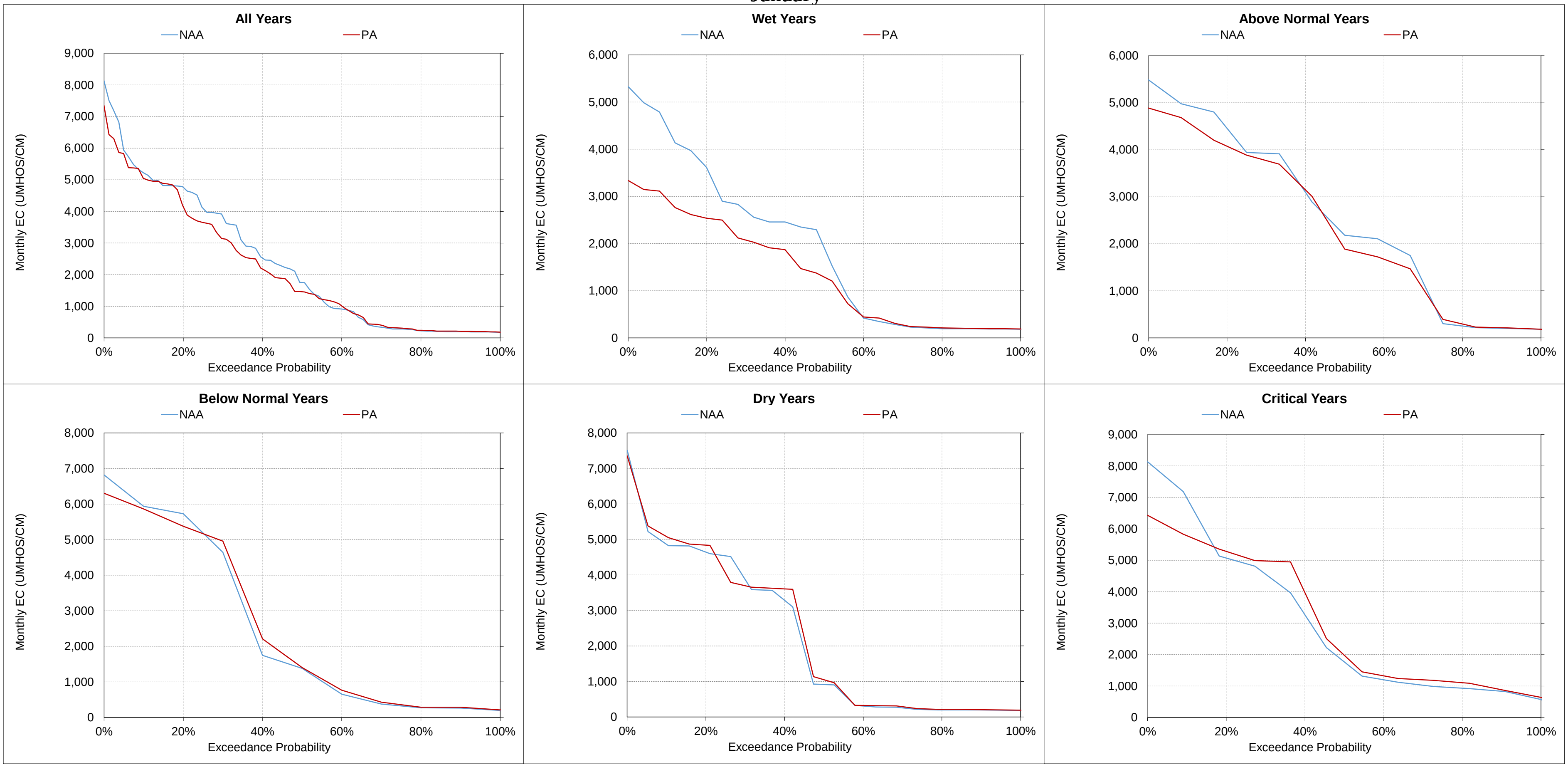
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-10. Montezuma Slough at National Steel, Monthly EC December



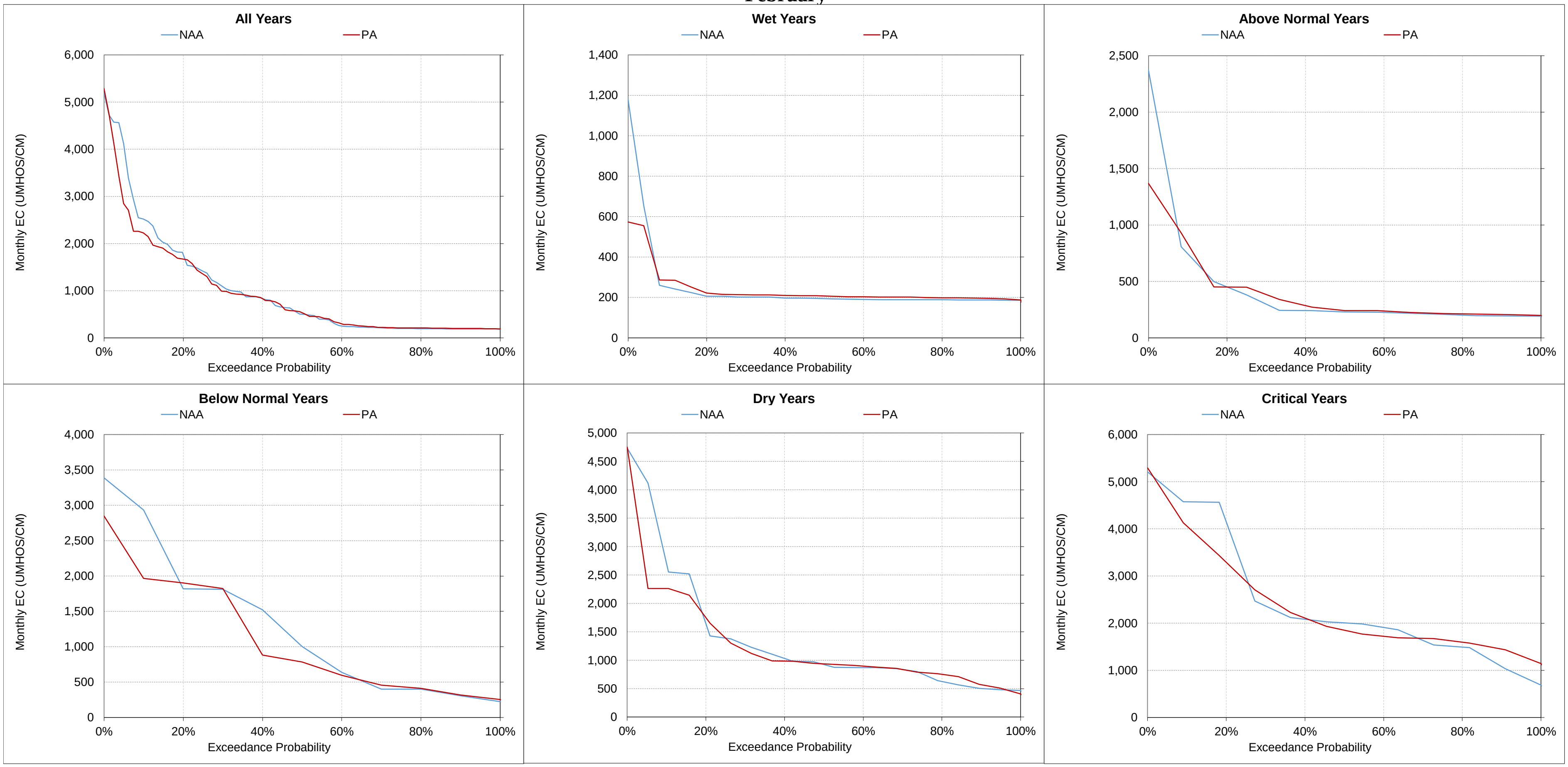
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-11. Montezuma Slough at National Steel, Monthly EC
January



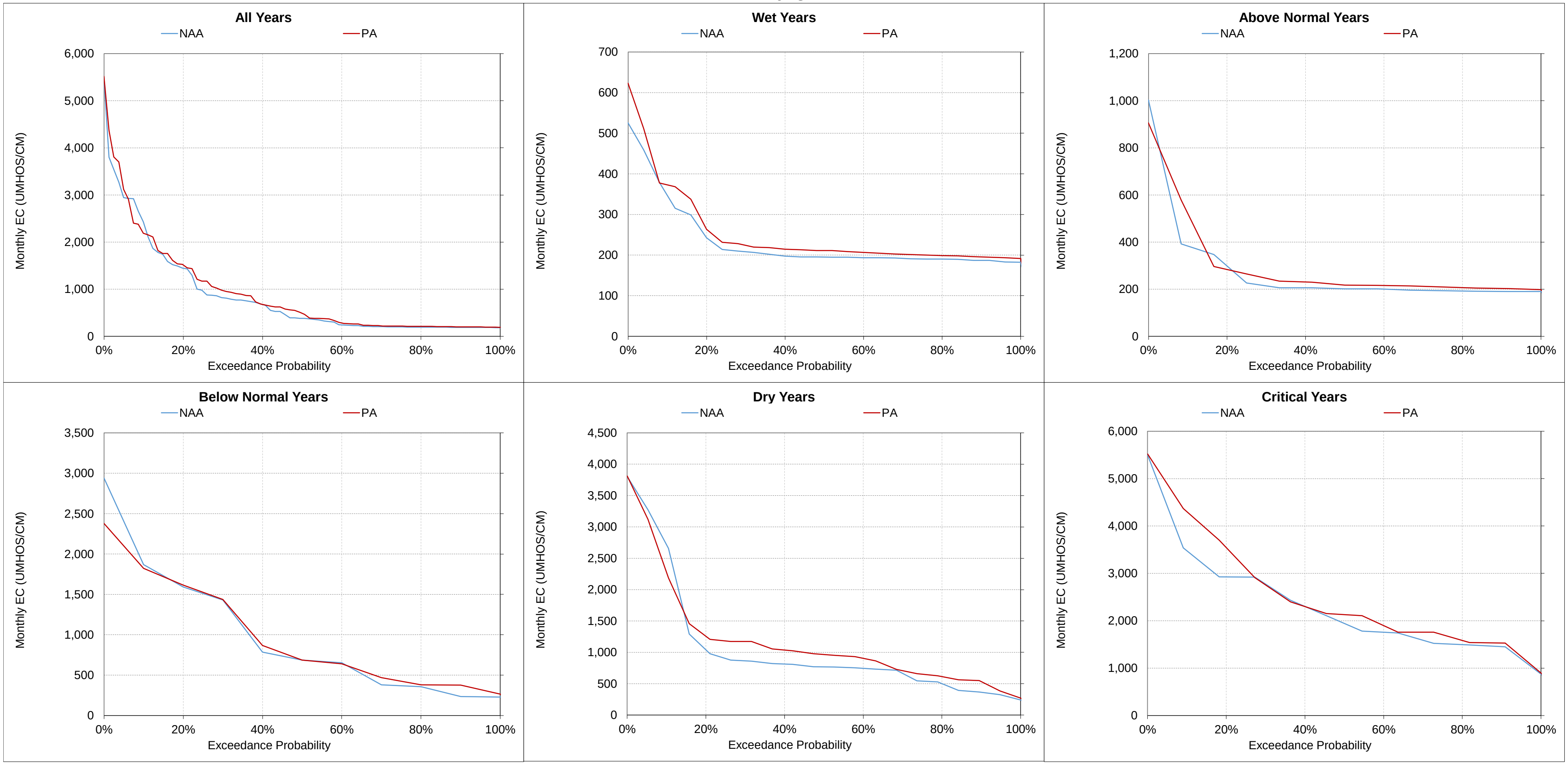
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-12. Montezuma Slough at National Steel, Monthly EC February



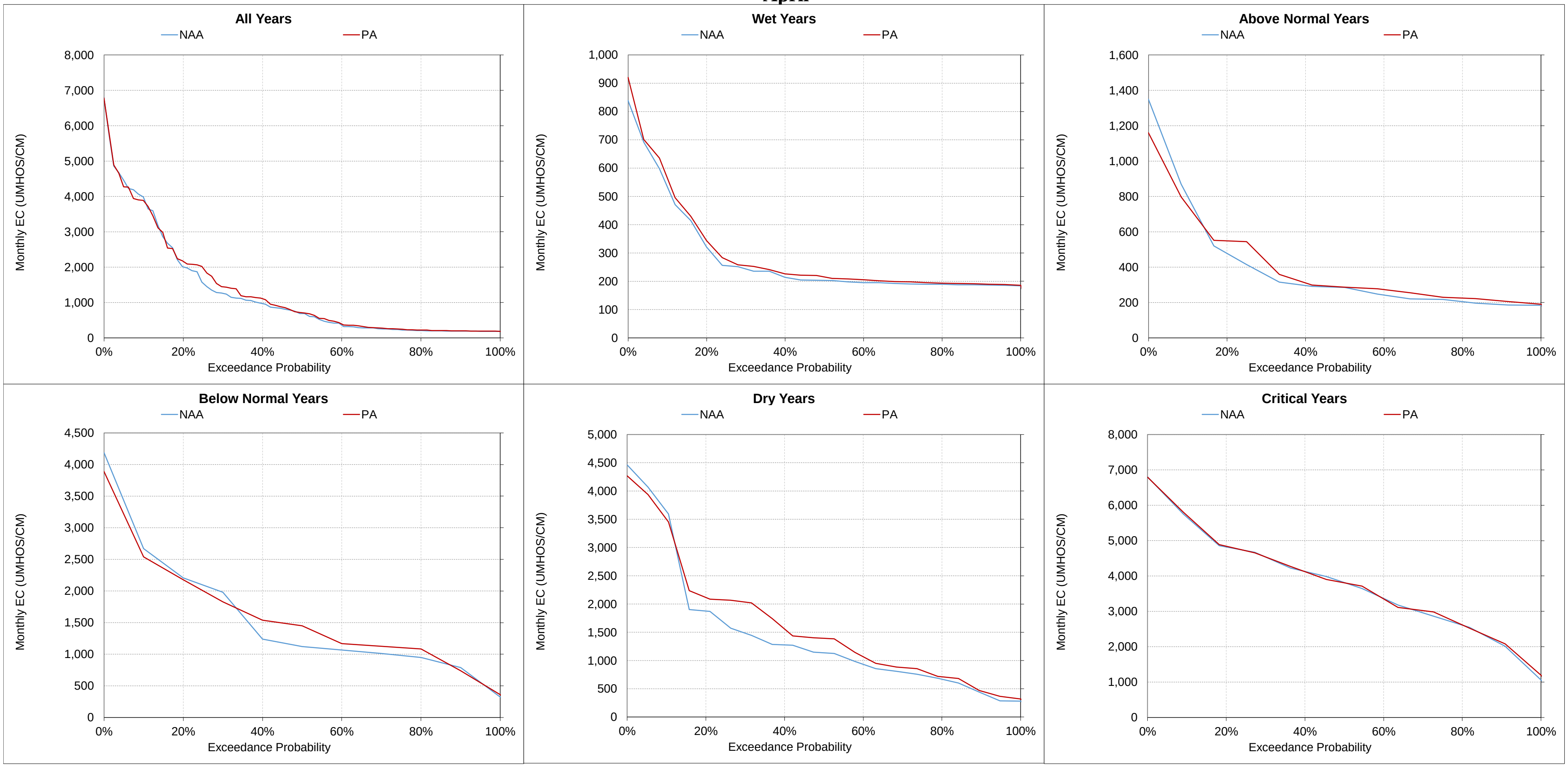
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-13. Montezuma Slough at National Steel, Monthly EC
March



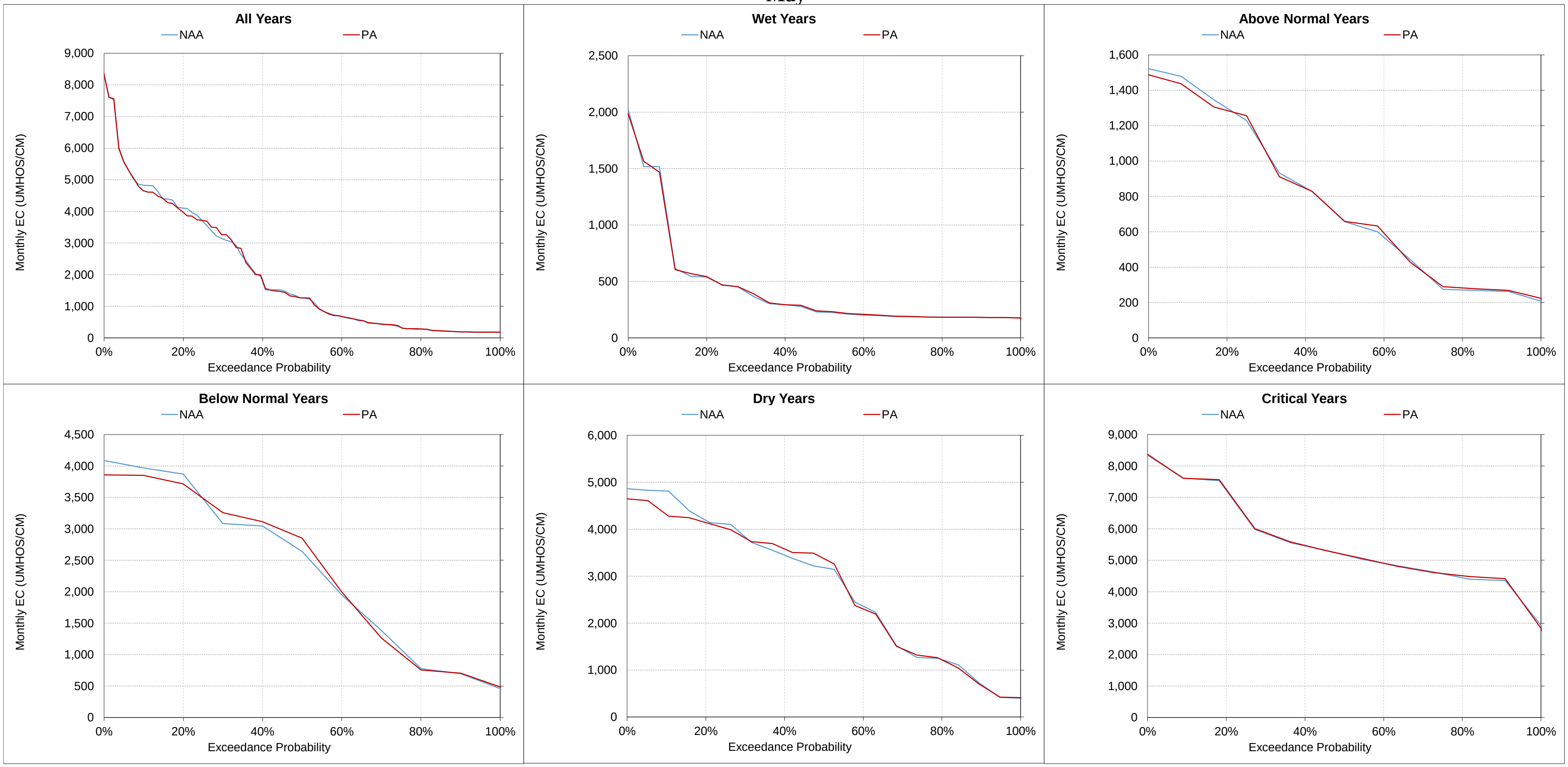
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-14. Montezuma Slough at National Steel, Monthly EC
April



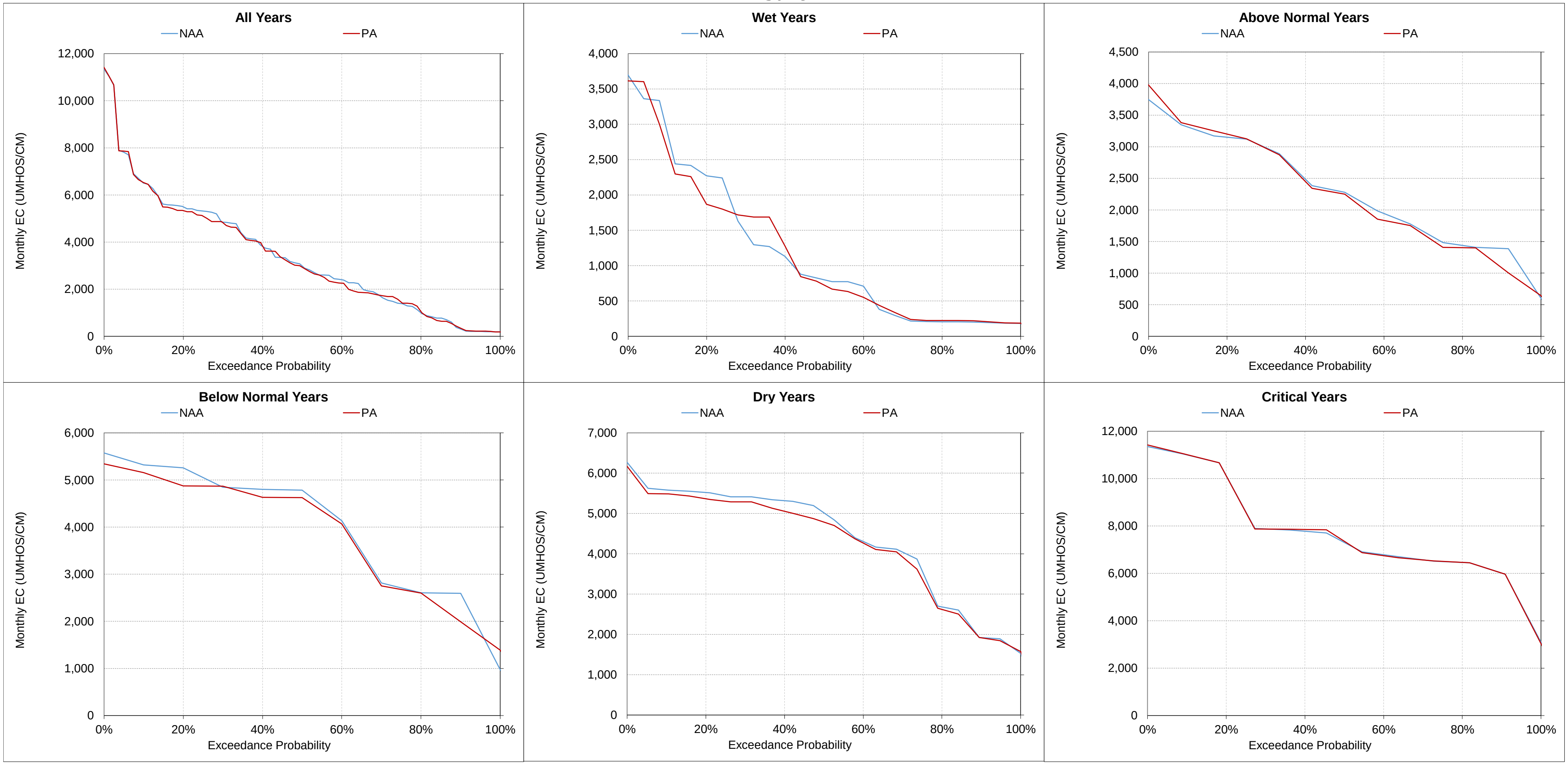
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-15. Montezuma Slough at National Steel, Monthly EC
May



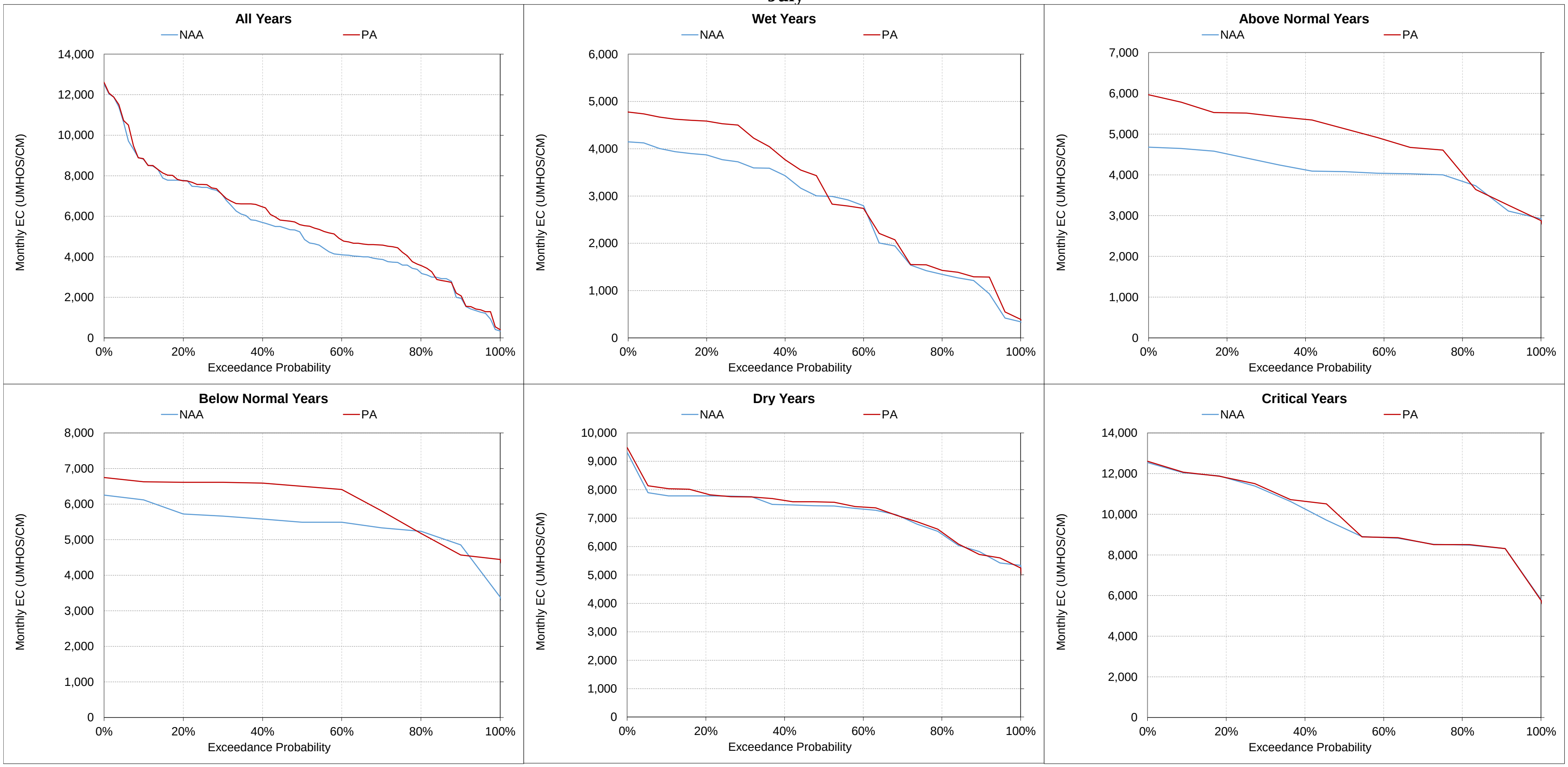
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-16. Montezuma Slough at National Steel, Monthly EC
June



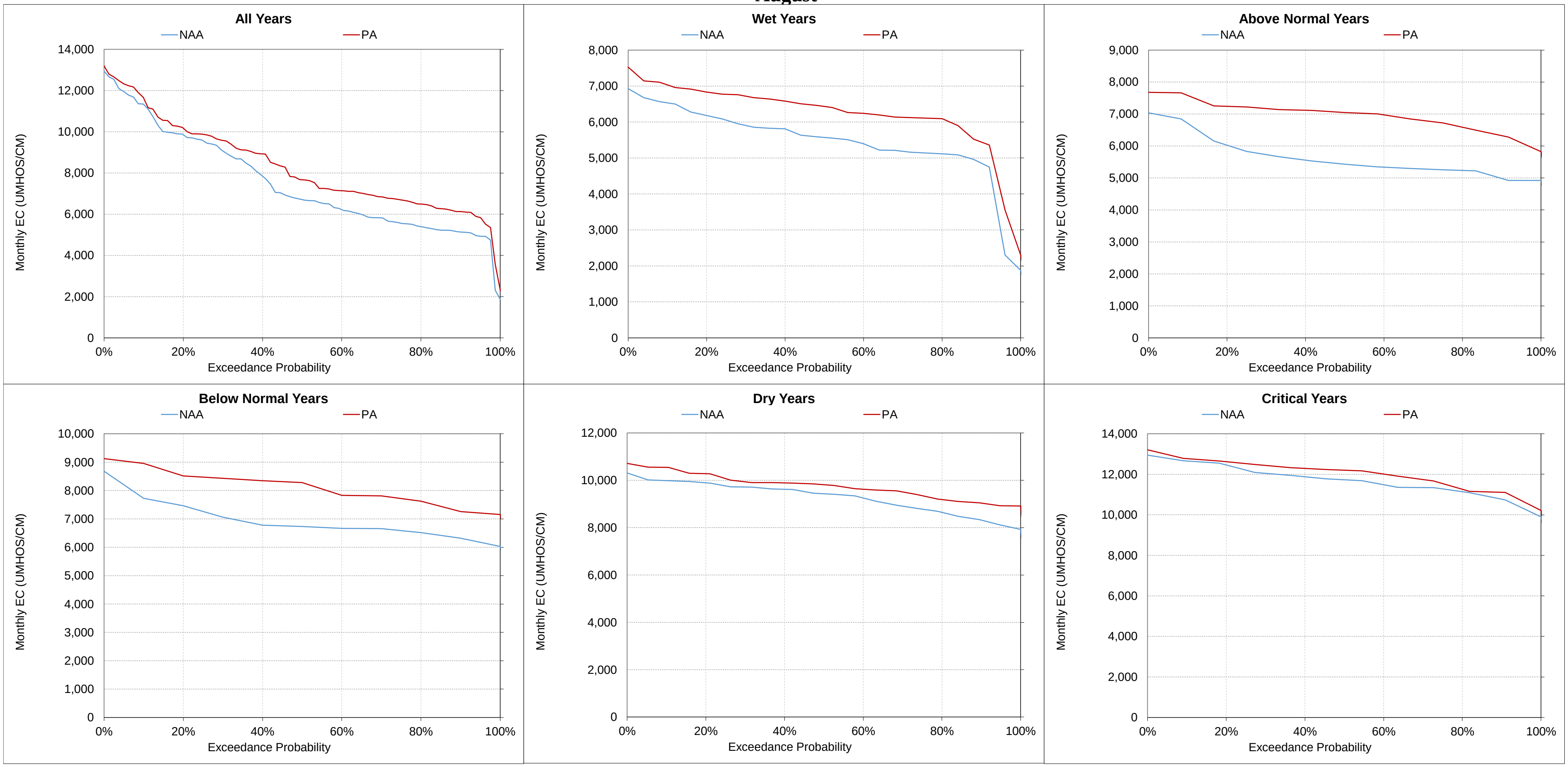
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-17. Montezuma Slough at National Steel, Monthly EC
July



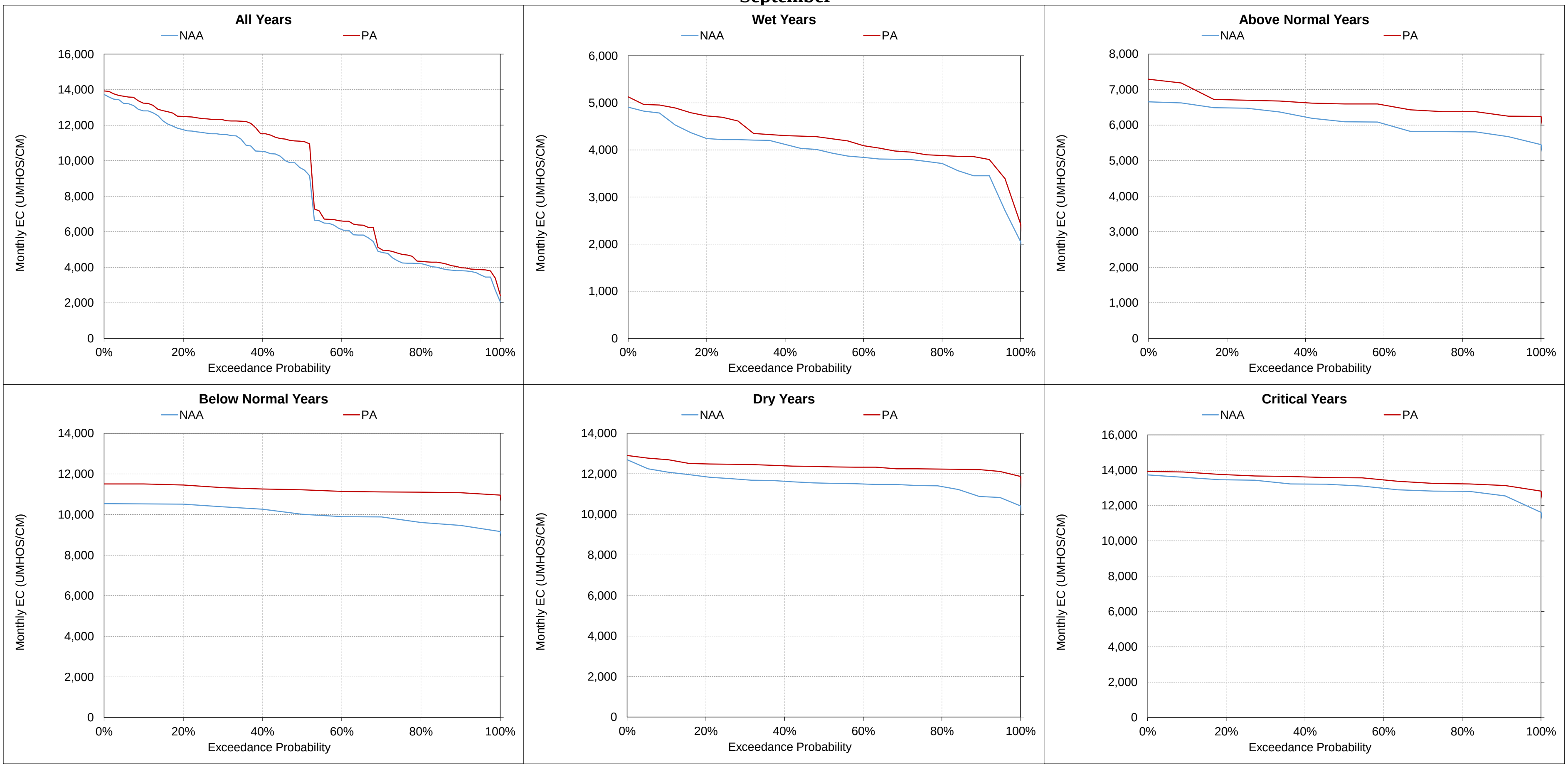
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-18. Montezuma Slough at National Steel, Monthly EC
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-28-19. Montezuma Slough at National Steel, Monthly EC
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-29. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	2,392	2,383	-8	0%	2,382	2,349	-33	-1%	2,376	2,361	-15	-1%	2,219	2,232	14	1%	2,154	2,089	-65	-3%	1,341	1,321	-21	-2%
20%	2,366	2,358	-8	0%	2,358	2,322	-36	-2%	2,306	2,299	-7	0%	2,039	2,030	-8	0%	1,802	1,653	-149	-8%	974	987	13	1%
30%	2,346	2,344	-3	0%	2,314	2,301	-13	-1%	2,110	2,133	24	1%	1,952	1,822	-130	-7%	1,389	1,340	-49	-4%	551	528	-24	-4%
40%	2,325	2,322	-3	0%	2,280	2,252	-28	-1%	1,937	1,935	-2	0%	1,729	1,626	-103	-6%	1,160	1,115	-45	-4%	364	355	-8	-2%
50%	2,259	2,267	8	0%	1,824	1,787	-37	-2%	1,740	1,749	10	1%	1,400	1,292	-107	-8%	984	960	-25	-2%	246	176	-70	-28%
60%	1,776	1,730	-46	-3%	1,719	1,697	-21	-1%	1,499	1,513	15	1%	1,186	1,107	-79	-7%	848	779	-69	-8%	144	113	-31	-22%
70%	1,078	1,076	-2	0%	1,168	1,174	6	1%	1,295	1,236	-59	-5%	1,104	1,040	-63	-6%	693	698	4	1%	75	58	-17	-23%
80%	1,040	1,031	-9	-1%	1,087	1,095	7	1%	1,033	1,055	23	2%	926	951	25	3%	586	552	-33	-6%	31	19	-12	-39%
90%	996	999	3	0%	1,017	1,005	-12	-1%	797	781	-16	-2%	648	666	18	3%	433	424	-9	-2%	-10	-10	0	-3%
Long Term Full Simulation Period[b]	1,816	1,808	-8	0%	1,766	1,741	-25	-1%	1,666	1,663	-3	0%	1,521	1,461	-59	-4%	1,189	1,153	-35	-3%	526	515	-11	-2%
Water Year Types[c]																								
Wet (32%)	1,026	1,028	2	0%	1,045	1,059	14	1%	1,278	1,277	-2	0%	1,510	1,350	-160	-11%	1,512	1,508	-4	0%	1,136	1,141	5	0%
Above Normal (16%)	1,710	1,667	-43	-3%	1,661	1,657	-4	0%	1,525	1,527	2	0%	1,478	1,413	-64	-4%	1,020	981	-40	-4%	670	681	11	2%
Below Normal (13%)	2,246	2,231	-16	-1%	2,186	2,132	-53	-2%	1,780	1,805	25	1%	1,451	1,461	9	1%	960	840	-120	-12%	106	86	-20	-19%
Dry (24%)	2,355	2,349	-6	0%	2,192	2,106	-86	-4%	1,820	1,801	-19	-1%	1,518	1,511	-7	0%	908	843	-65	-7%	174	129	-45	-26%
Critical (15%)	2,351	2,361	10	0%	2,347	2,344	-4	0%	2,296	2,285	-11	0%	1,660	1,673	13	1%	1,348	1,376	28	2%	20	15	-5	-26%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	994	991	-3	0%	577	575	-2	0%	134	113	-22	-16%	45	1	-44	-97%	-86	-89	-3	-3%	131	149	19	14%
20%	553	553	0	0%	261	257	-4	-2%	24	19	-5	-22%	17	-18	-35	-207%	-94	-101	-7	-7%	112	131	19	17%
30%	291	293	1	0%	131	132	2	1%	-18	-6	12	65%	-5	-37	-32	-680%	-103	-105	-2	-2%	70	90	20	29%
40%	178	178	0	0%	72	74	2	3%	-35	-32	3	8%	-21	-46	-25	-121%	-106	-110	-4	-4%	10	14	3	34%
50%	115	115	-1	-1%	28	31	4	14%	-49	-45	3	7%	-44	-57	-13	-28%	-111	-115	-4	-4%	-93	-107	-14	-15%
60%	46	46	1	2%	-1	1	2	360%	-54	-53	1	3%	-60	-71	-11	-18%	-115	-120	-5	-5%	-113	-118	-4	-4%
70%	9	1	-8	-92%	-22	-15	6	29%	-65	-59	6	9%	-82	-83	-1	-1%	-121	-126	-4	-4%	-119	-125	-6	-5%
80%	-16	-15	1	5%	-49	-42	7	14%	-75	-72	3	4%	-92	-95	-3	-3%	-127	-132	-5	-4%	-126	-130	-4	-3%
90%	-43	-41	2	4%	-60	-57	4	6%	-89	-89	0	0%	-107	-108	-1	-1%	-133	-136	-3	-2%	-136	-139	-3	-2%
Long Term Full Simulation Period[b]	290	291	1	0%	150	151	1	1%	8	8	-1	-10%	-35	-55	-20	-56%	-109	-114	-6	-5%	-25	-22	3	10%
Water Year Types[c]																								
Wet (32%)	694	693	0	0%	441	437	-4	-1%	140	134	-6	-4%	8	-17	-25	-321%	-103	-106	-4	-3%	120	135	15	12%
Above Normal (16%)	312	318	6	2%	120	121	1	1%	-30	-26	5	15%	15	-30	-45	-306%	-110	-113	-3	-2%	8	15	8	101%
Below Normal (13%)	62	61	0	-1%	16	18	3	18%	-53	-50	3	6%	-26	-55	-29	-110%	-101	-105	-5	-5%	-113	-125	-13	-11%
Dry (24%)	72	71	0	0%	-2	6	7	429%	-55	-56	-1	-1%	-85	-87	-2	-3%	-114	-123	-10	-8%	-124	-130	-7	-5%
Critical (15%)	-37	-36	0	1%	-73	-73	0	0%	-73	-73	0	-1%	-110	-112	-2	-2%	-120	-127	-7	-6%	-126	-126	0	0%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

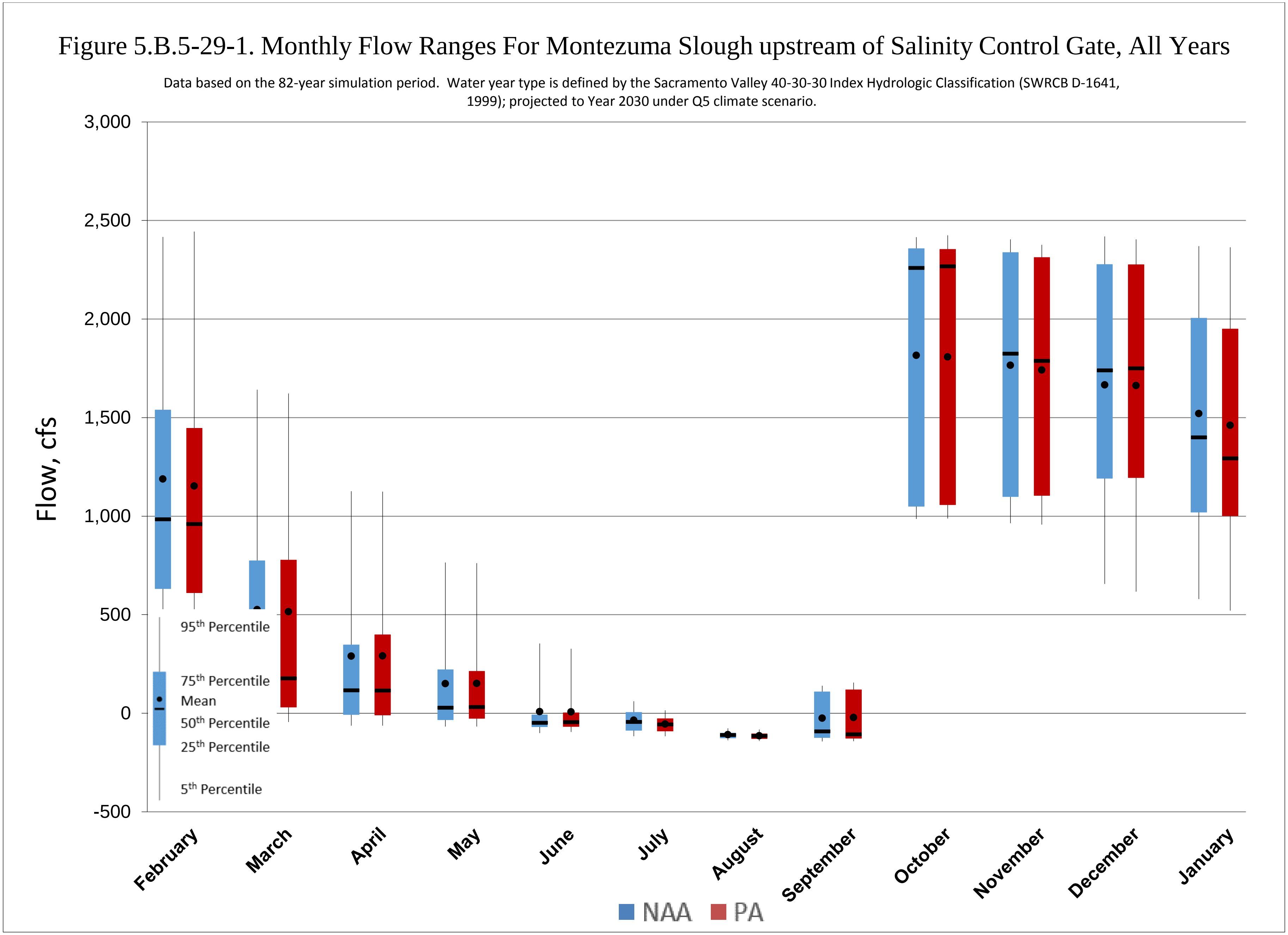


Figure 5.B.5-29-1. Monthly Flow Ranges For Montezuma Slough upstream of Salinity Control Gate, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
Flow, cfs
3,000
2,500
2,000
1,500
1,000
500
0
-500
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

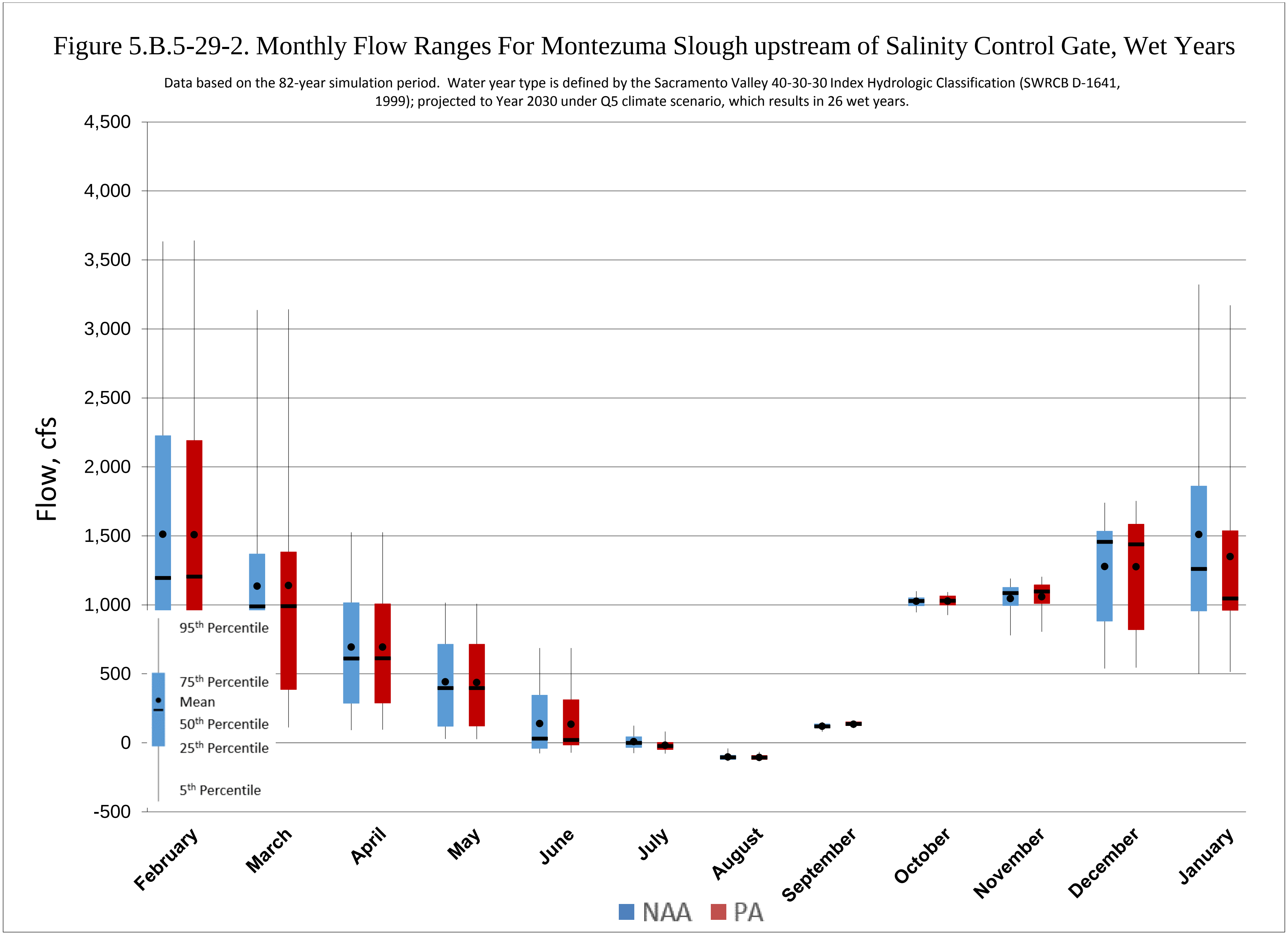


Figure 5.B.5-29-2. Monthly Flow Ranges For Montezuma Slough upstream of Salinity Control Gate, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
Flow, cfs
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
-500
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-29-3. Monthly Flow Ranges For Montezuma Slough upstream of Salinity Control Gate, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

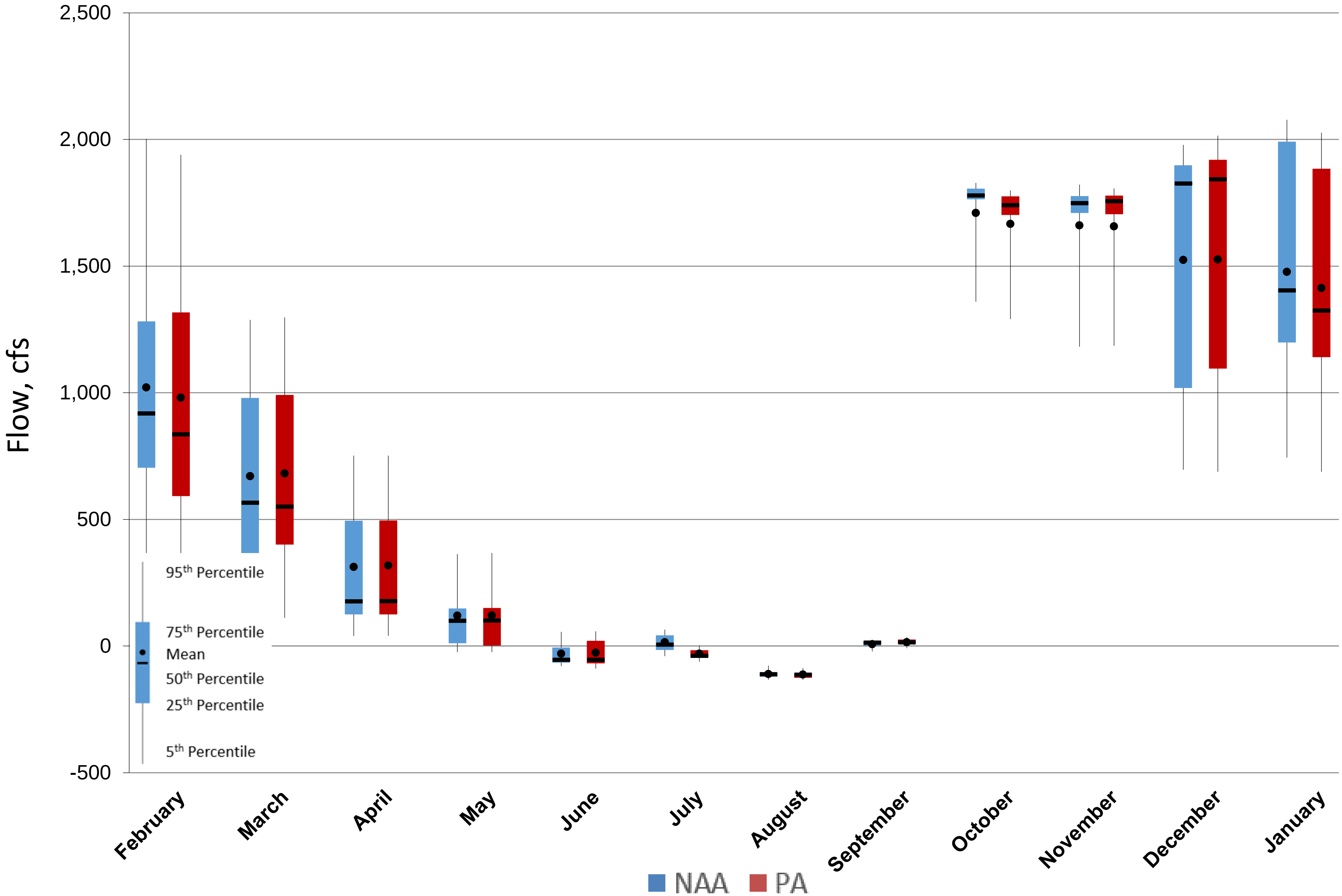
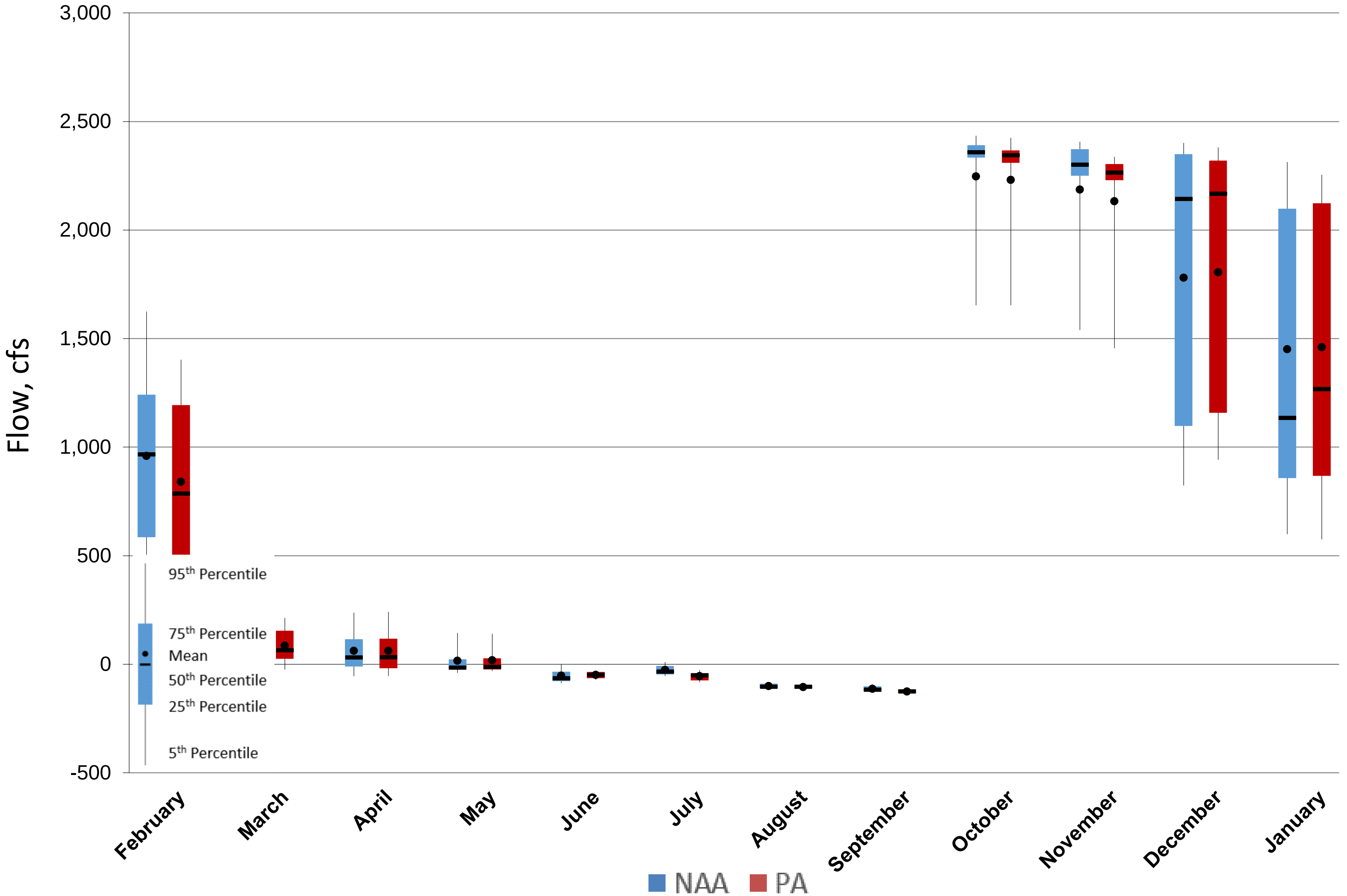


Figure 5.B.5-29-4. Monthly Flow Ranges For Montezuma Slough upstream of Salinity Control Gate, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.



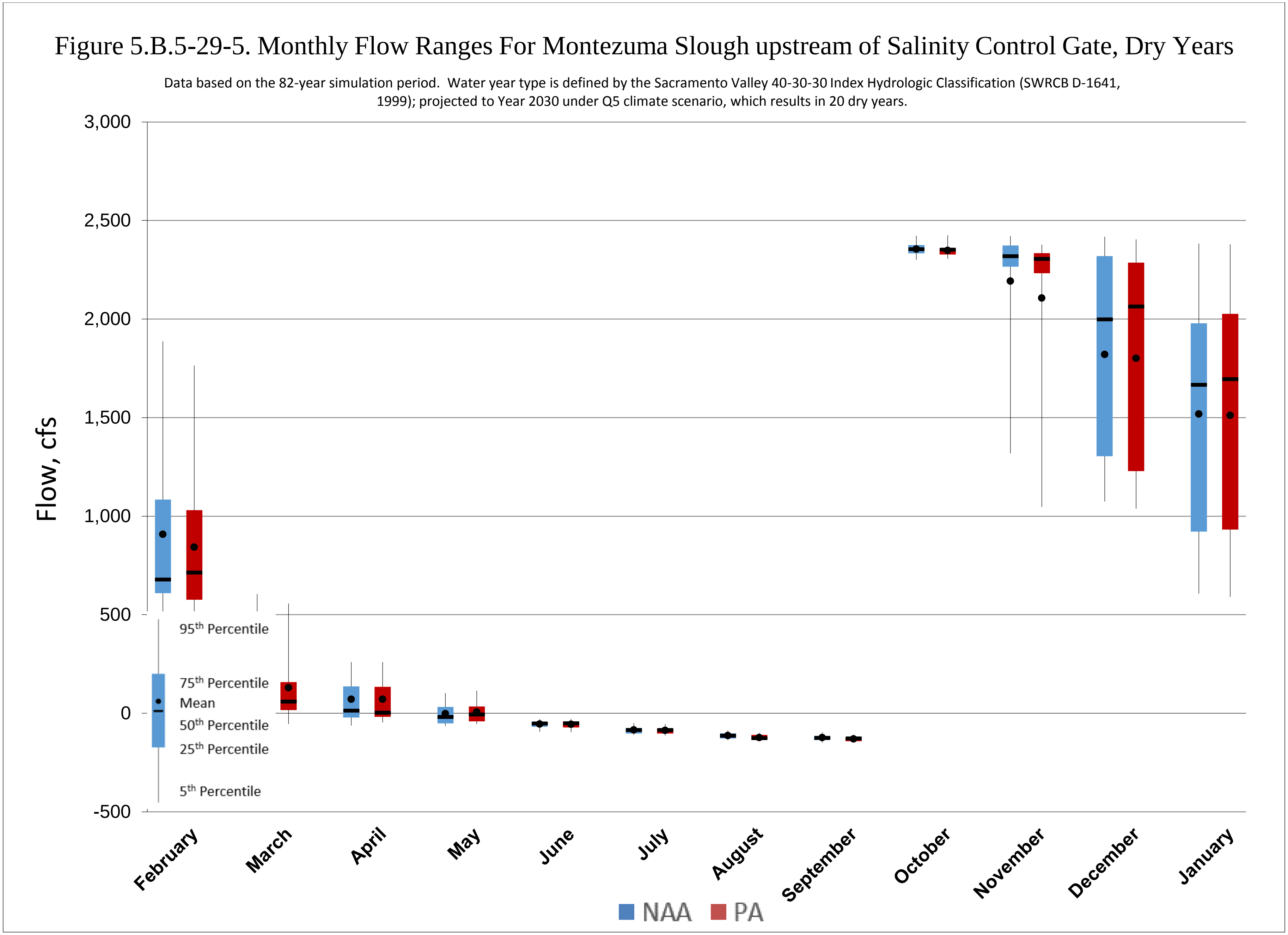


Figure 5.B.5-29-5. Monthly Flow Ranges For Montezuma Slough upstream of Salinity Control Gate, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
Flow, cfs
3,000
2,500
2,000
1,500
1,000
500
0
-500
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-29-6. Monthly Flow Ranges For Montezuma Slough upstream of Salinity Control Gate, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

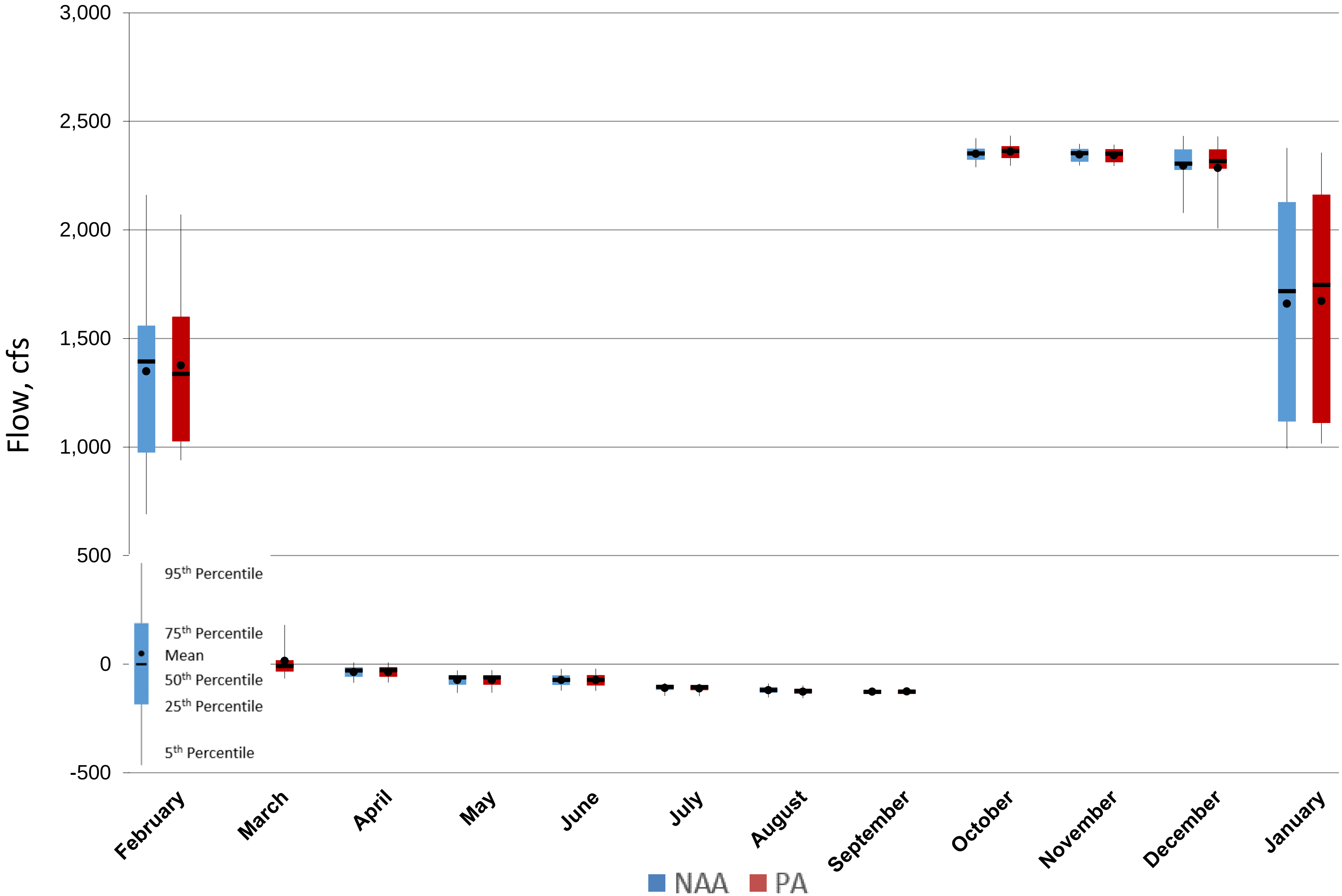
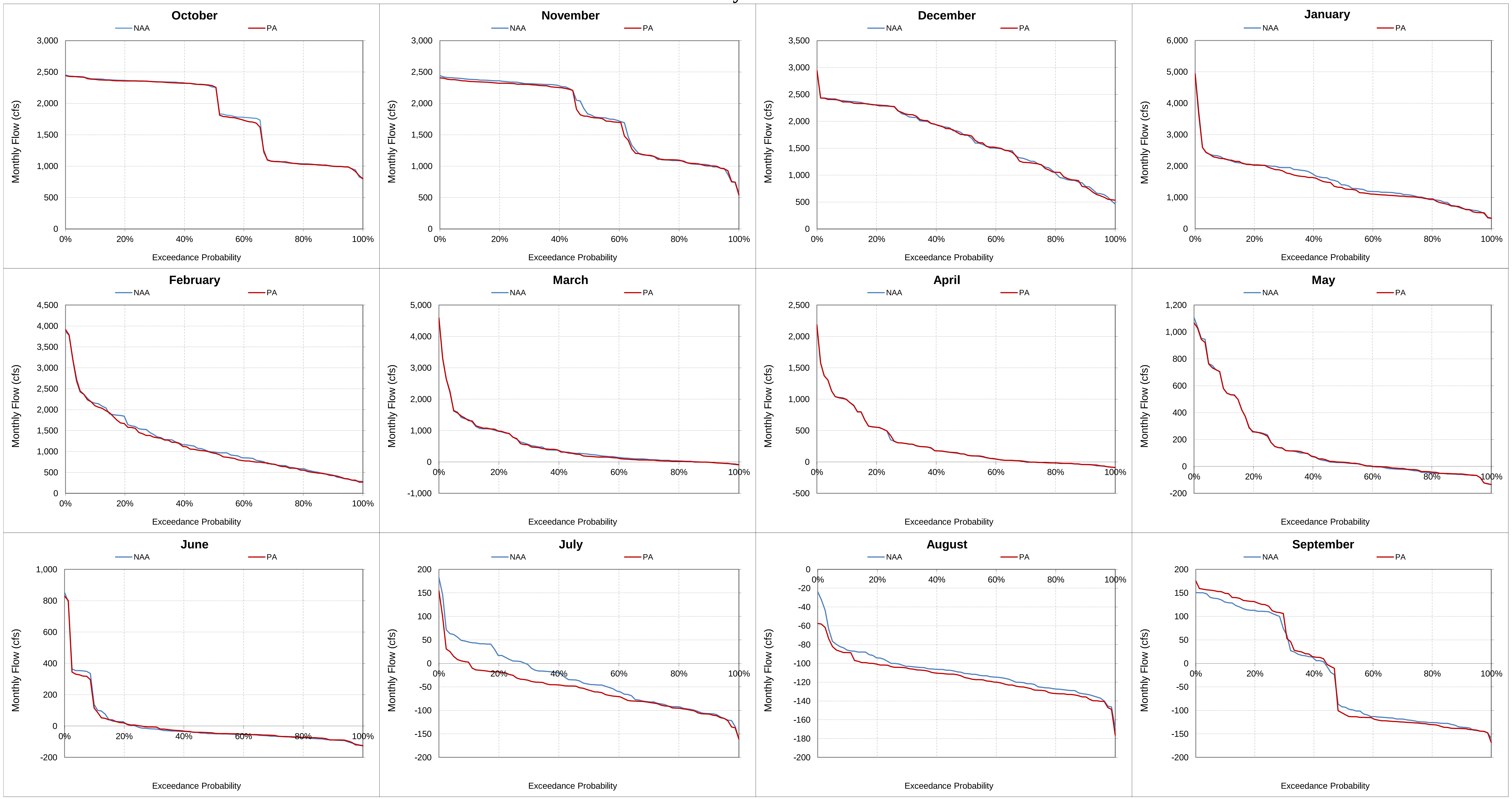
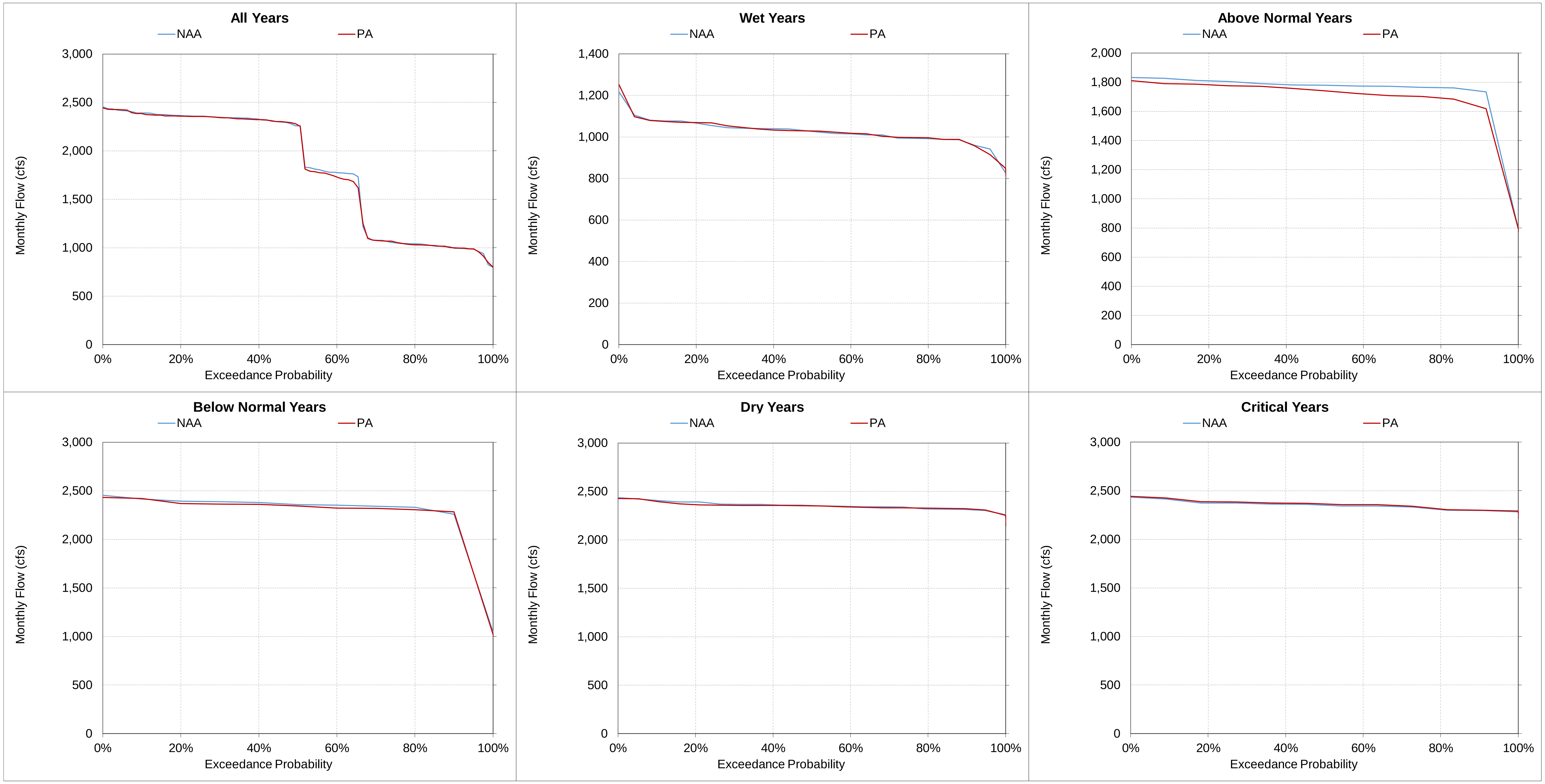


Figure 5.B.5-29-7. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow Probability of Exceedance



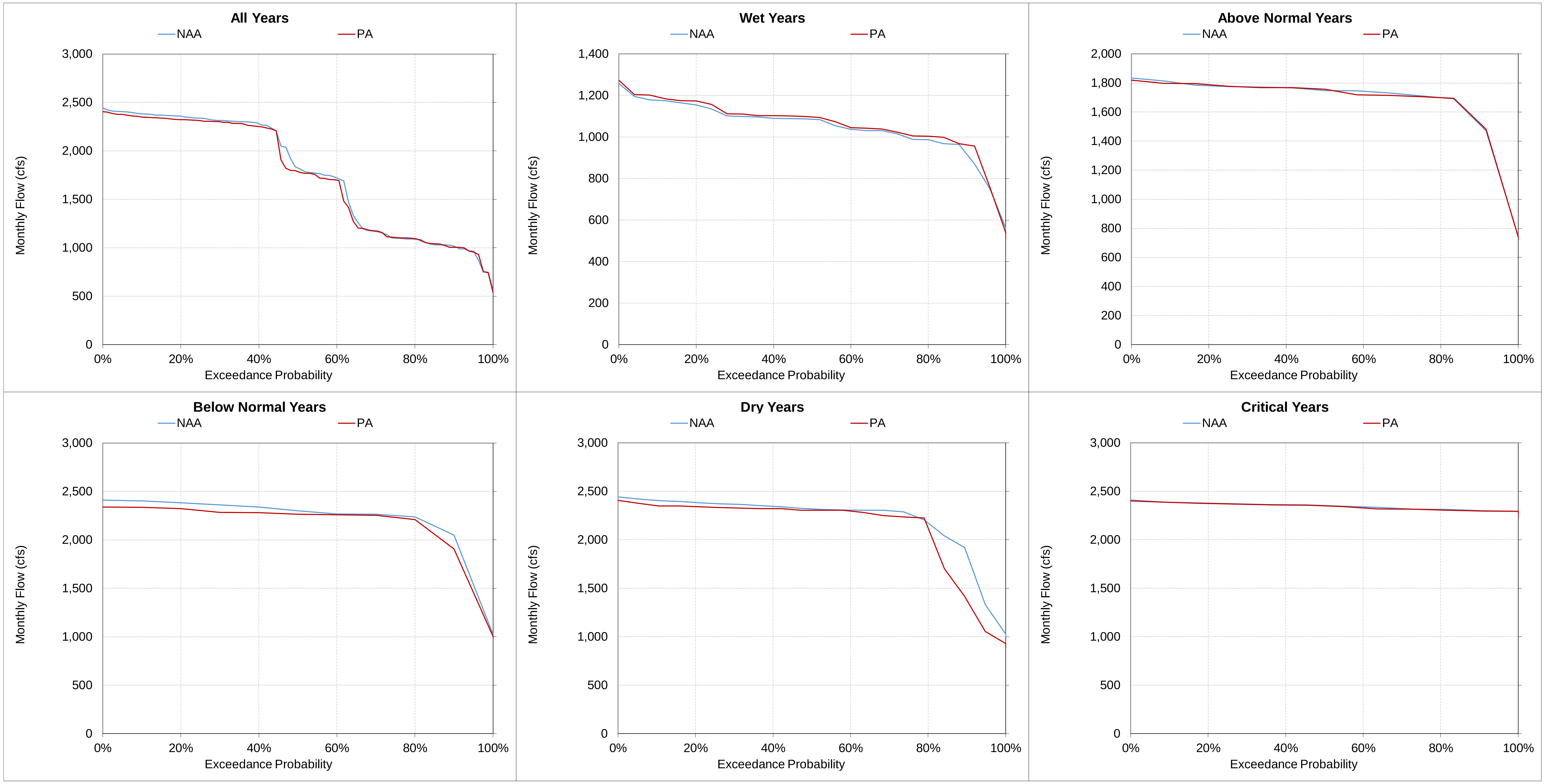
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-8. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow October



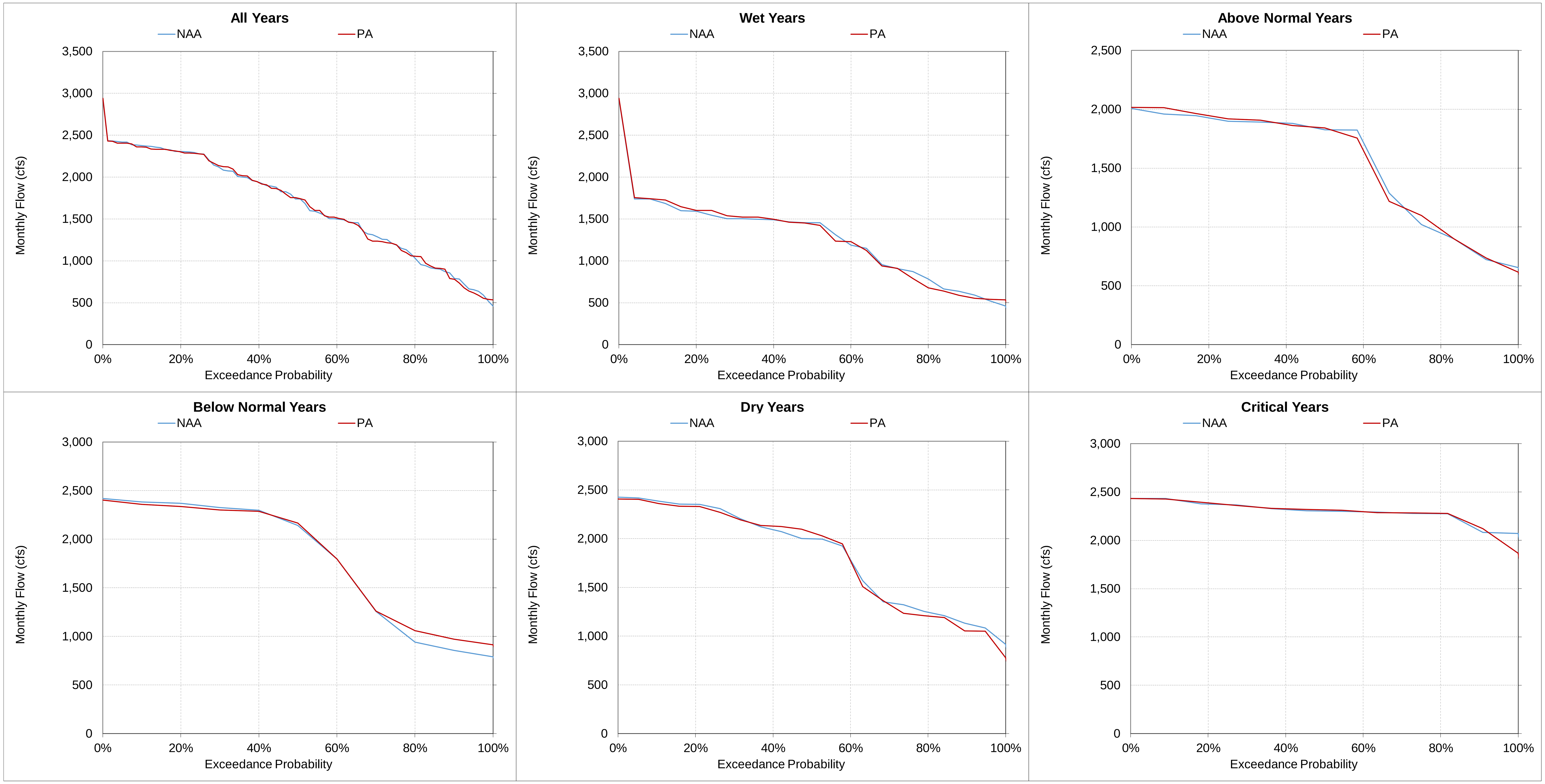
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-9. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow November



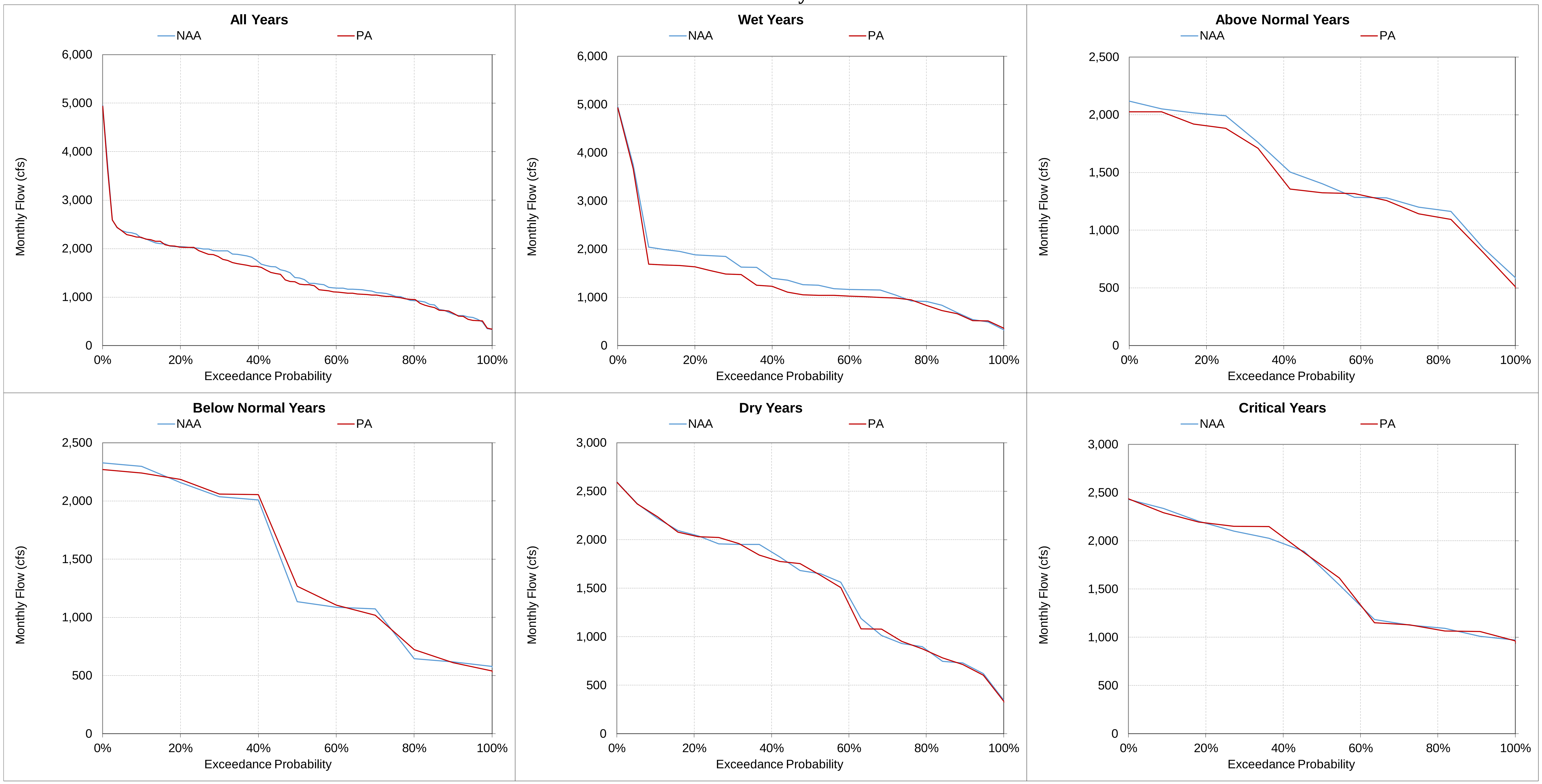
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-10. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow December



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-11. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow January



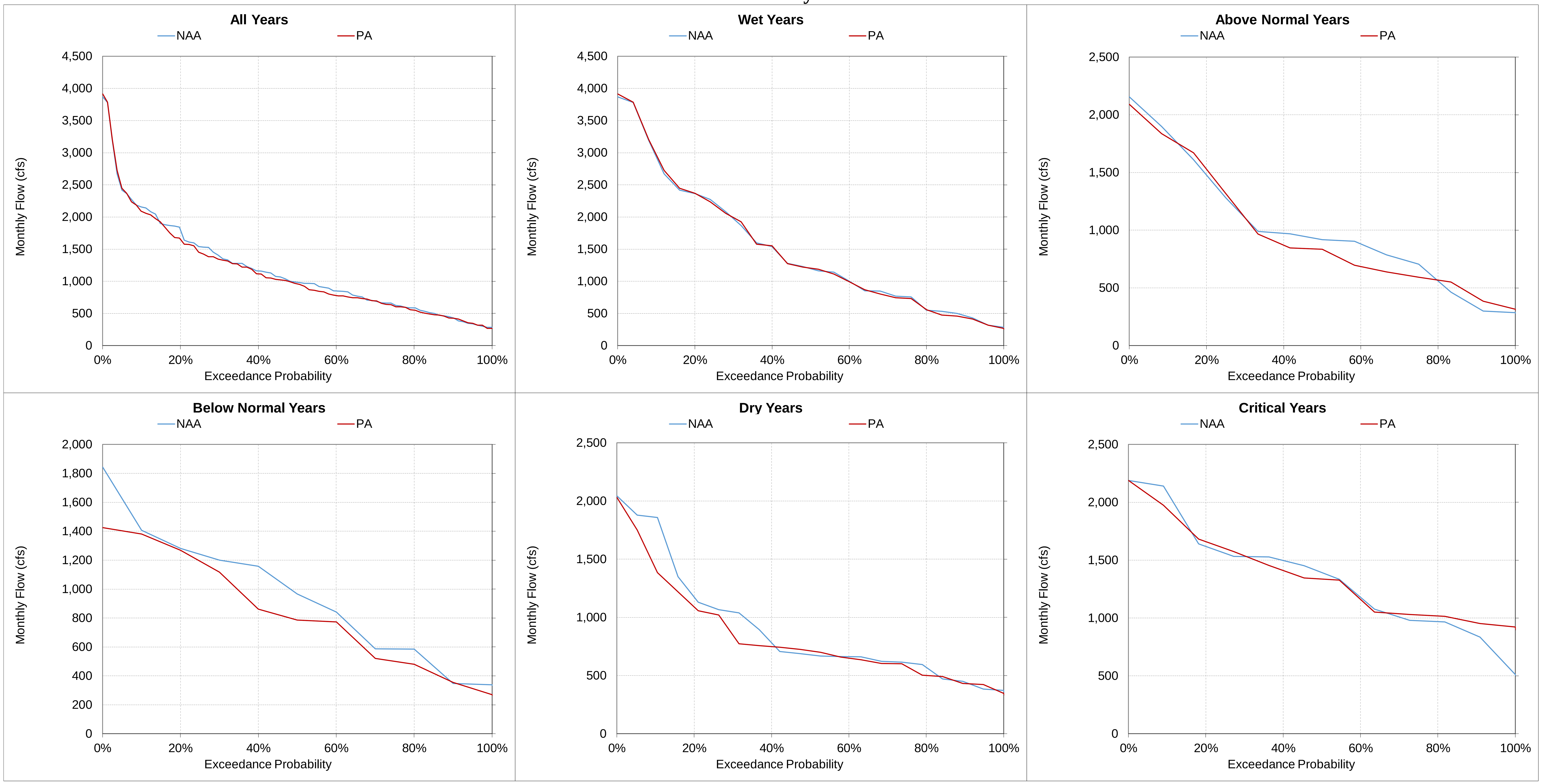
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

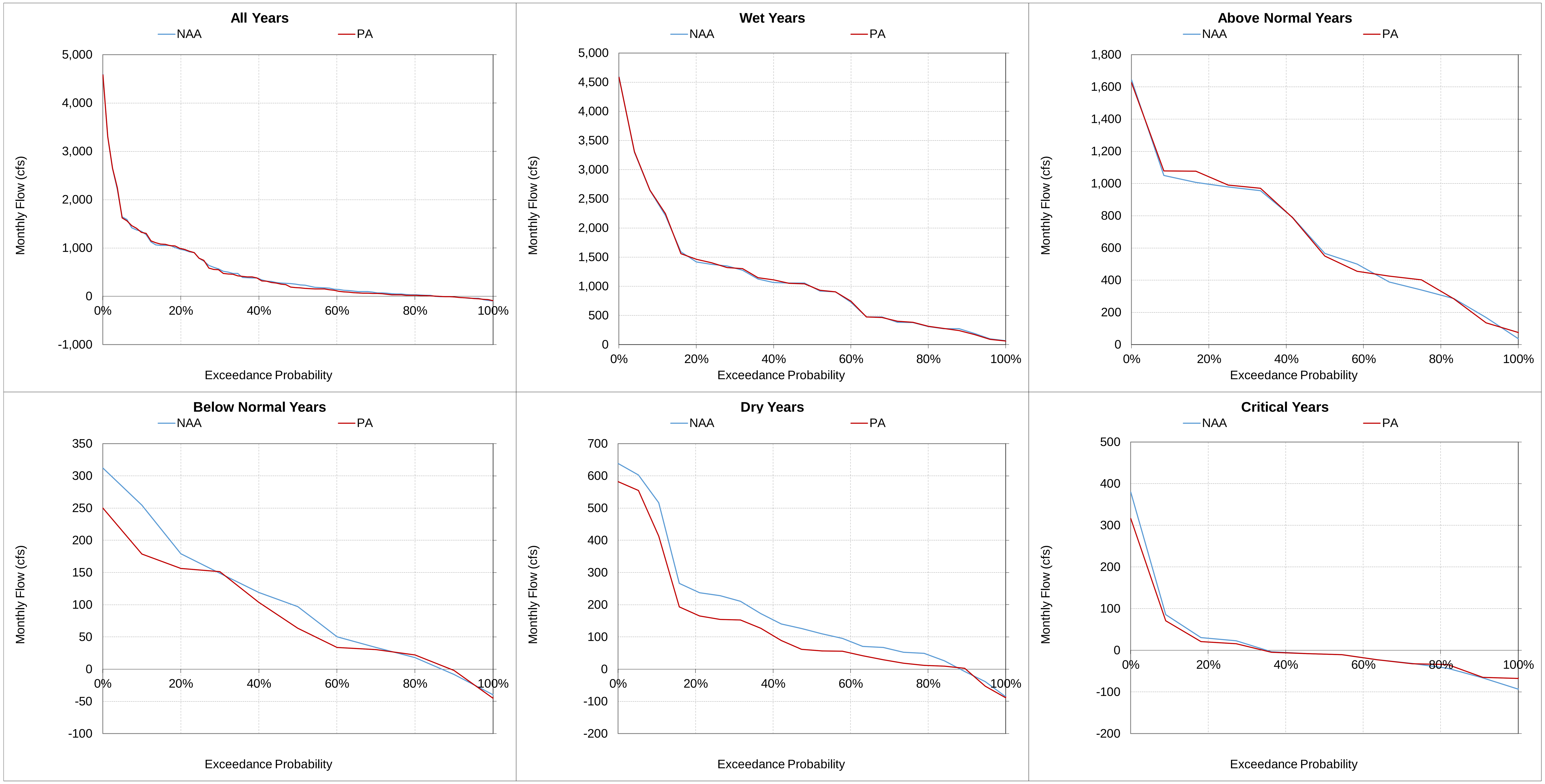
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-12. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow February



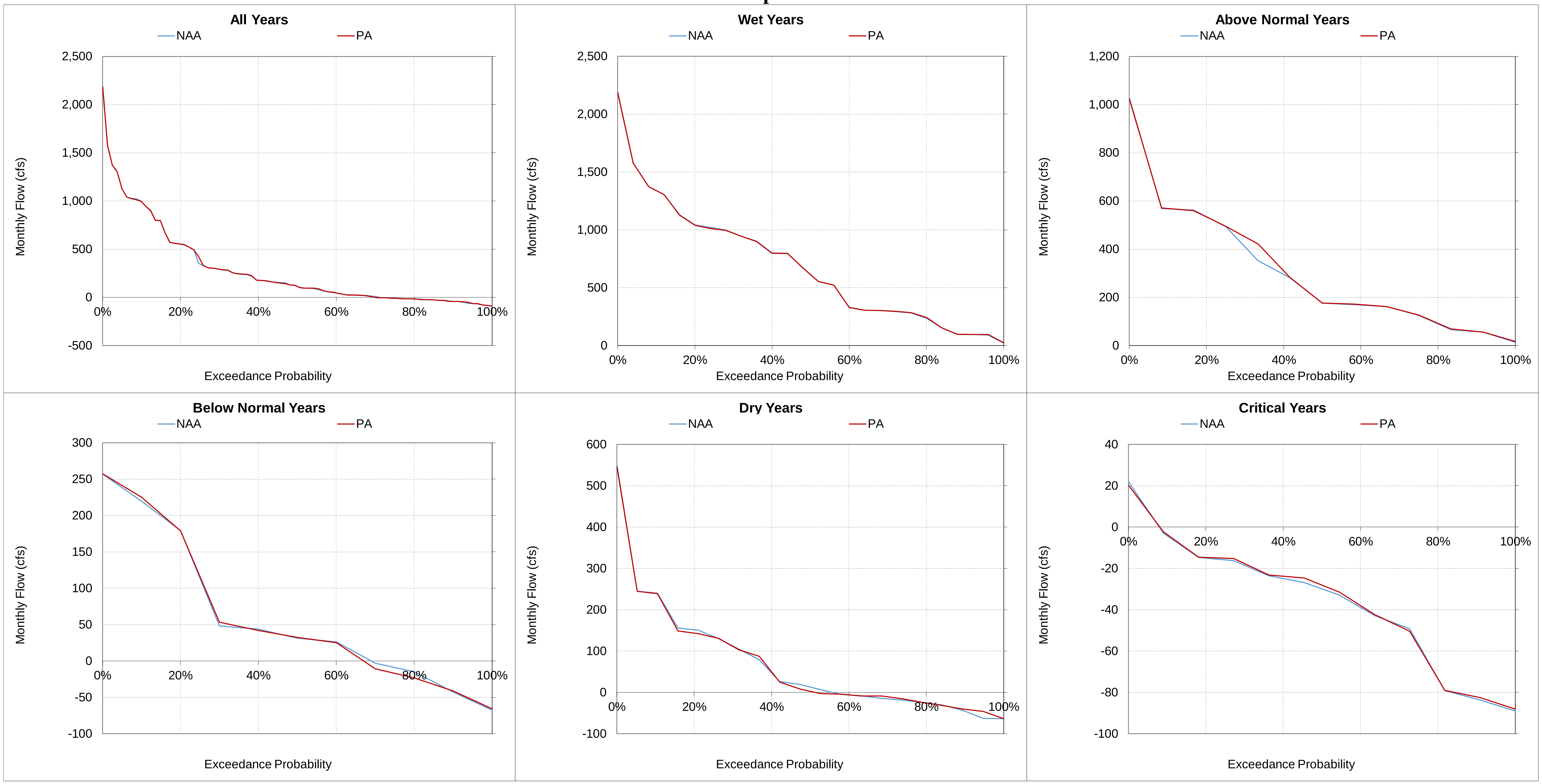
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-13. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow March



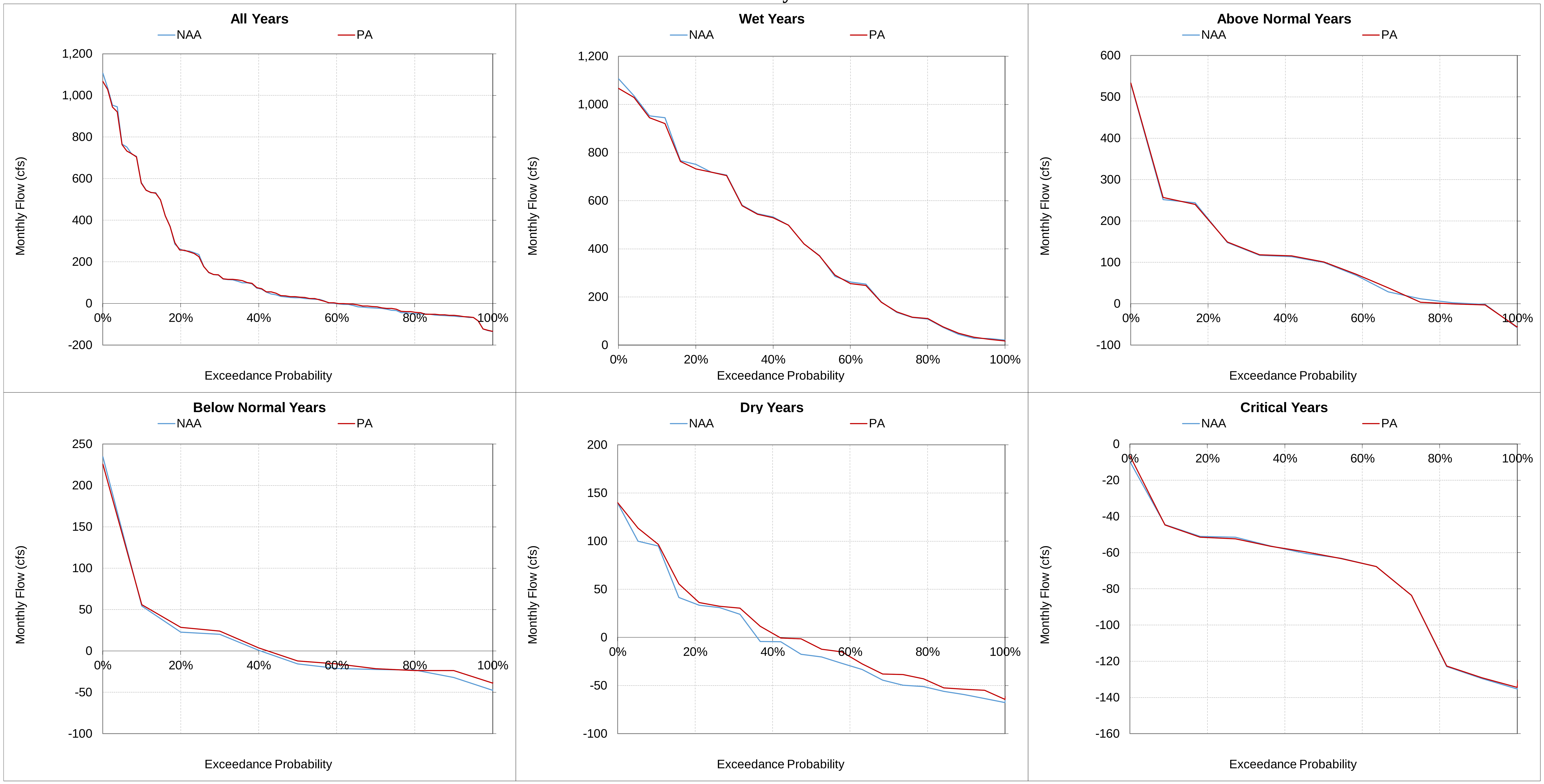
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-14. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow
April



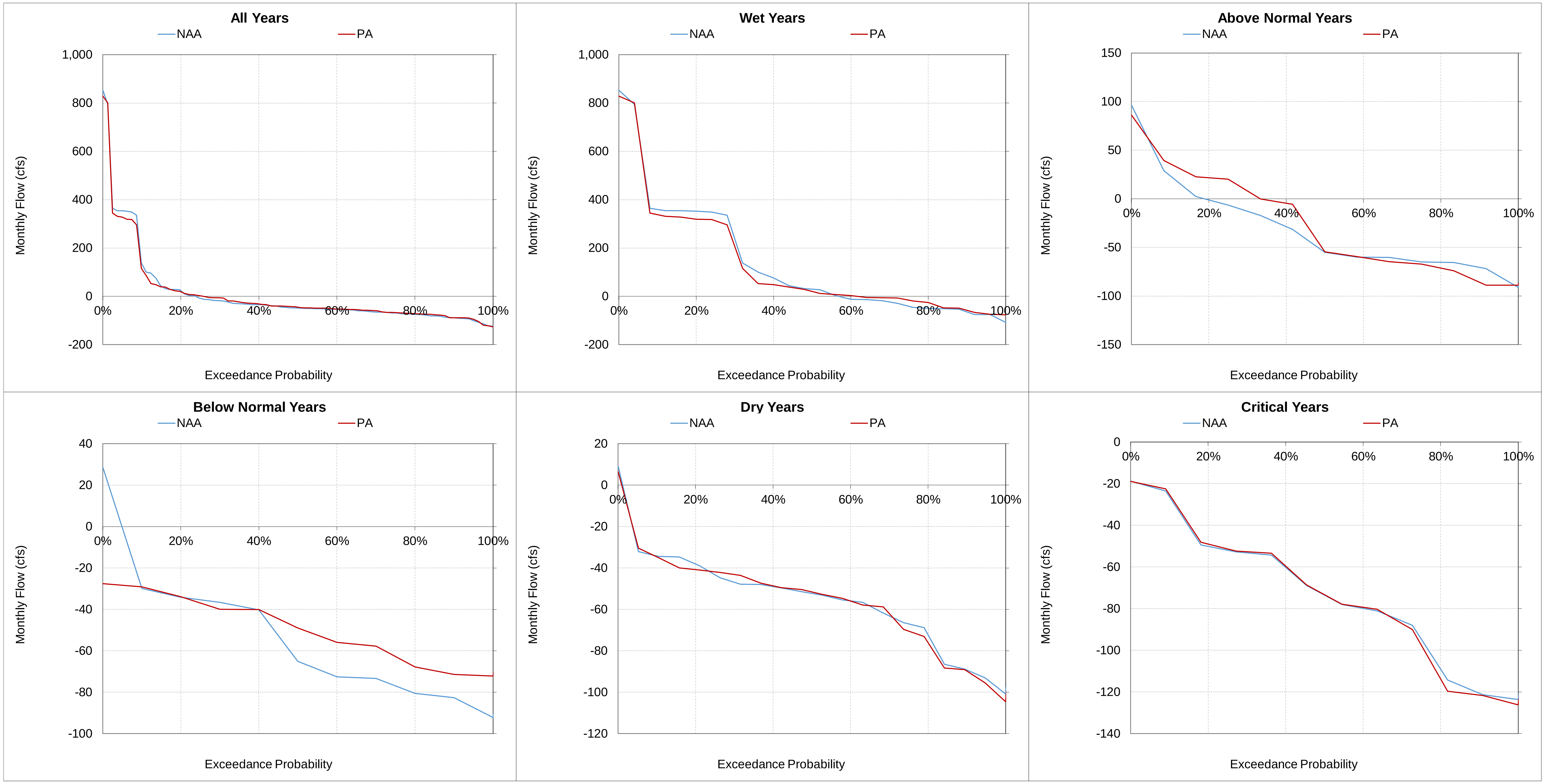
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-15. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow May



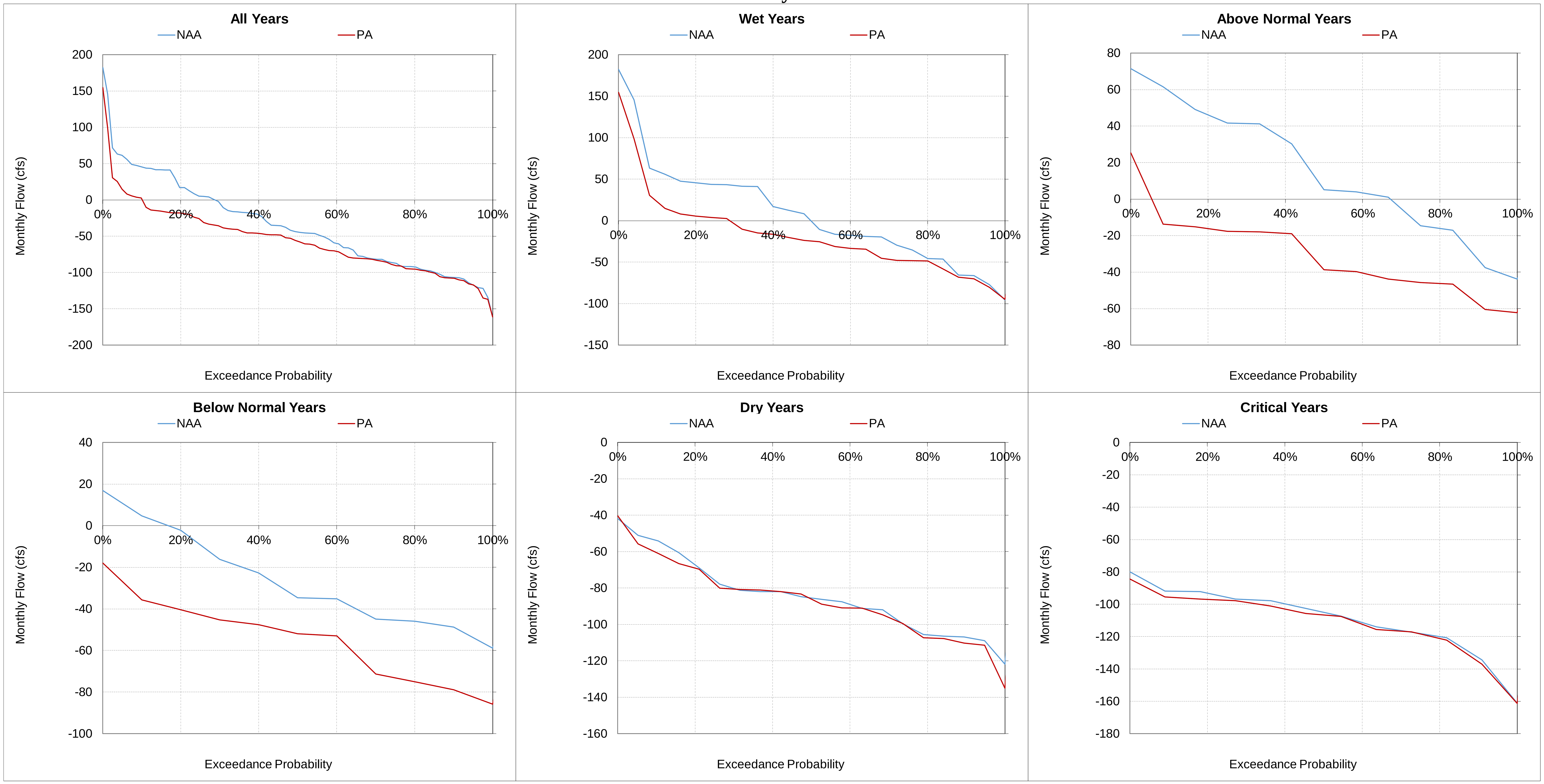
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-16. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow June



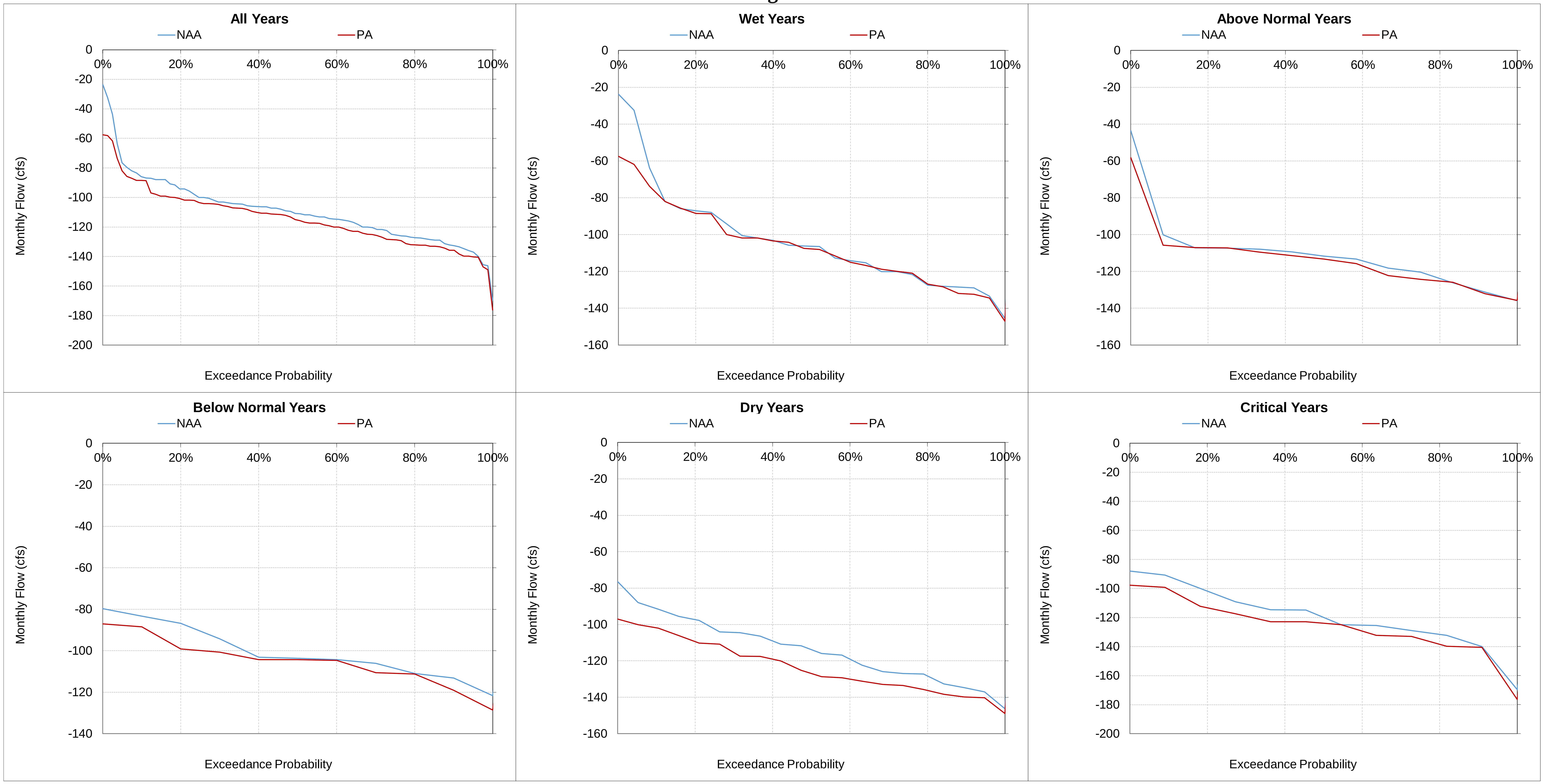
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-17. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow July



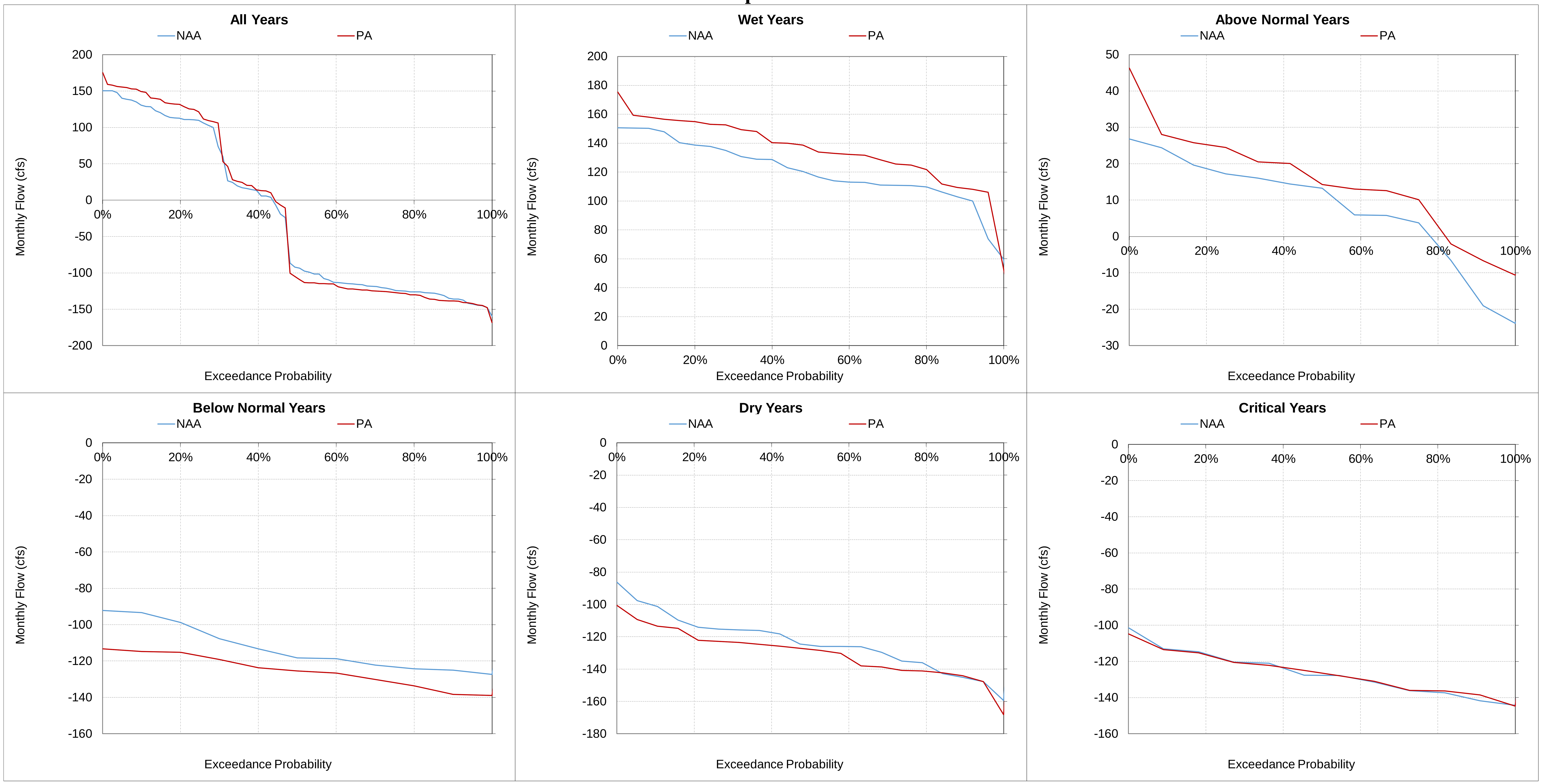
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-18. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-29-19. Montezuma Slough upstream of Salinity Control Gate, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-30. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
20%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
30%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
40%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
50%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
60%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
70%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
80%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
90%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Long Term Full Simulation Period[b]	0	0	0	-20%	0	0	0	-50%	0	0	0	-23%	0	0	0	20%	0	0	0	17%	0	0	0	-
Water Year Types[c]																								
Wet (32%)	0	0	0	-	0	0	0	0%	0	0	0	-33%	0	0	0	17%	0	0	0	-	0	0	0	-
Above Normal (16%)	0	0	0	-20%	0	0	0	-50%	0	0	0	-20%	0	0	0	-	0	0	0	0%	0	0	0	-
Below Normal (13%)	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	100%	0	0	0	-
Dry (24%)	0	0	0	-	0	0	0	-100%	0	0	0	-	0	0	0	0%	0	0	0	-	0	0	0	-
Critical (15%)	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	33%	0	0	0	-	0	0	0	-

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
20%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
30%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
40%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
50%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
60%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
70%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
80%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
90%	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Long Term Full Simulation Period[b]	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Water Year Types[c]																								
Wet (32%)	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Above Normal (16%)	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Below Normal (13%)	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Dry (24%)	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Critical (15%)	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-1. Monthly Flow Ranges For Roaring Slough upstream of Roaring River Distribution System, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.

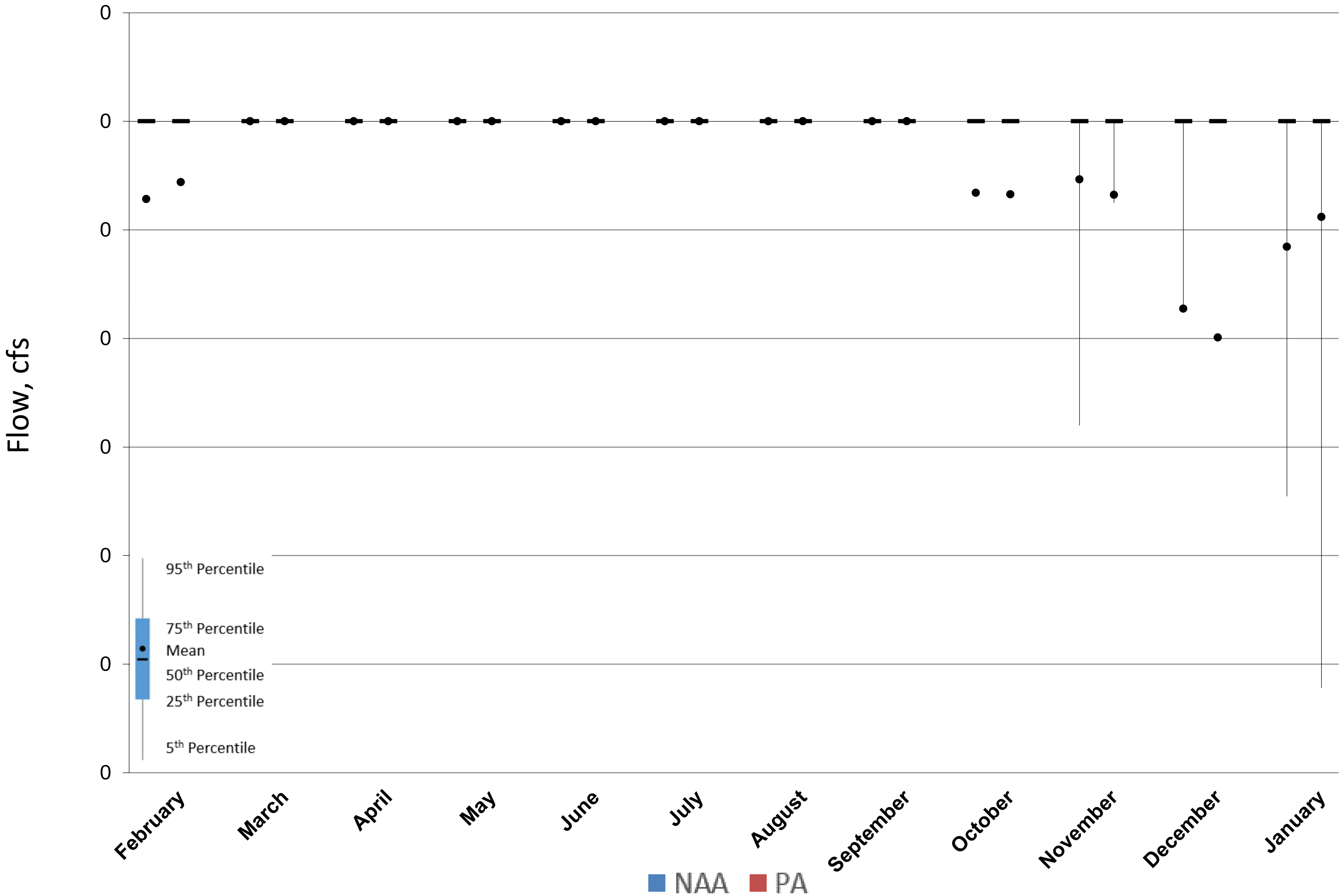


Figure 5.B.5-30-2. Monthly Flow Ranges For Roaring Slough upstream of Roaring River Distribution System, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

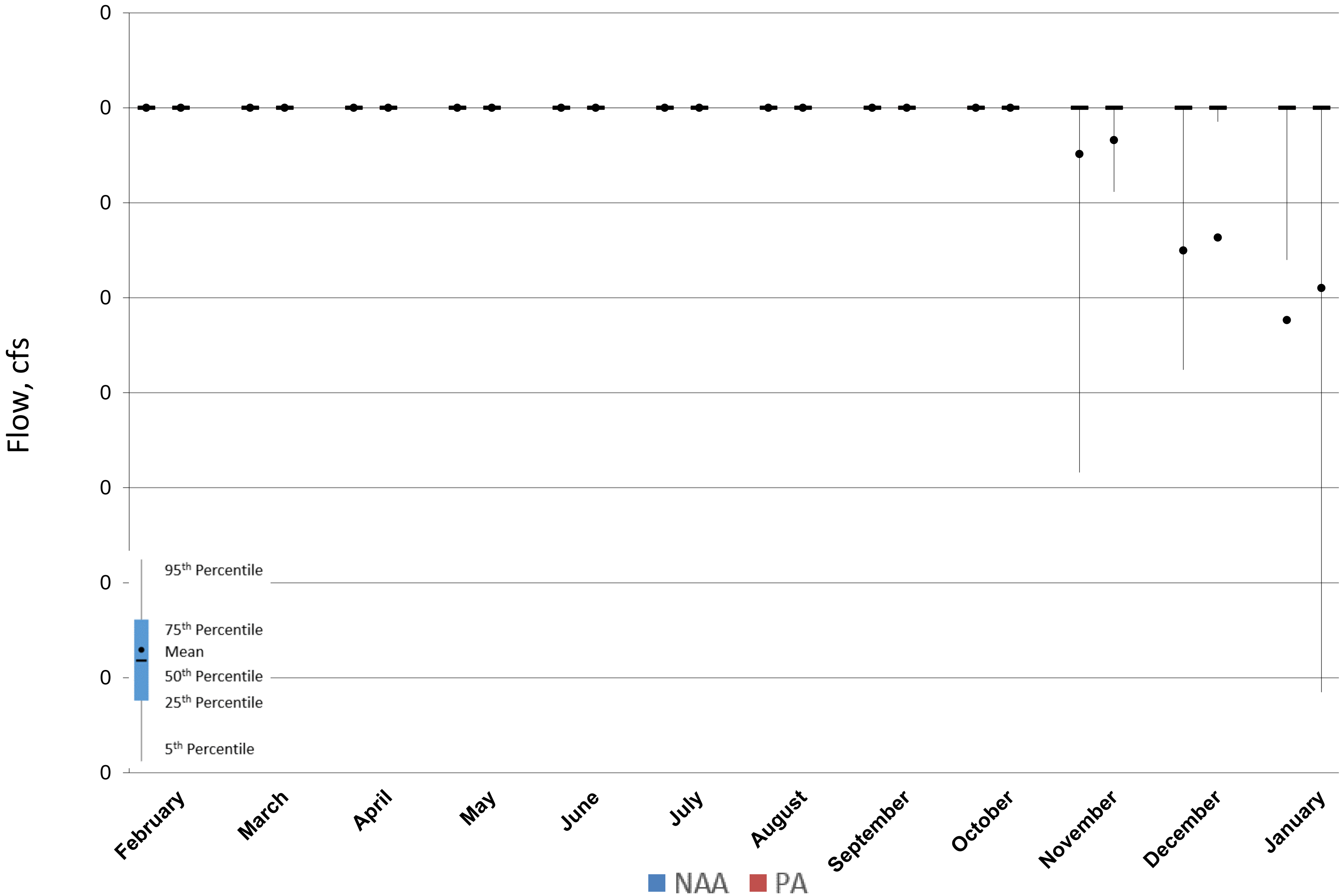


Figure 5.B.5-30-3. Monthly Flow Ranges For Roaring Slough upstream of Roaring River Distribution System, Above Normal Years

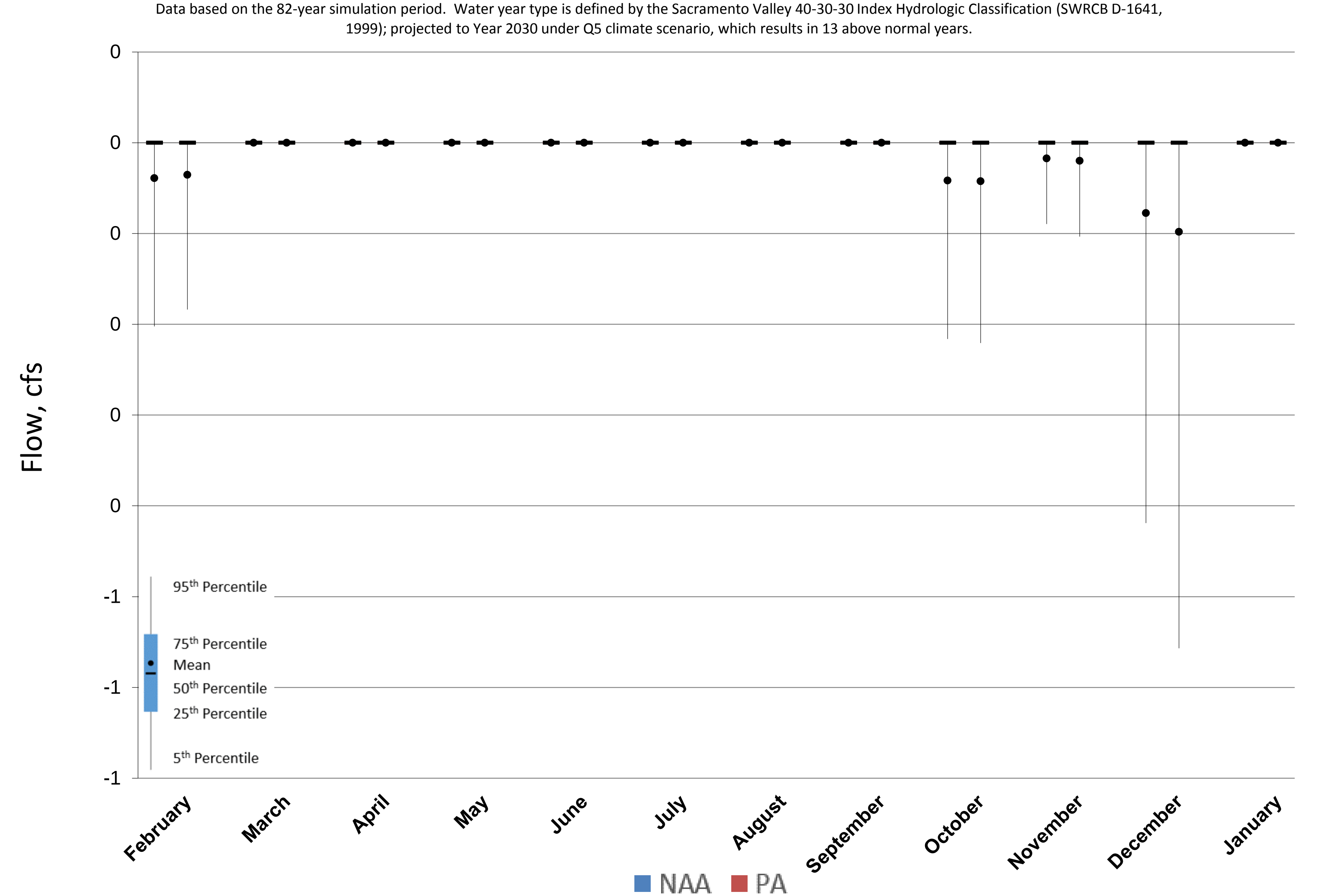


Figure 5.B.5-30-4. Monthly Flow Ranges For Roaring Slough upstream of Roaring River Distribution System, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

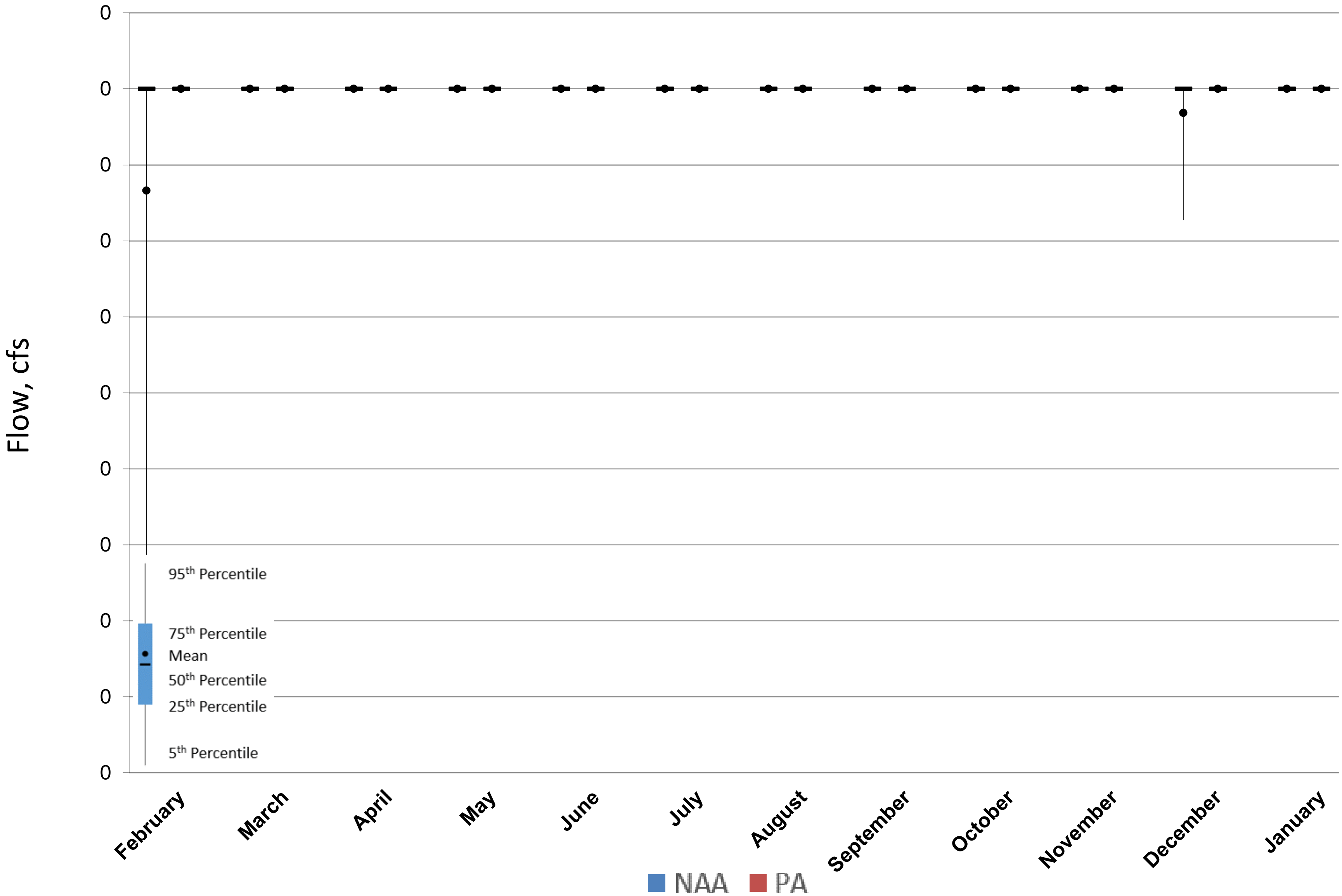


Figure 5.B.5-30-5. Monthly Flow Ranges For Roaring Slough upstream of Roaring River Distribution System, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.

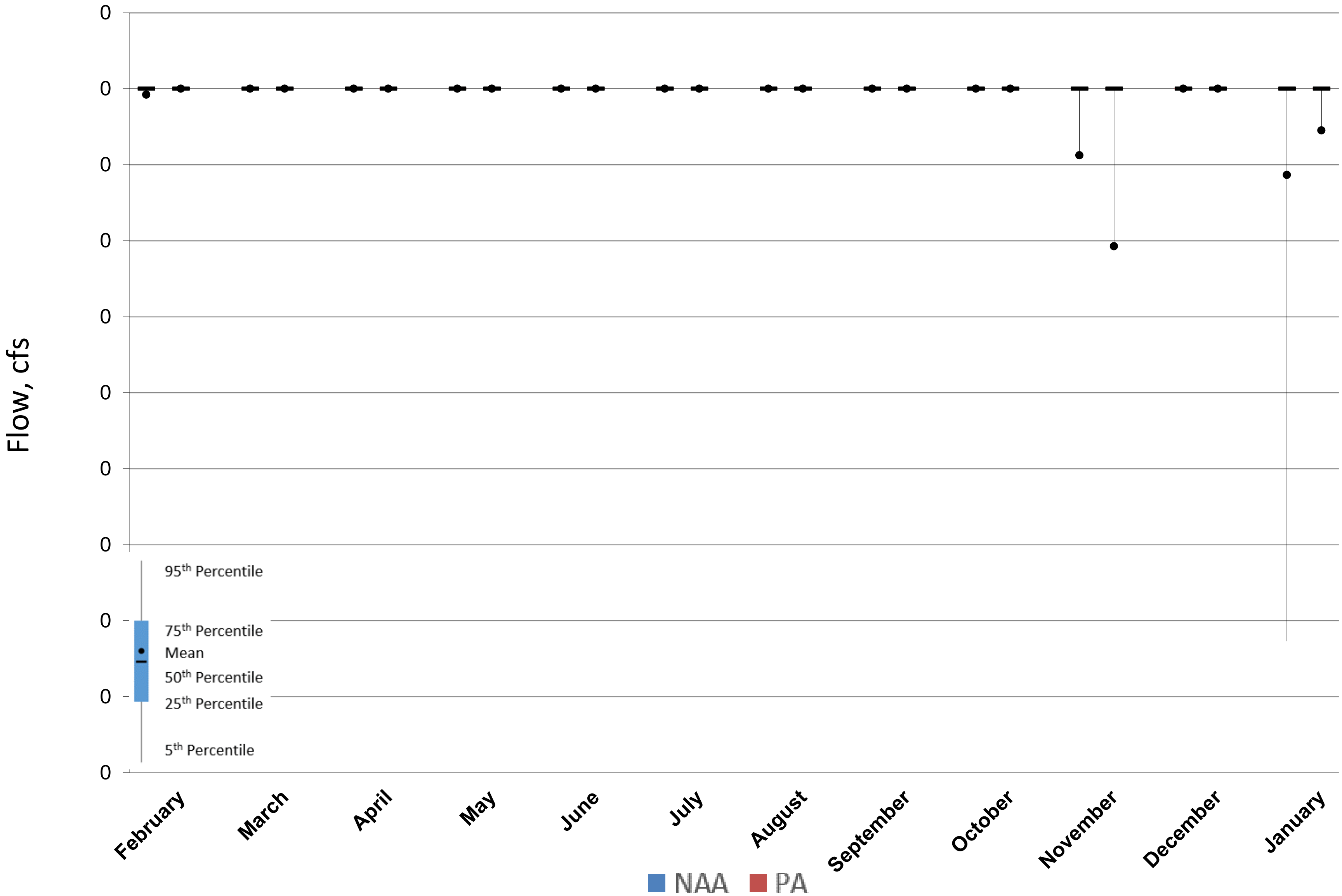


Figure 5.B.5-30-6. Monthly Flow Ranges For Roaring Slough upstream of Roaring River Distribution System, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

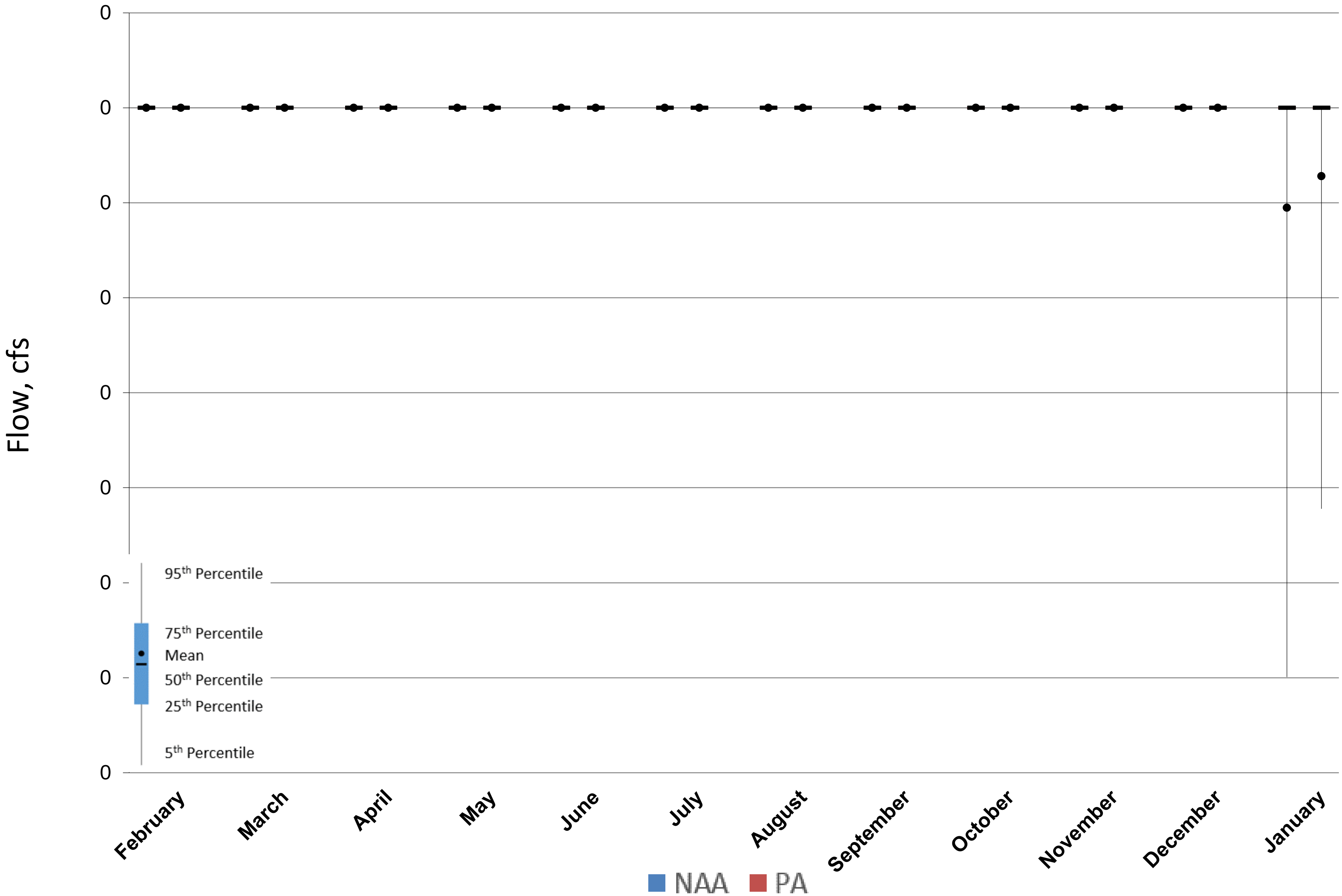
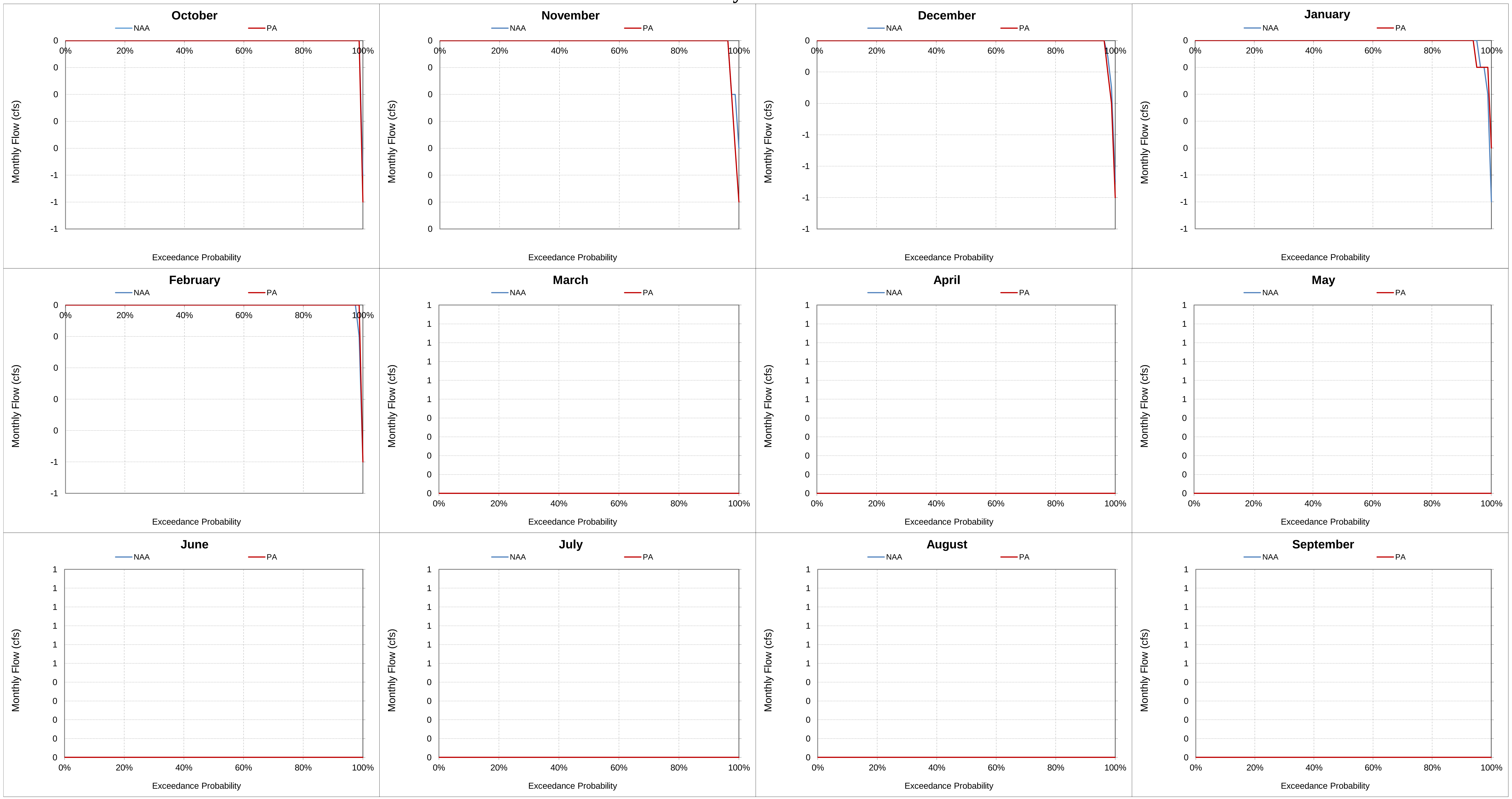
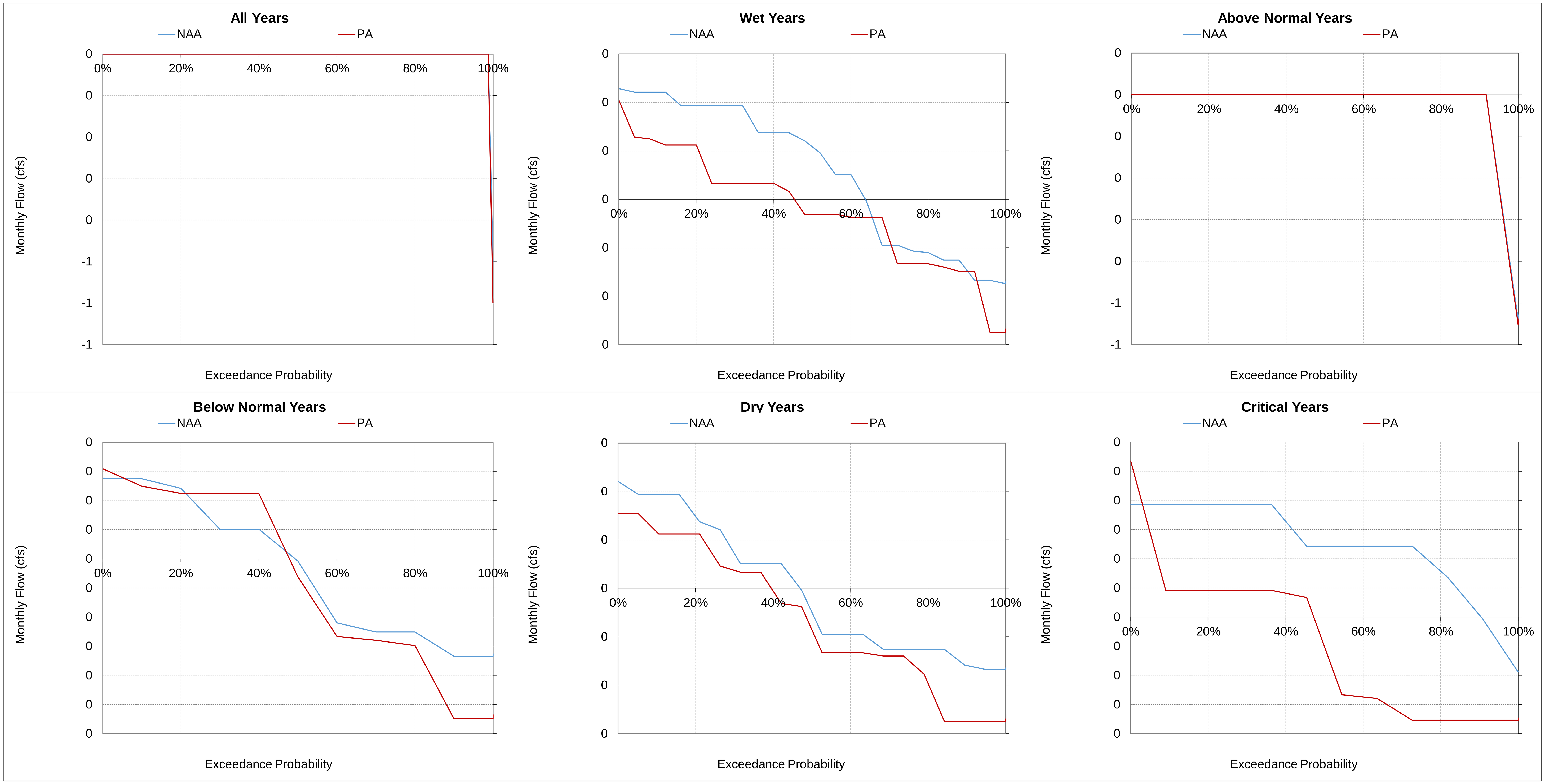


Figure 5.B.5-30-7. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow Probability of Exceedance



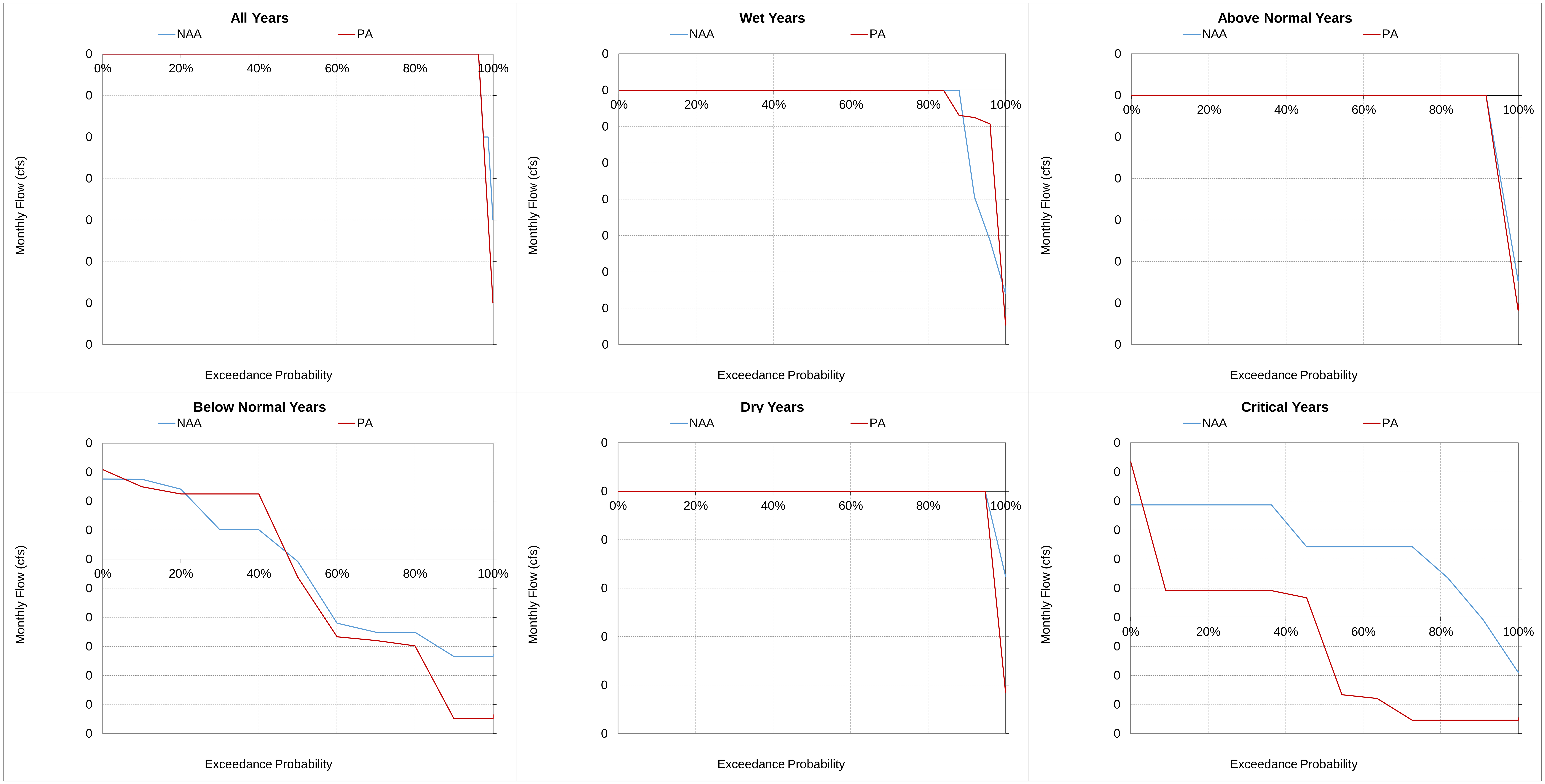
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-8. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow October



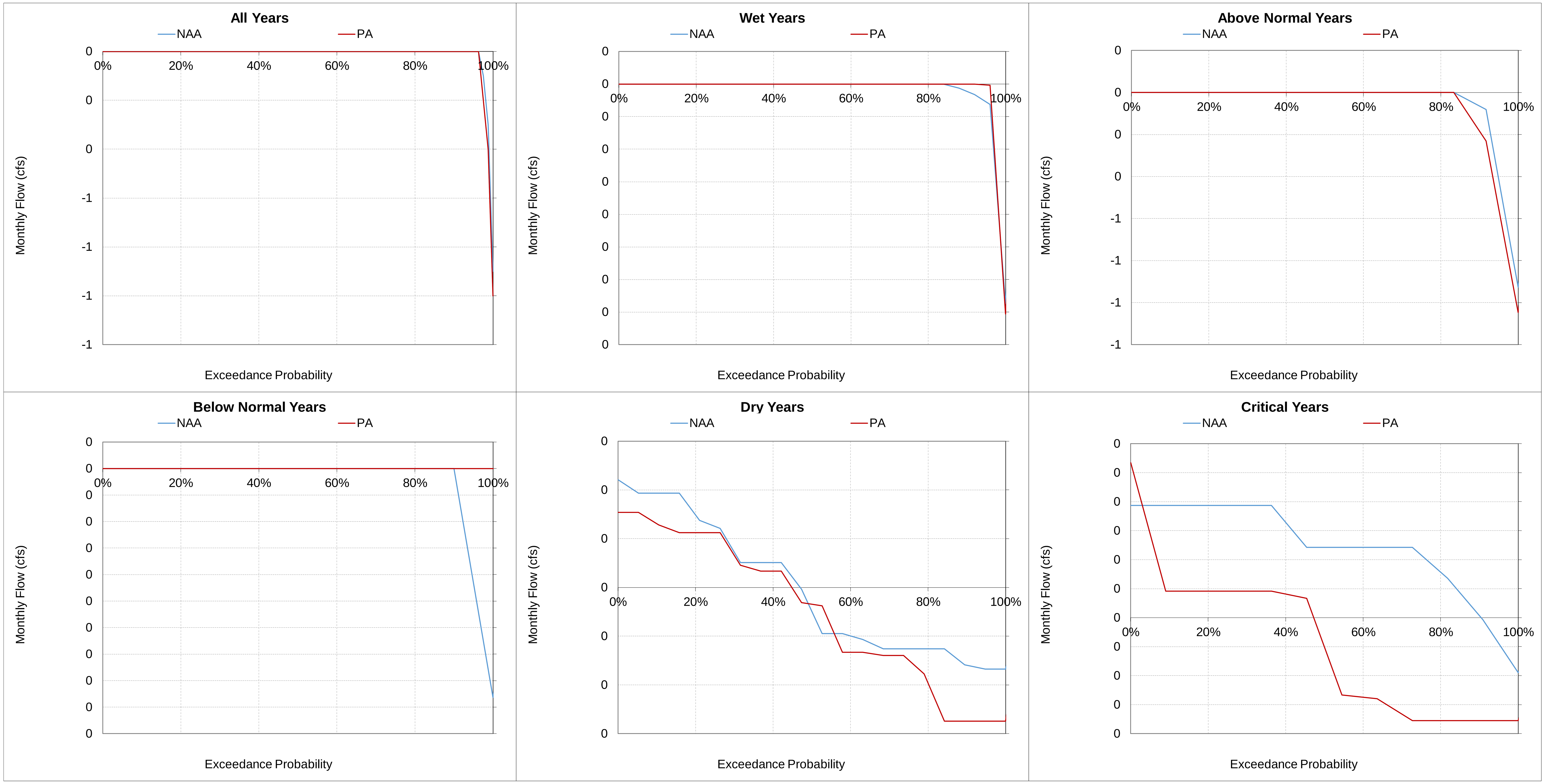
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-9. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow
November



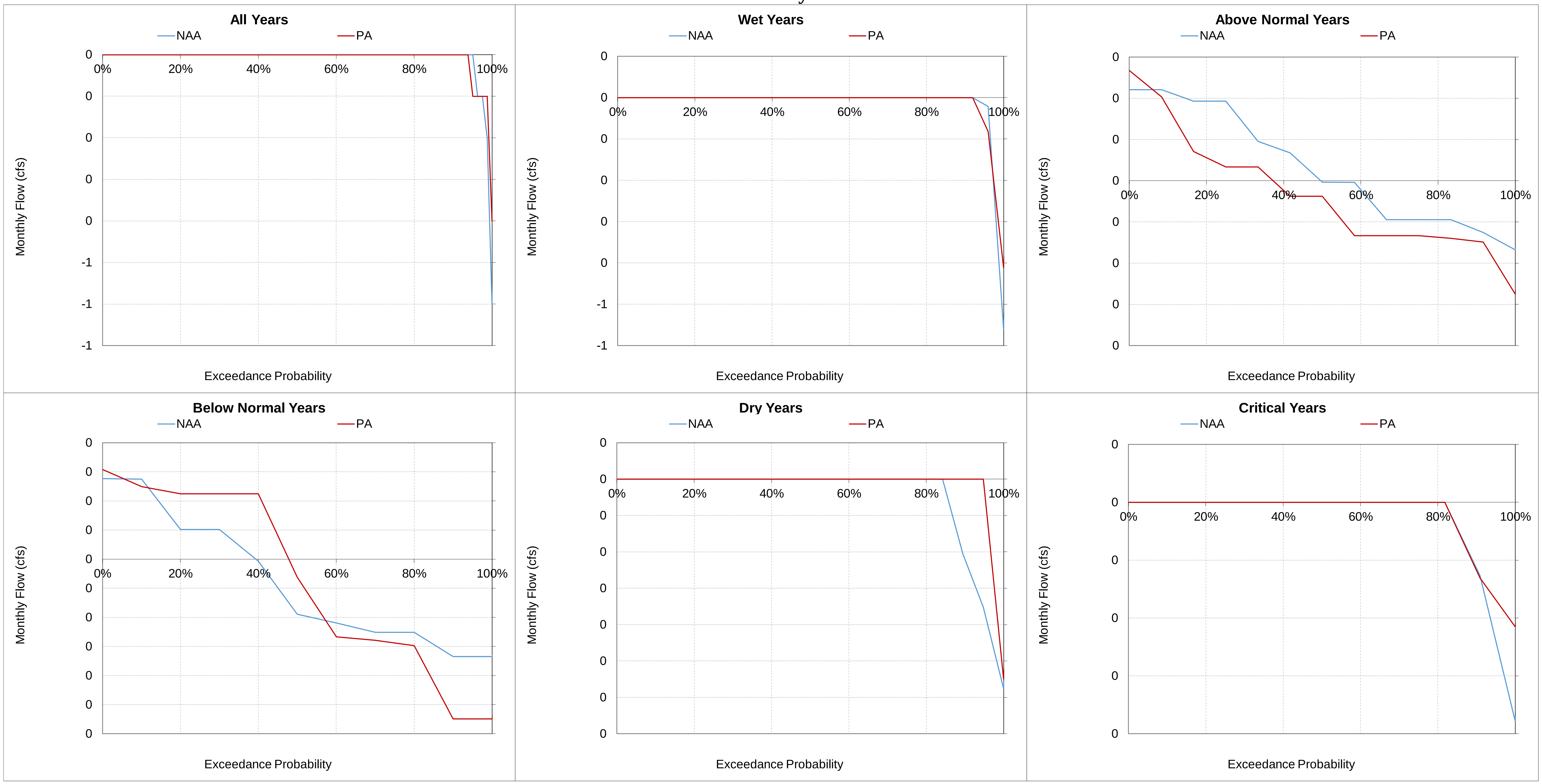
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-10. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow December



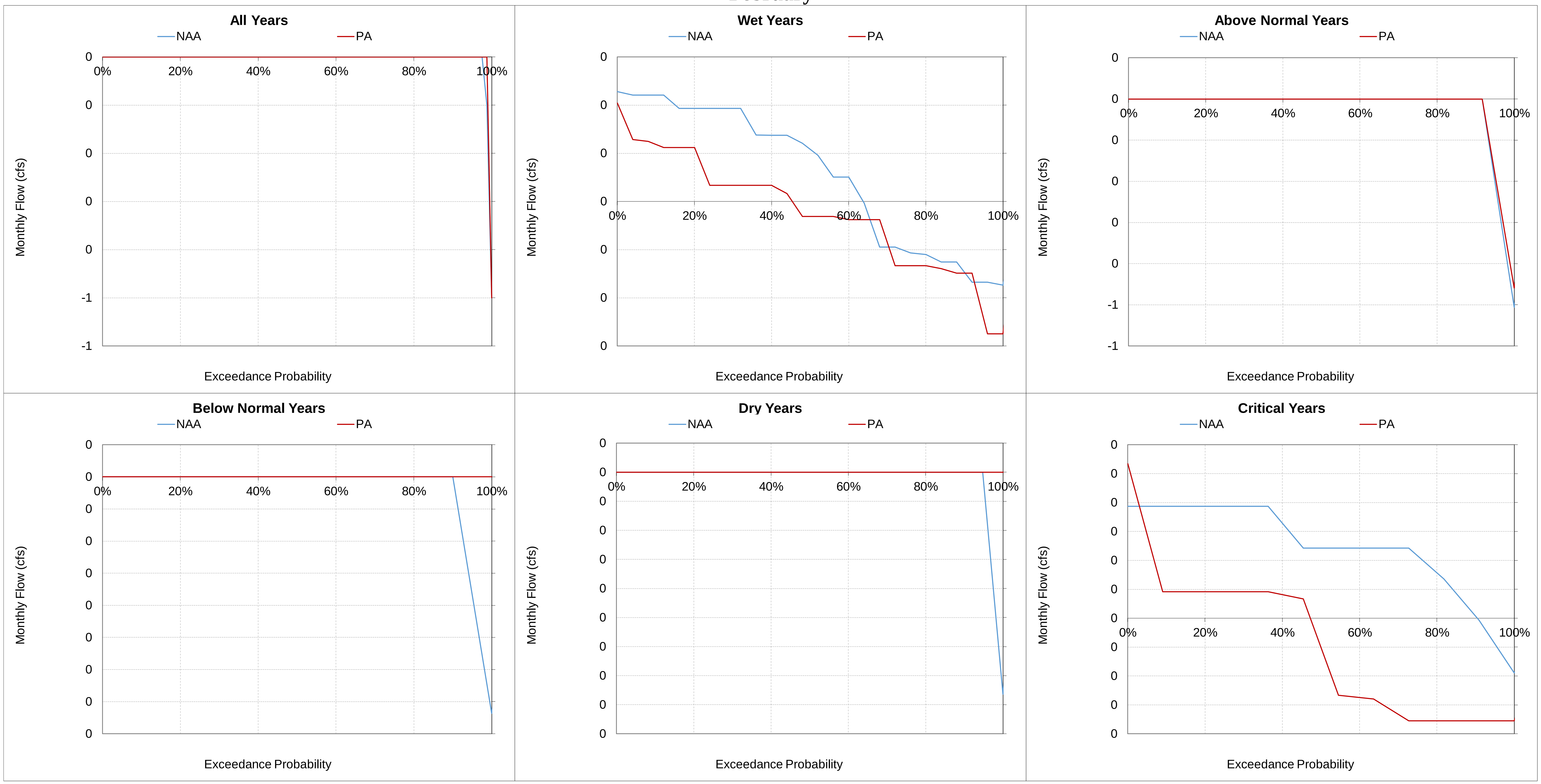
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-11. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow
January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-12. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow February



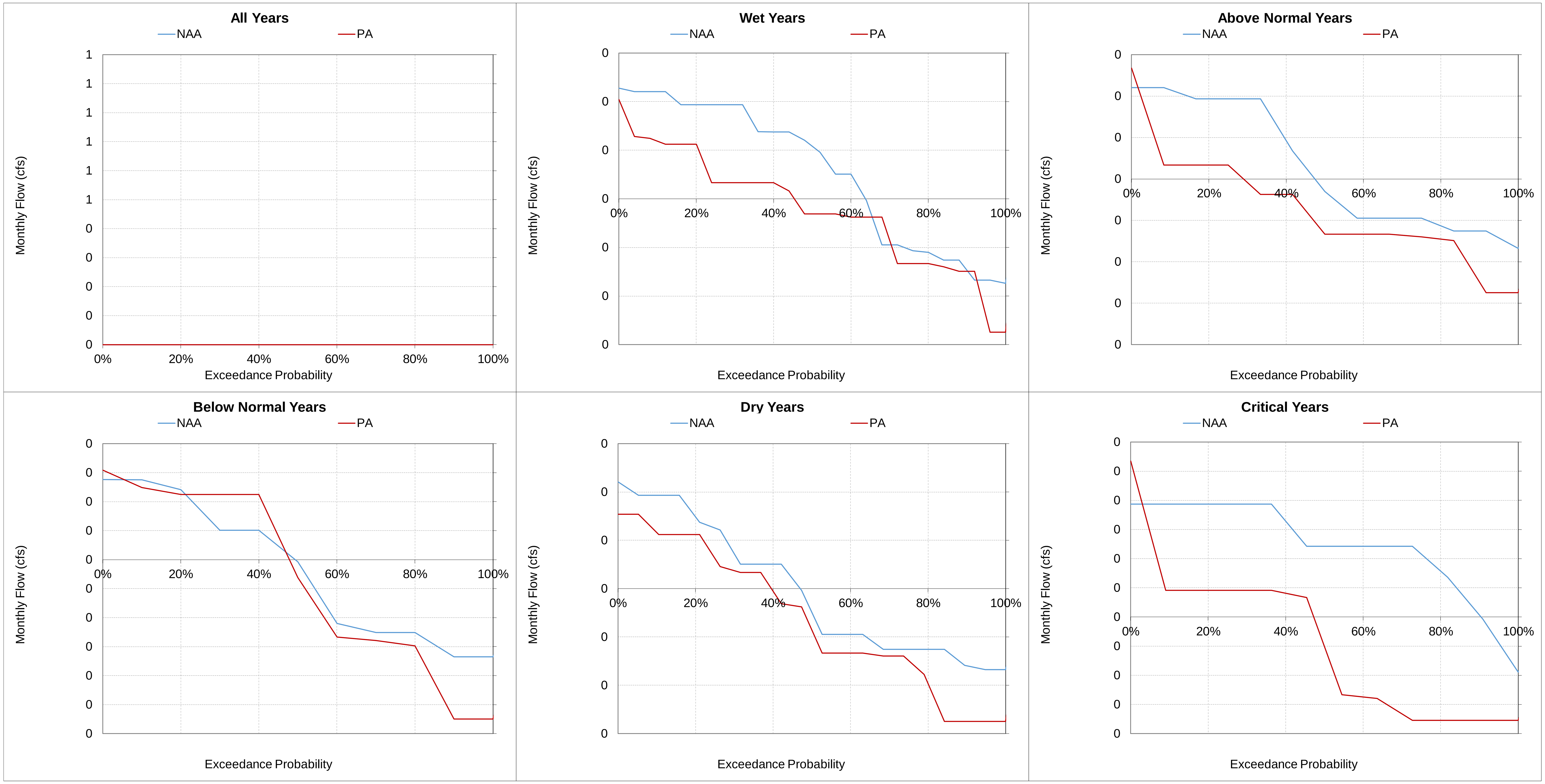
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-13. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow March



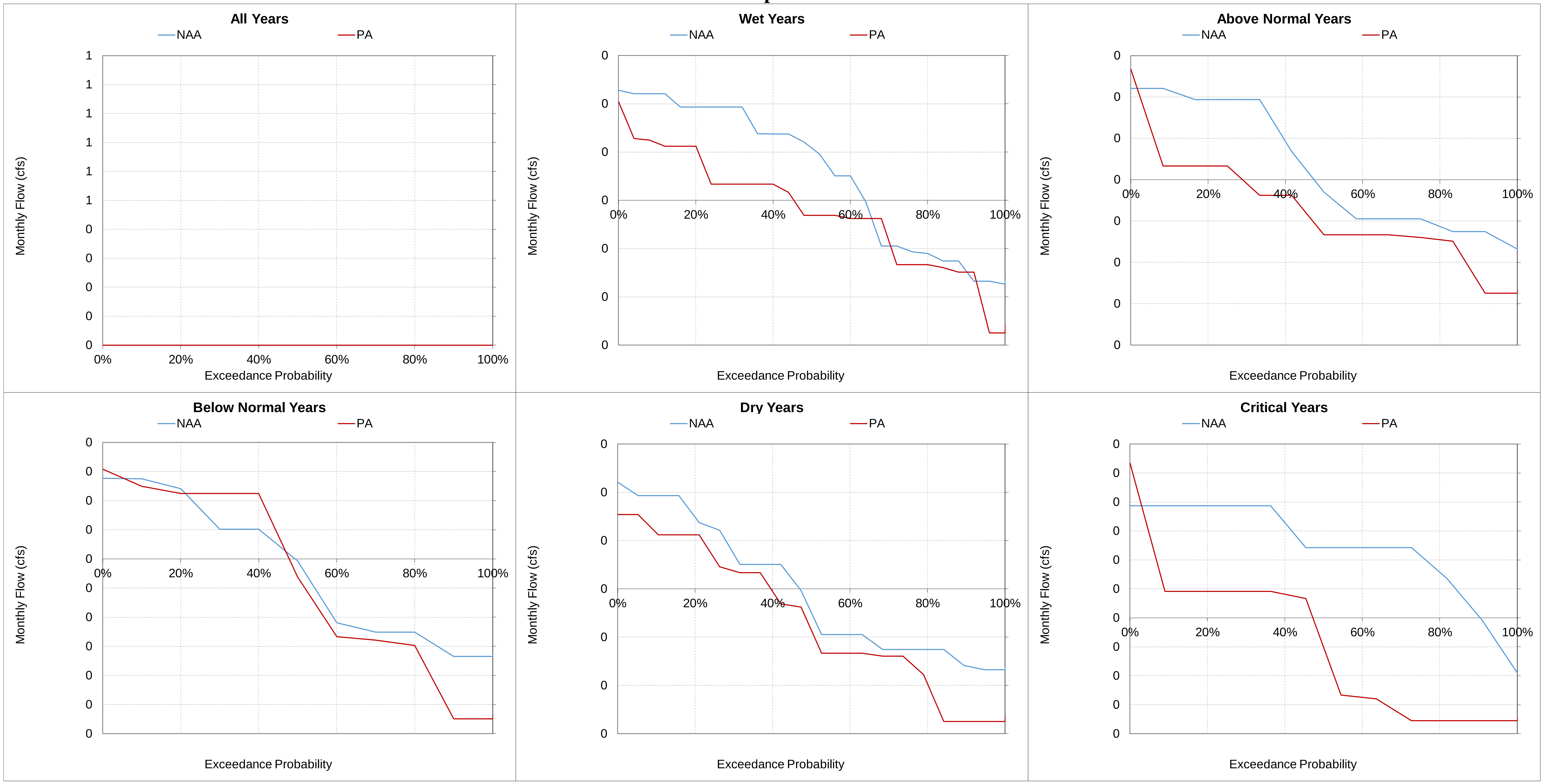
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

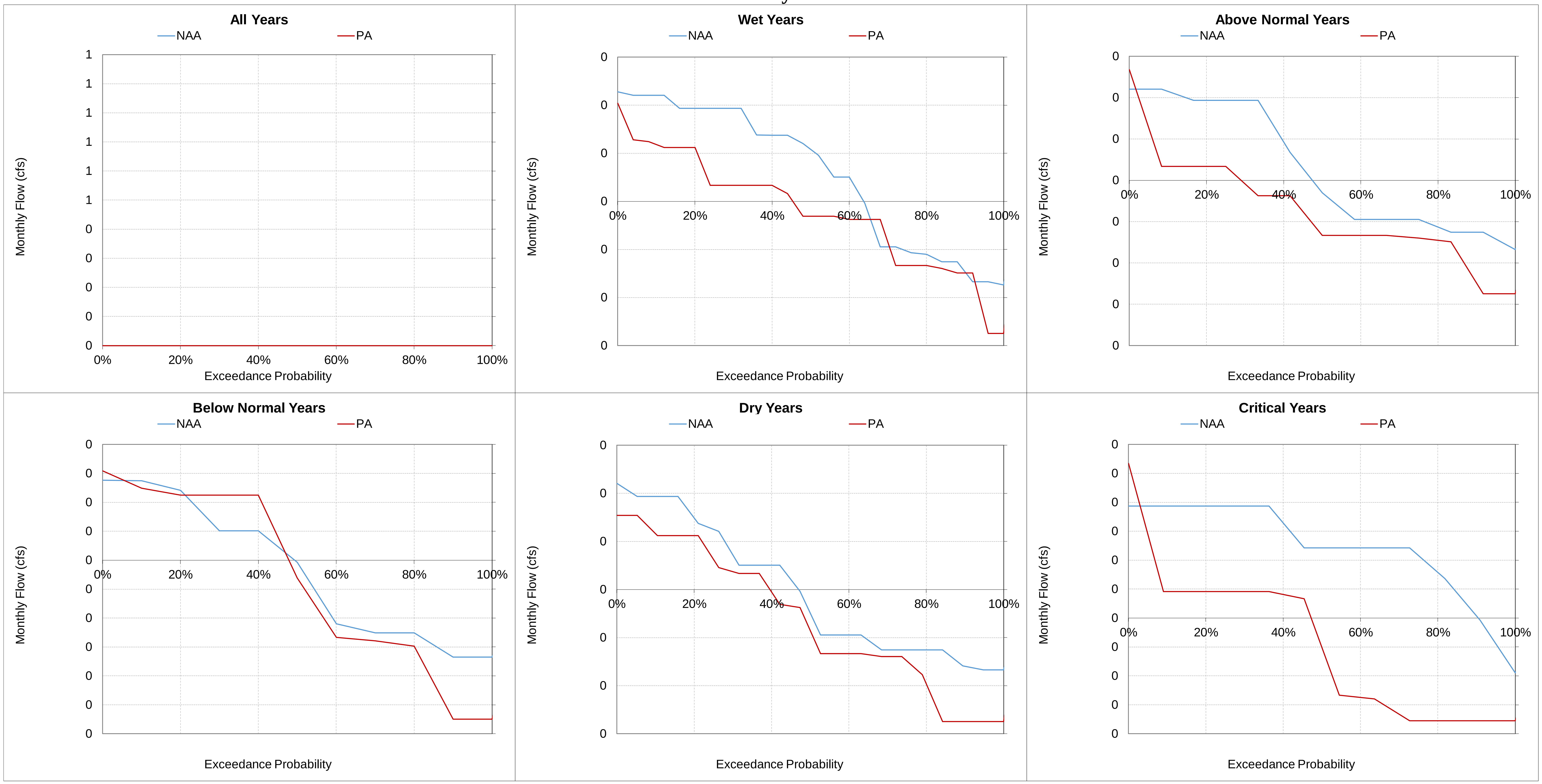
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-14. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-15. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow May



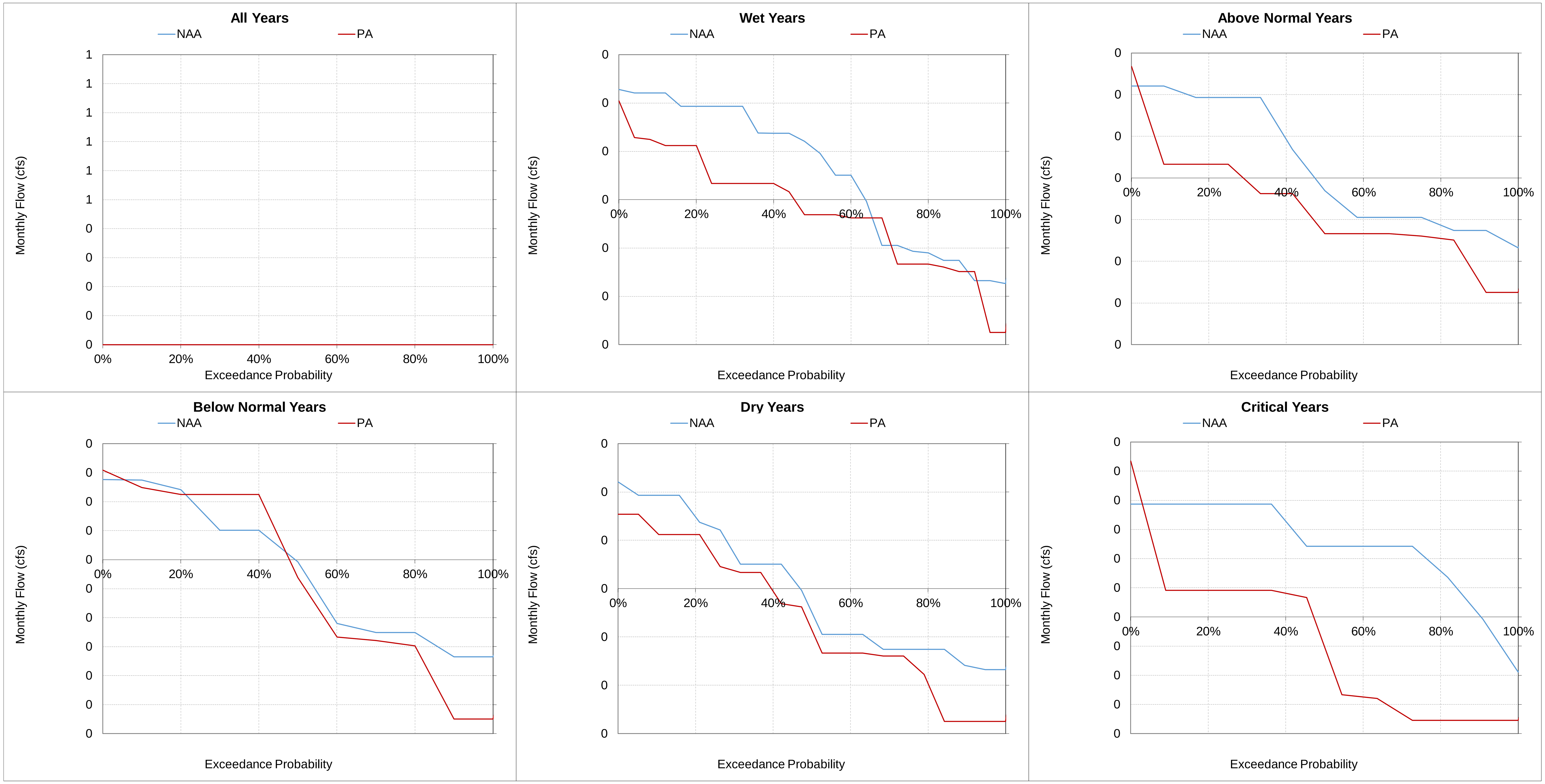
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

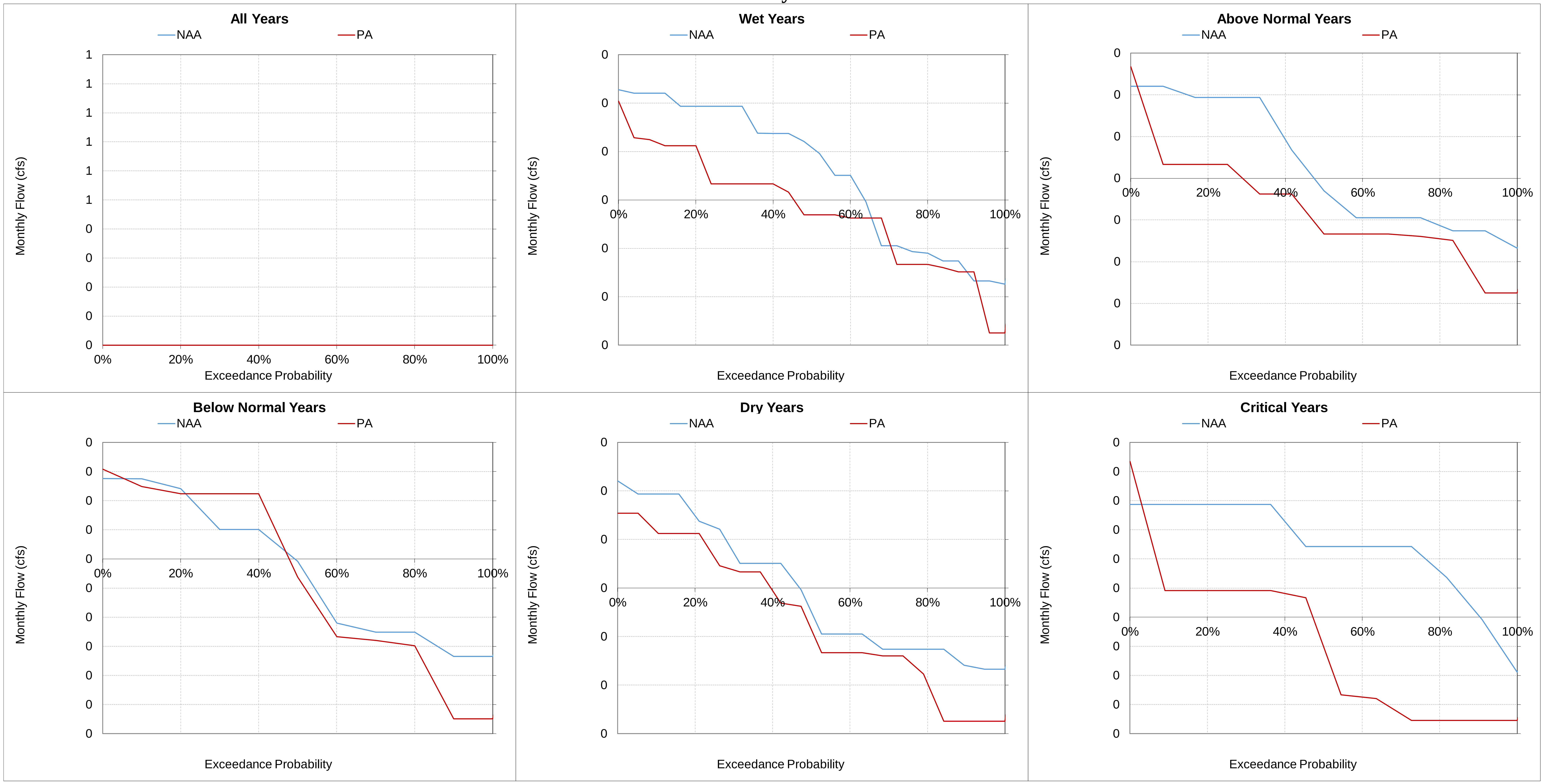
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-16. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow
June



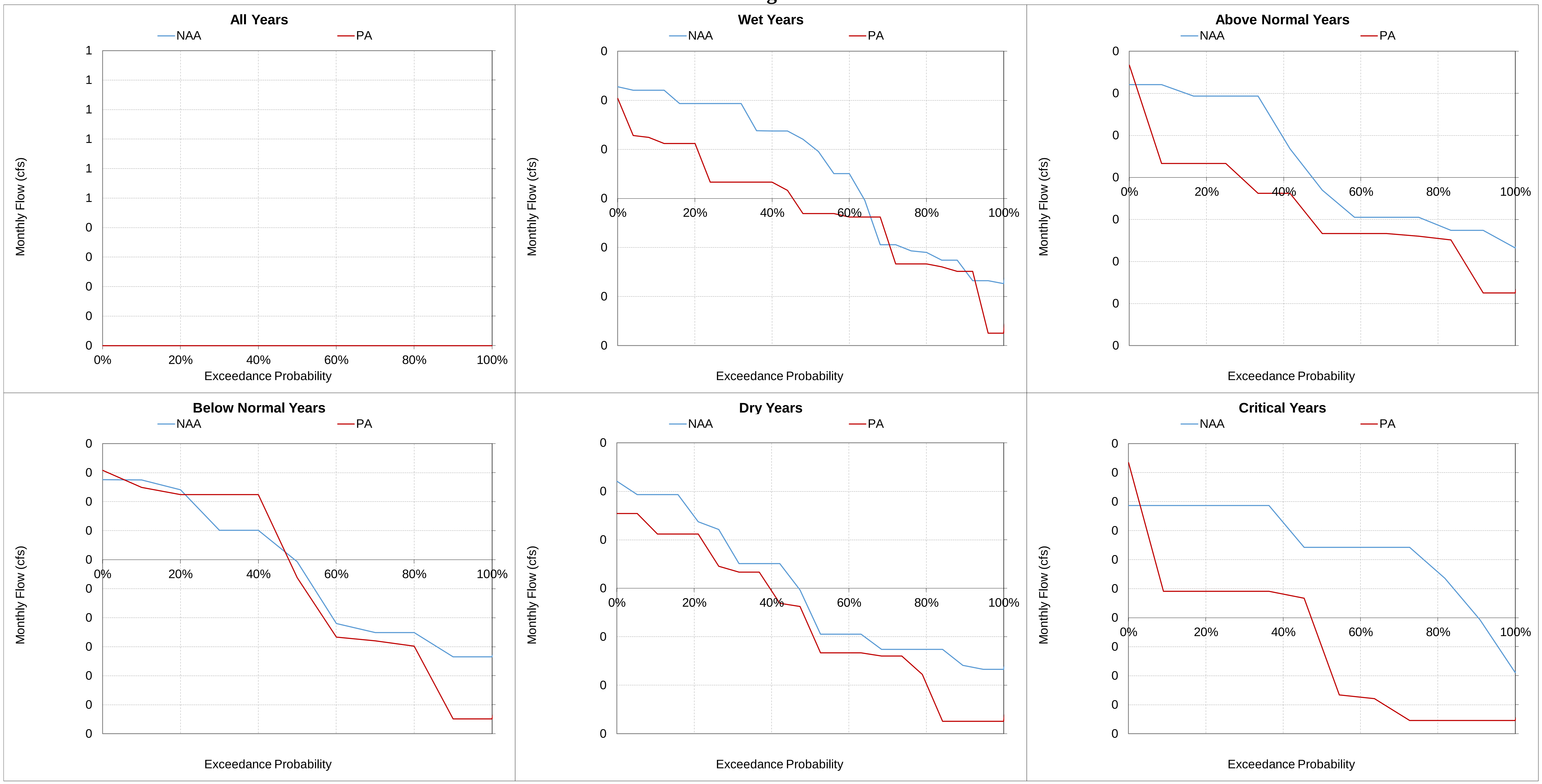
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-17. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow July



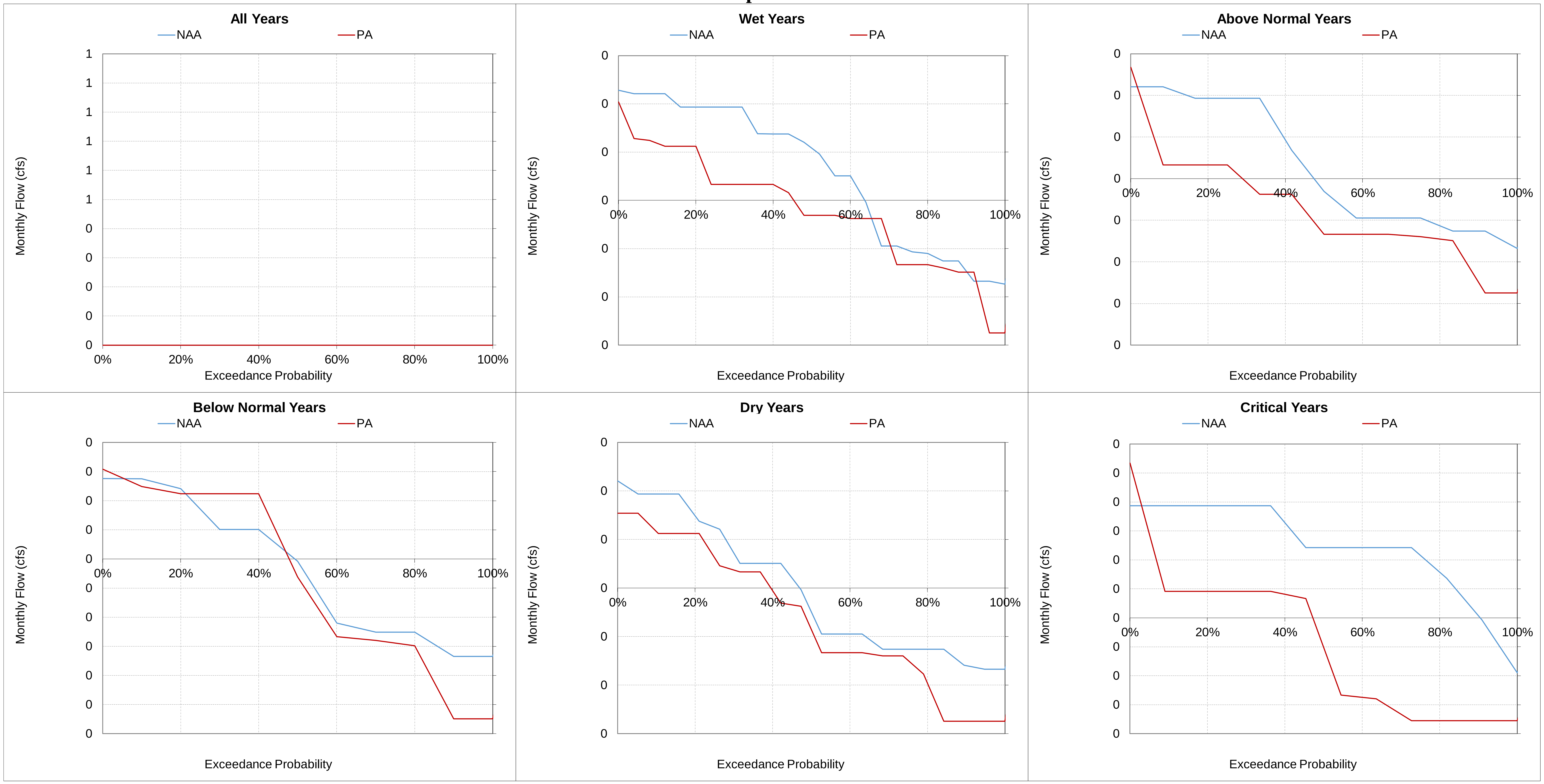
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-18. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-30-19. Roaring Slough upstream of Roaring River Distribution System, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-31. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	81	81	0	0%	81	81	0	0%	82	82	0	0%	81	81	0	0%	80	80	0	0%	79	79	0	0%
20%	81	81	0	0%	81	81	0	0%	81	81	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%
30%	81	81	0	0%	81	81	0	0%	81	81	0	0%	80	80	0	0%	79	79	0	0%	79	79	0	0%
40%	80	80	0	0%	81	81	0	0%	81	81	0	0%	80	80	0	0%	79	79	0	0%	78	78	0	0%
50%	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	78	78	0	0%	78	78	0	0%
60%	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	78	78	0	0%	78	78	0	0%
70%	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	77	77	0	0%	77	77	0	0%
80%	79	79	0	0%	80	80	0	0%	79	79	0	0%	78	78	0	0%	76	76	0	0%	76	76	0	0%
90%	79	79	0	0%	79	79	0	0%	78	78	0	0%	76	76	0	0%	75	75	0	0%	75	75	0	0%
Long Term Full Simulation Period[b]	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	78	78	0	0%	78	78	0	0%
Water Year Types[c]																								
Wet (32%)	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	76	76	0	0%	76	76	0	0%
Above Normal (16%)	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	78	78	0	0%	77	77	0	0%
Below Normal (13%)	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	78	78	0	0%	78	78	0	0%
Dry (24%)	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	79	79	0	0%	79	79	0	0%
Critical (15%)	80	80	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%	79	79	0	0%	79	79	0	0%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	80	80	0	0%	81	81	0	0%	81	81	0	0%	82	82	0	0%	81	81	0	0%	81	81	0	0%
20%	80	80	0	0%	80	80	0	0%	81	81	0	0%	81	81	0	0%	81	81	0	0%	81	81	0	0%
30%	79	79	0	0%	80	80	0	0%	80	80	0	0%	81	81	0	0%	80	80	0	0%	80	80	0	0%
40%	79	79	0	0%	80	80	0	0%	80	80	0	0%	81	81	0	0%	80	80	0	0%	80	80	0	0%
50%	79	79	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%
60%	78	78	0	0%	79	79	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%
70%	78	78	0	0%	79	79	0	0%	79	79	0	0%	80	80	0	0%	80	80	0	0%	79	79	0	0%
80%	77	77	0	0%	78	78	0	0%	79	79	0	0%	80	80	0	0%	79	79	0	0%	79	79	0	0%
90%	76	76	0	0%	78	78	0	0%	78	78	0	0%	79	79	0	0%	79	79	0	0%	79	79	0	0%
Long Term Full Simulation Period[b]	78	78	0	0%	79	79	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%
Water Year Types[c]																								
Wet (32%)	77	77	0	0%	79	79	0	0%	79	79	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%
Above Normal (16%)	78	78	0	0%	80	80	0	0%	80	80	0	0%	81	81	0	0%	80	80	0	0%	80	80	0	0%
Below Normal (13%)	79	79	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%
Dry (24%)	79	79	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%	80	80	0	0%
Critical (15%)	79	79	0	0%	80	80	0	0%	80	80	0	0%	81	81	0	0%	80	80	0	0%	80	80	0	0%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-1. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Goodyear Slough, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.

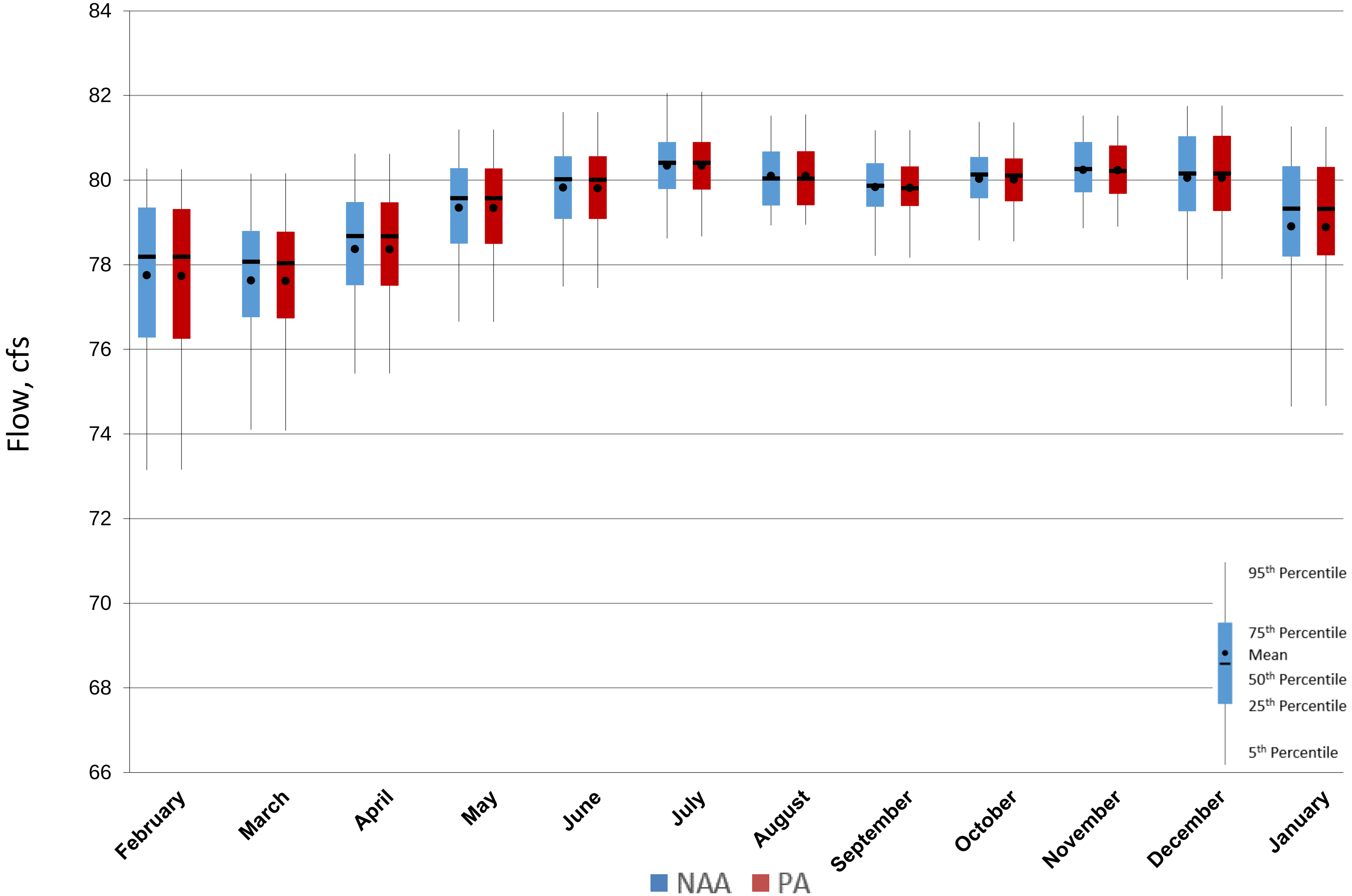


Figure 5.B.5-31-2. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Goodyear Slough, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

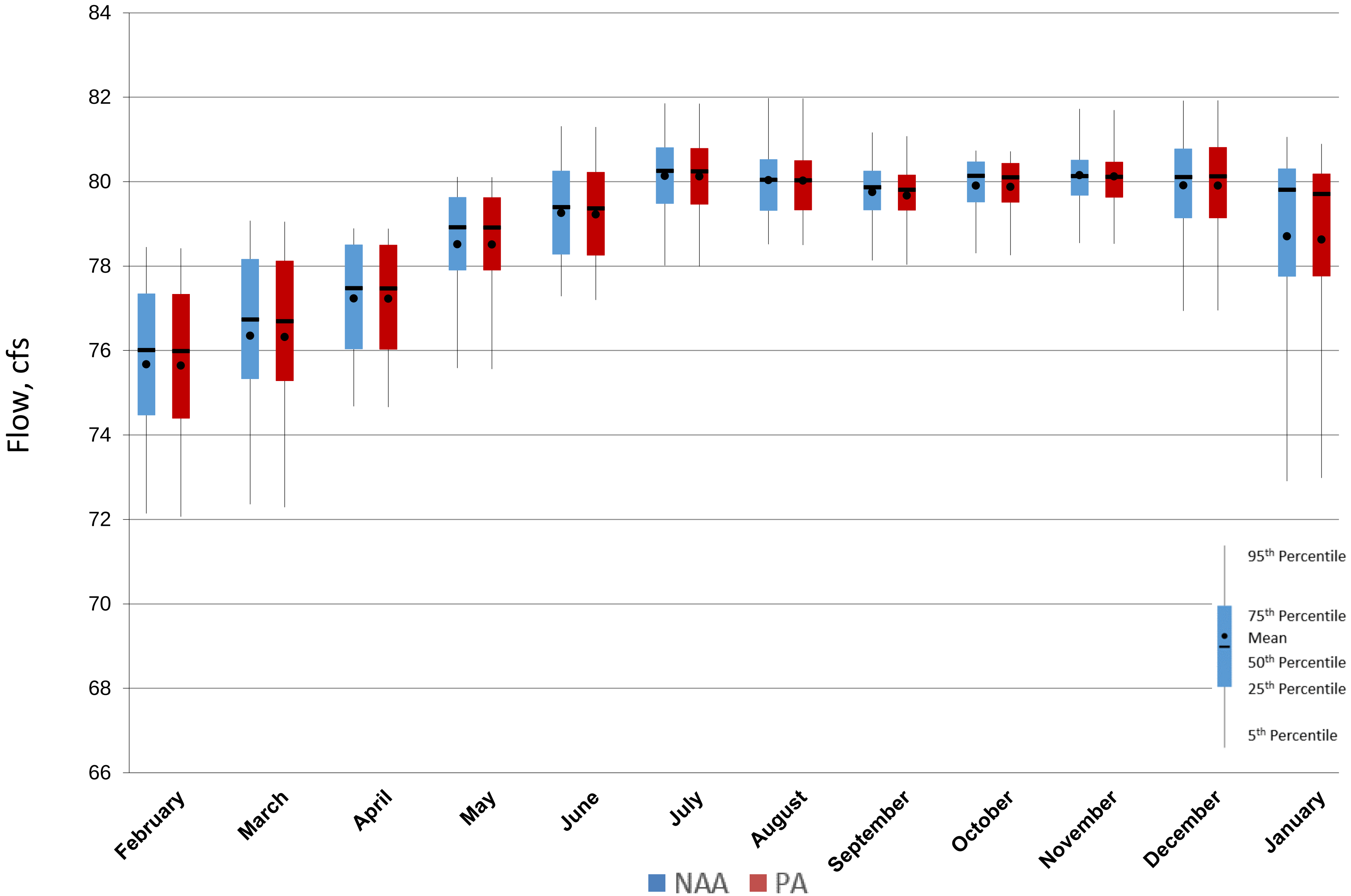


Figure 5.B.5-31-3. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Goodyear Slough, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

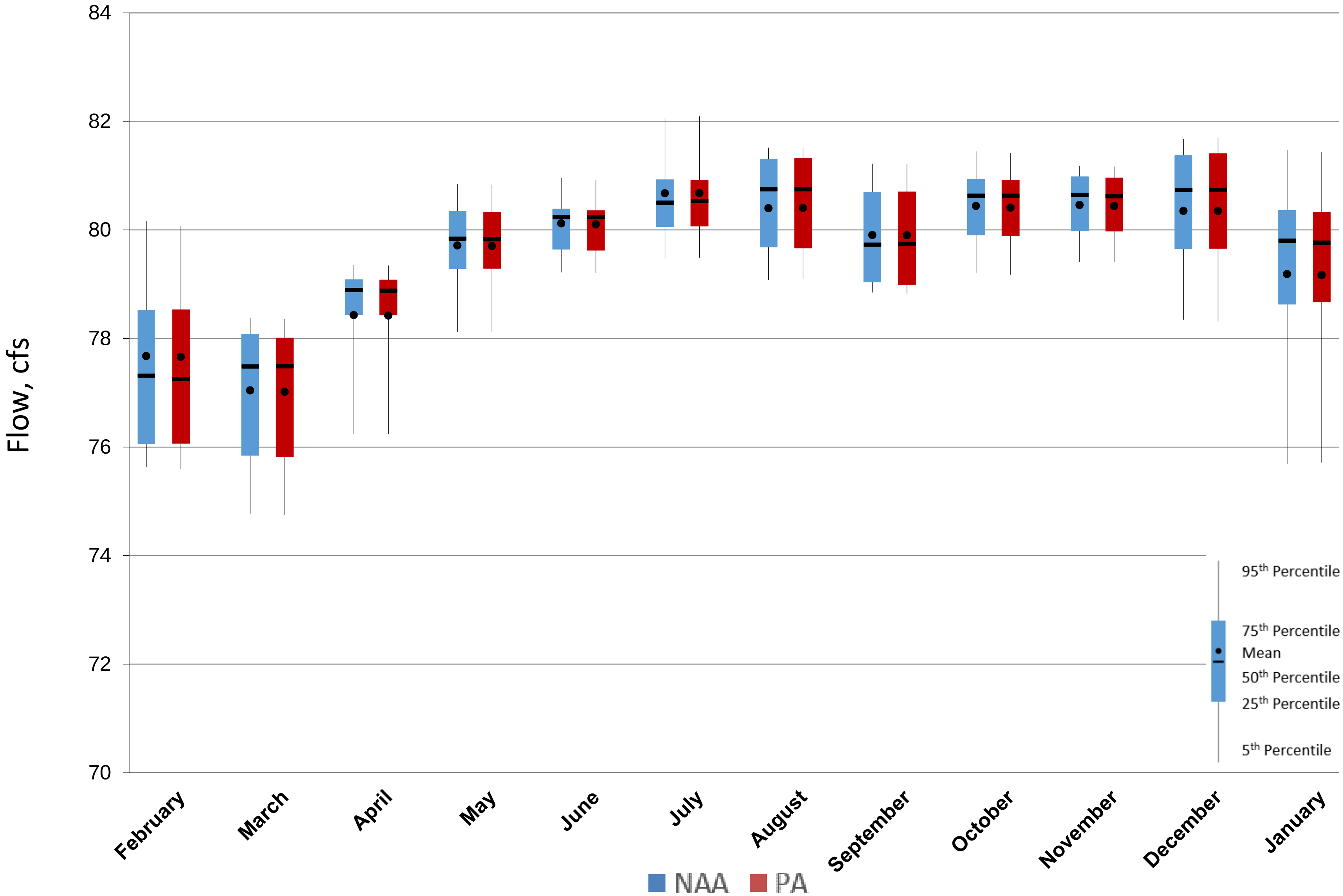


Figure 5.B.5-31-4. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Goodyear Slough, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

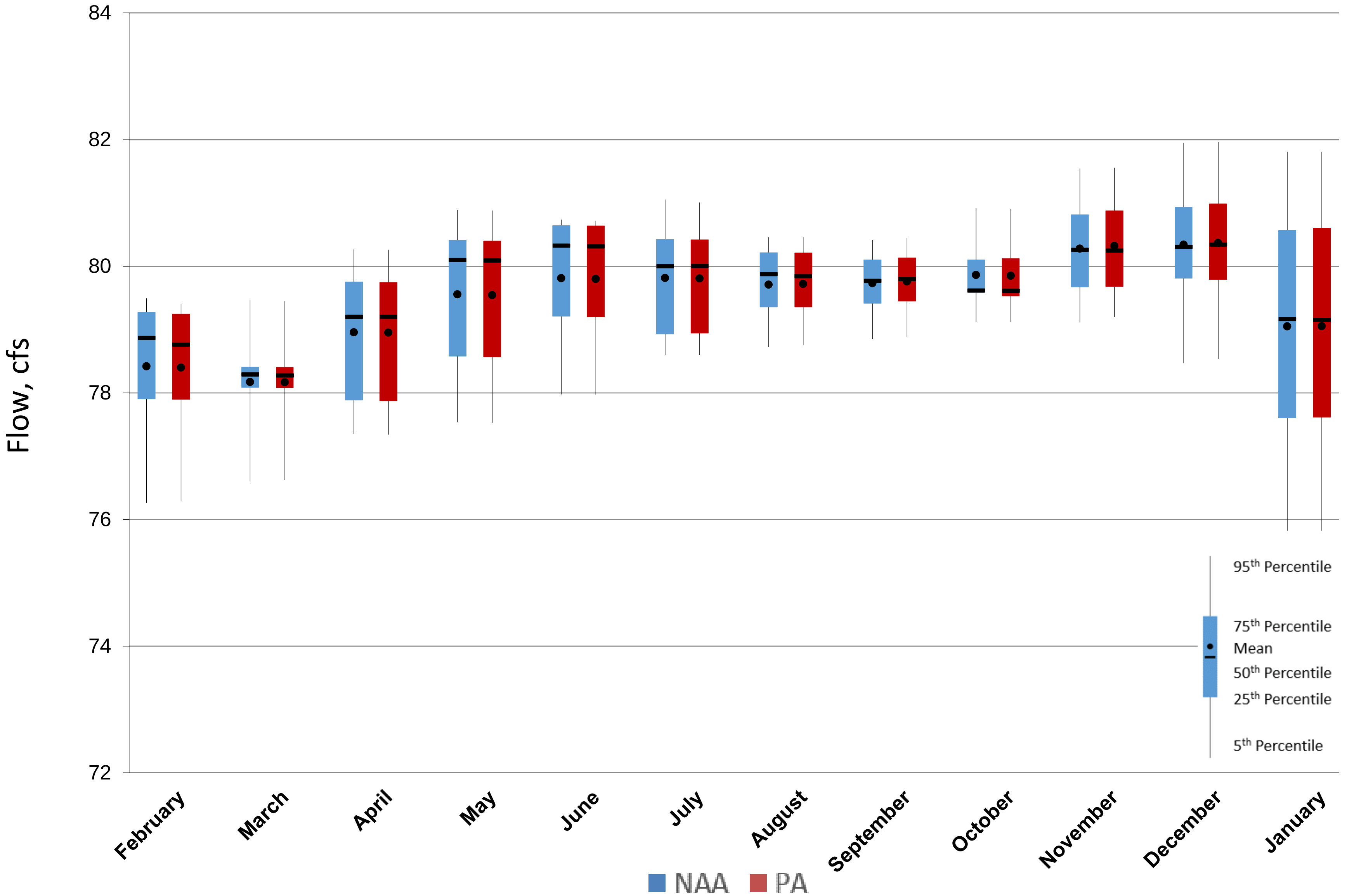


Figure 5.B.5-31-5. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Goodyear Slough, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.

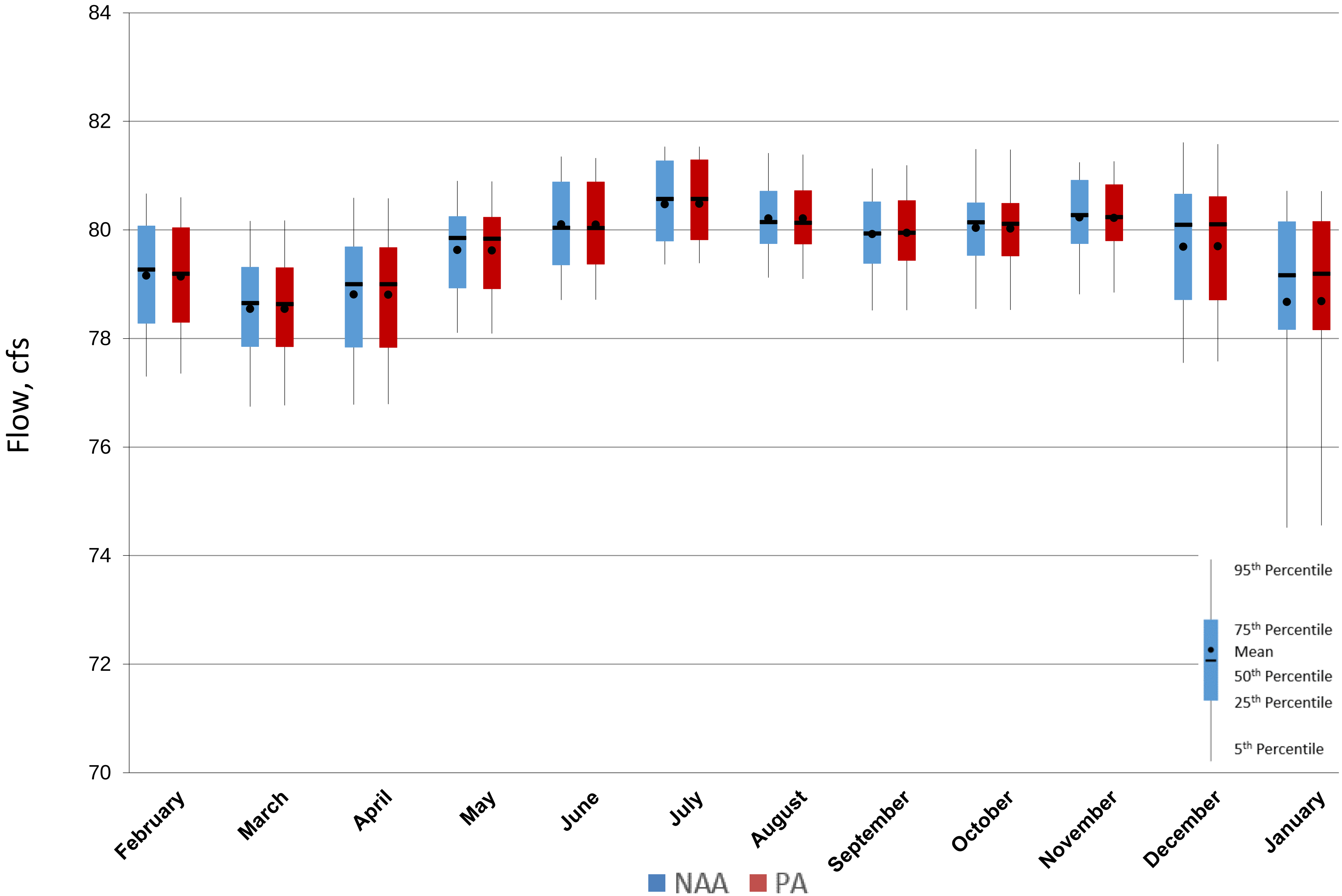


Figure 5.B.5-31-6. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Goodyear Slough, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

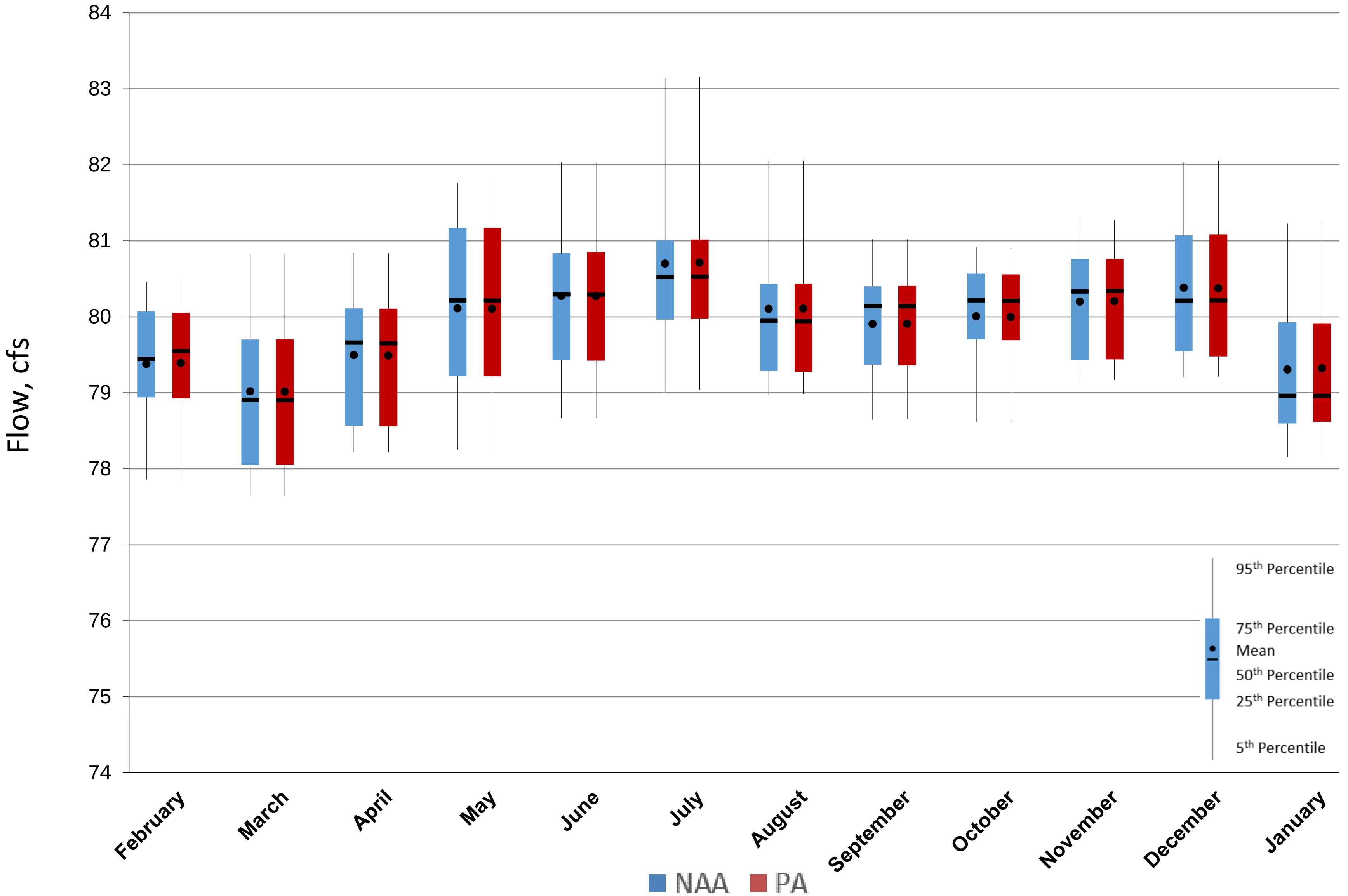
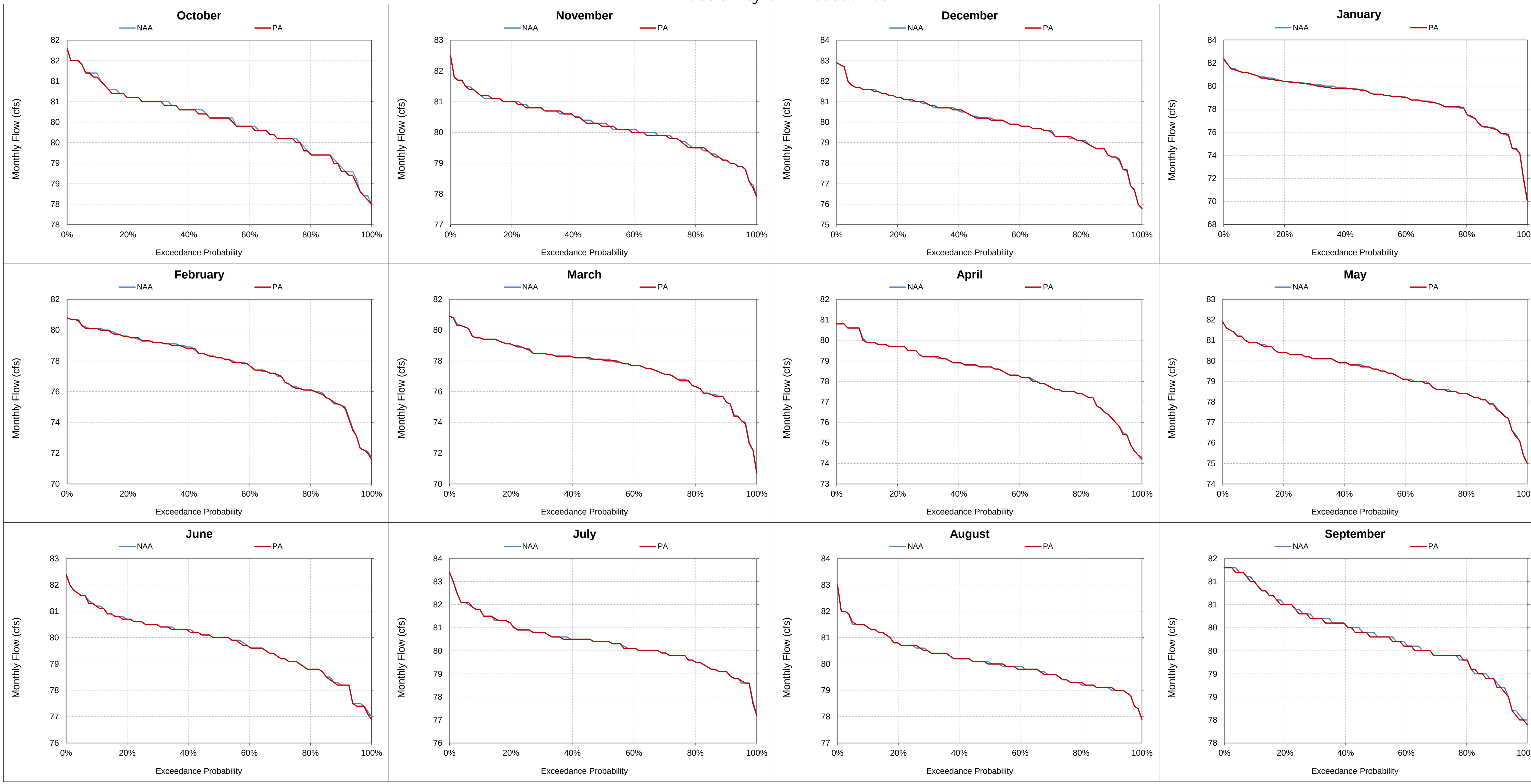
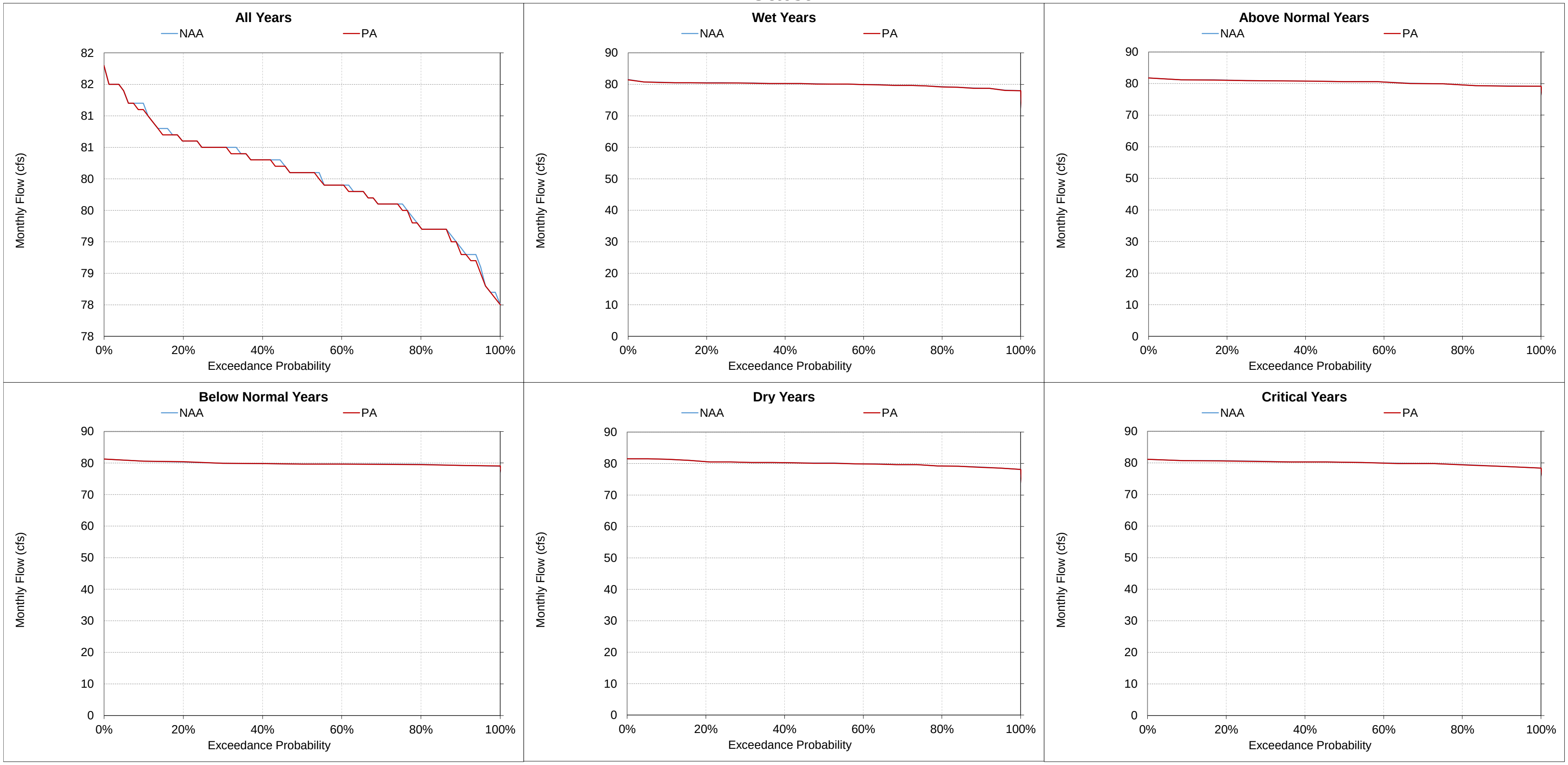


Figure 5.B.5-31-7. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow Probability of Exceedance



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-8. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow October



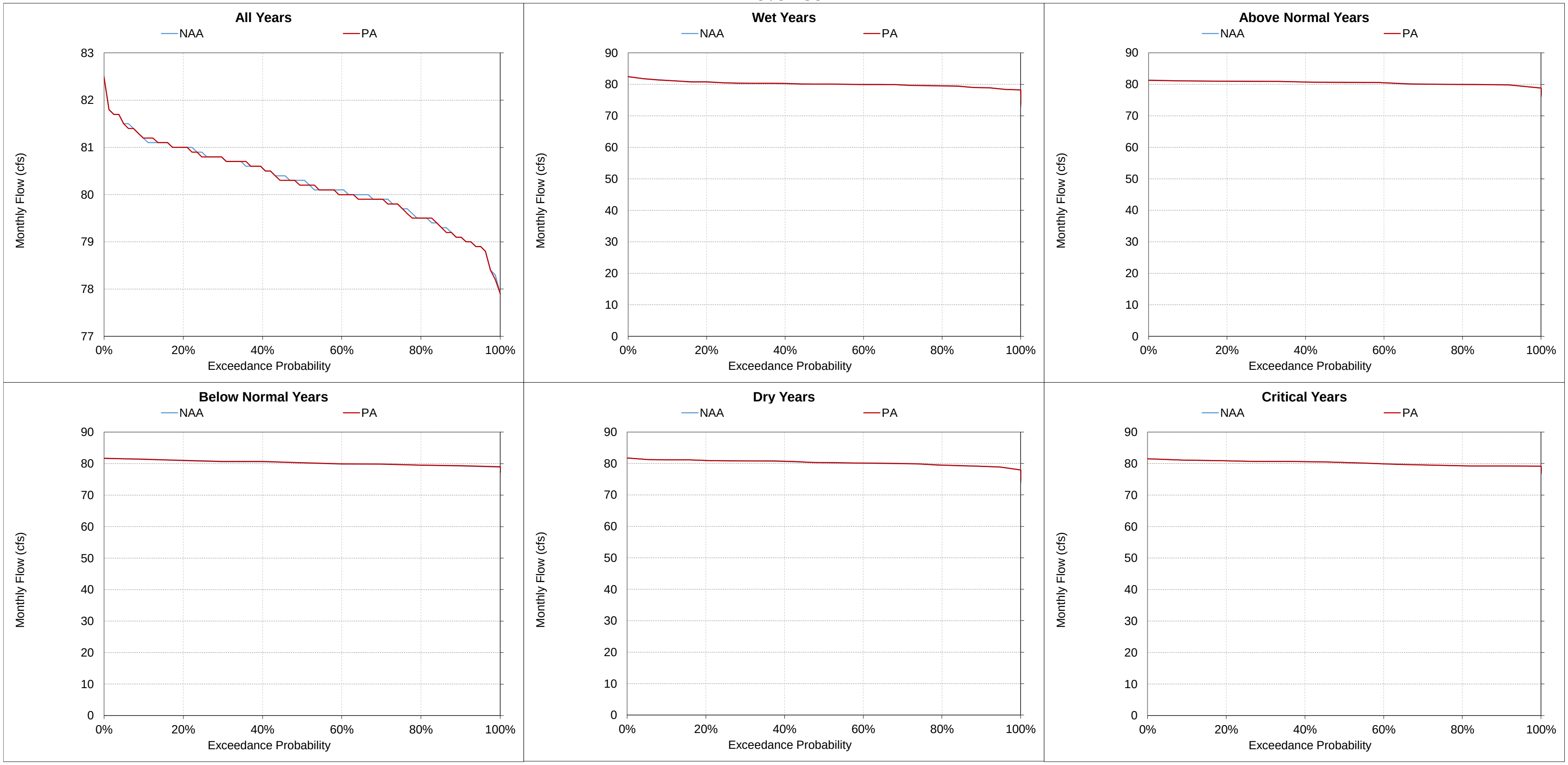
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

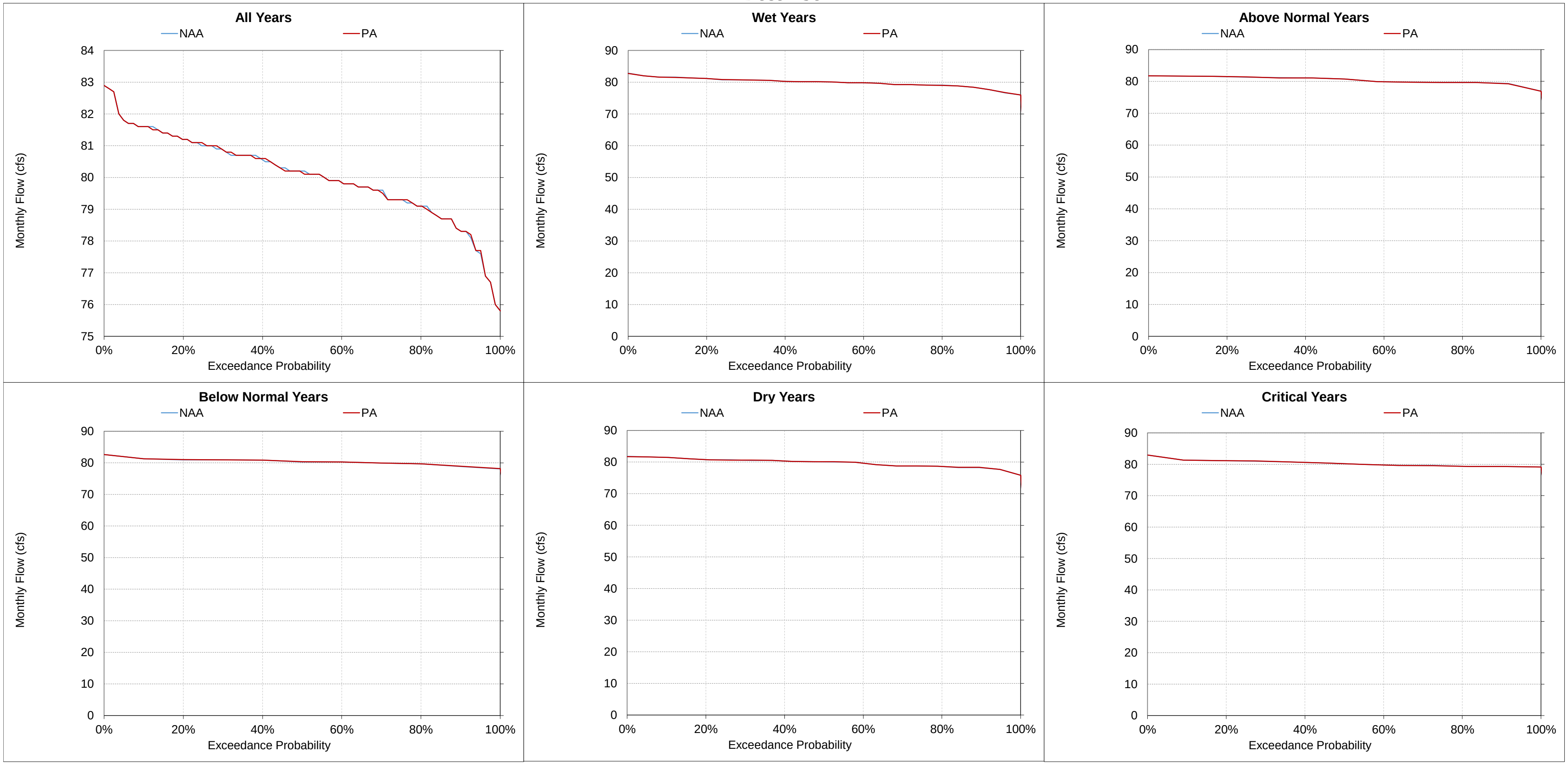
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-9. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-10. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow December



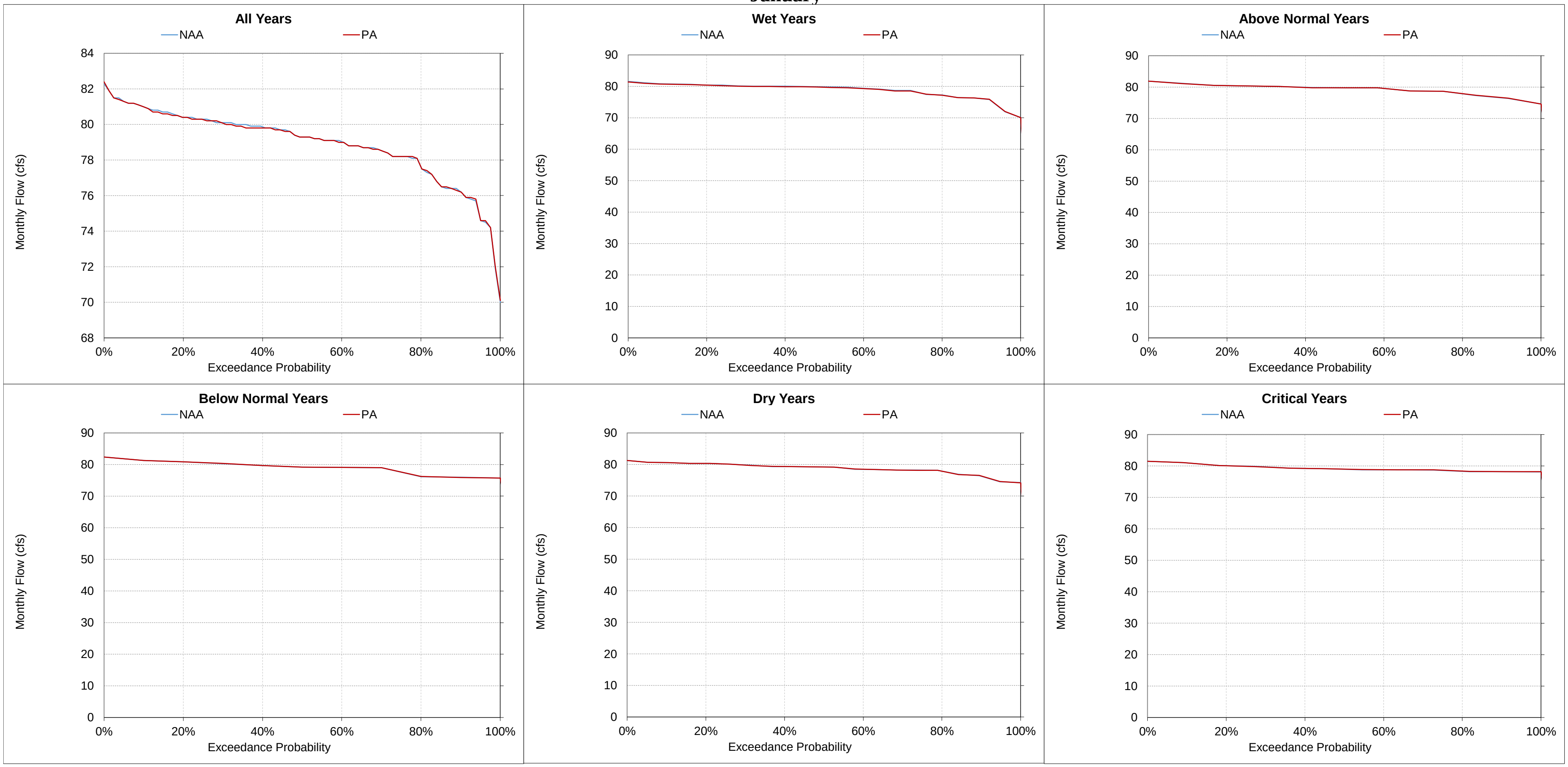
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

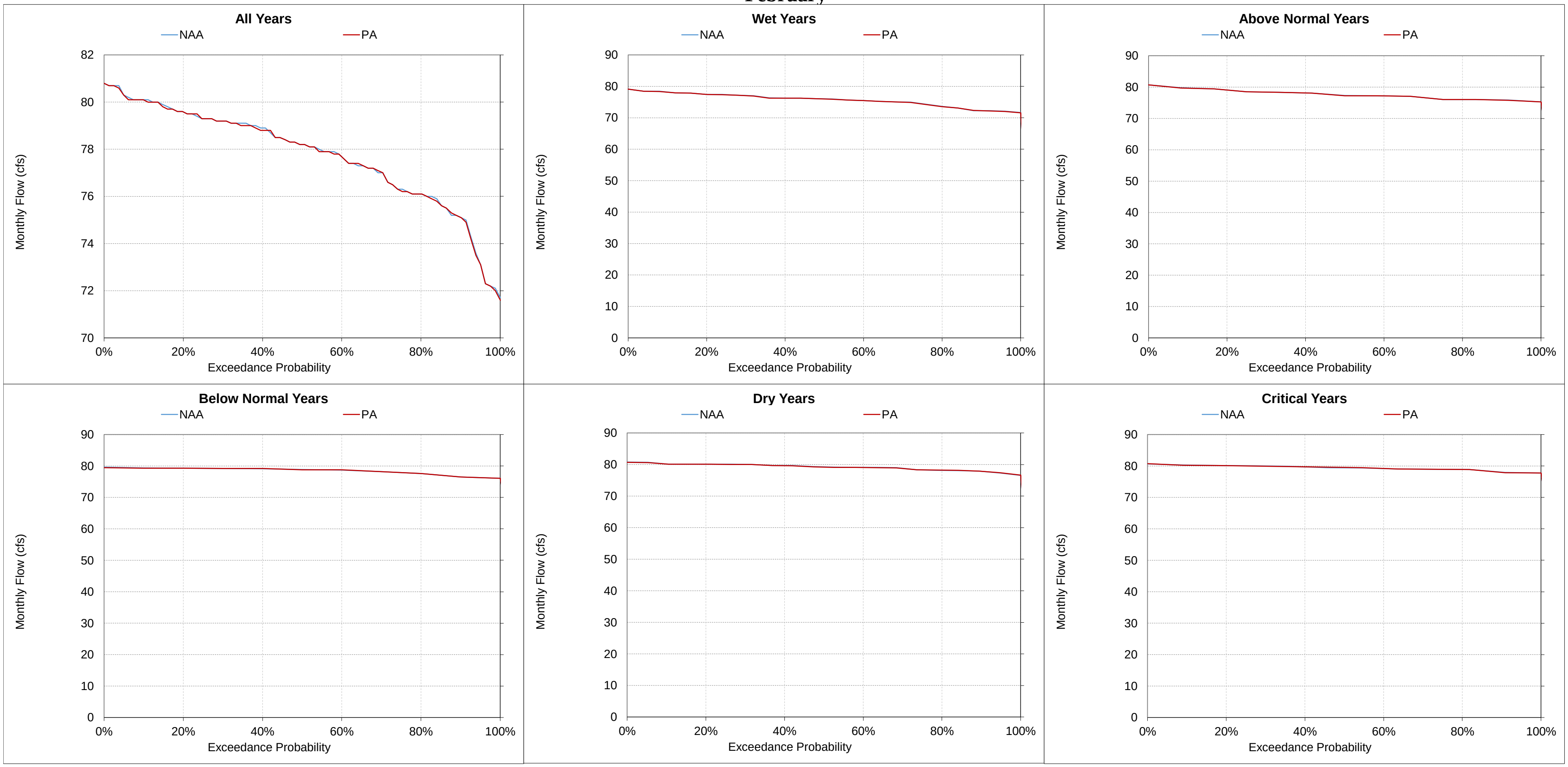
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-11. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow January



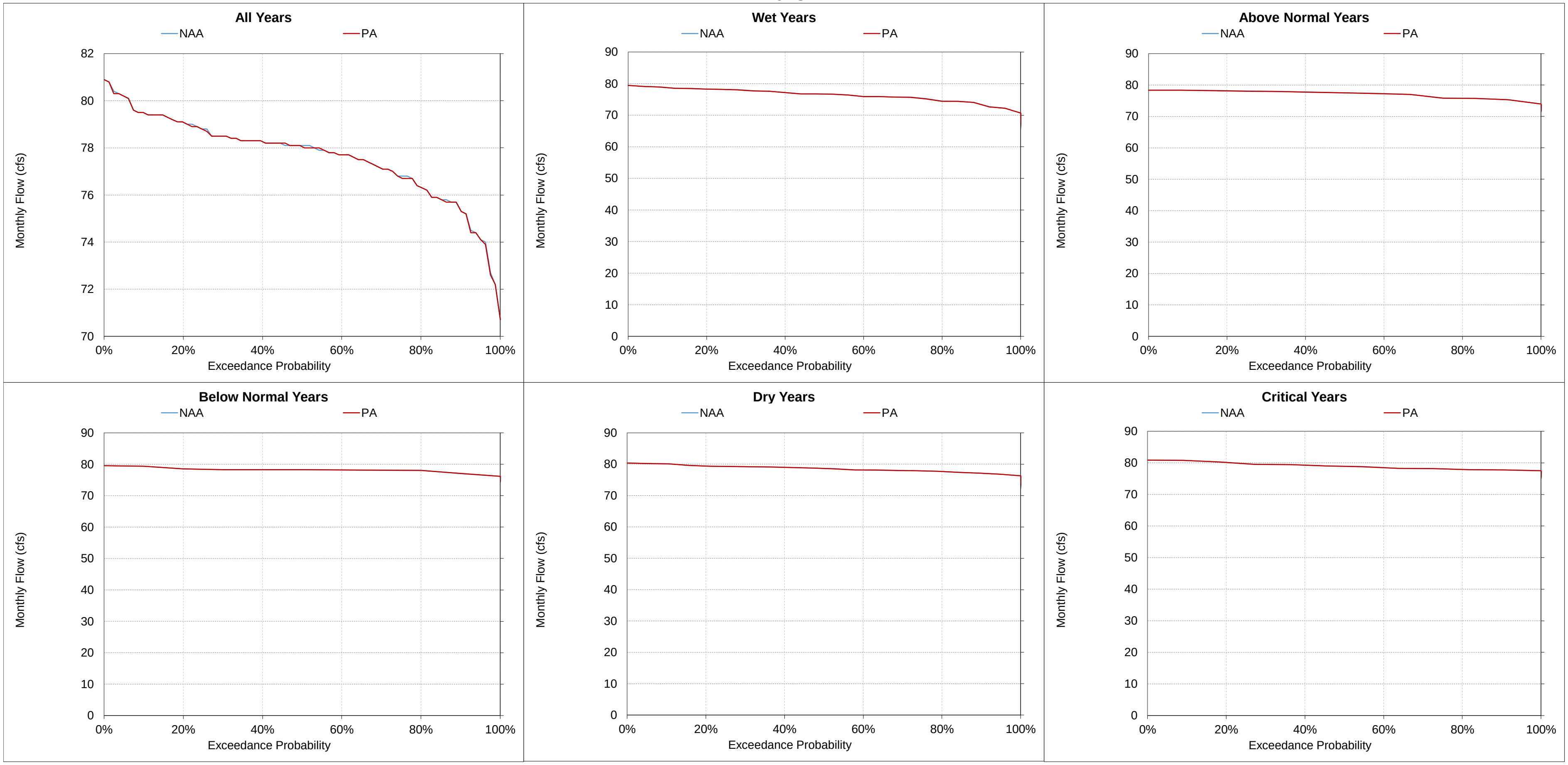
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-12. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow February



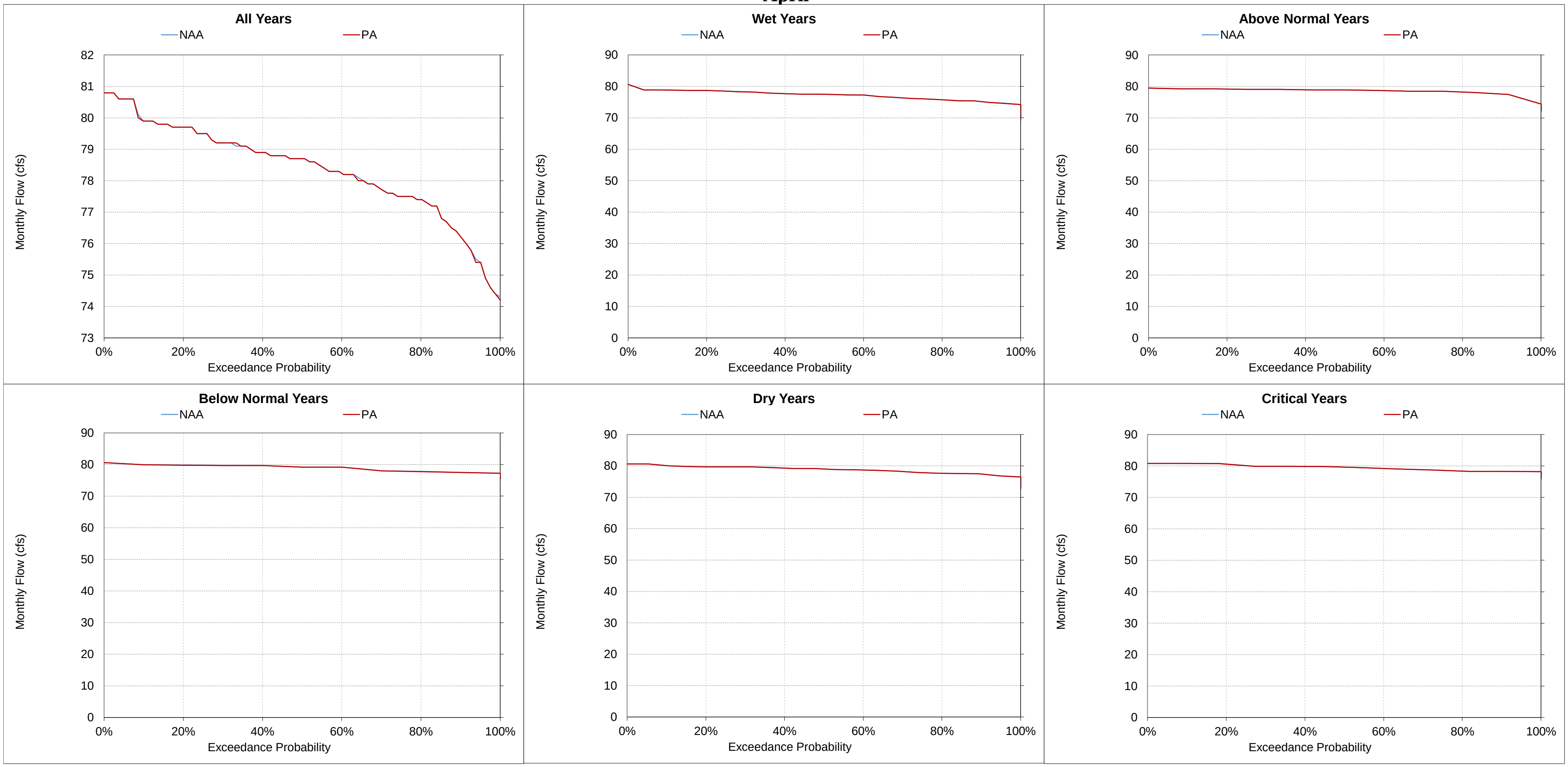
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-13. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow
March



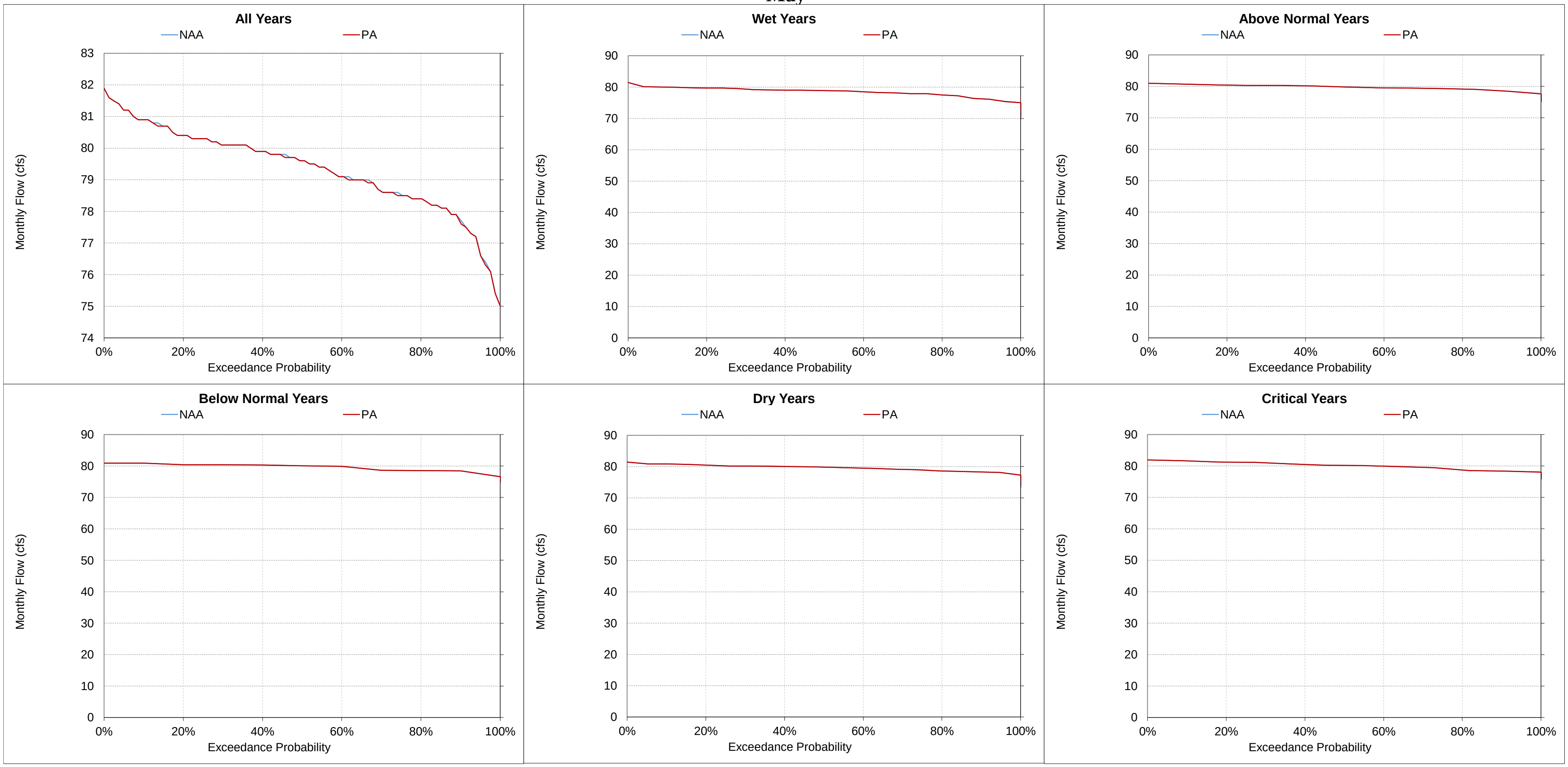
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-14. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow
April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-15. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow May



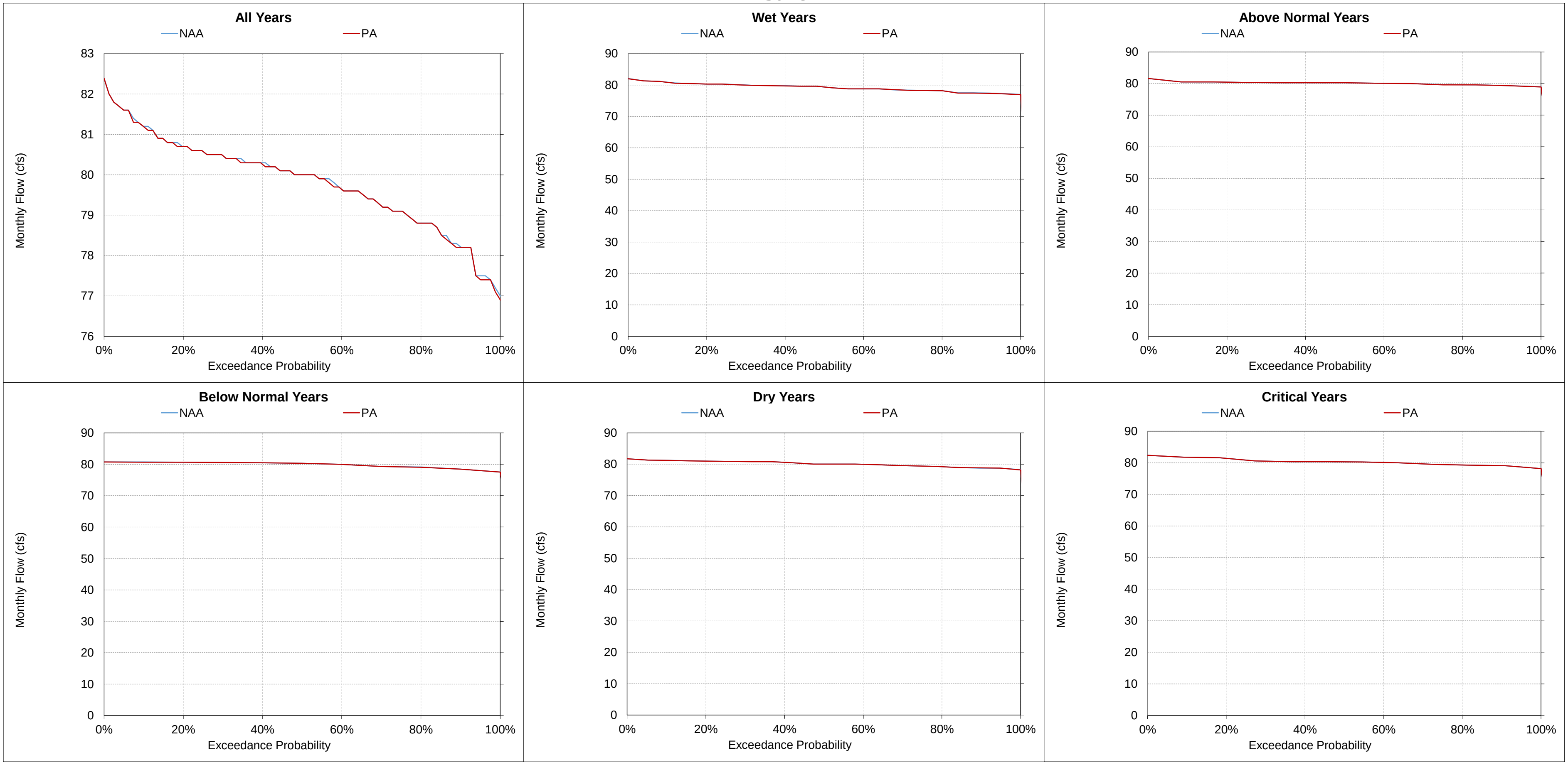
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

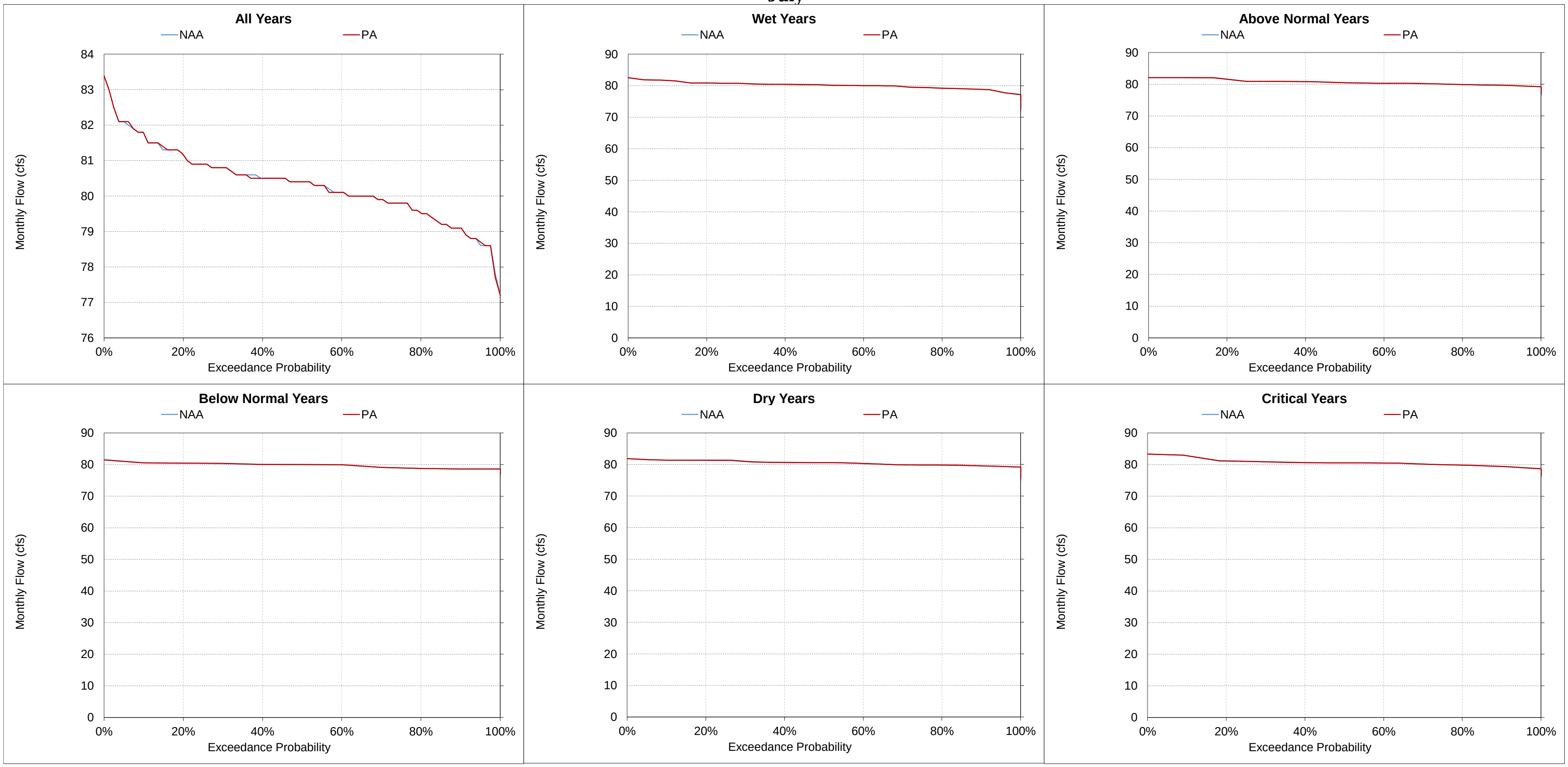
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-16. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow June



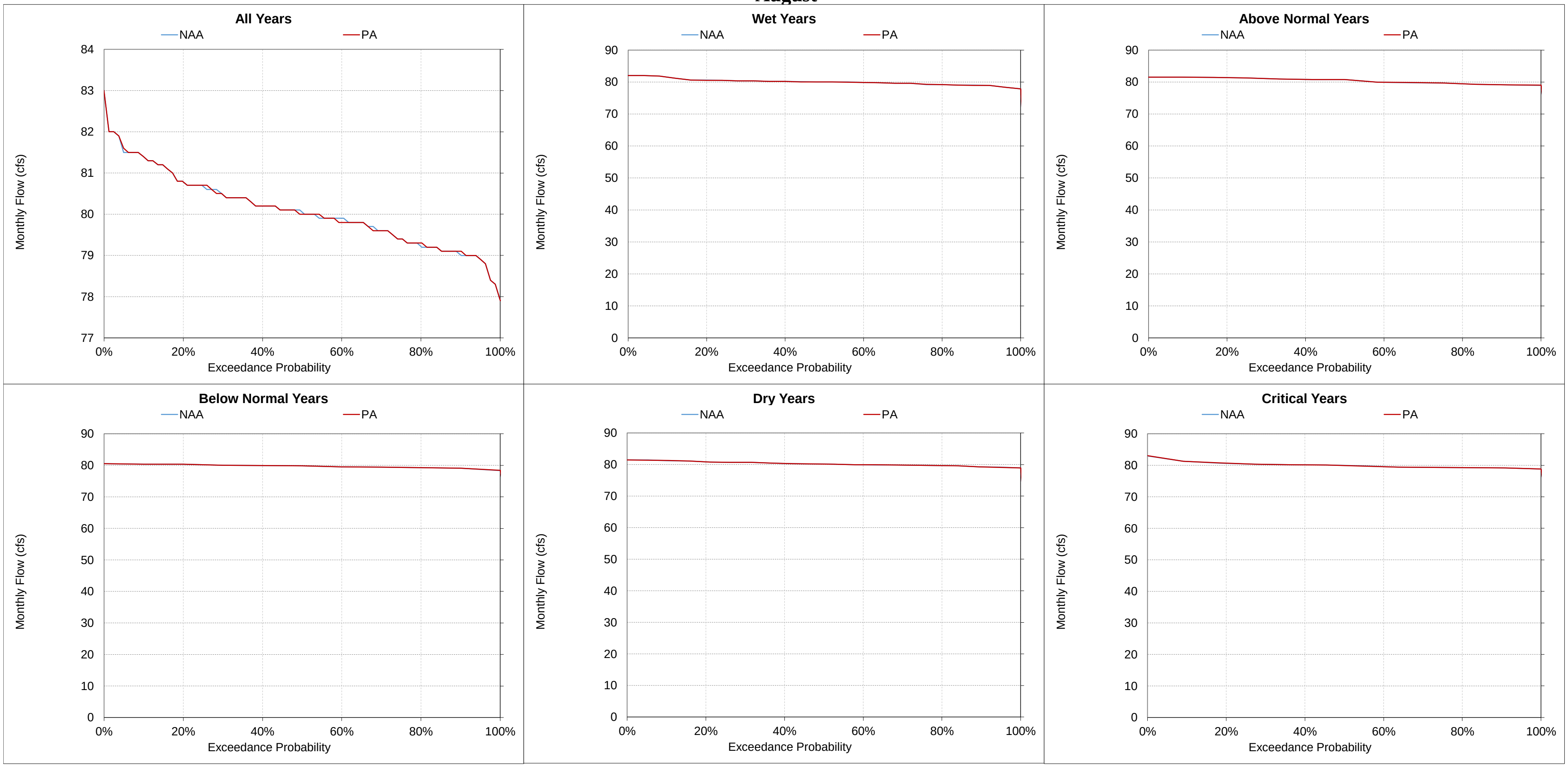
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-17. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow
July



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-18. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow
August



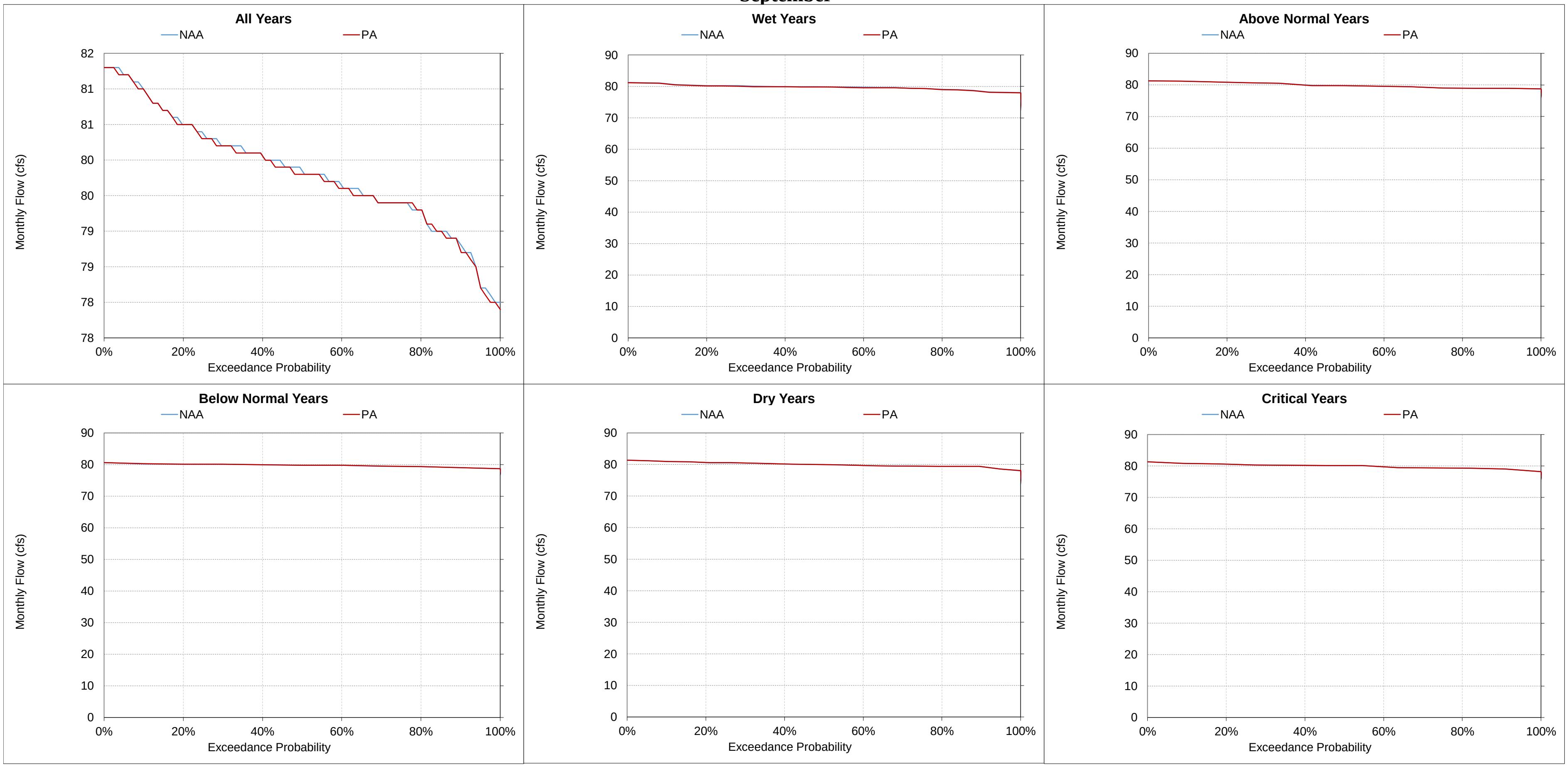
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-31-19. Morrow Island Distribution System M-line towards Goodyear Slough, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-32. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	58	58	0	0%	59	59	0	0%	59	59	0	0%	59	59	0	0%	58	58	0	0%	58	58	0	0%
20%	58	58	0	0%	59	59	0	0%	59	59	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%
30%	58	58	0	0%	58	59	0	0%	59	59	0	0%	58	58	0	0%	57	57	0	0%	57	57	0	0%
40%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	57	57	0	0%
50%	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	57	57	0	0%	57	57	0	0%
60%	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	56	56	0	0%	56	56	0	0%
70%	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	56	56	0	0%	56	56	0	0%
80%	57	57	0	0%	58	58	0	0%	57	57	0	0%	56	56	0	0%	55	55	0	0%	55	55	0	0%
90%	57	57	0	0%	57	57	0	0%	57	57	0	0%	55	55	0	0%	54	54	0	0%	55	54	0	0%
Long Term Full Simulation Period[b]	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	56	56	0	0%	56	56	0	0%
Water Year Types[c]																							0	
Wet (32%)	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	55	55	0	0%	55	55	0	0%
Above Normal (16%)	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	56	56	0	0%	56	56	0	0%
Below Normal (13%)	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	57	57	0	0%	57	57	0	0%
Dry (24%)	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	57	57	0	0%	57	57	0	0%
Critical (15%)	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%	57	57	0	0%	57	57	0	0%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	58	58	0	0%	59	59	0	0%	59	59	0	0%	59	59	0	0%	59	59	0	0%	58	58	0	0%
20%	58	58	0	0%	59	58	0	0%	59	59	0	0%	59	59	0	0%	58	58	0	0%	58	58	0	0%
30%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%
40%	57	57	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%
50%	57	57	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%
60%	57	57	0	0%	57	57	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%
70%	56	56	0	0%	57	57	0	0%	57	57	0	0%	58	58	0	0%	58	57	0	0%	57	57	0	0%
80%	56	56	0	0%	57	57	0	0%	57	57	0	0%	58	58	0	0%	57	57	0	0%	57	57	0	0%
90%	55	55	0	0%	56	56	0	0%	57	57	0	0%	57	57	0	0%	57	57	0	0%	57	57	0	0%
Long Term Full Simulation Period[b]	57	57	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%
Water Year Types[c]																							0	
Wet (32%)	56	56	0	0%	57	57	0	0%	57	57	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%
Above Normal (16%)	57	57	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%
Below Normal (13%)	57	57	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	57	57	0	0%
Dry (24%)	57	57	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%
Critical (15%)	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%	58	58	0	0%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-1. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Suisun Bay, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.

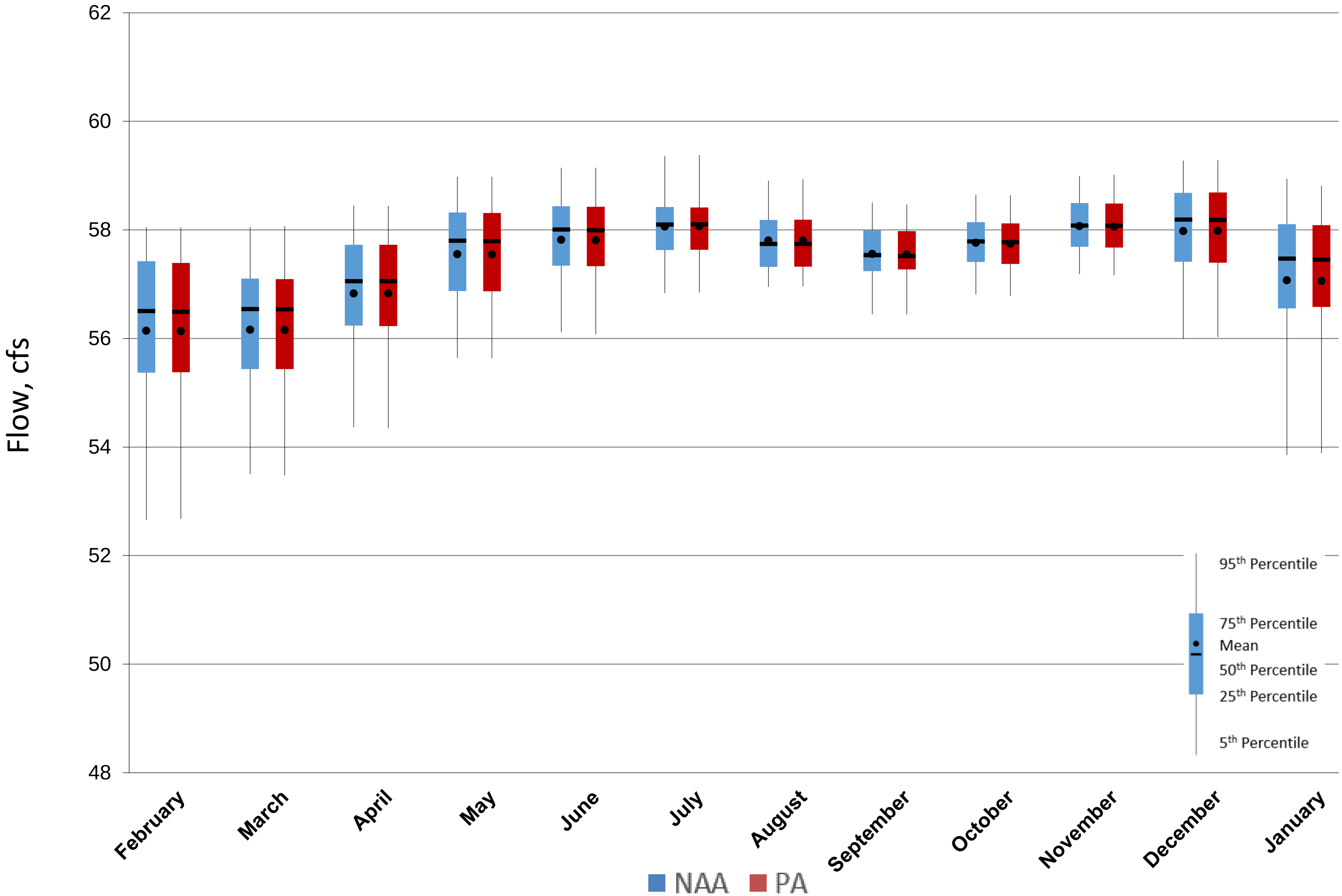


Figure 5.B.5-32-2. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Suisun Bay, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

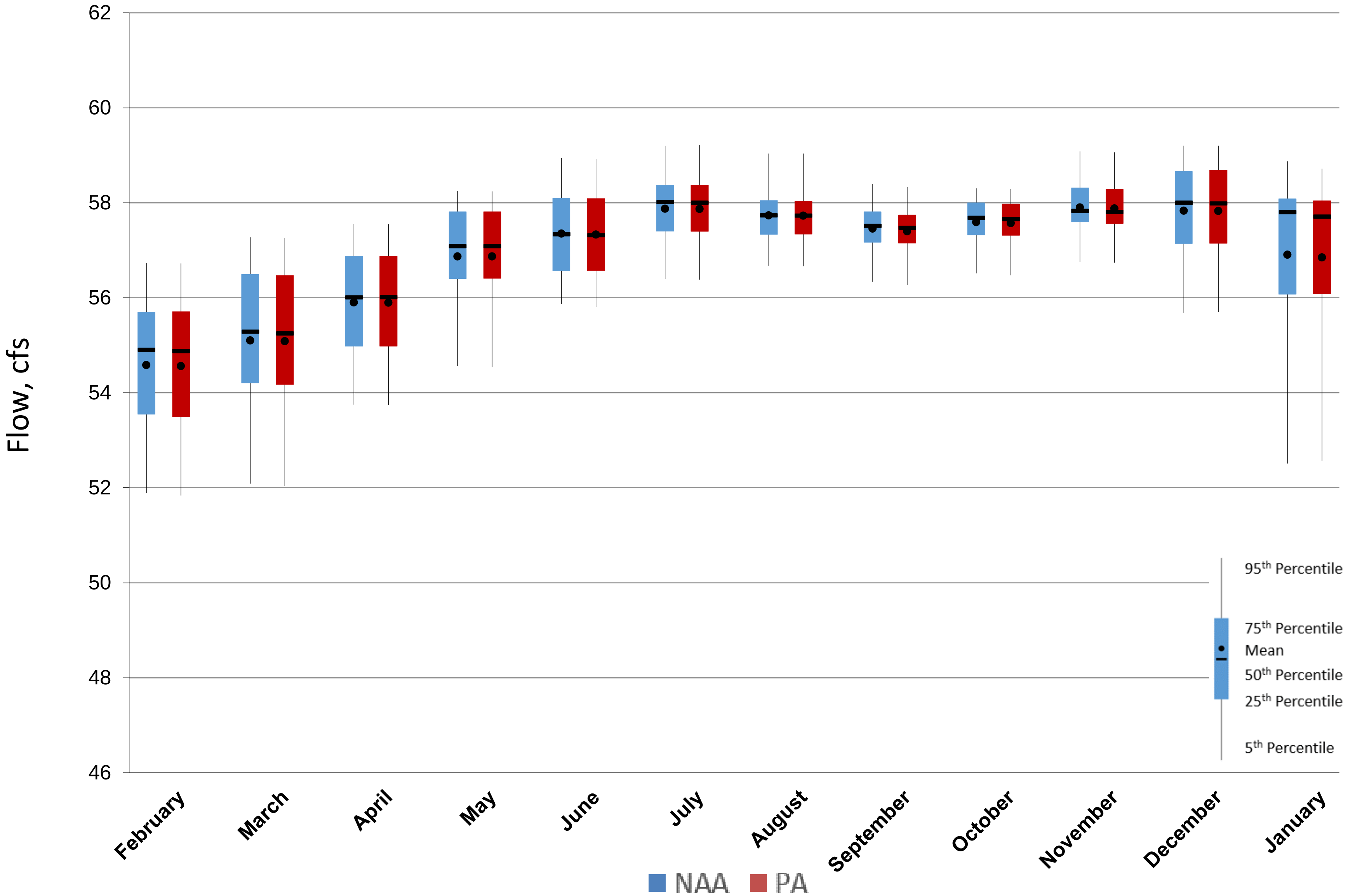


Figure 5.B.5-32-3. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Suisun Bay, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

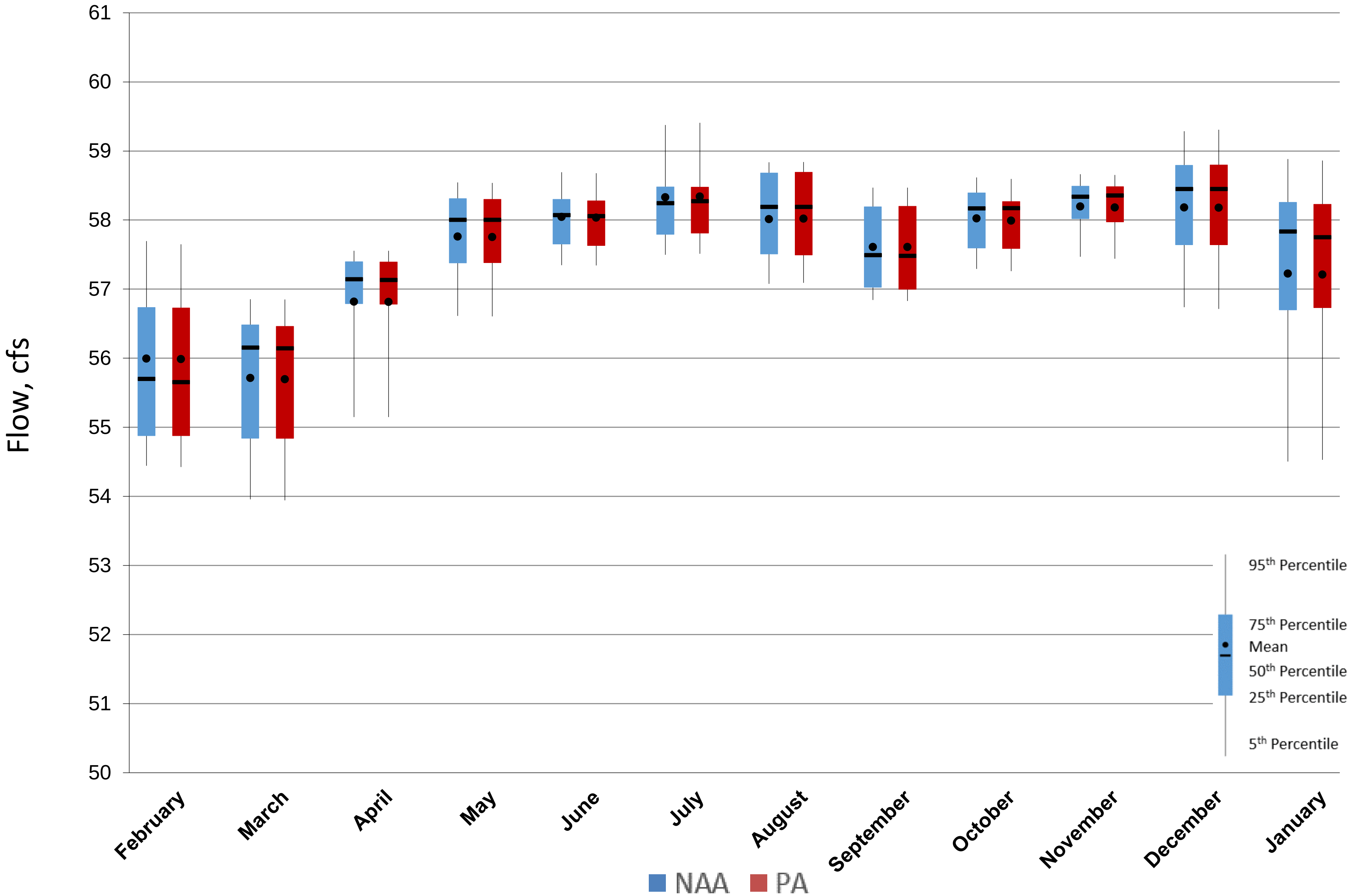


Figure 5.B.5-32-4. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Suisun Bay, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

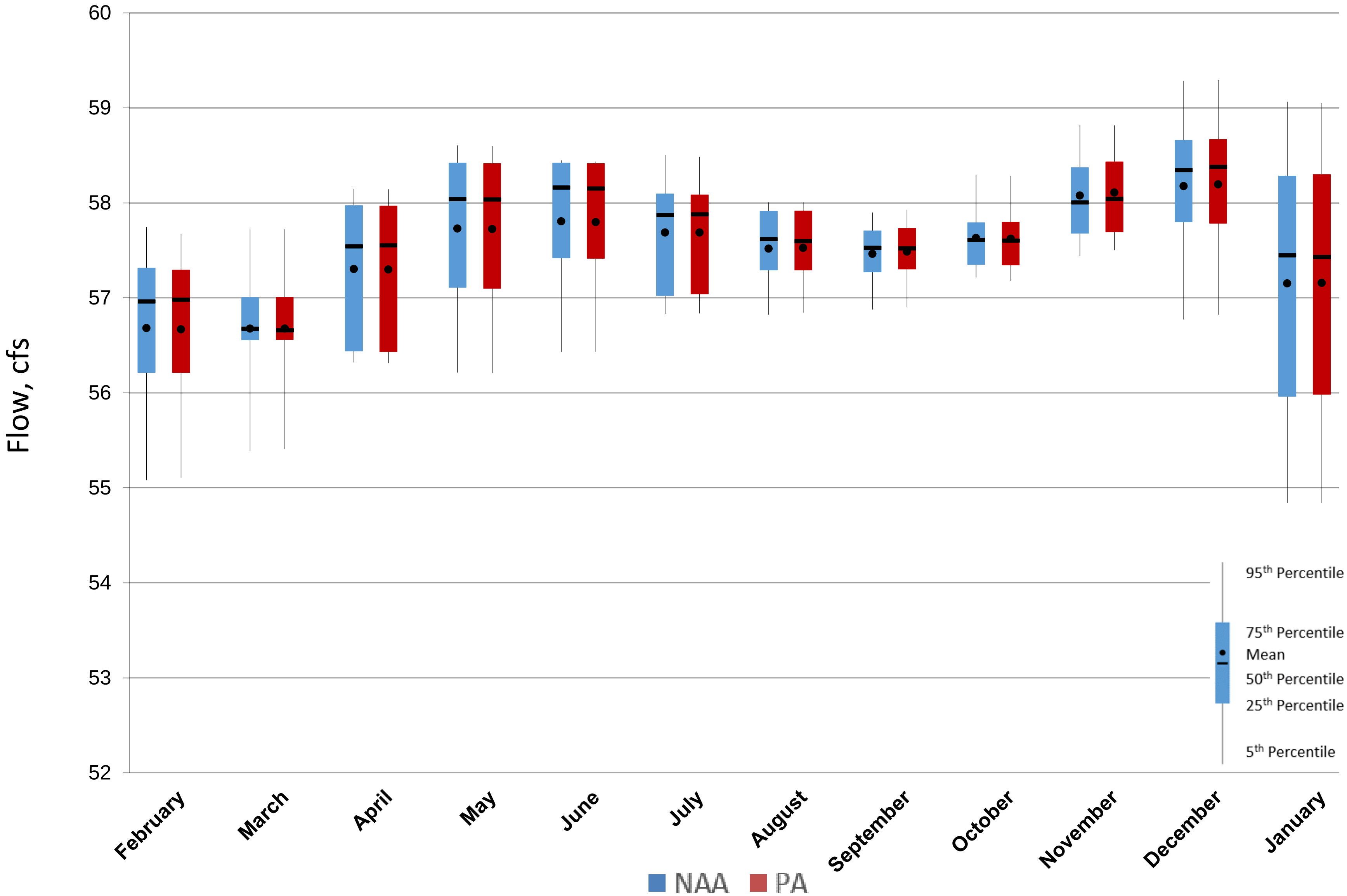


Figure 5.B.5-32-5. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Suisun Bay, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.

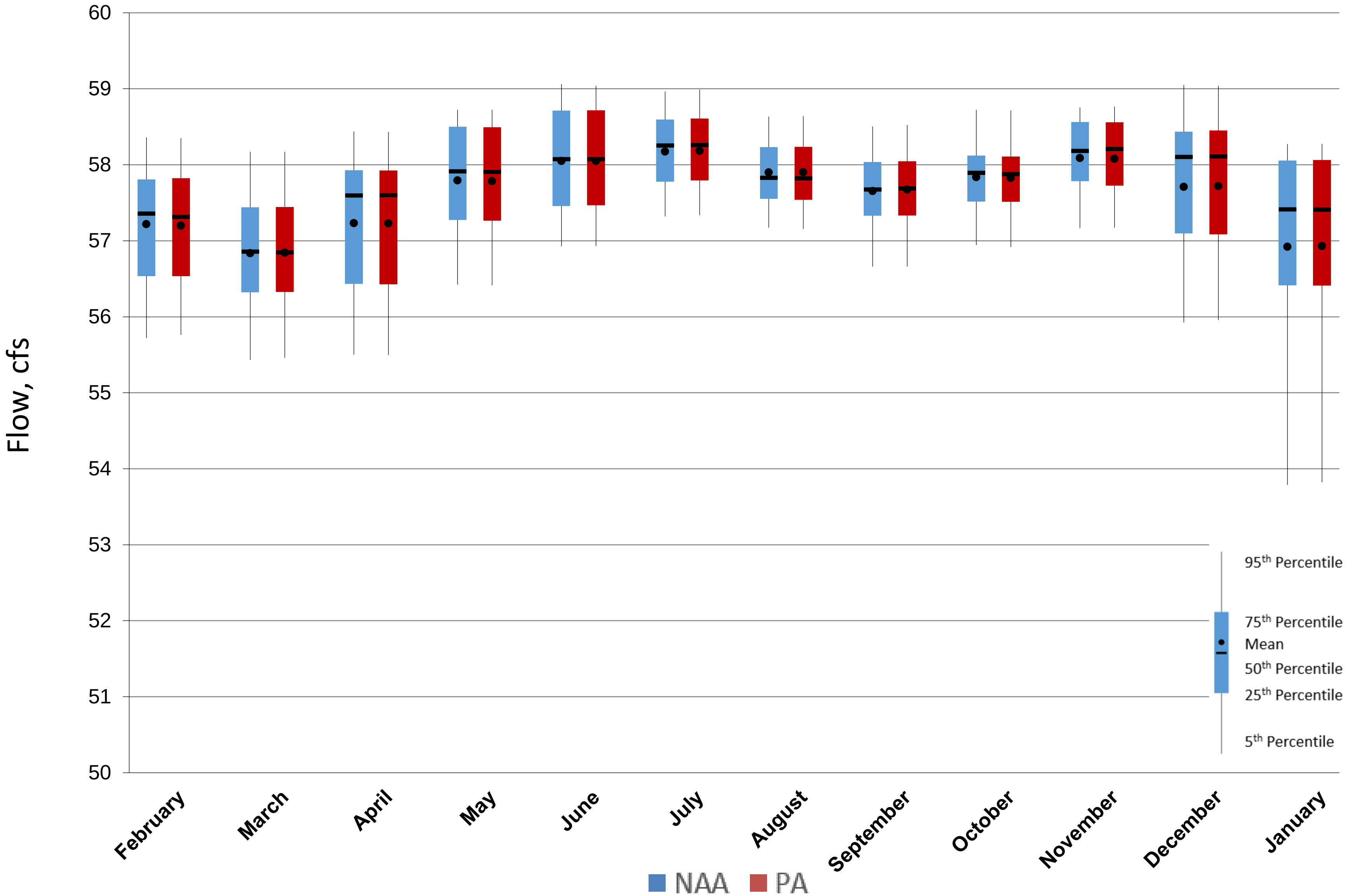


Figure 5.B.5-32-6. Monthly Flow Ranges For Morrow Island Distribution System M-line towards Suisun Bay, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

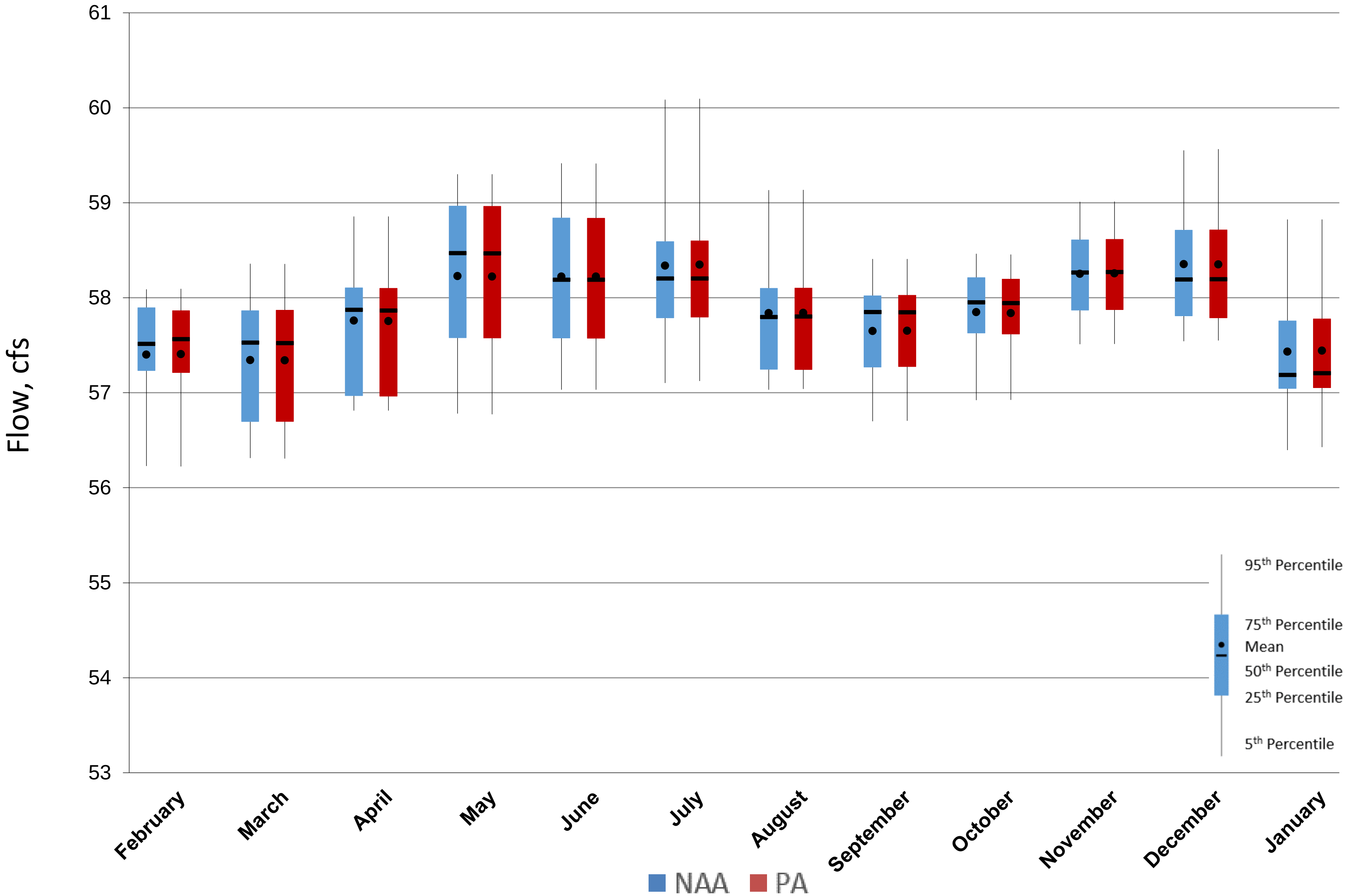
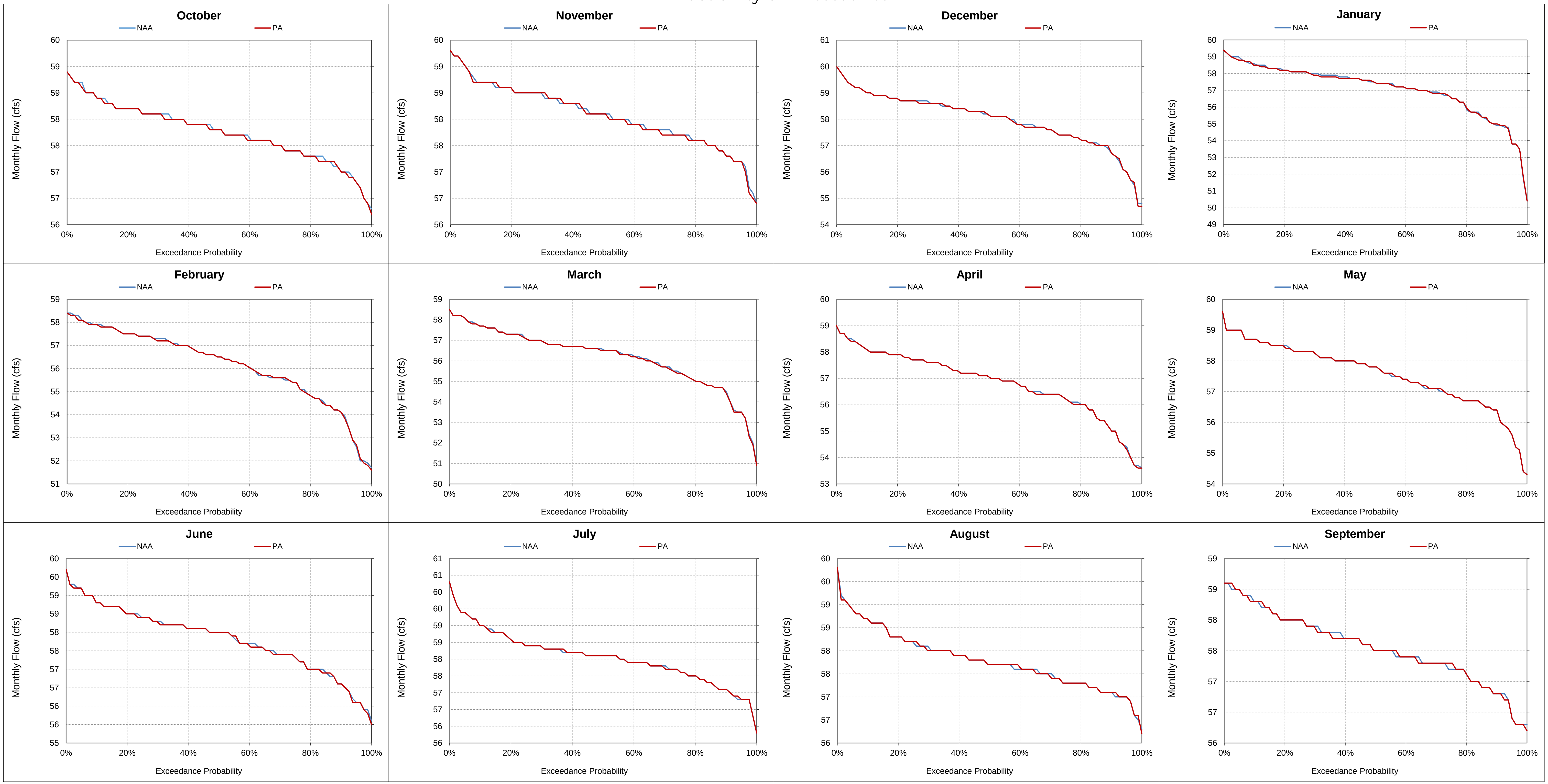
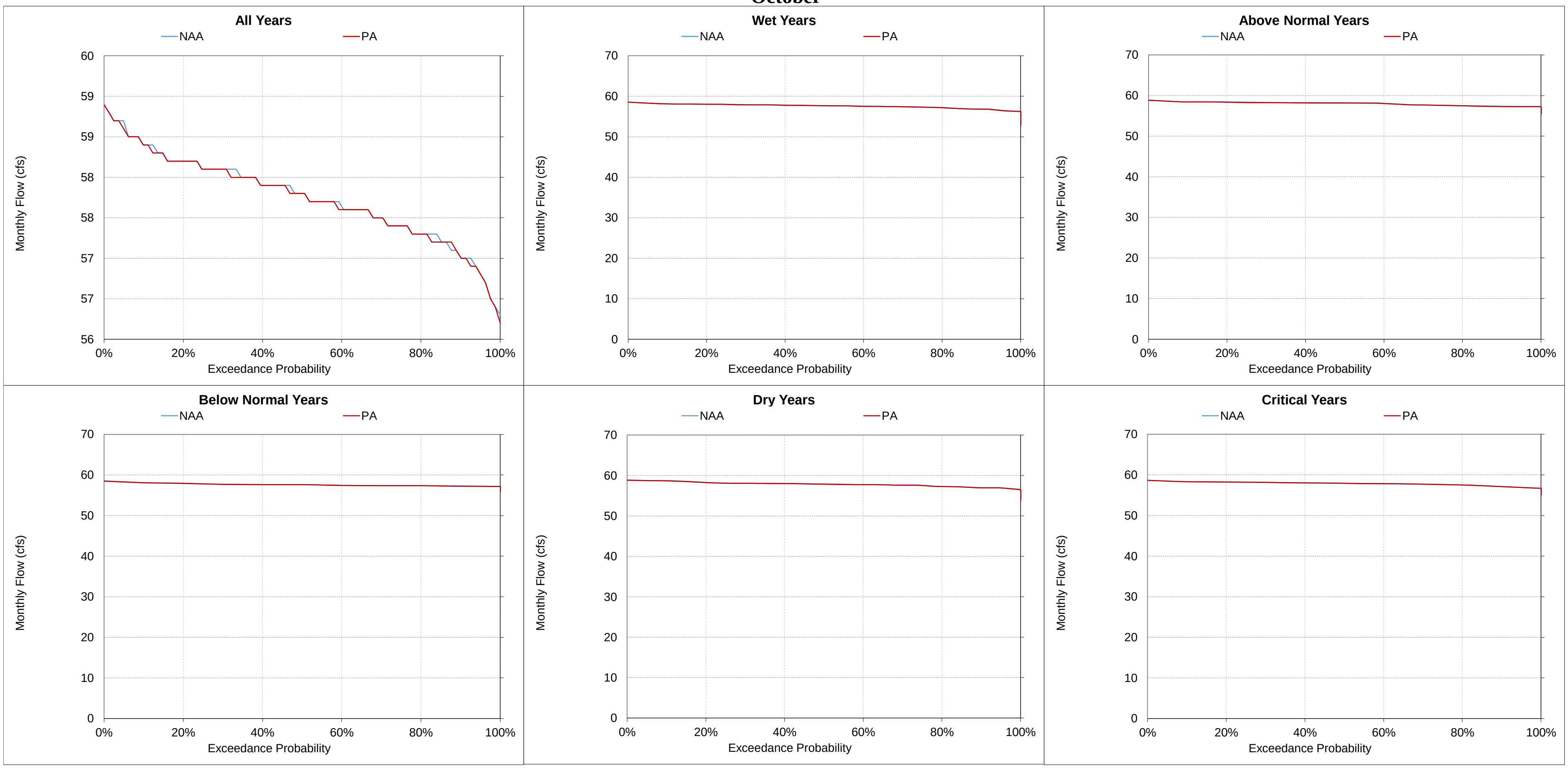


Figure 5.B.5-32-7. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow Probability of Exceedance



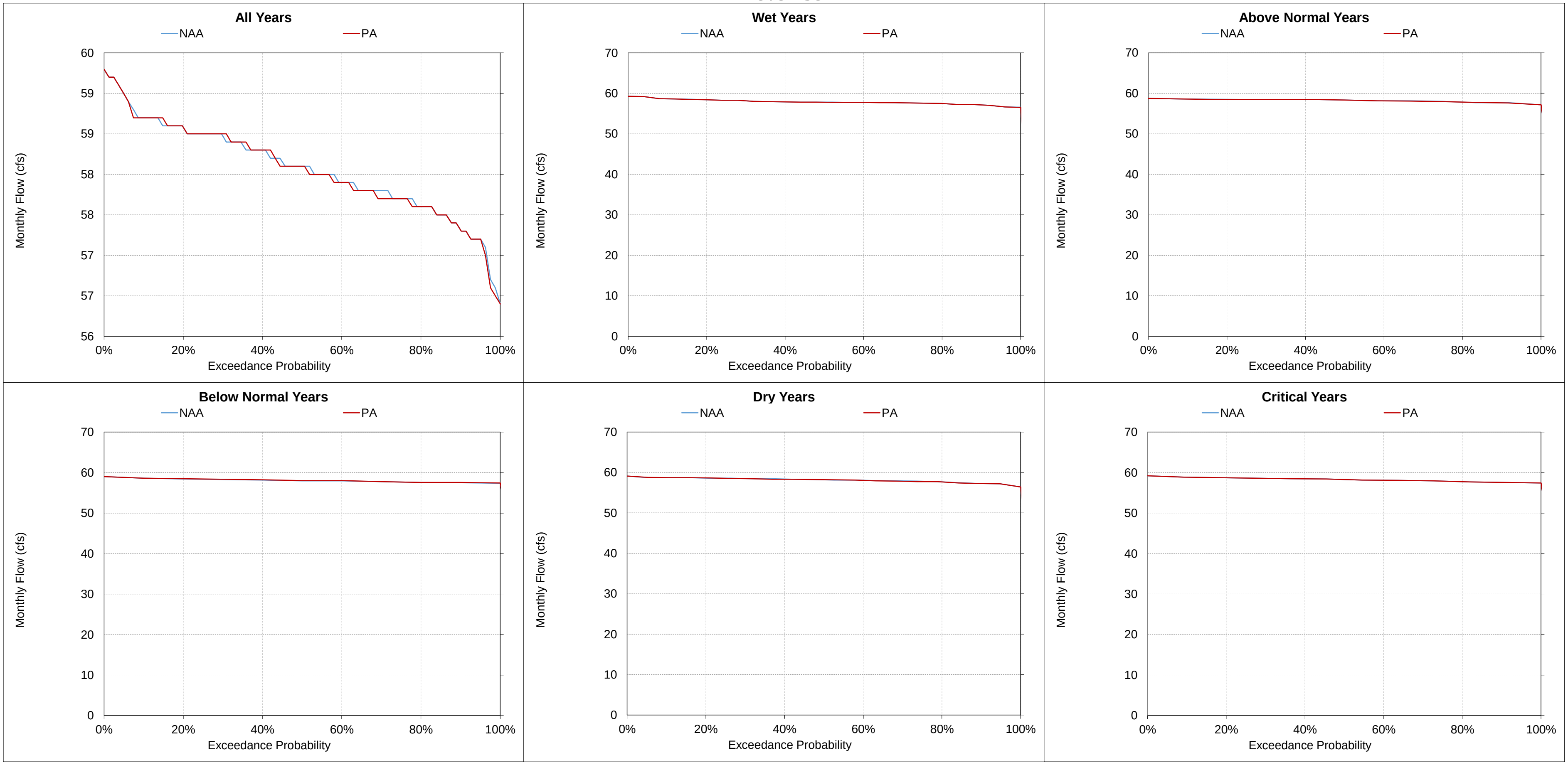
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-8. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-9. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow November



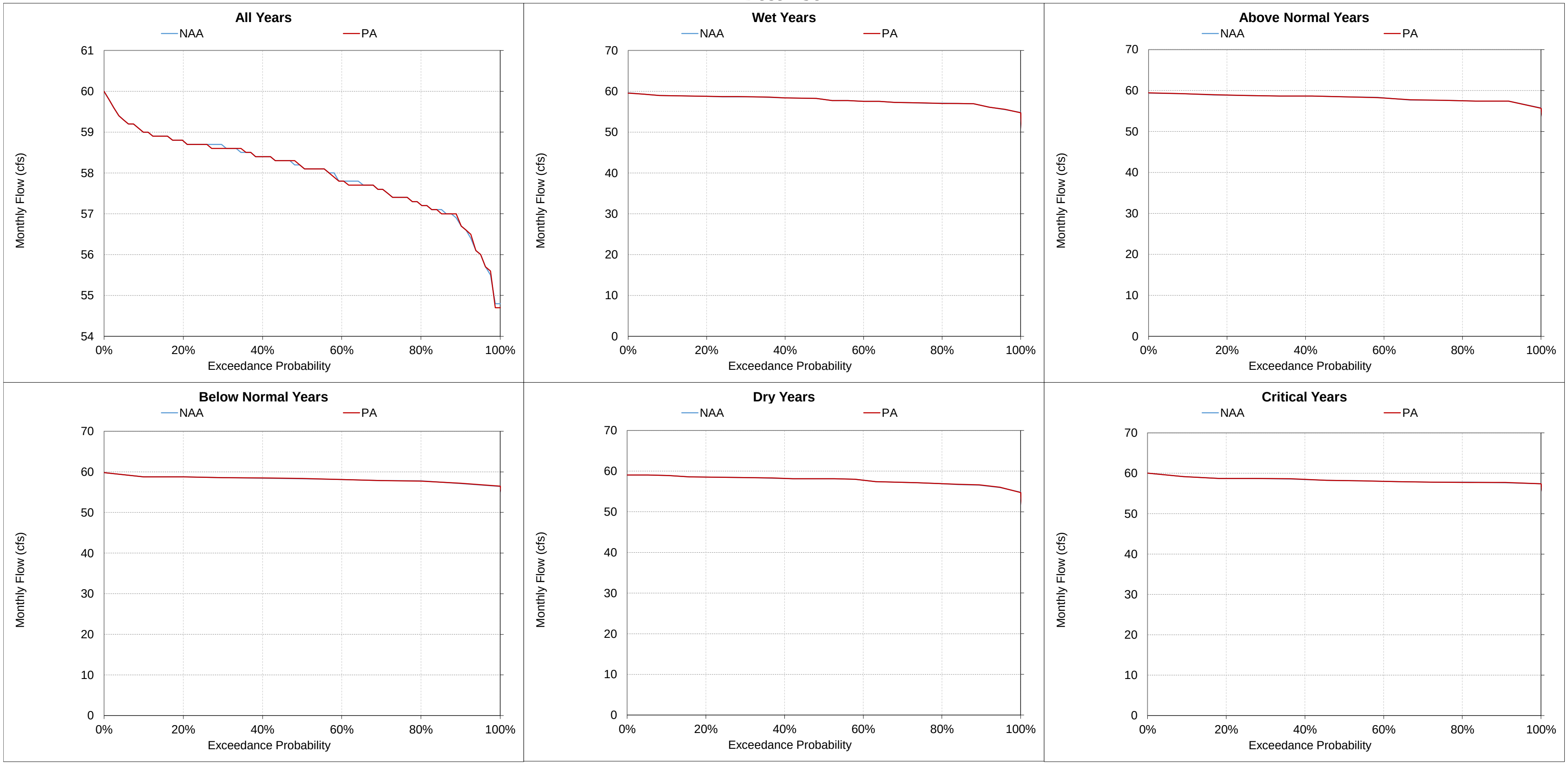
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

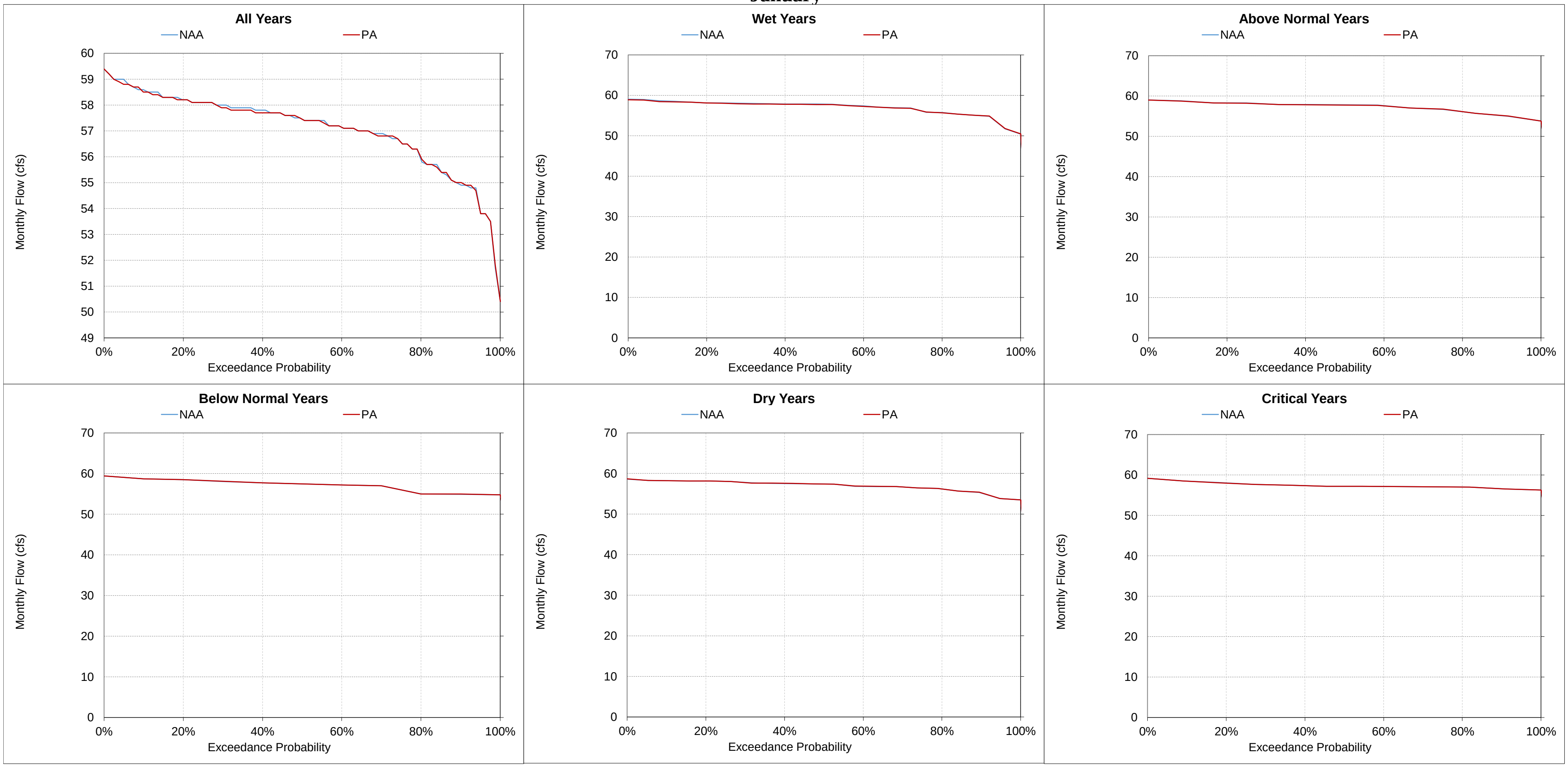
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-10. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow December



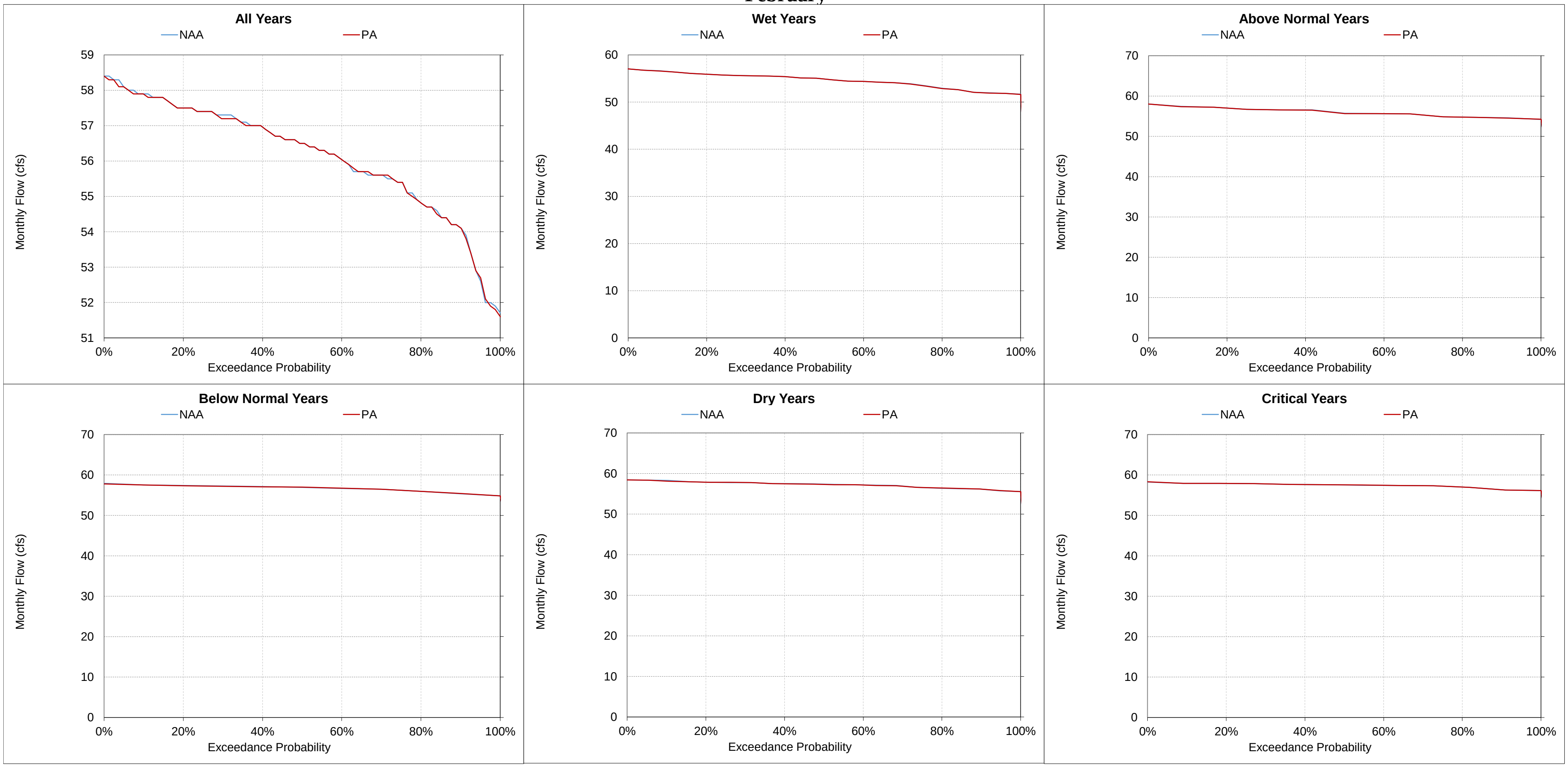
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-11. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow
January



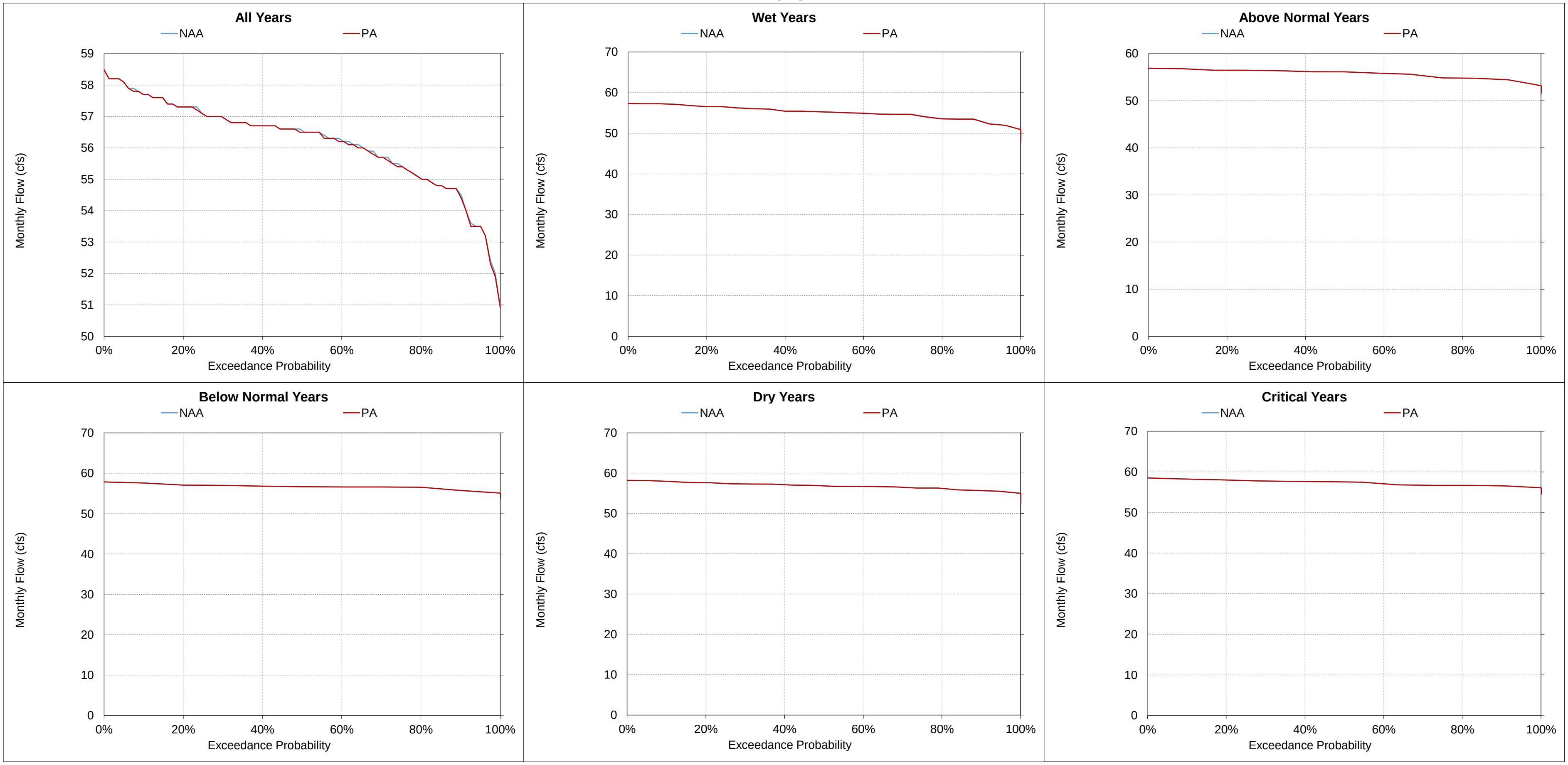
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-12. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow February



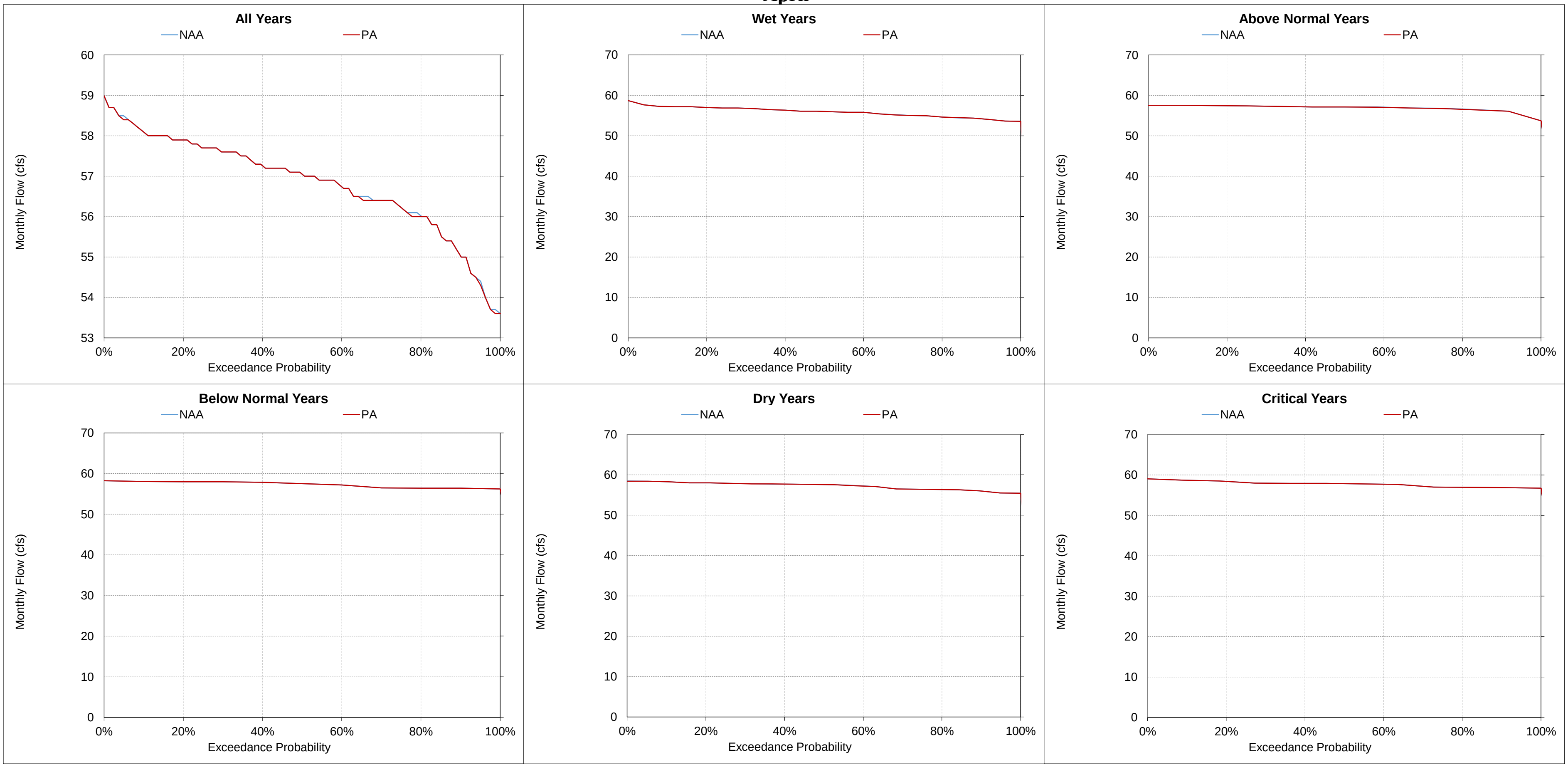
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-13. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow March



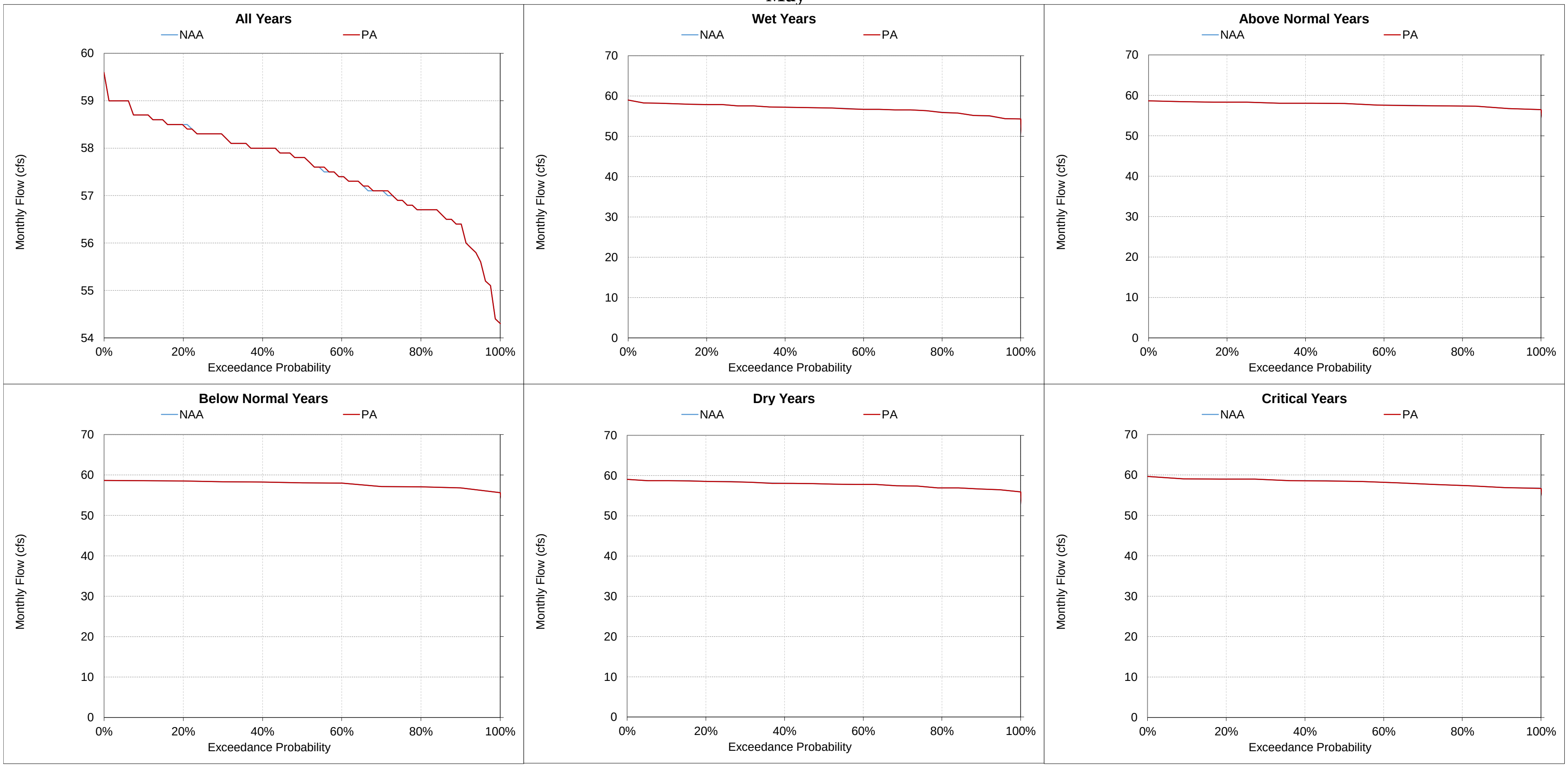
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-14. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-15. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow May



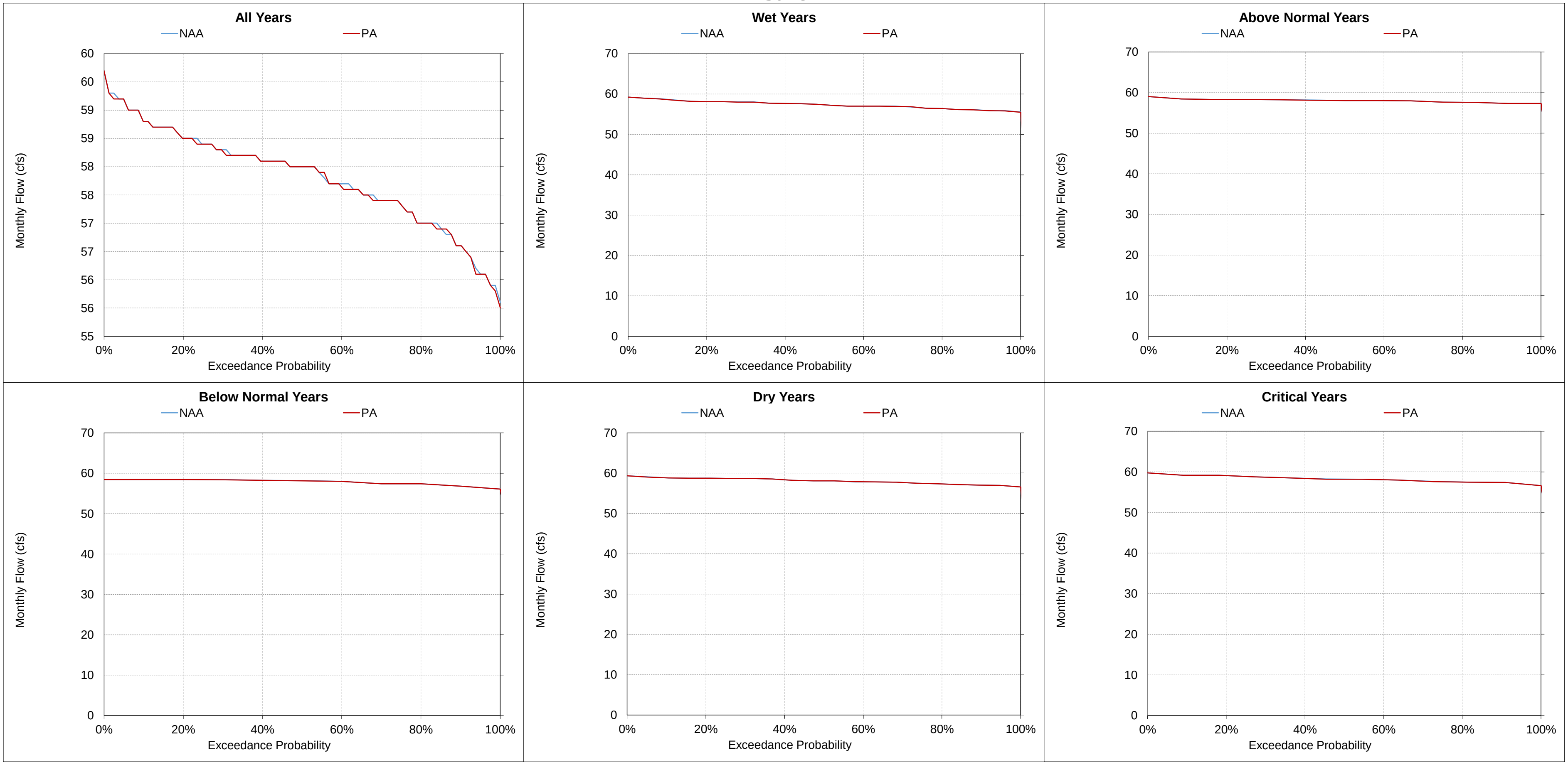
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

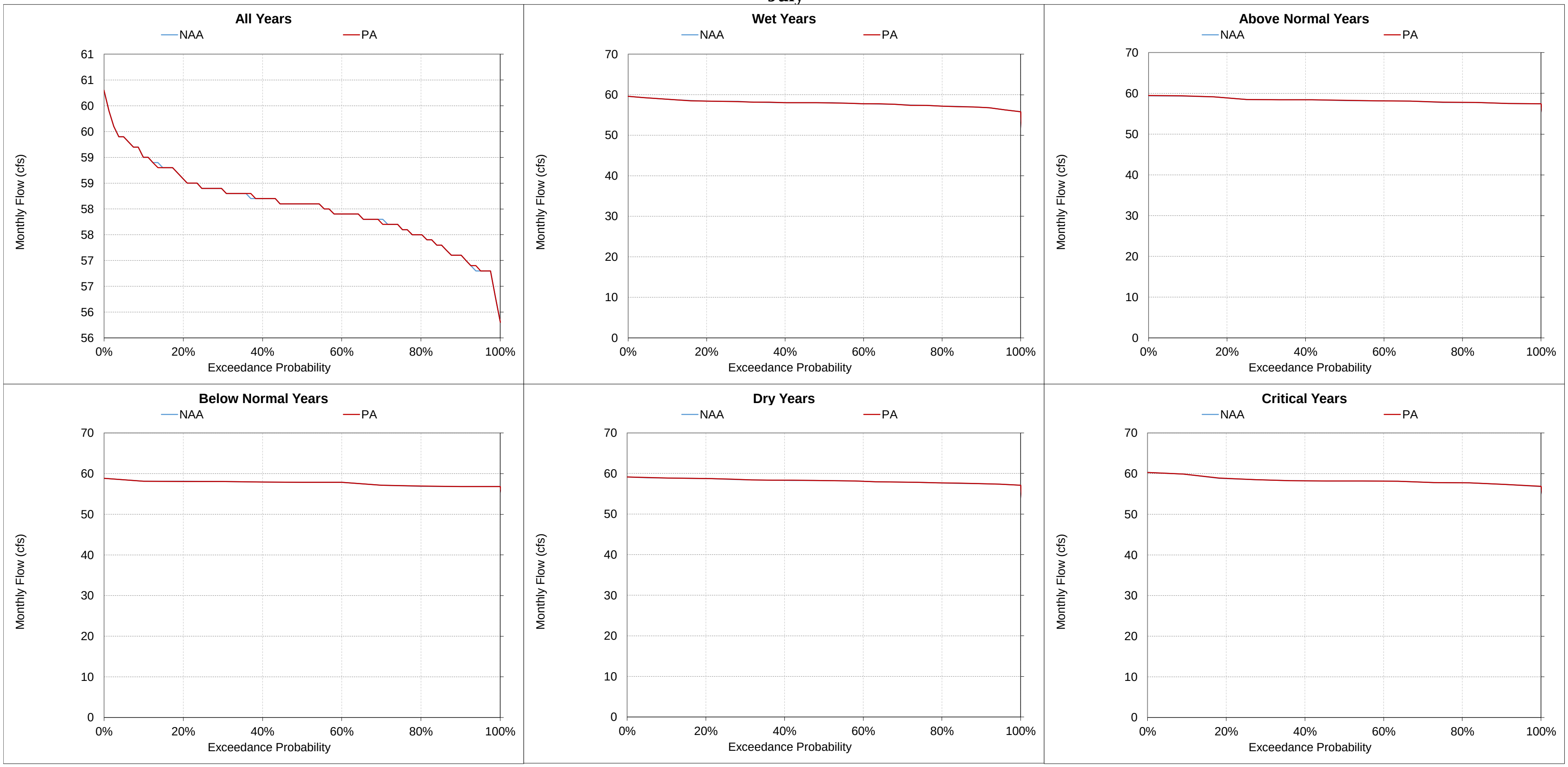
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-16. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow
June



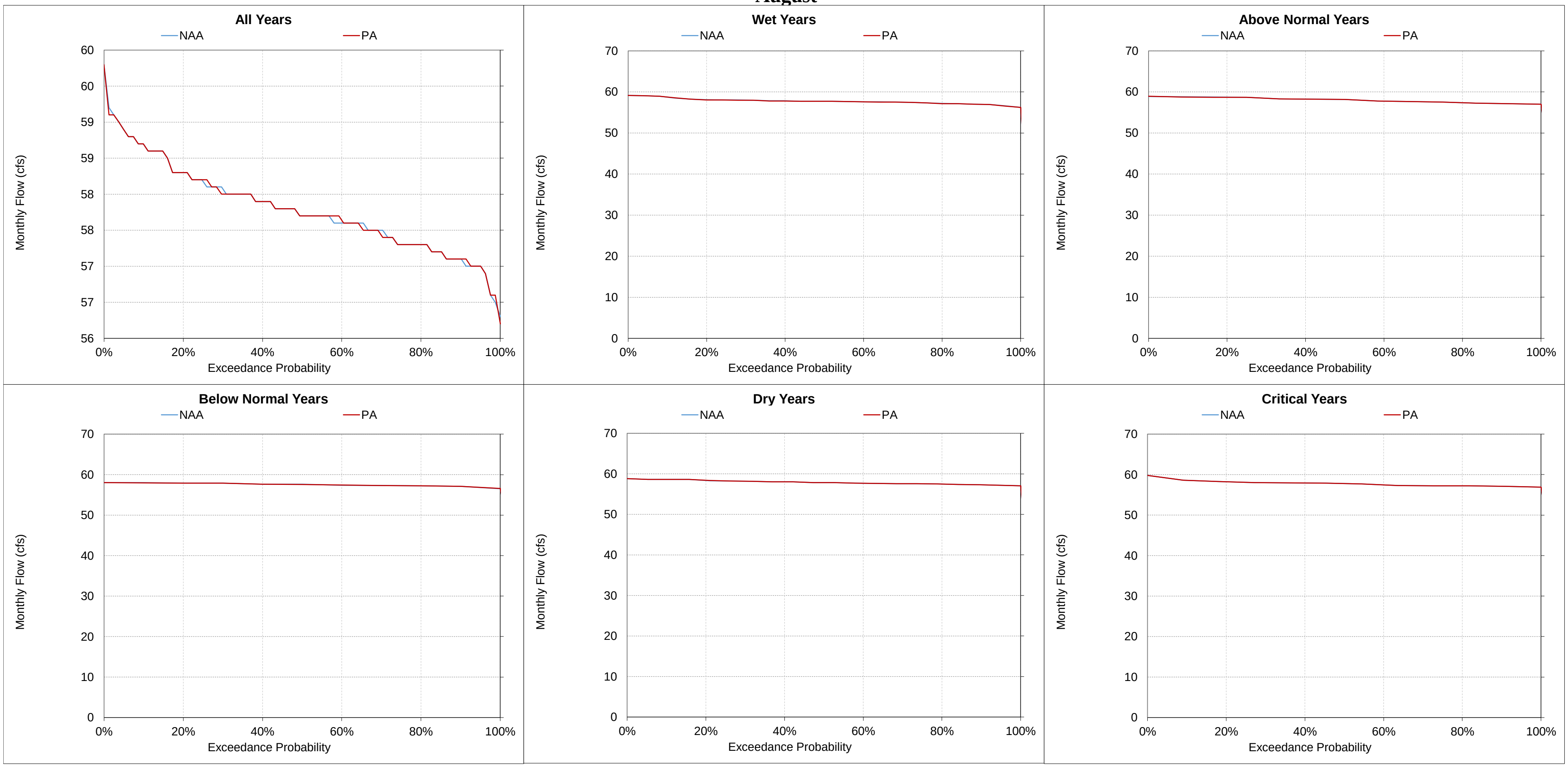
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-17. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow
July



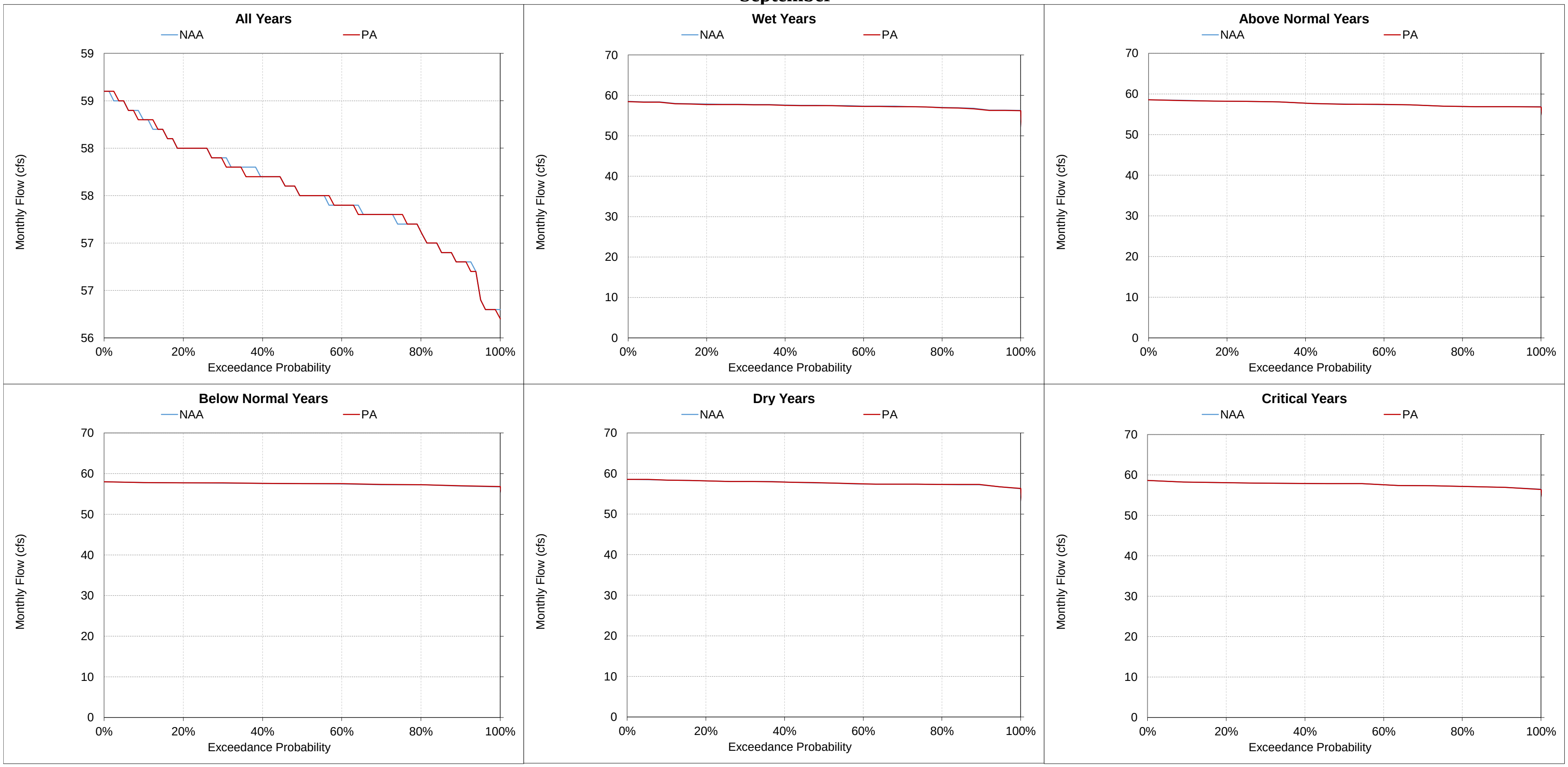
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-18. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-32-19. Morrow Island Distribution System M-line towards Suisun Bay, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-33. Morrow Island Distribution System C-line, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	23	23	0	0%	23	23	0	0%	23	23	0	0%	23	22	0	0%	22	22	0	0%	22	22	0	0%
20%	23	23	0	0%	23	23	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
30%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
40%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
50%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
60%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
70%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	21	21	0	0%	21	21	0	0%
80%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	21	21	0	0%	21	21	0	0%
90%	22	22	0	0%	22	22	0	0%	22	22	0	0%	21	21	0	0%	21	21	0	0%	21	21	0	0%
Long Term Full Simulation Period[b]	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	21	21	0	0%
Water Year Types[c]																							0	
Wet (32%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	21	21	0	0%	21	21	0	0%
Above Normal (16%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	21	21	0	0%
Below Normal (13%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
Dry (24%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
Critical (15%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	22	22	0	0%	22	22	0	0%	22	22	0	0%	23	23	0	0%	23	23	0	0%	23	23	0	0%
20%	22	22	0	0%	22	22	0	0%	22	22	0	0%	23	23	0	0%	23	23	0	0%	23	23	0	0%
30%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	23	23	0	0%	22	22	0	0%
40%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
50%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
60%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
70%	21	21	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
80%	21	21	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
90%	21	21	0	0%	21	21	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
Long Term Full Simulation Period[b]	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
Water Year Types[c]																							0	
Wet (32%)	21	21	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
Above Normal (16%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
Below Normal (13%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
Dry (24%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%
Critical (15%)	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%	22	22	0	0%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-1. Monthly Flow Ranges For Morrow Island Distribution System C-line, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.

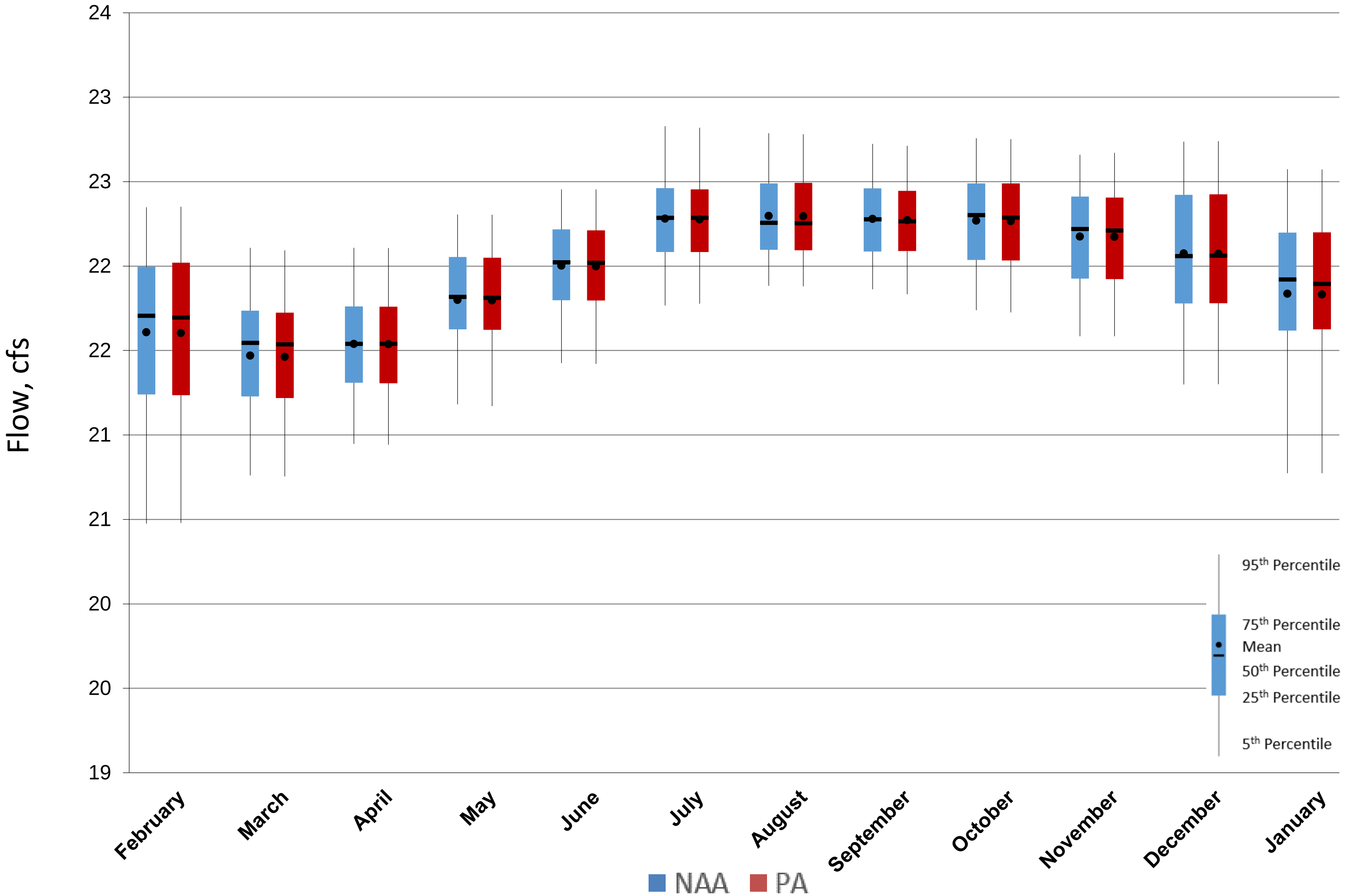
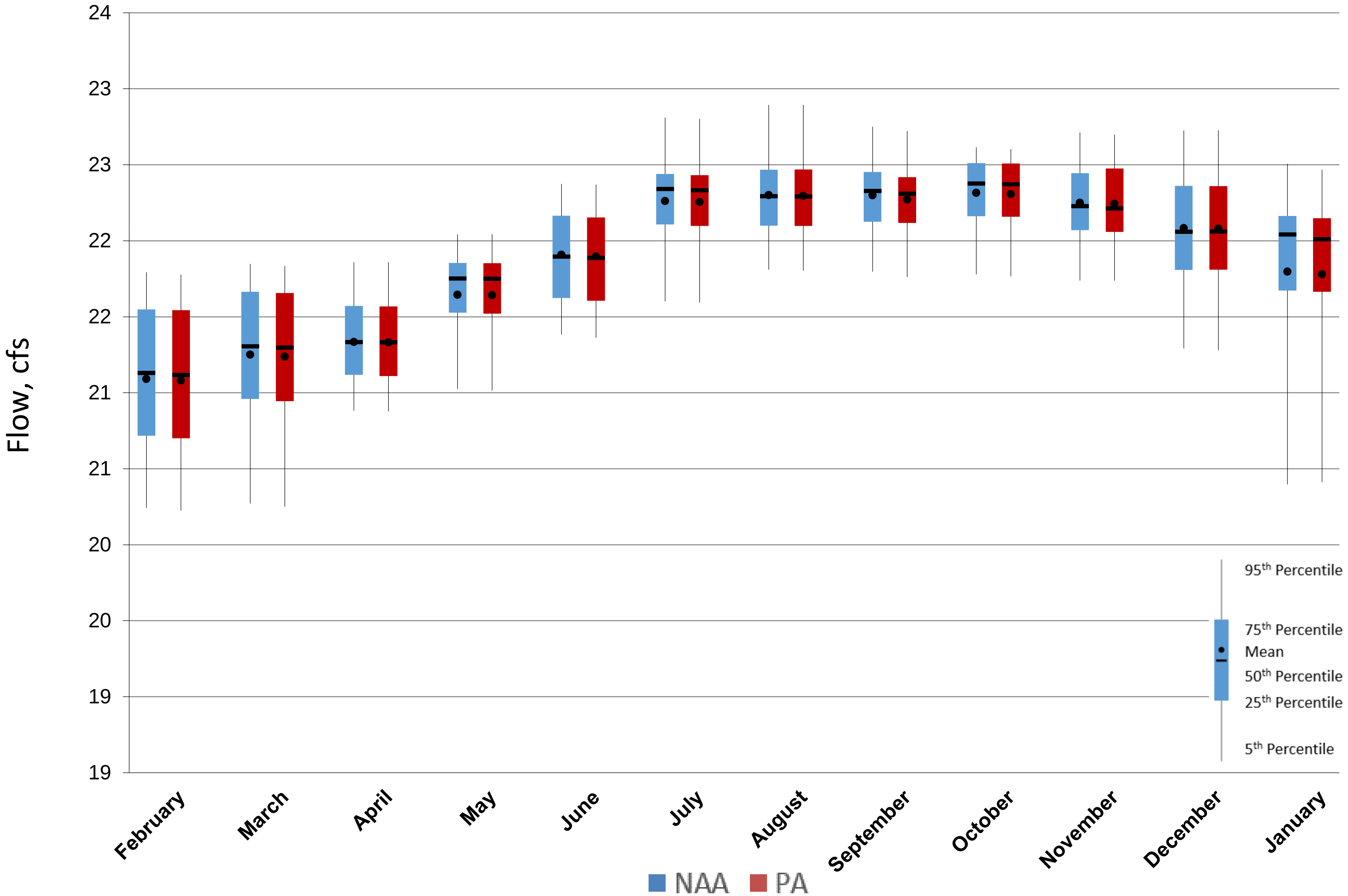


Figure 5.B.5-33-2. Monthly Flow Ranges For Morrow Island Distribution System C-line, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.



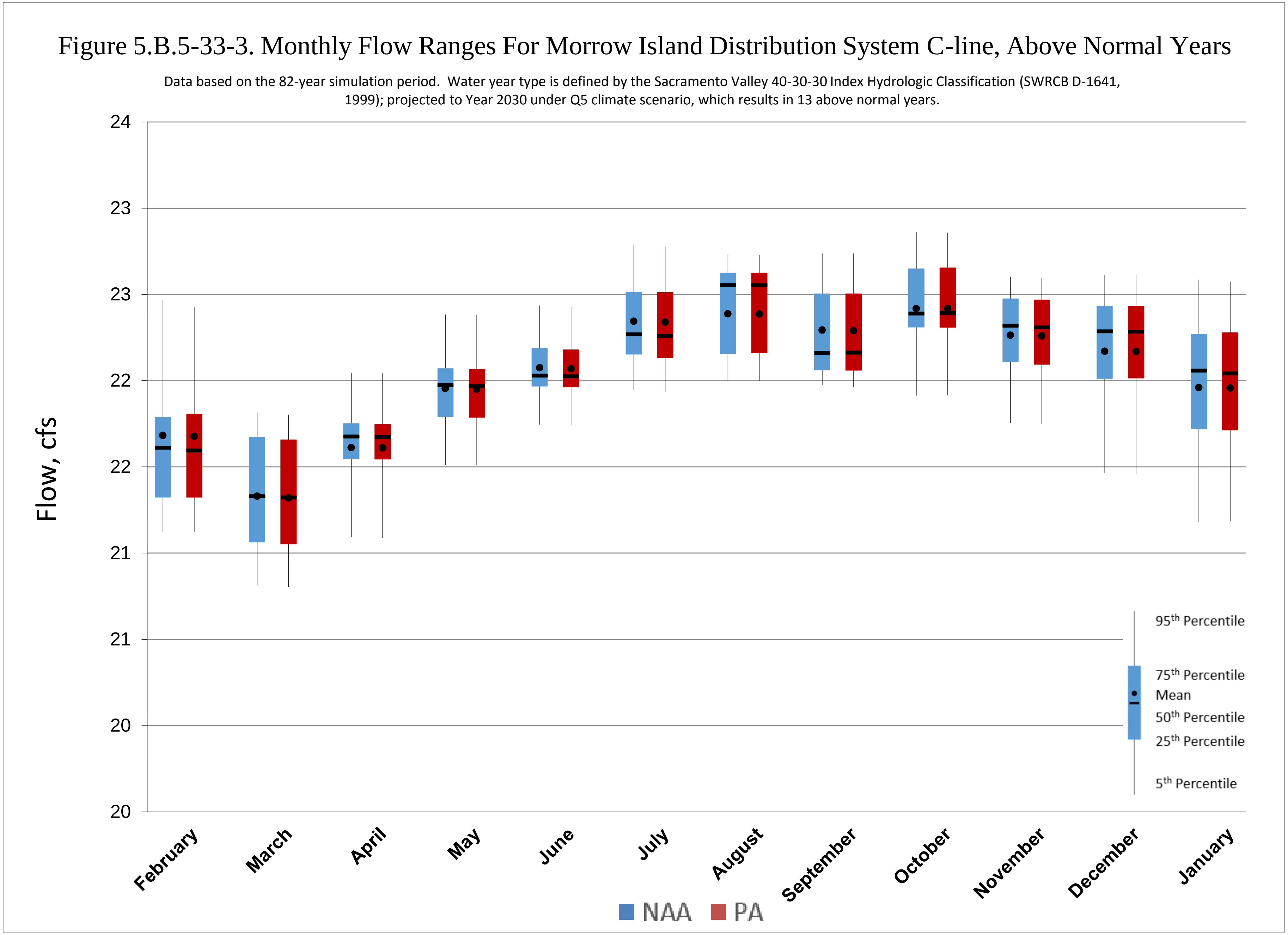


Figure 5.B.5-33-3. Monthly Flow Ranges For Morrow Island Distribution System C-line, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
Flow, cfs
24
23
23
22
22
21
21
20
20
February
March
April
May
June
July
August
September
October
November
December
January
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
NAA
PA

Figure 5.B.5-33-4. Monthly Flow Ranges For Morrow Island Distribution System C-line, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

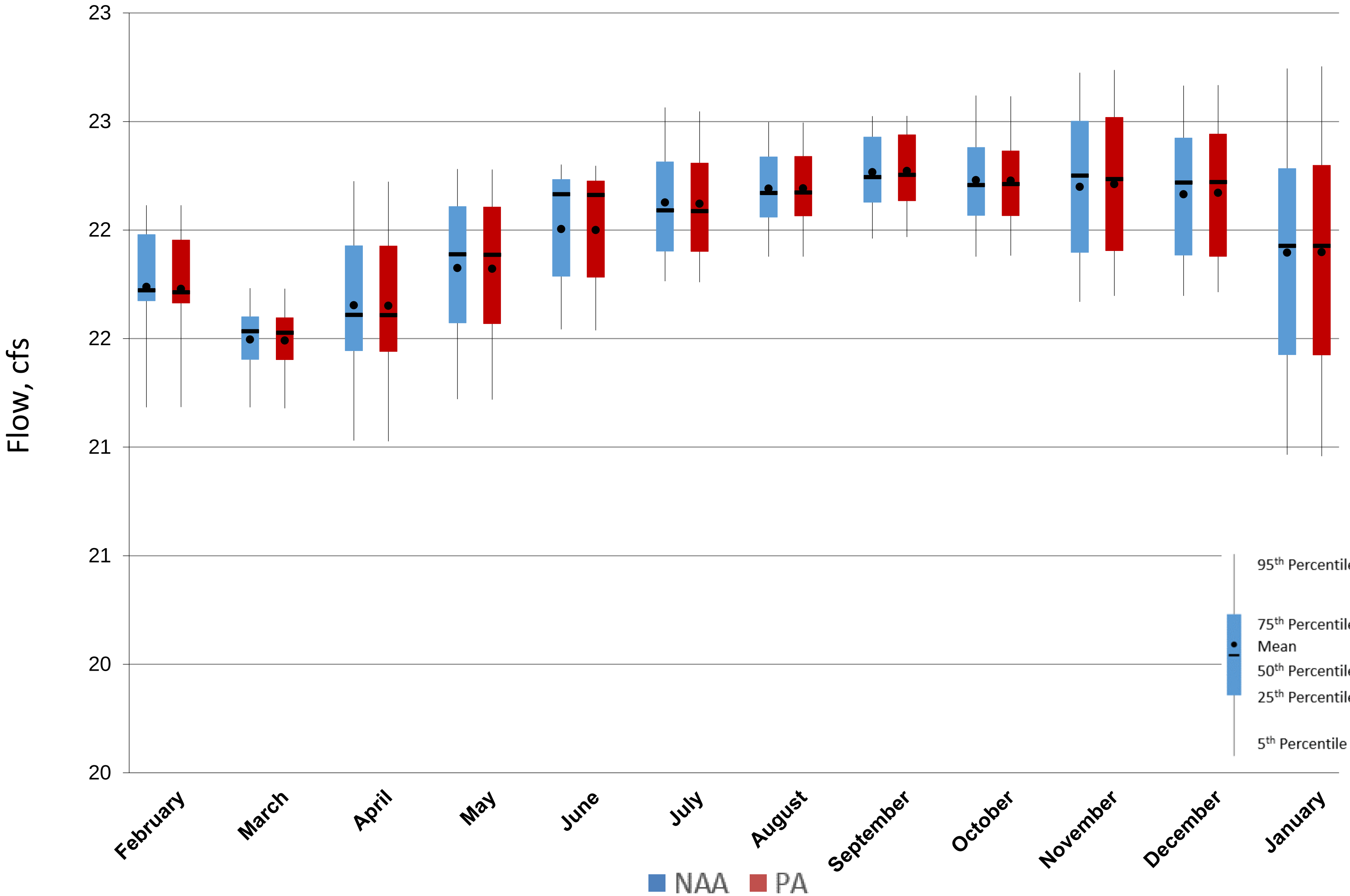


Figure 5.B.5-33-5. Monthly Flow Ranges For Morrow Island Distribution System C-line, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.

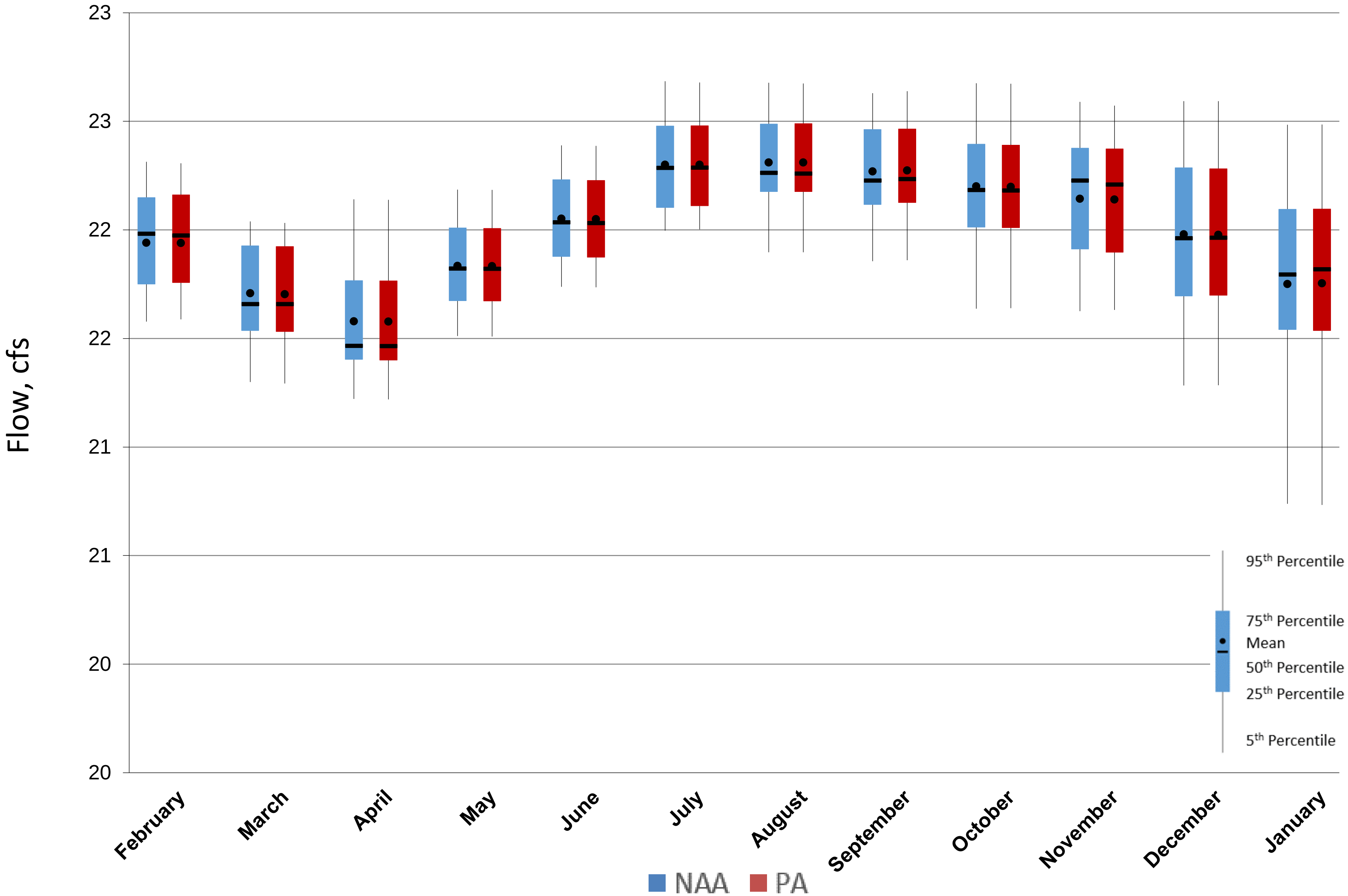


Figure 5.B.5-33-6. Monthly Flow Ranges For Morrow Island Distribution System C-line, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

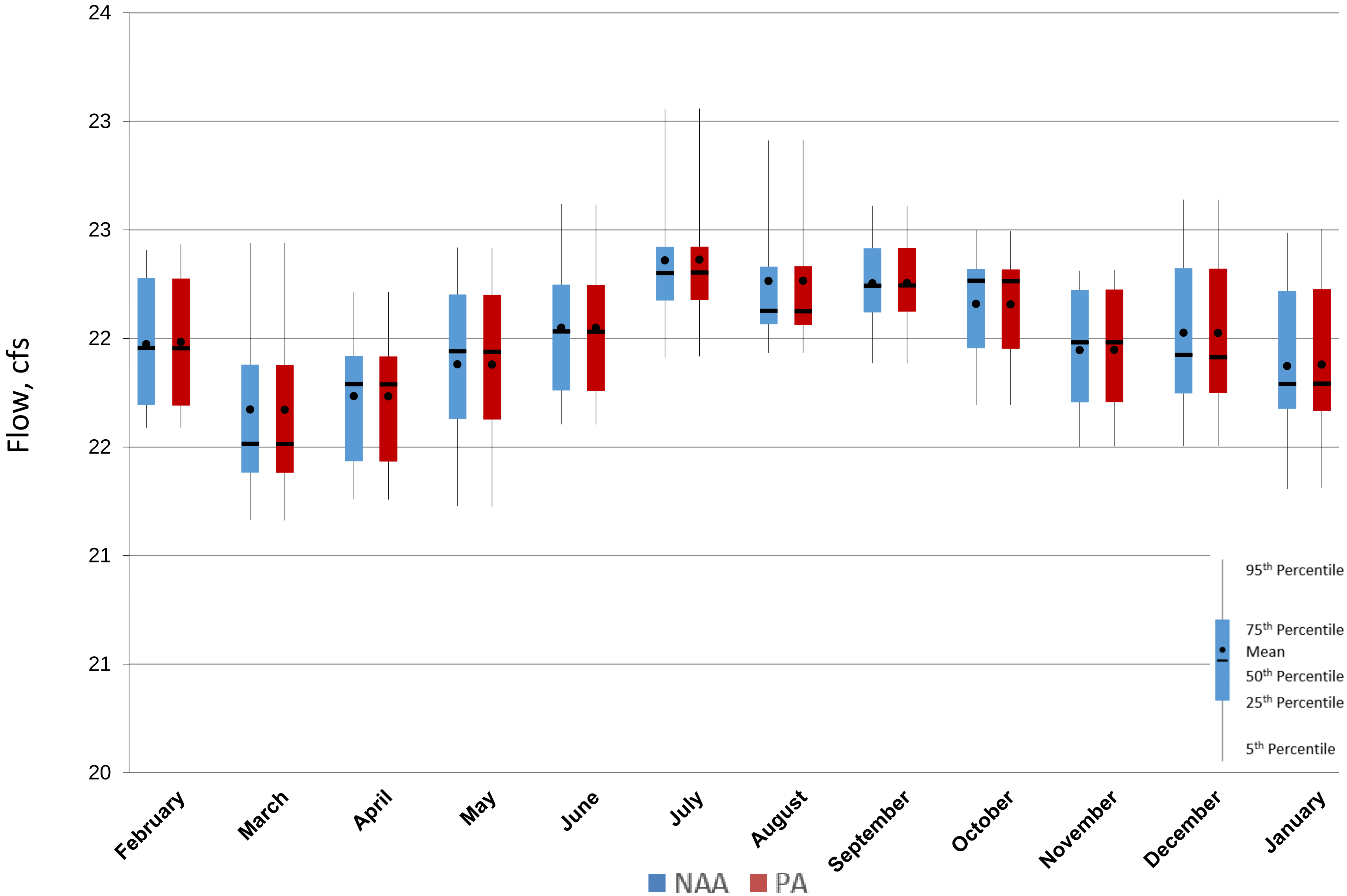
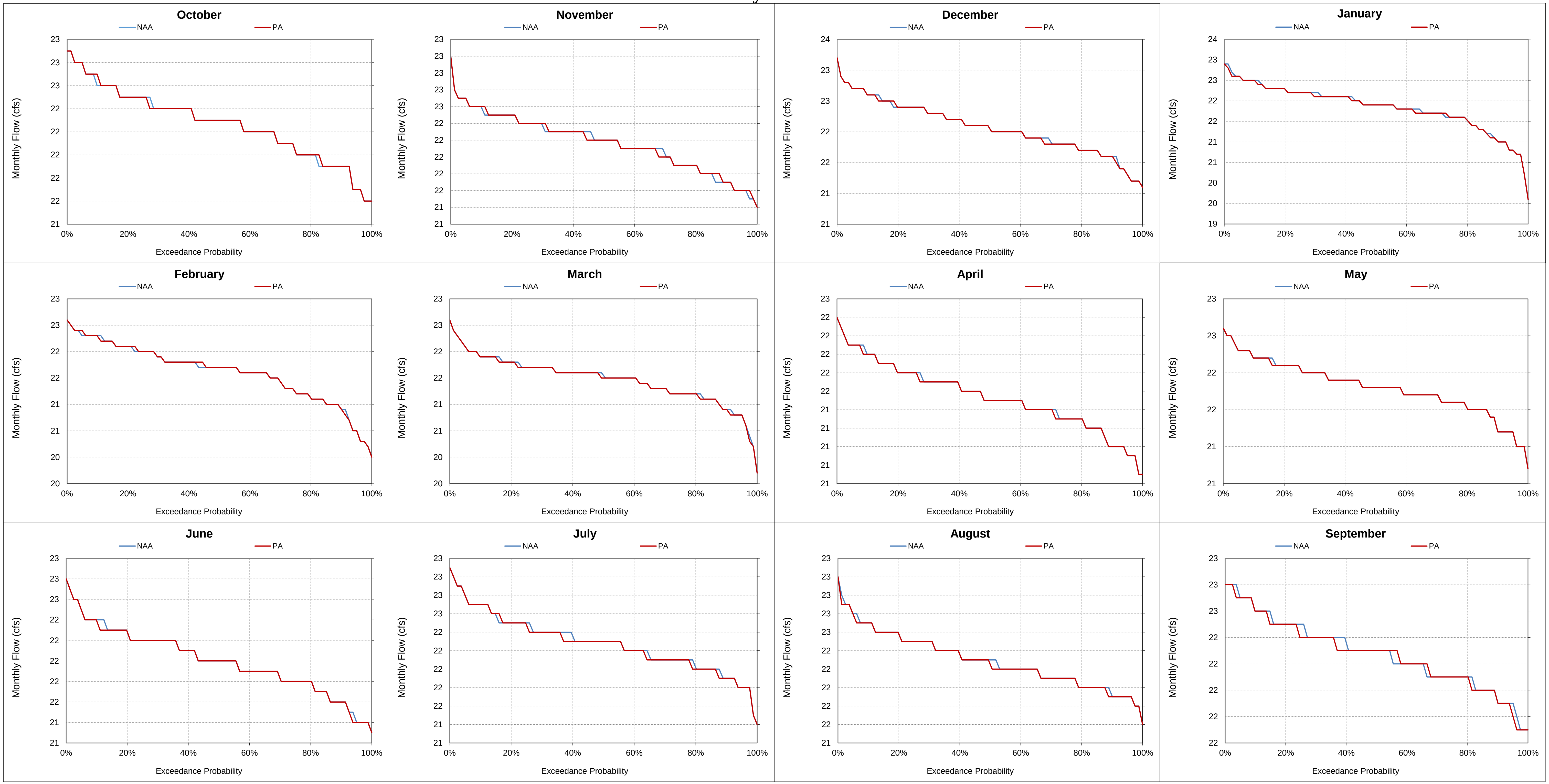
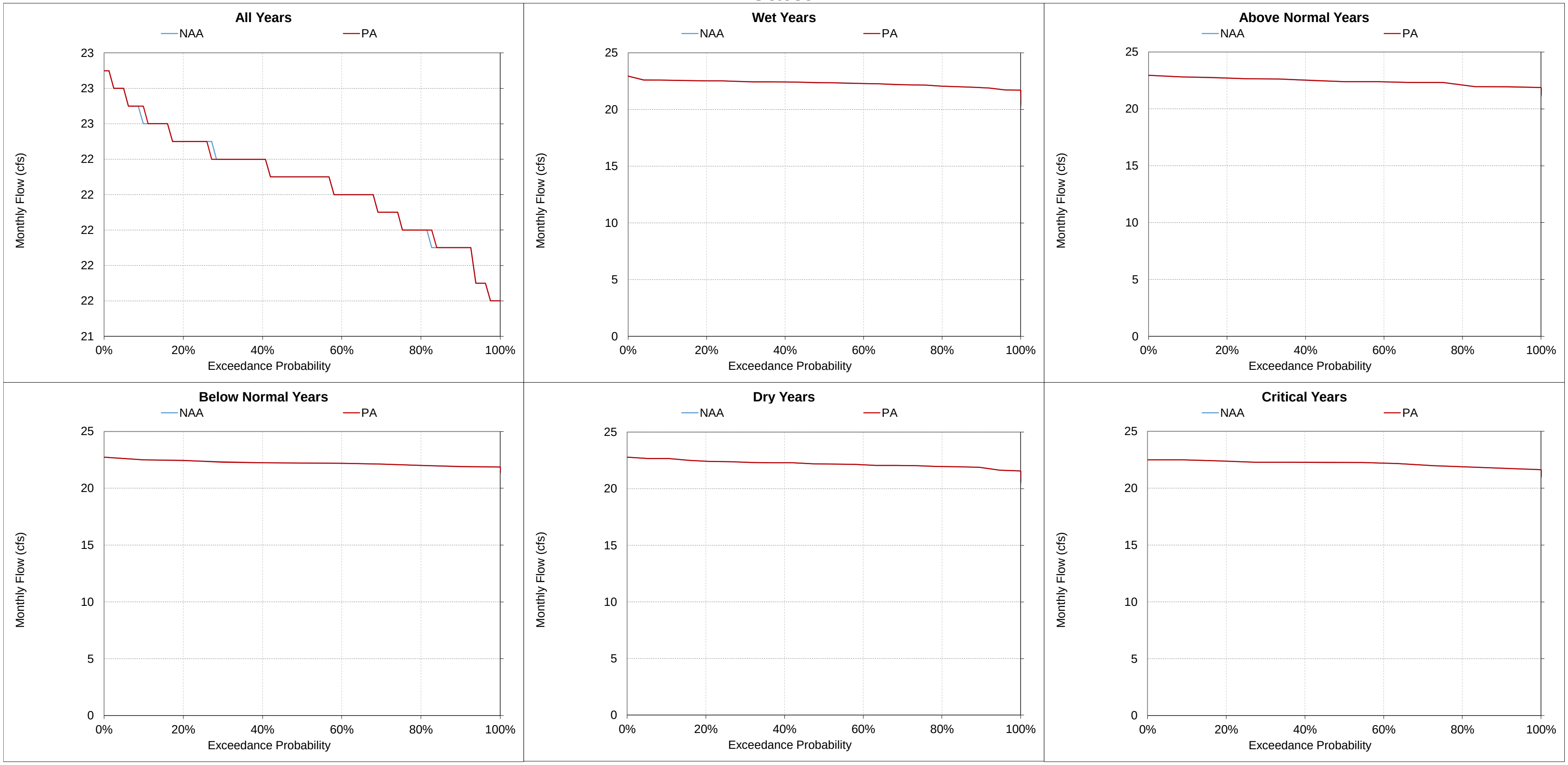


Figure 5.B.5-33-7. Morrow Island Distribution System C-line, Monthly Flow Probability of Exceedance



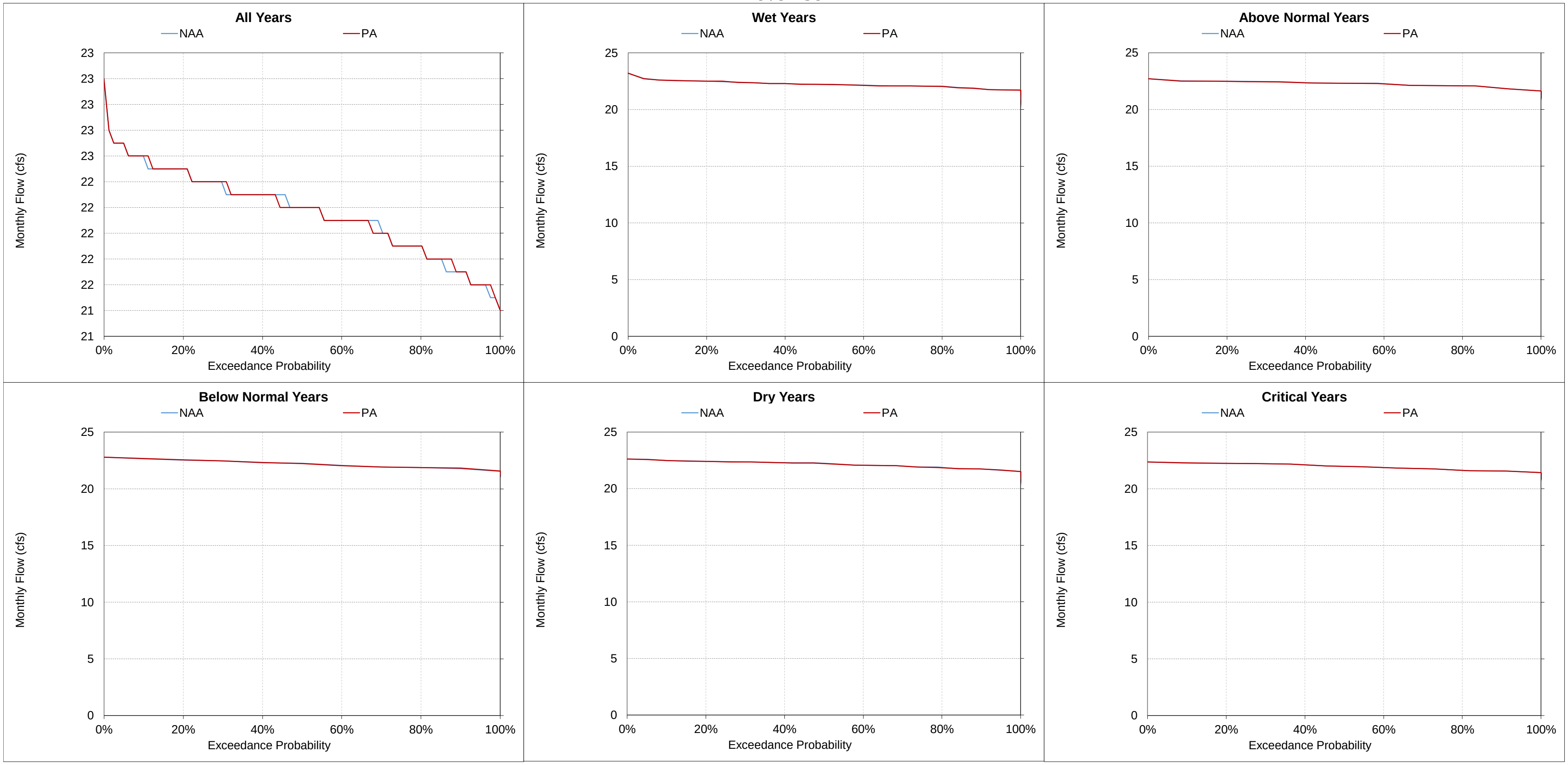
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-8. Morrow Island Distribution System C-line, Monthly Flow
October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-9. Morrow Island Distribution System C-line, Monthly Flow November



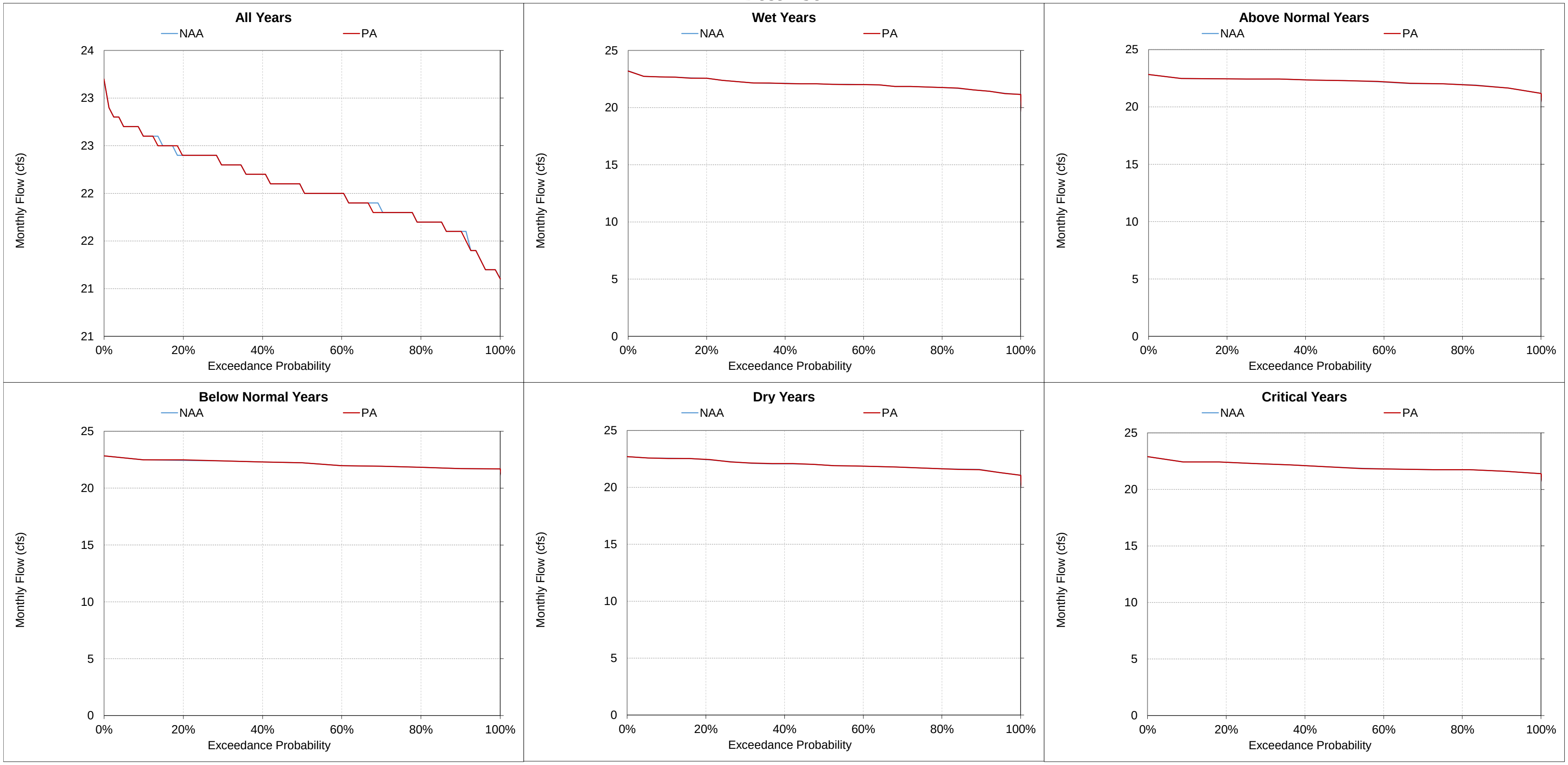
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-10. Morrow Island Distribution System C-line, Monthly Flow December



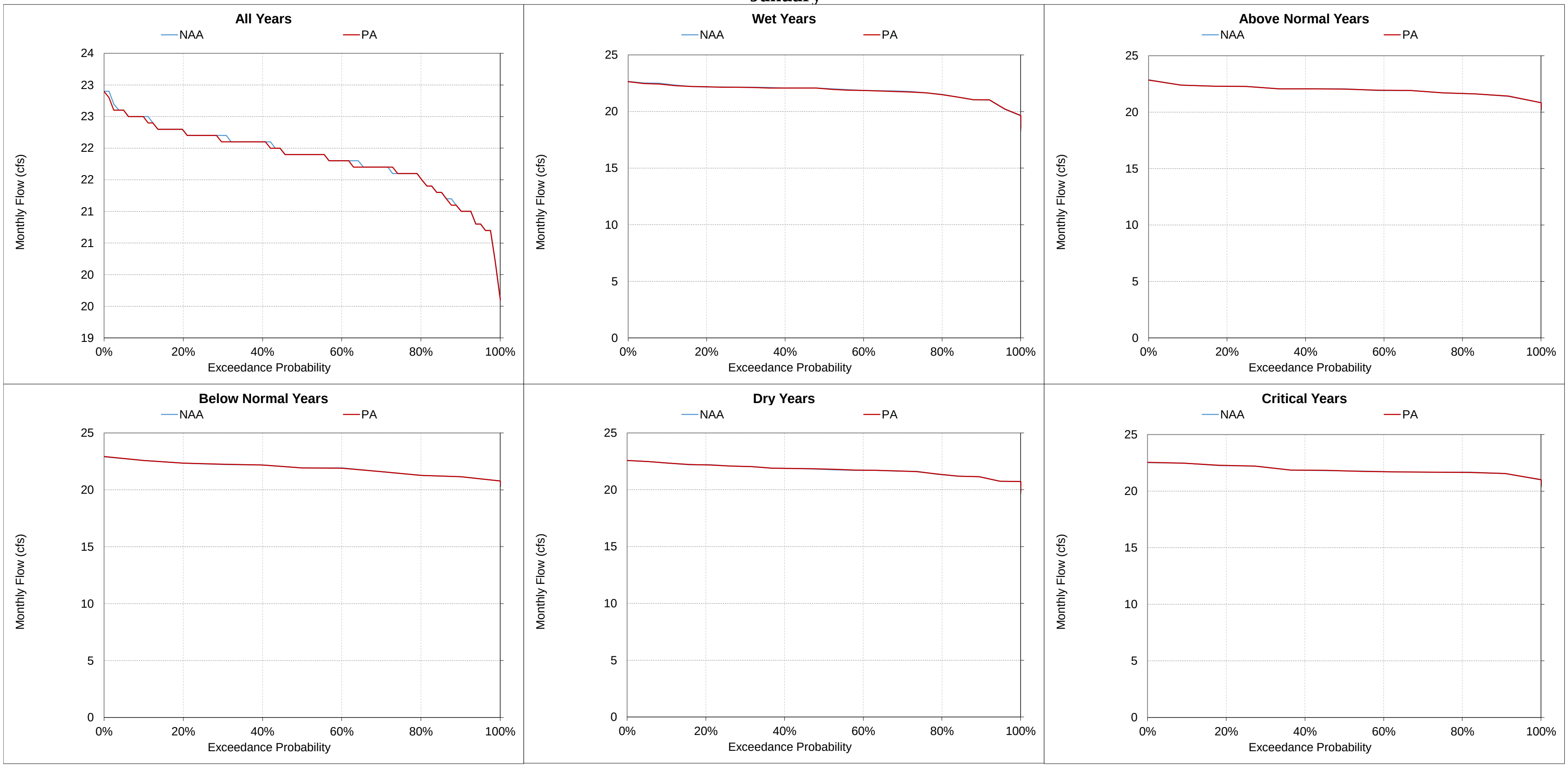
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

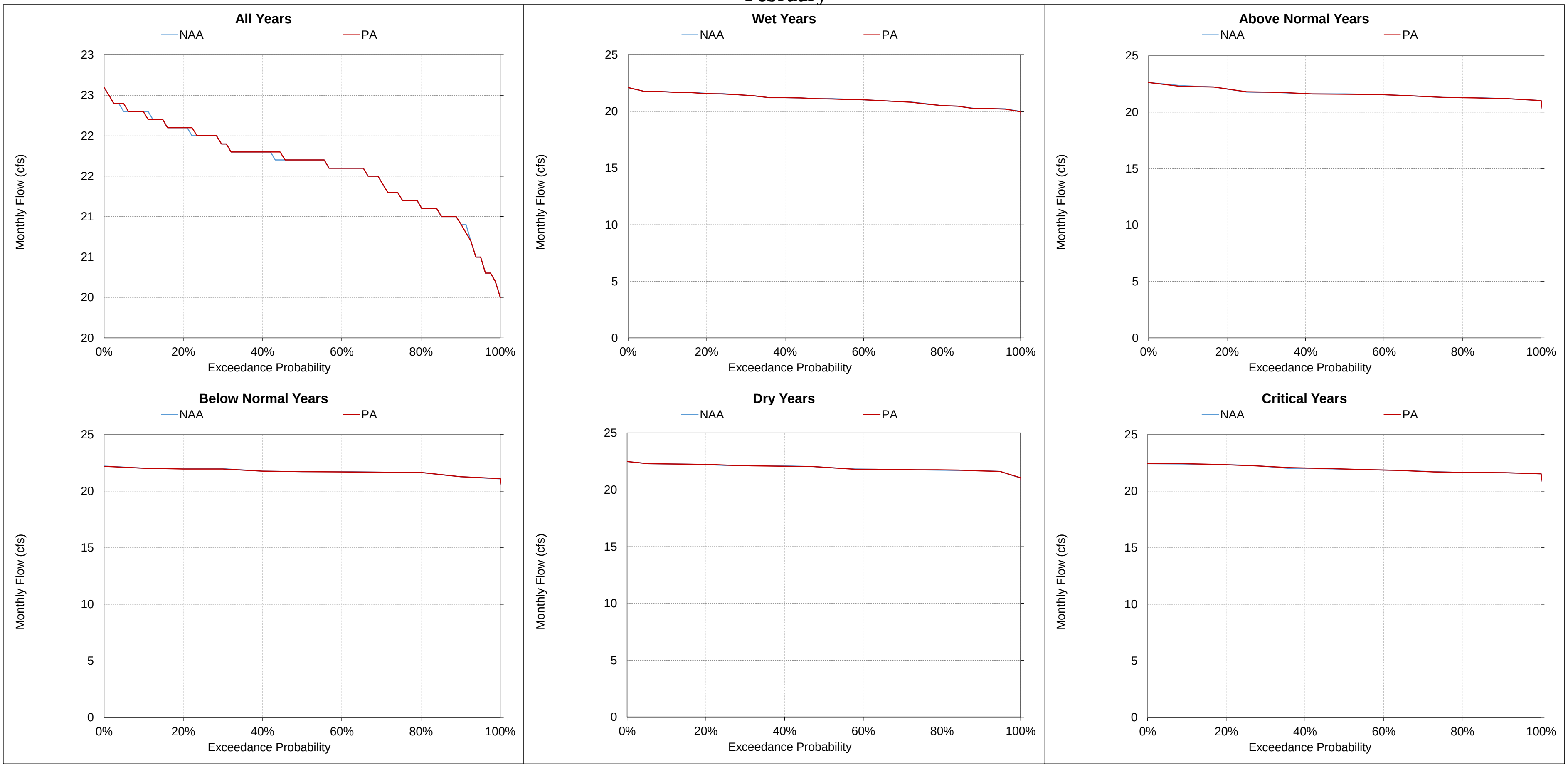
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-11. Morrow Island Distribution System C-line, Monthly Flow January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-12. Morrow Island Distribution System C-line, Monthly Flow February



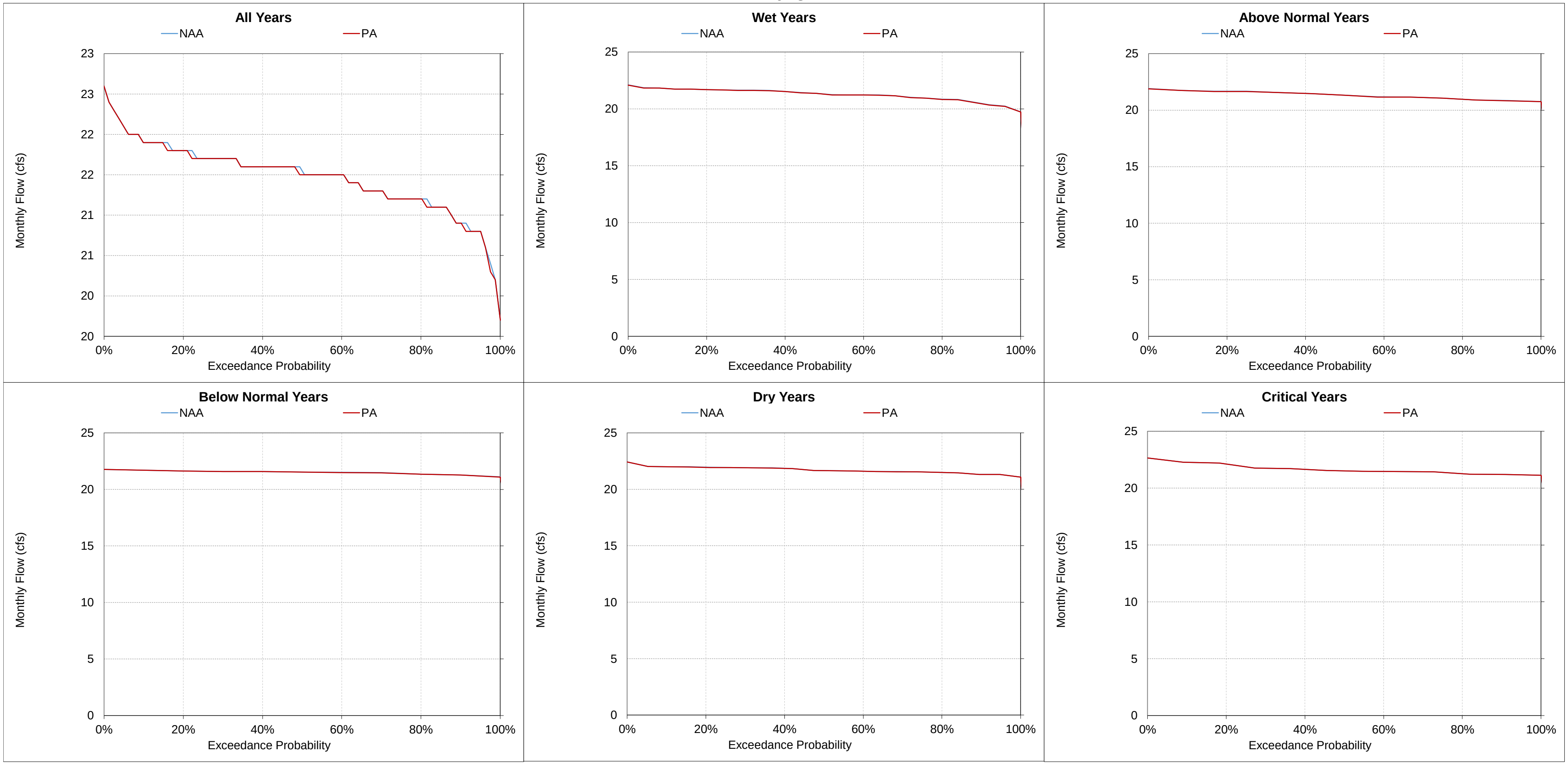
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-13. Morrow Island Distribution System C-line, Monthly Flow March



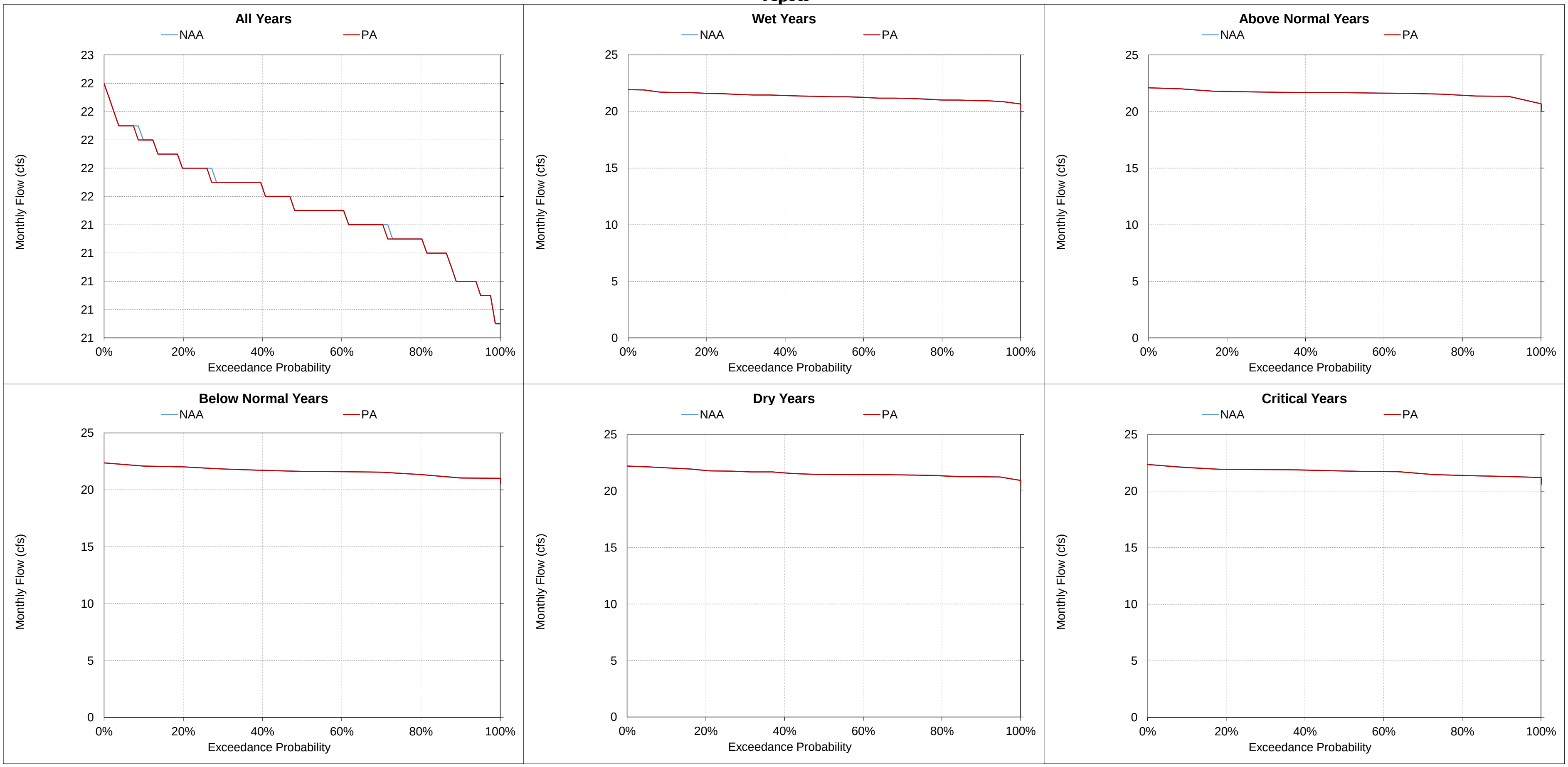
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

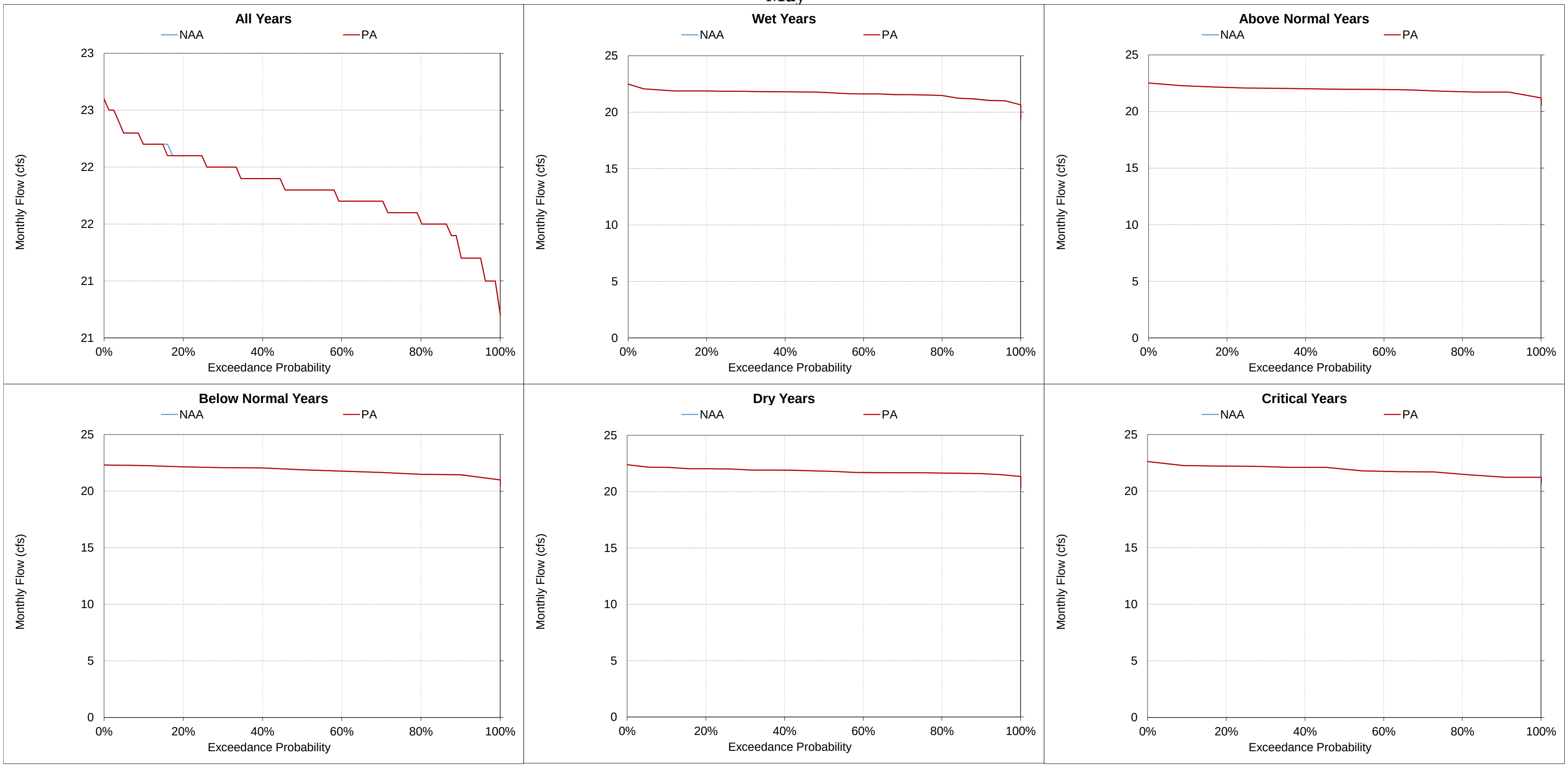
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-14. Morrow Island Distribution System C-line, Monthly Flow April



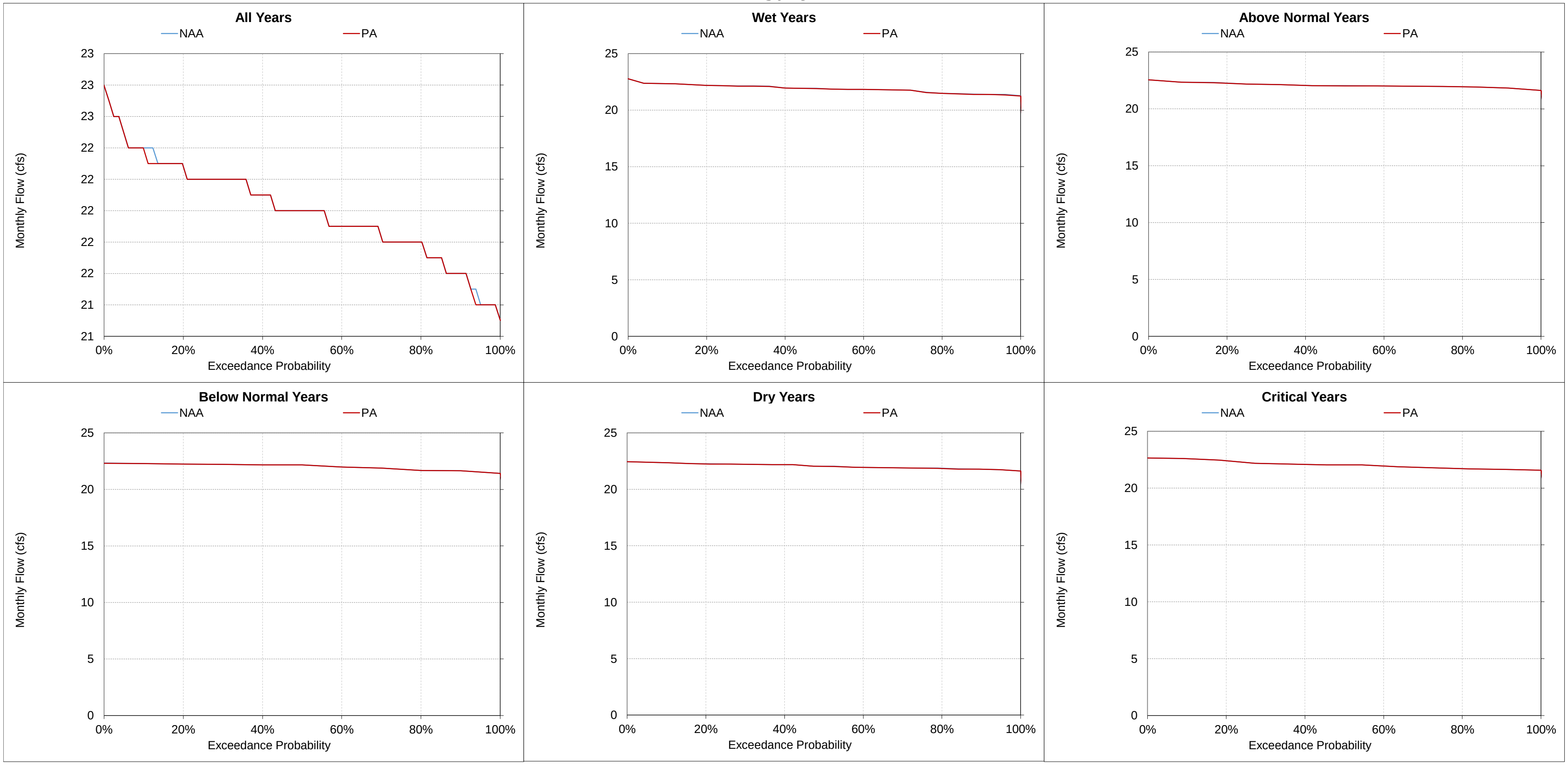
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-15. Morrow Island Distribution System C-line, Monthly Flow May



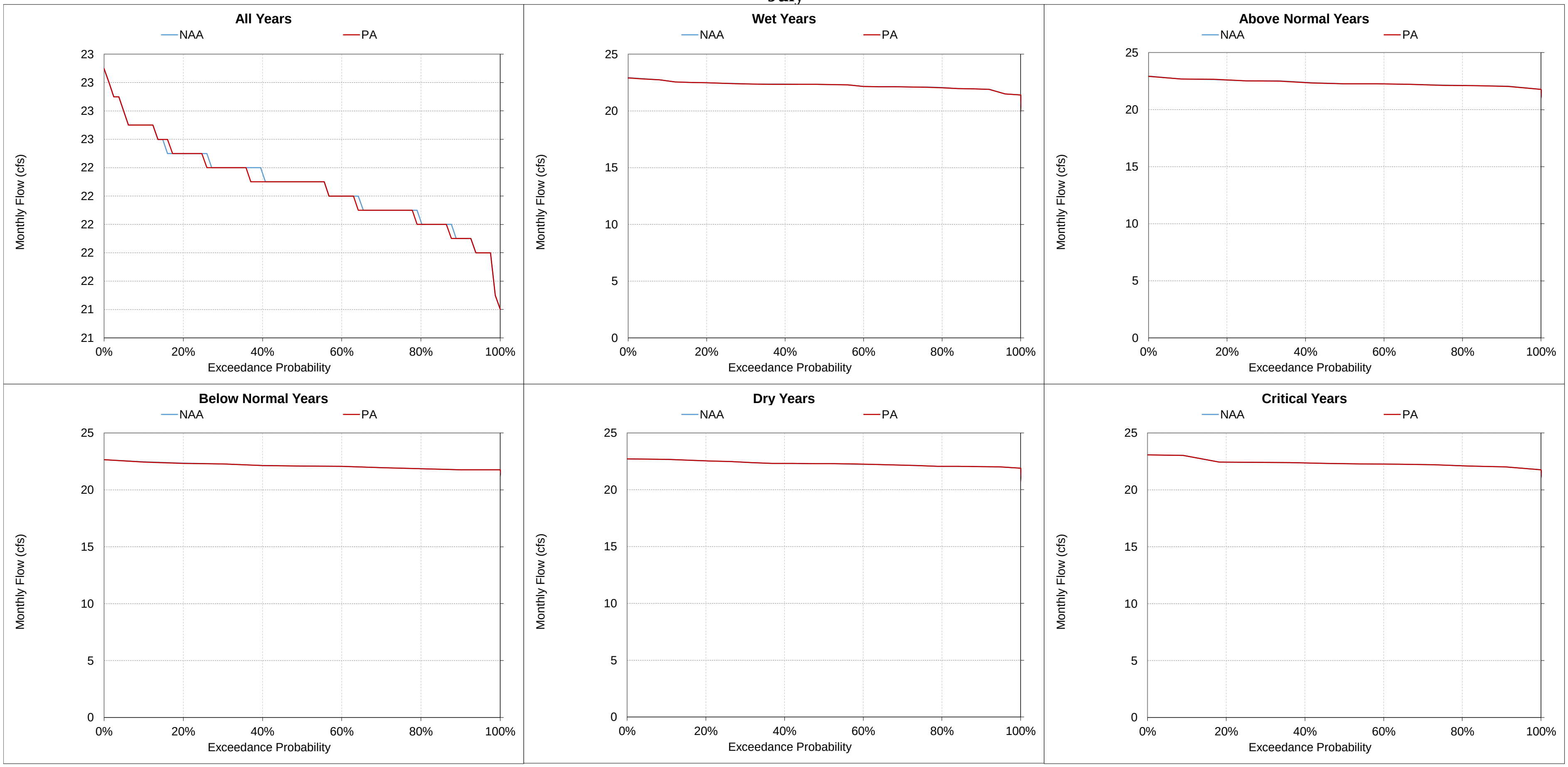
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-16. Morrow Island Distribution System C-line, Monthly Flow
June



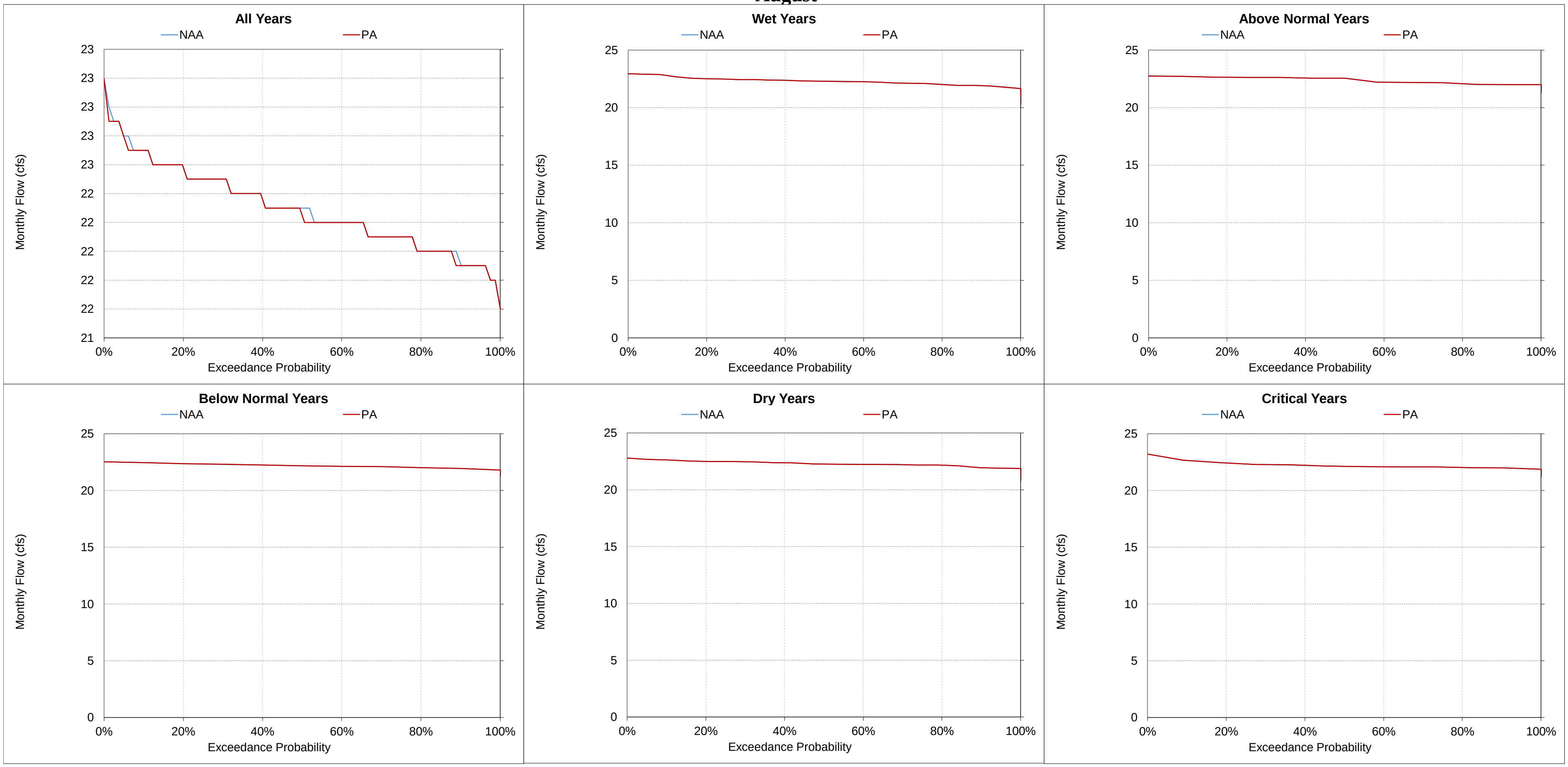
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-17. Morrow Island Distribution System C-line, Monthly Flow
July



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-18. Morrow Island Distribution System C-line, Monthly Flow August



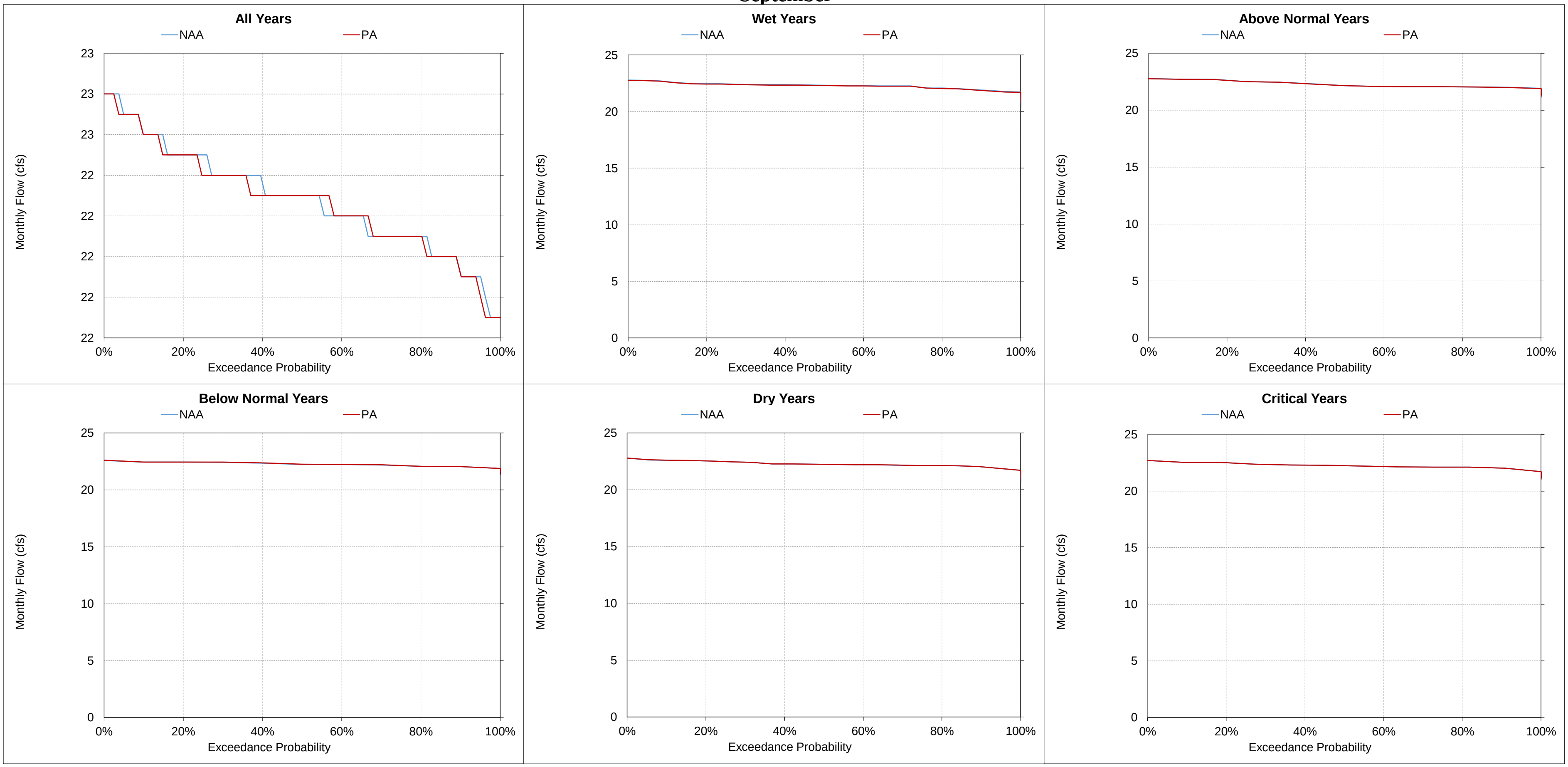
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-33-19. Morrow Island Distribution System C-line, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-34. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-43	-43	0	0%
20%	-45	-45	0	0%	-44	-44	0	0%	-44	-45	0	0%	-45	-45	0	0%	-44	-44	0	0%	-43	-43	0	0%
30%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-44	-44	0	0%
40%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-46	-45	0	1%	-44	-44	0	0%
50%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-46	-46	0	0%	-46	-46	0	0%	-44	-44	0	0%
60%	-45	-45	0	0%	-45	-45	0	0%	-46	-46	0	0%	-46	-46	0	0%	-46	-46	0	0%	-45	-45	0	0%
70%	-46	-46	0	0%	-46	-45	0	0%	-46	-46	0	0%	-46	-46	0	0%	-47	-47	0	0%	-45	-45	0	0%
80%	-46	-46	0	0%	-46	-46	0	0%	-46	-46	0	0%	-47	-47	0	1%	-48	-48	0	1%	-47	-47	0	0%
90%	-46	-46	0	0%	-46	-46	0	0%	-48	-47	0	1%	-50	-50	0	1%	-51	-51	0	0%	-48	-48	0	0%
Long Term Full Simulation Period[b]	-45	-45	0	0%	-45	-45	0	0%	-46	-46	0	0%	-46	-46	0	0%	-47	-47	0	0%	-45	-45	0	0%
Water Year Types[c]																								
Wet (32%)	-45	-45	0	0%	-45	-45	0	0%	-46	-46	0	0%	-47	-47	0	0%	-49	-49	0	0%	-48	-47	0	0%
Above Normal (16%)	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-46	-46	0	0%	-47	-47	0	0%	-45	-45	0	0%
Below Normal (13%)	-45	-45	0	0%	-45	-45	0	0%	-46	-45	0	0%	-46	-46	0	0%	-45	-45	0	0%	-43	-43	0	0%
Dry (24%)	-45	-45	0	0%	-45	-45	0	0%	-46	-46	0	0%	-46	-46	0	0%	-45	-45	0	0%	-44	-44	0	0%
Critical (15%)	-45	-45	0	0%	-44	-44	0	0%	-45	-45	0	0%	-46	-46	0	0%	-45	-45	0	0%	-44	-44	0	0%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	-43	-43	0	0%	-43	-43	0	0%	-43	-43	0	0%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%
20%	-43	-43	0	0%	-43	-43	0	0%	-43	-43	0	0%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%
30%	-43	-43	0	0%	-43	-43	0	0%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%
40%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-45	-44	0	0%	-45	-44	0	0%	-45	-45	0	0%
50%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%
60%	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%
70%	-45	-45	0	0%	-44	-44	0	0%	-44	-44	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%
80%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%	-46	-46	0	0%
90%	-46	-46	0	0%	-46	-46	0	0%	-45	-45	0	0%	-46	-46	0	0%	-46	-46	0	0%	-46	-46	0	0%
Long Term Full Simulation Period[b]	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-45	-45	0	0%	-45	-45	0	0%	-45	-45	0	0%
Water Year Types[c]																								
Wet (32%)	-45	-45	0	0%	-45	-45	0	0%	-44	-44	0	0%	-45	-45	0	0%	-45	-45	0	0%	-46	-45	0	0%
Above Normal (16%)	-44	-44	0	0%	-44	-44	0	0%	-44	-44	0	0%	-45	-45	0	1%	-45	-45	0	0%	-45	-45	0	0%
Below Normal (13%)	-43	-43	0	0%	-43	-43	0	0%	-44	-44	0	0%	-44	-44	0	0%	-45	-44	0	0%	-45	-44	0	0%
Dry (24%)	-43	-43	0	0%	-44	-44	0	0%	-44	-44	0	0%	-45	-45	0	0%	-45	-45	0	0%	-44	-44	0	0%
Critical (15%)	-43	-43	0	0%	-43	-43	0	0%	-44	-44	0	0%	-45	-45	0	0%	-44	-44	0	0%	-44	-44	0	0%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

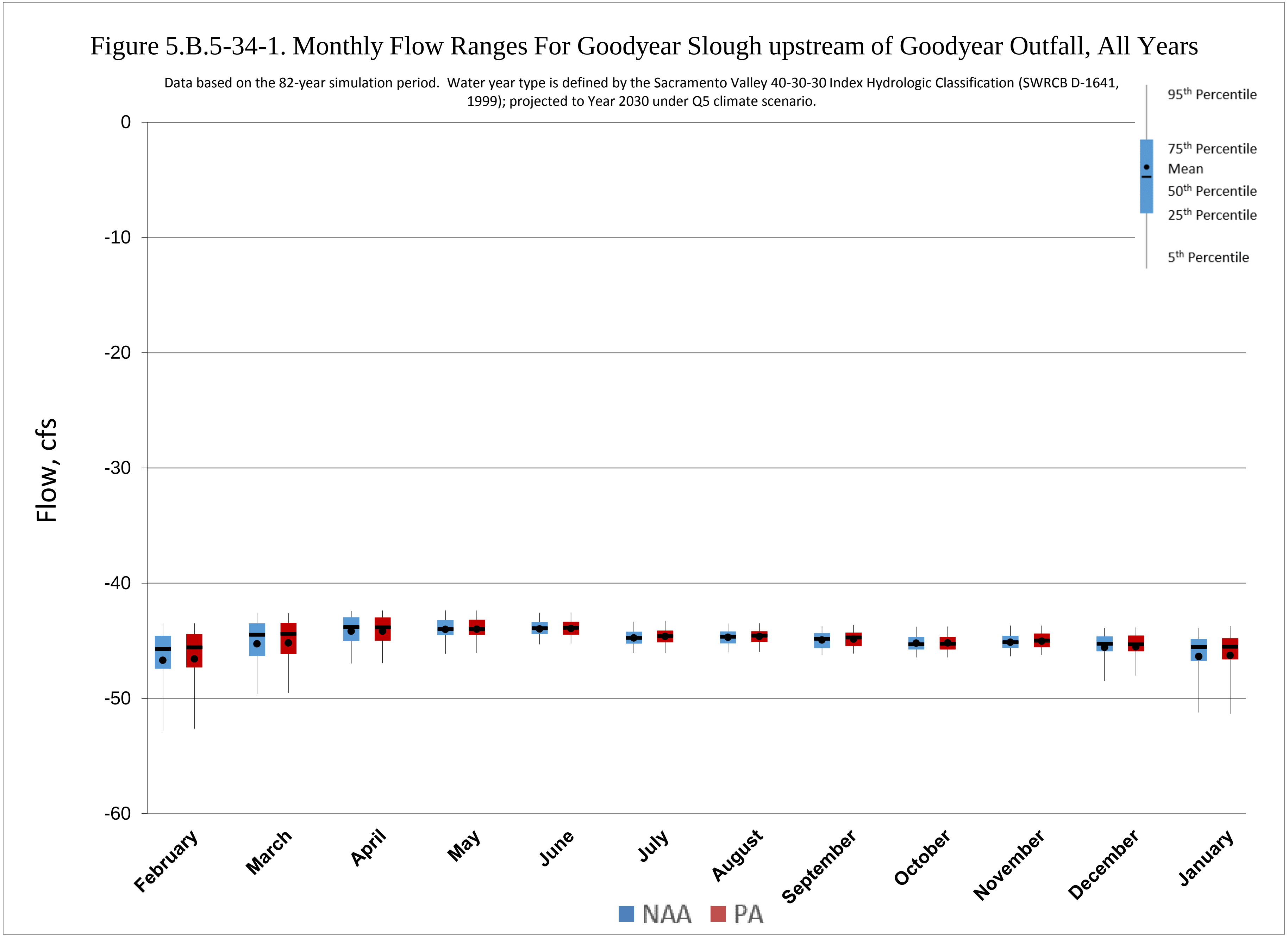


Figure 5.B.5-34-1. Monthly Flow Ranges For Goodyear Slough upstream of Goodyear Outfall, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
0
-10
-20
-30
-40
-50
-60
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-34-2. Monthly Flow Ranges For Goodyear Slough upstream of Goodyear Outfall, Wet Years

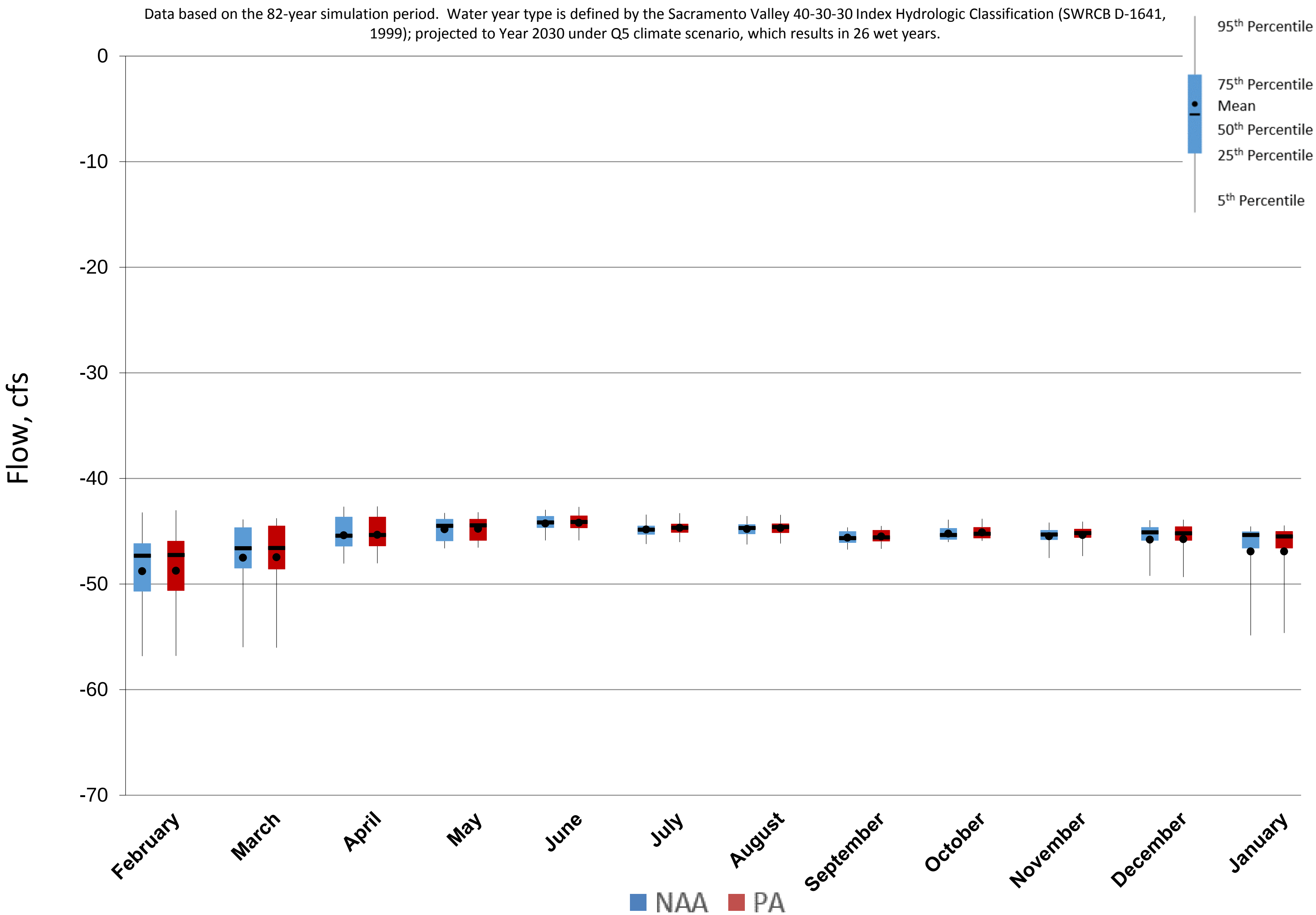


Figure 5.B.5-34-3. Monthly Flow Ranges For Goodyear Slough upstream of Goodyear Outfall, Above Normal Years

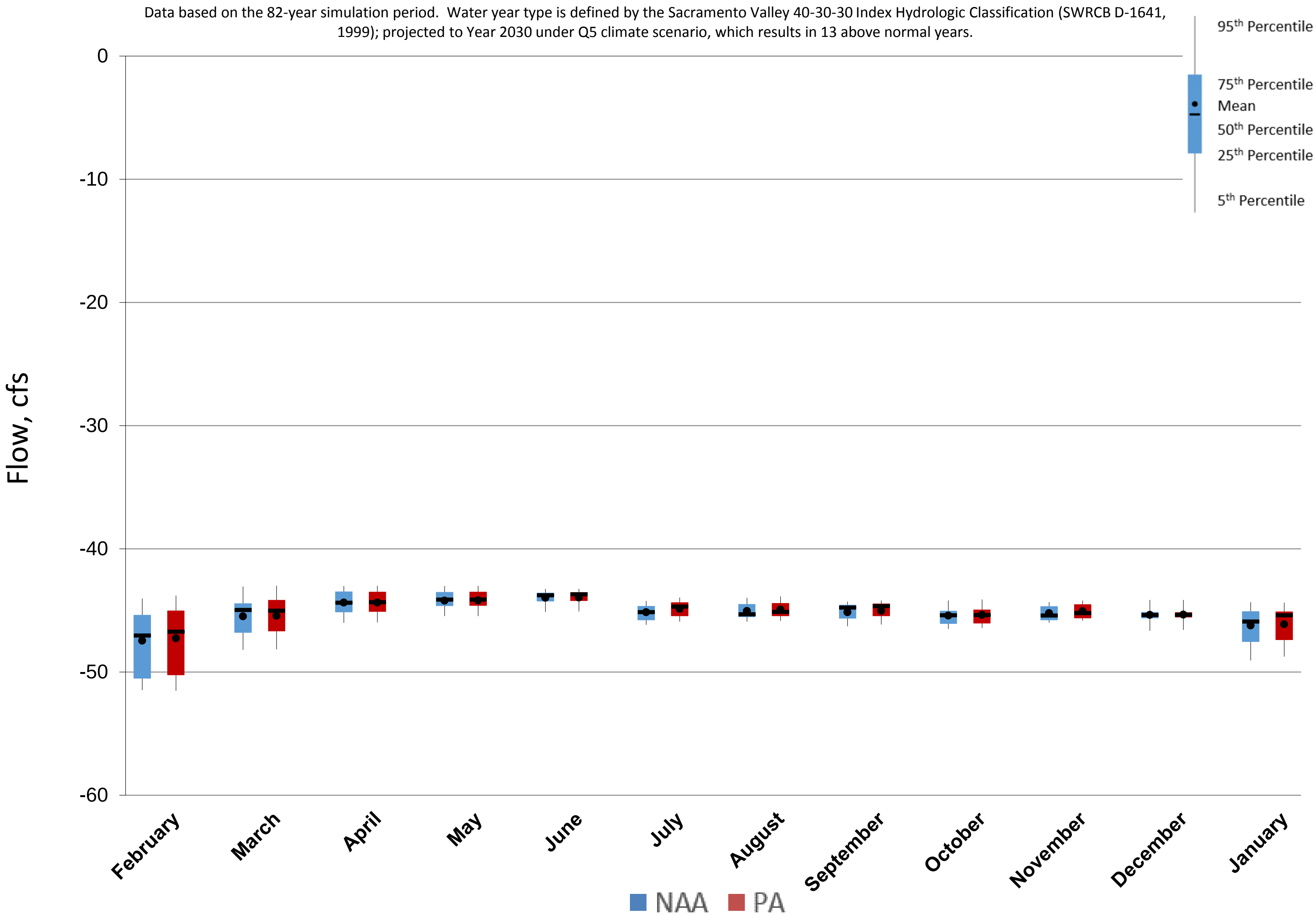


Figure 5.B.5-34-4. Monthly Flow Ranges For Goodyear Slough upstream of Goodyear Outfall, Below Normal Years

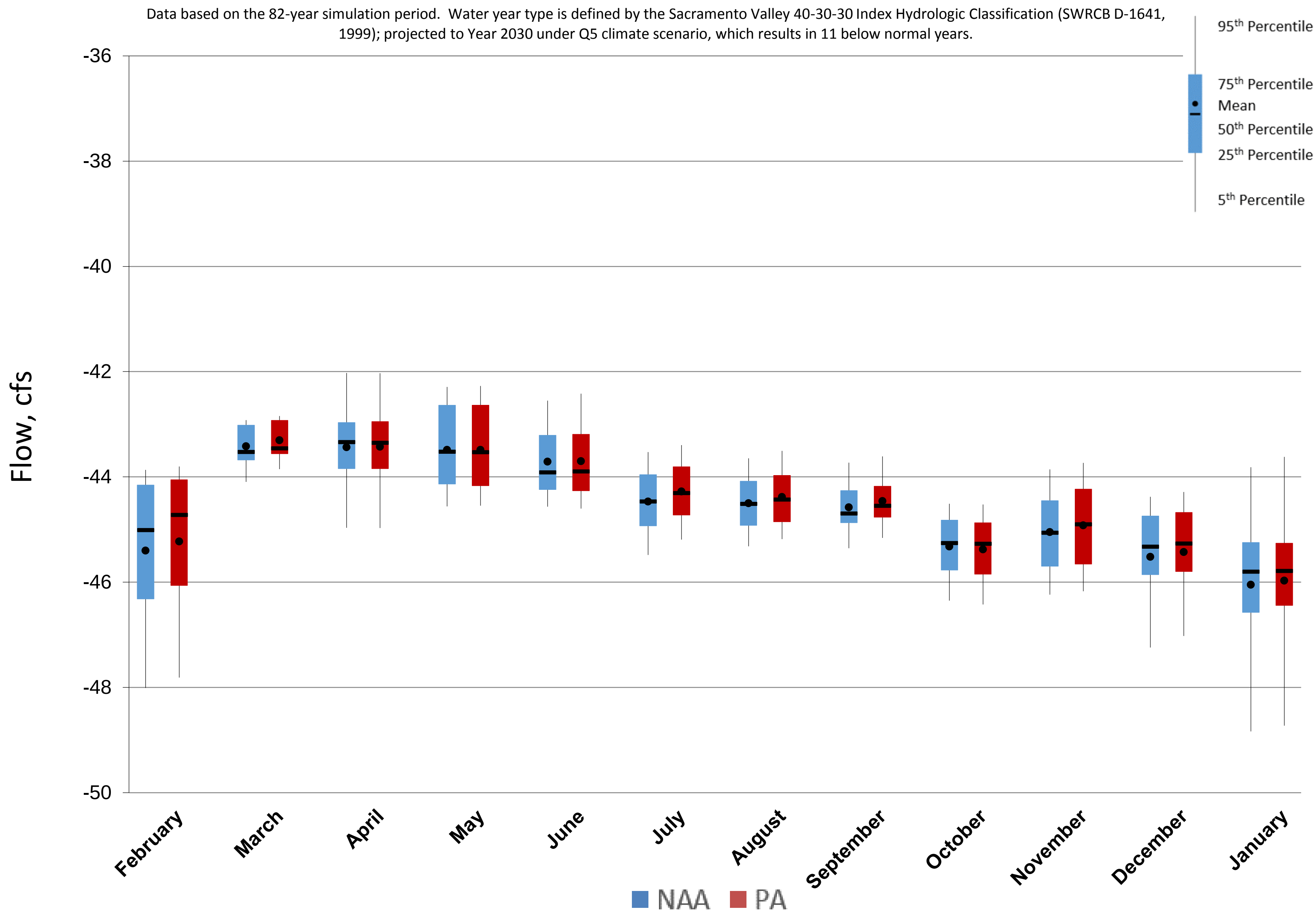
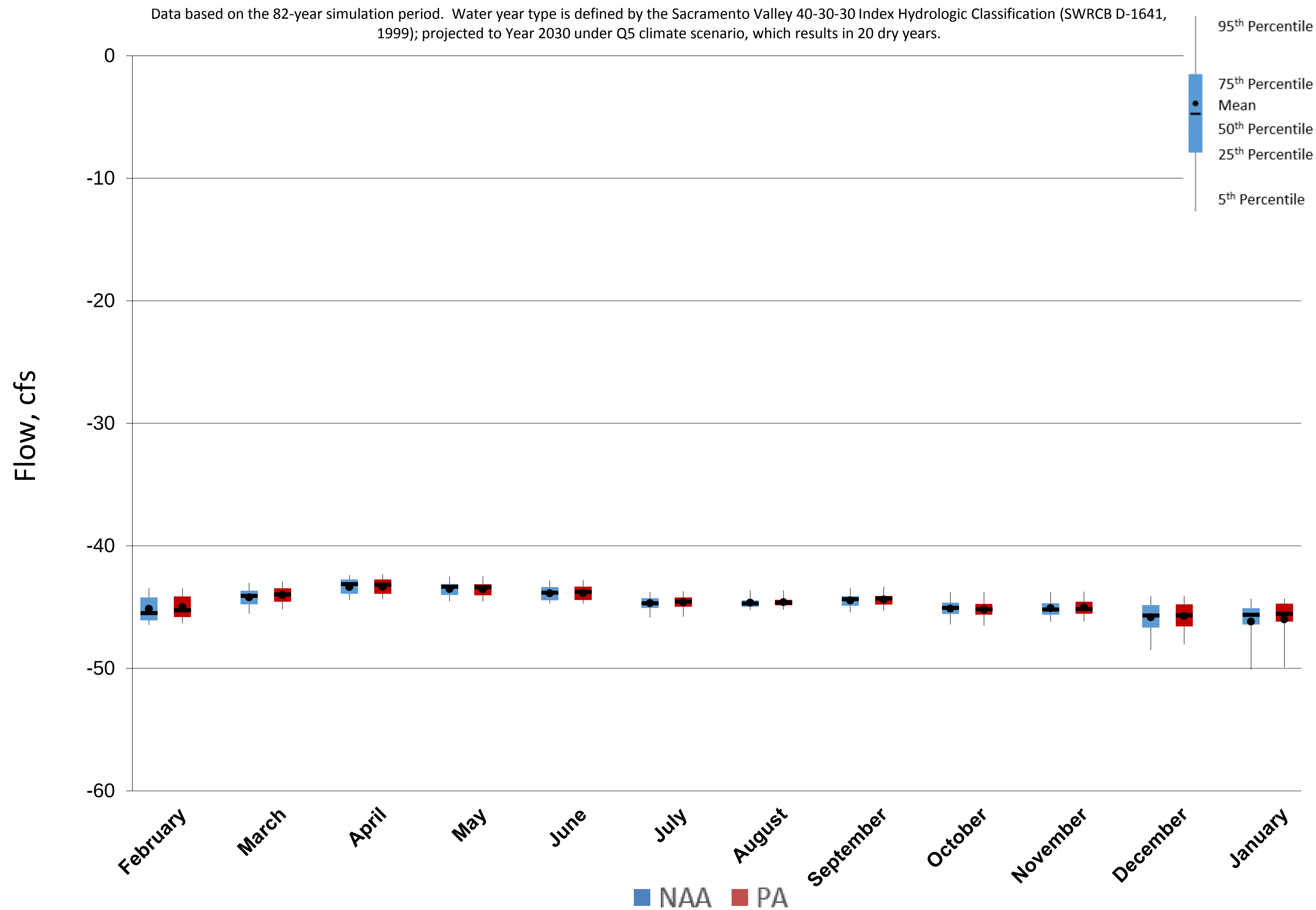


Figure 5.B.5-34-5. Monthly Flow Ranges For Goodyear Slough upstream of Goodyear Outfall, Dry Years



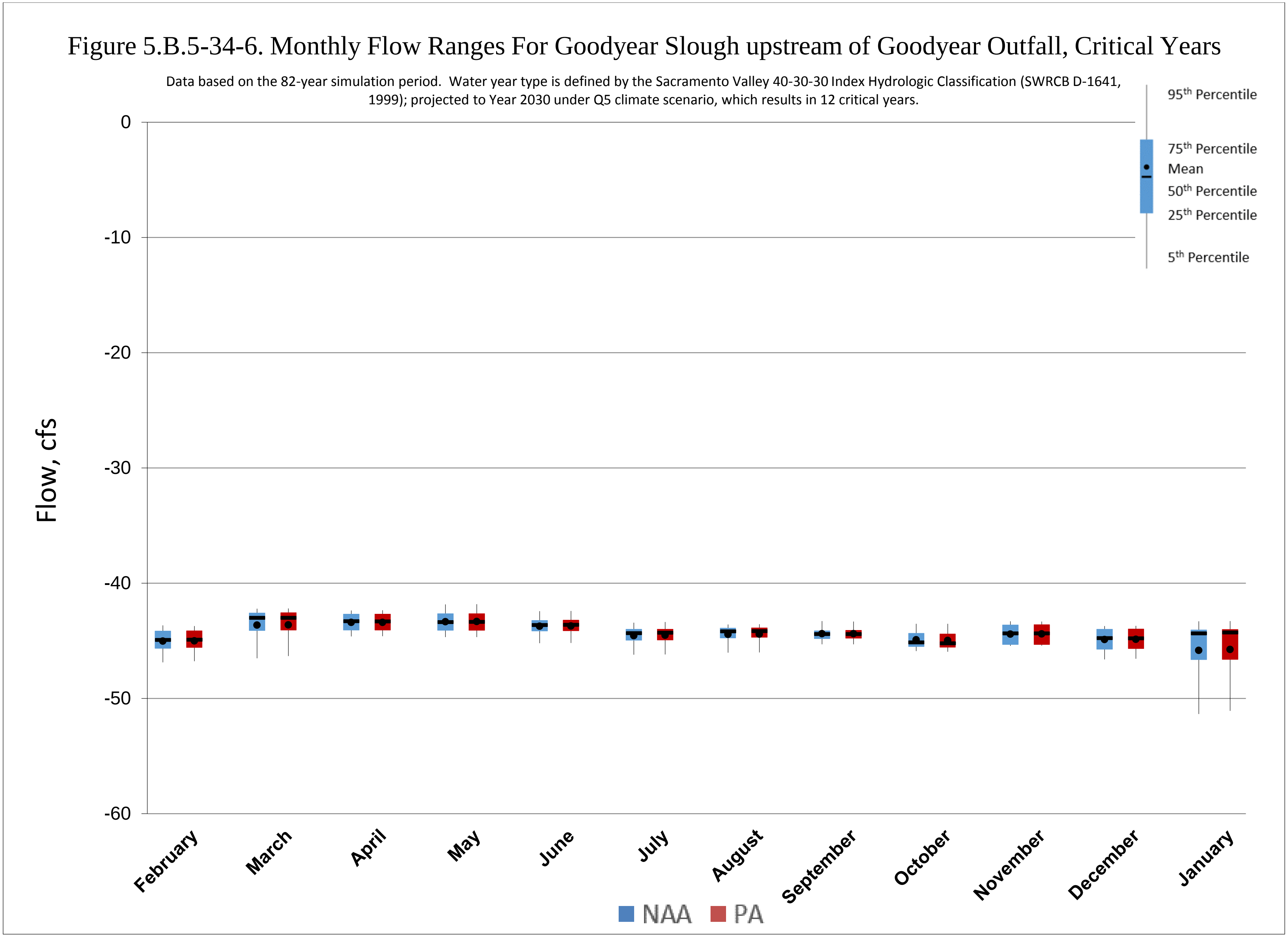
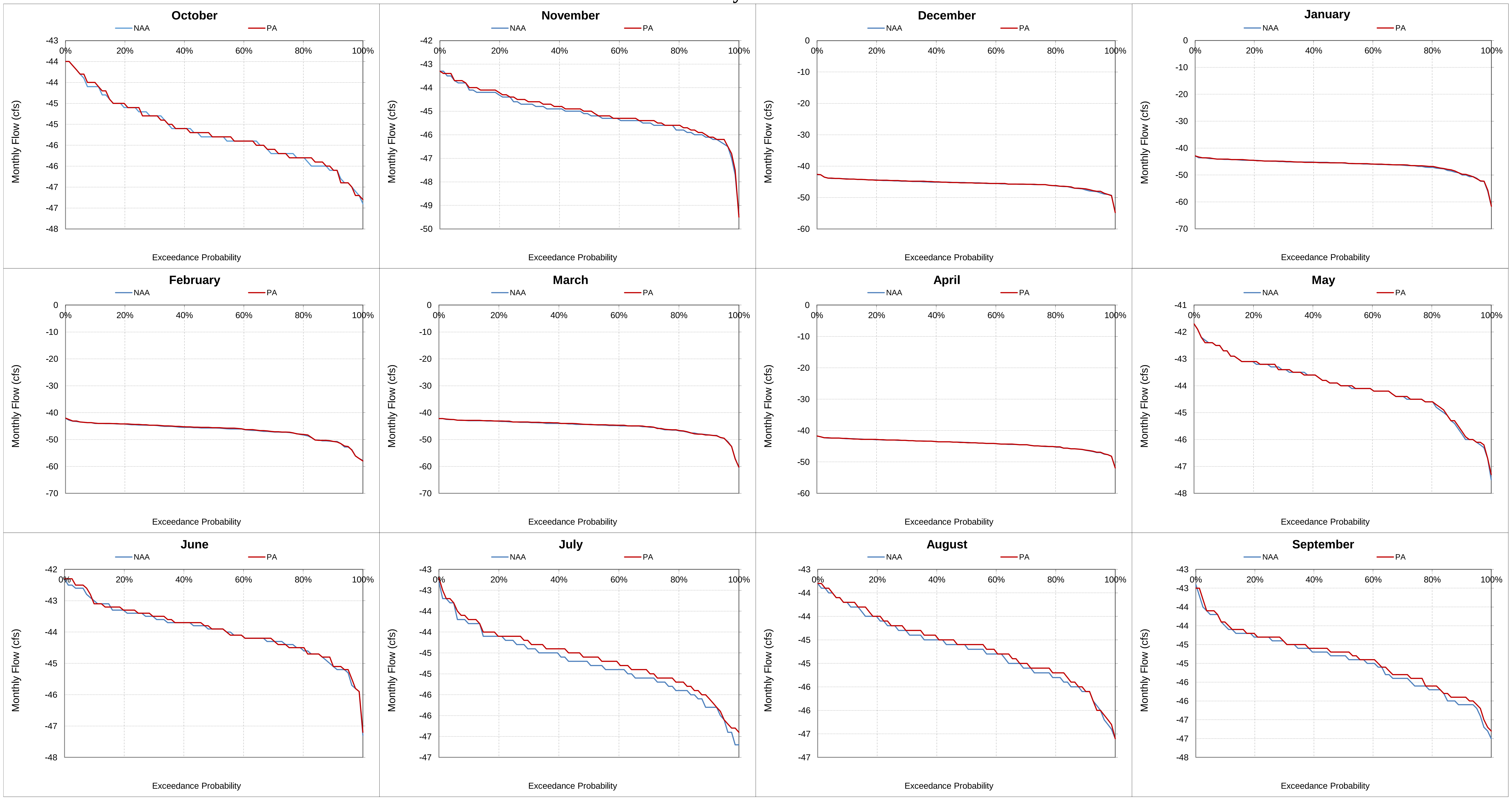


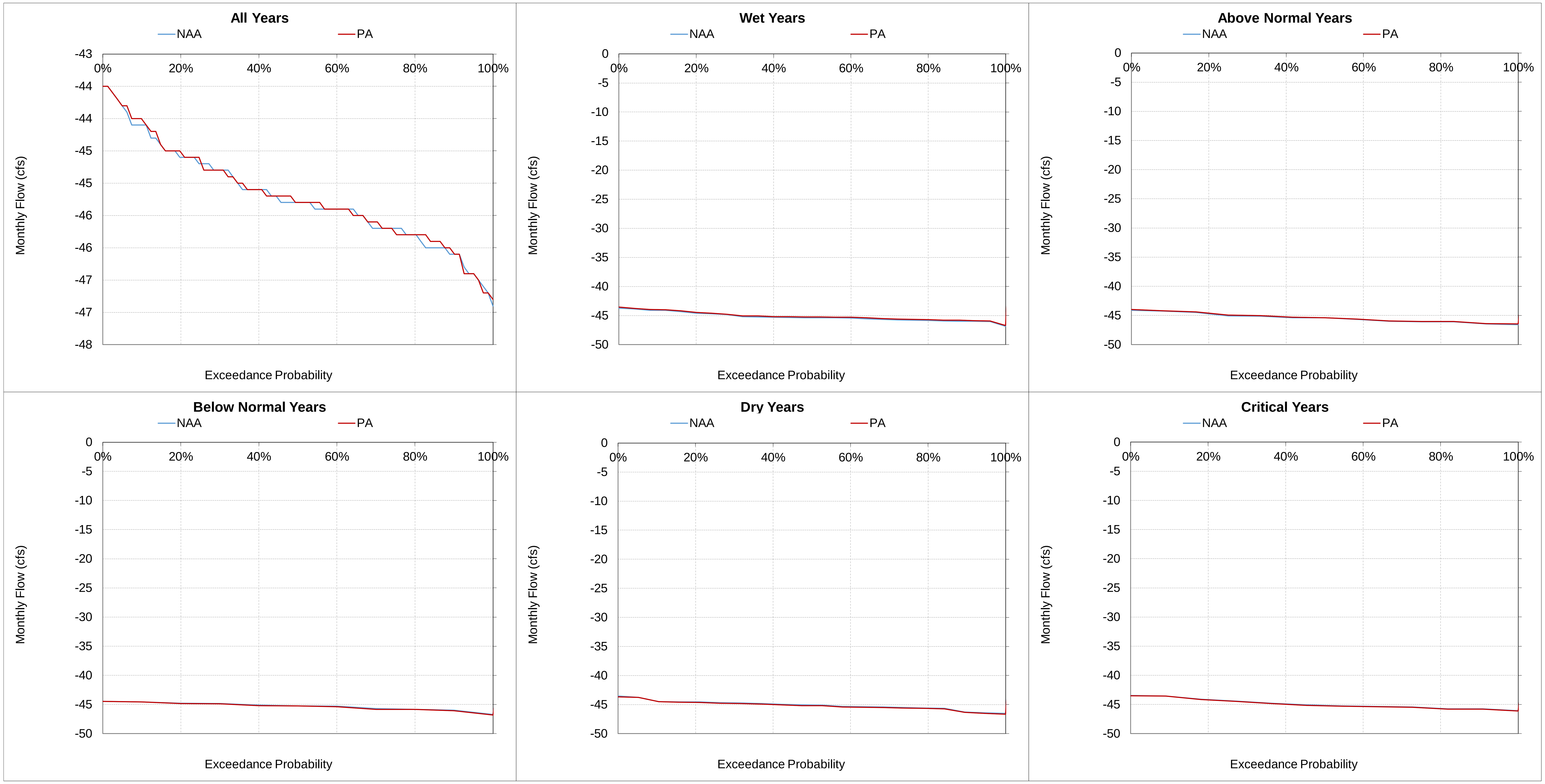
Figure 5.B.5-34-6. Monthly Flow Ranges For Goodyear Slough upstream of Goodyear Outfall, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
0
-10
-20
-30
-40
-50
-60
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-34-7. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow Probability of Exceedance



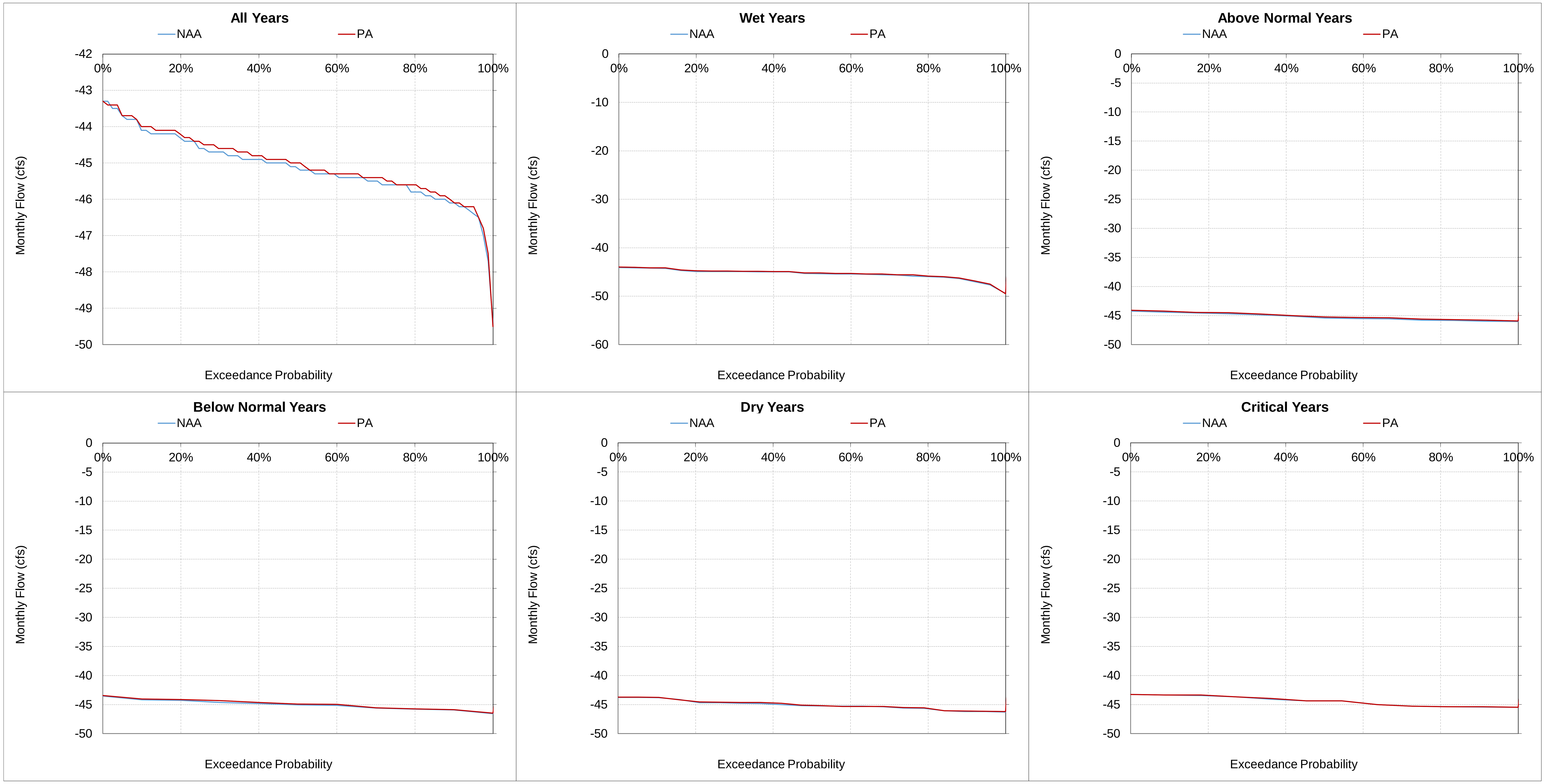
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-8. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow
October



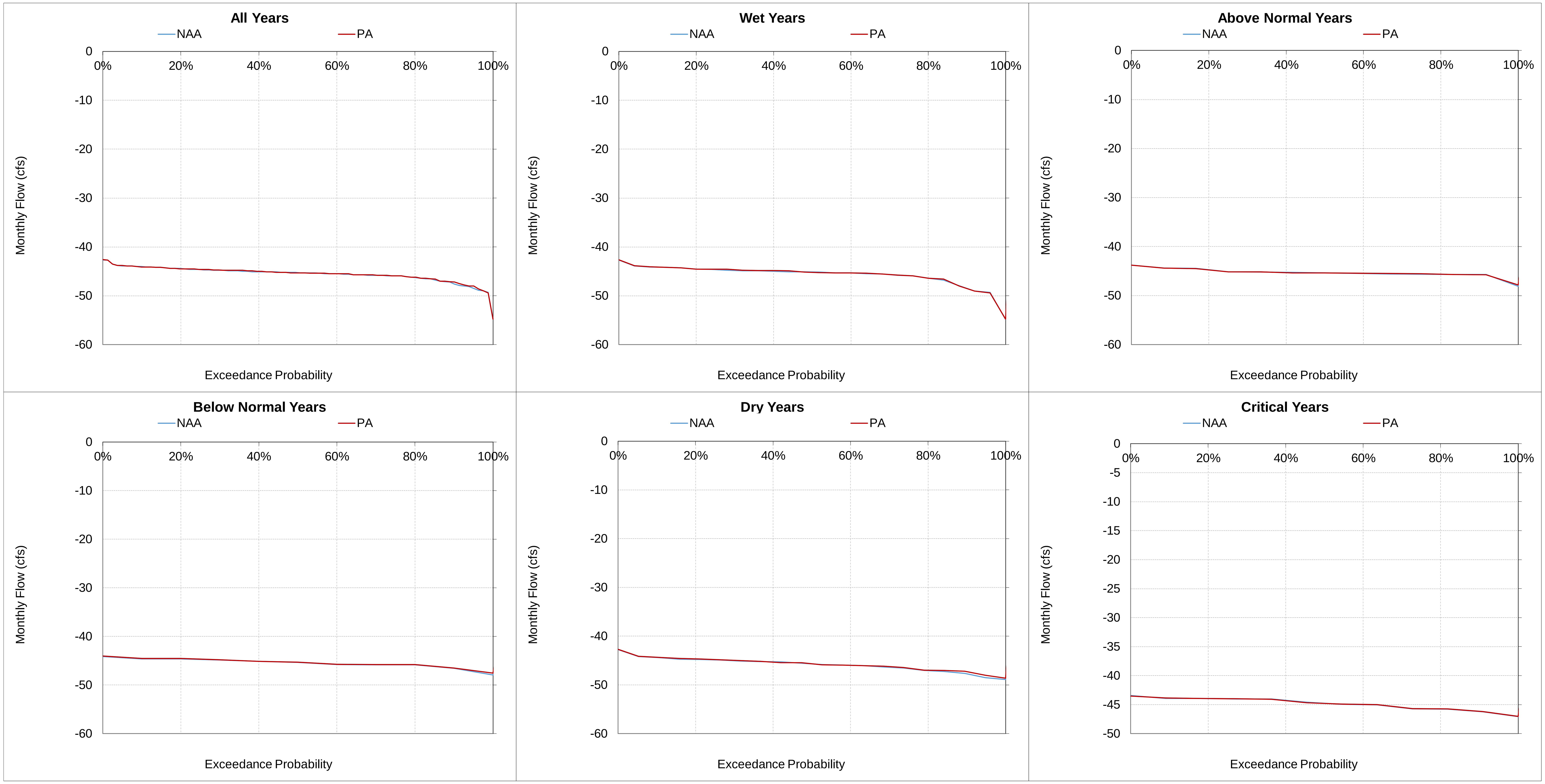
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-9. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-10. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow December



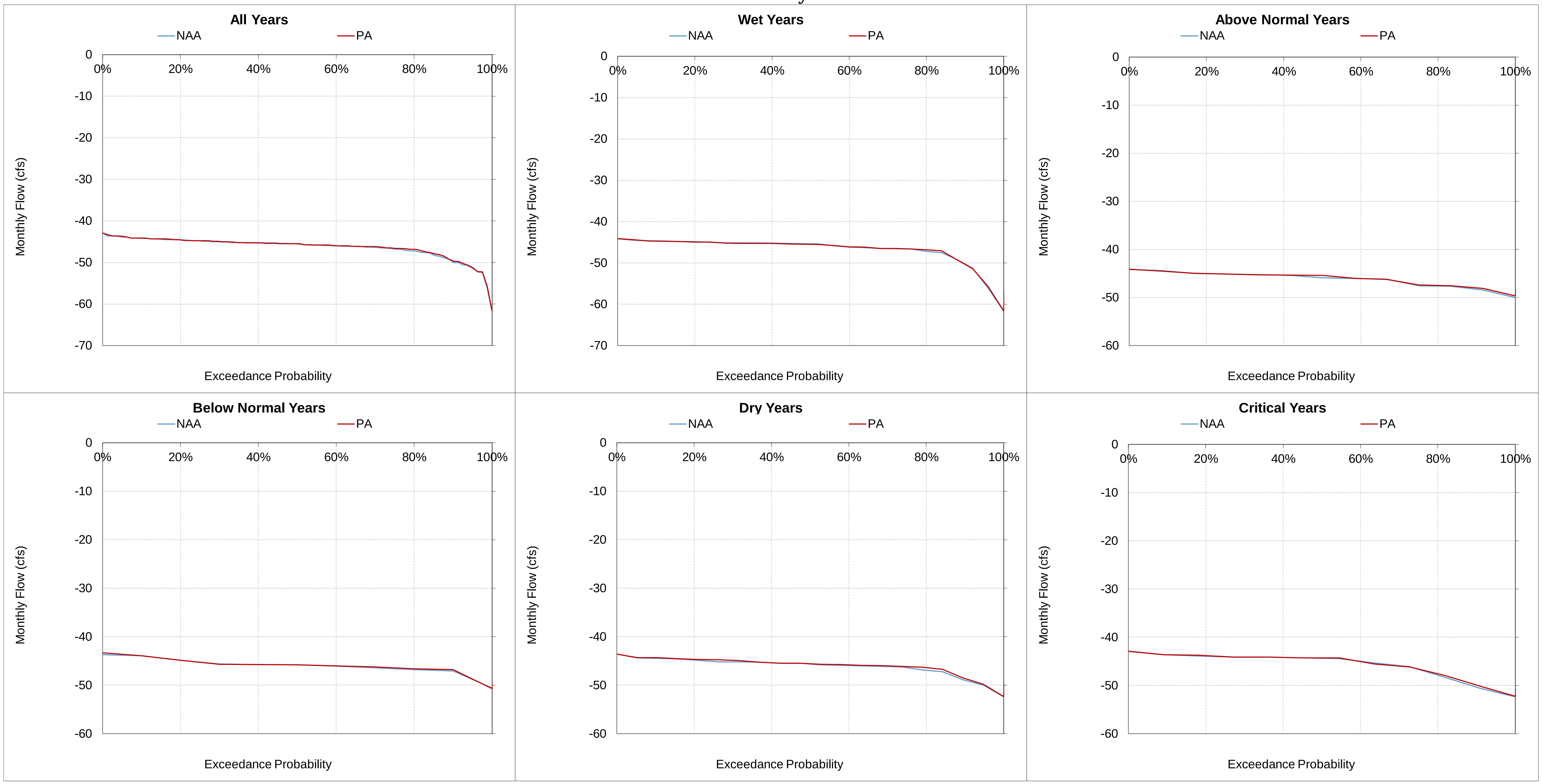
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

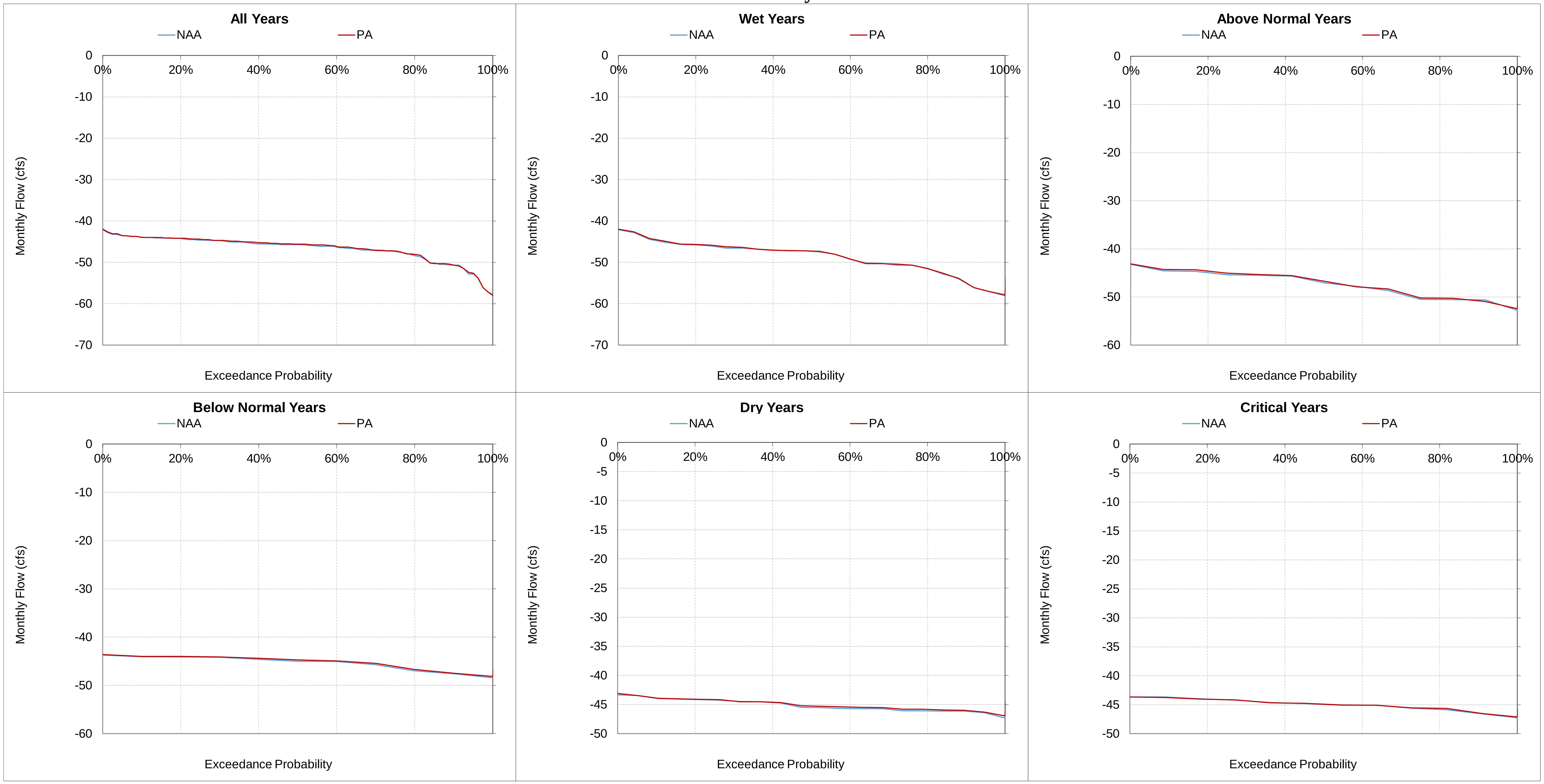
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-11. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow
January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-12. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow February



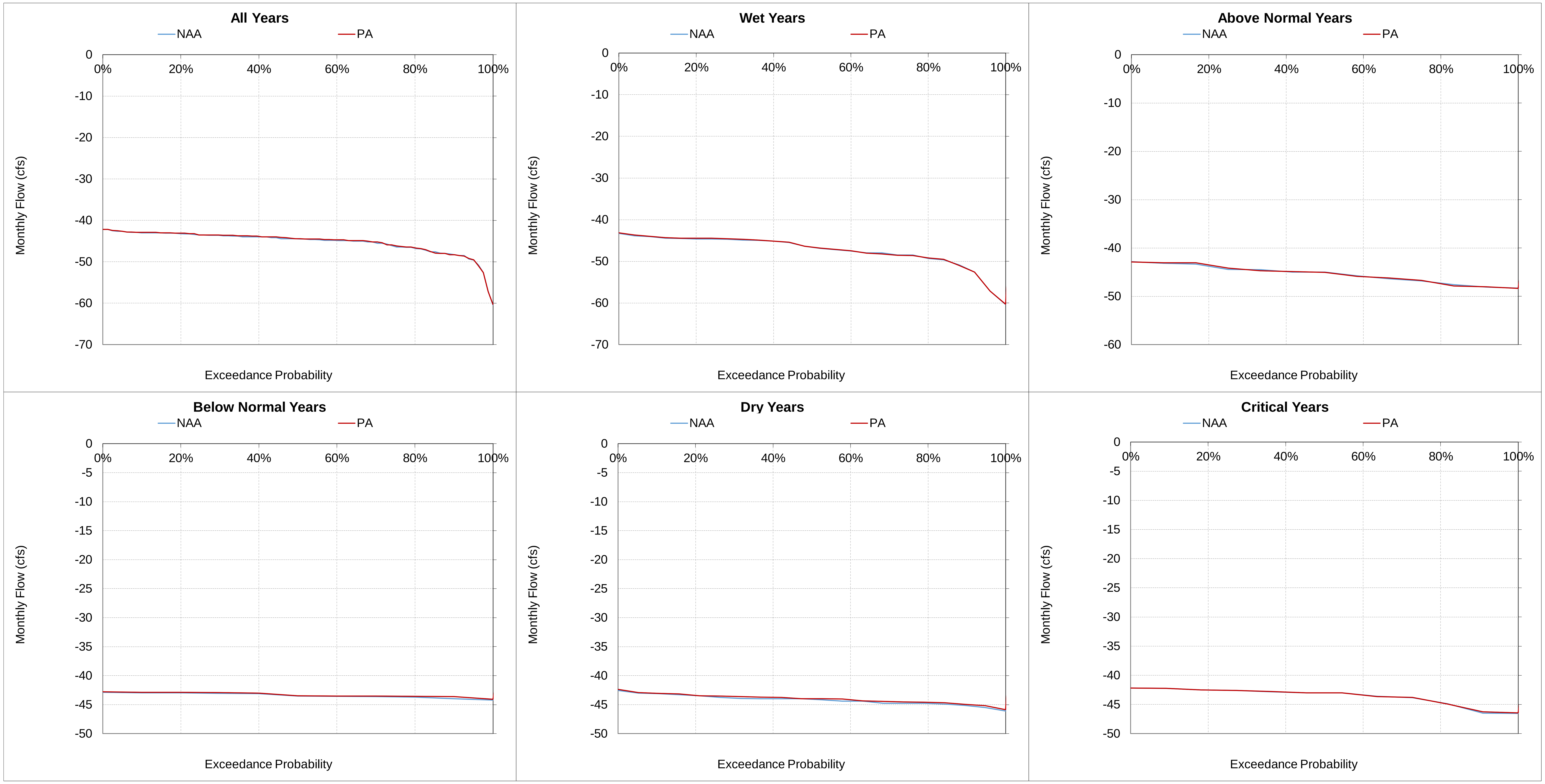
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-13. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow March



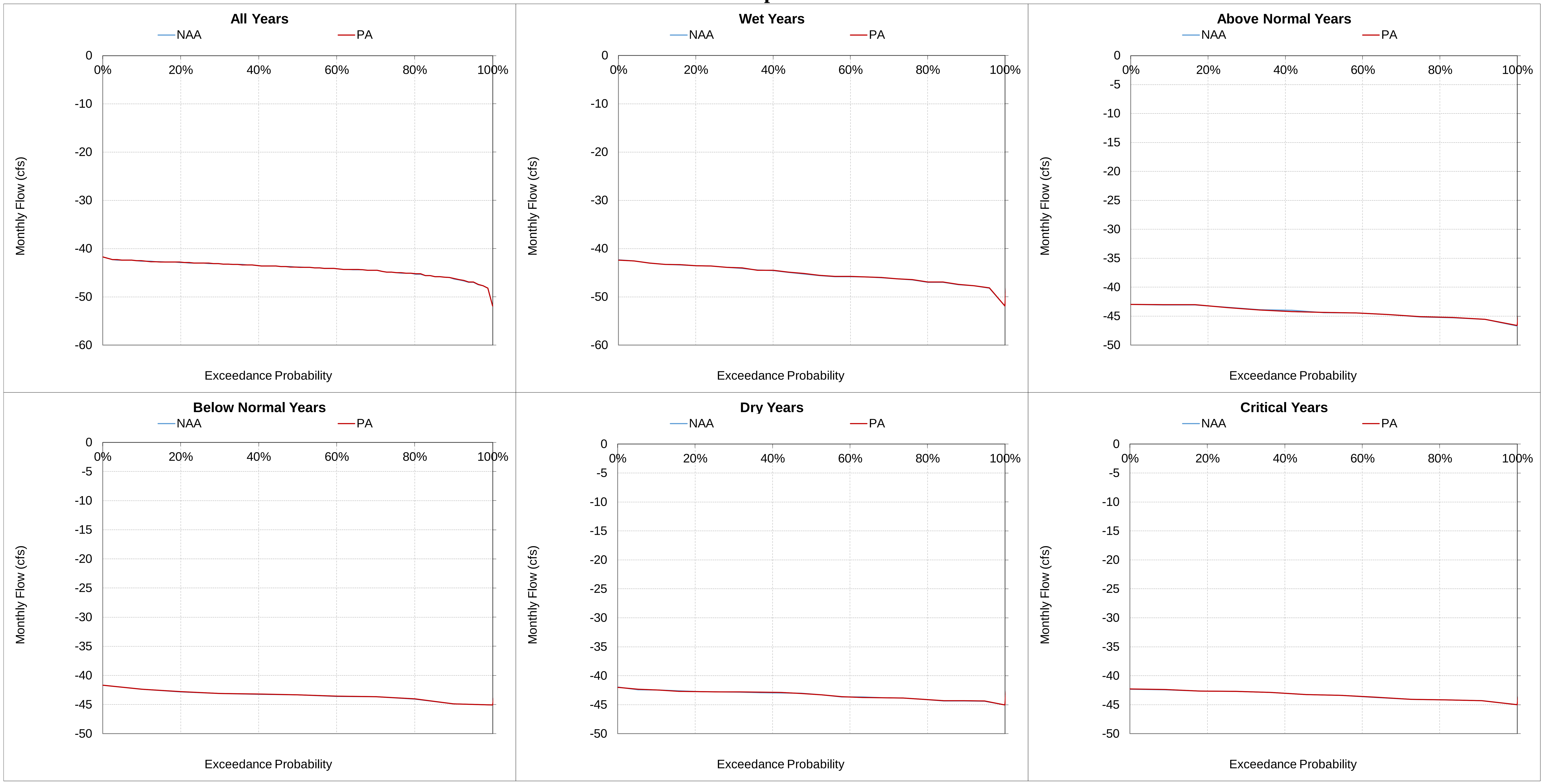
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

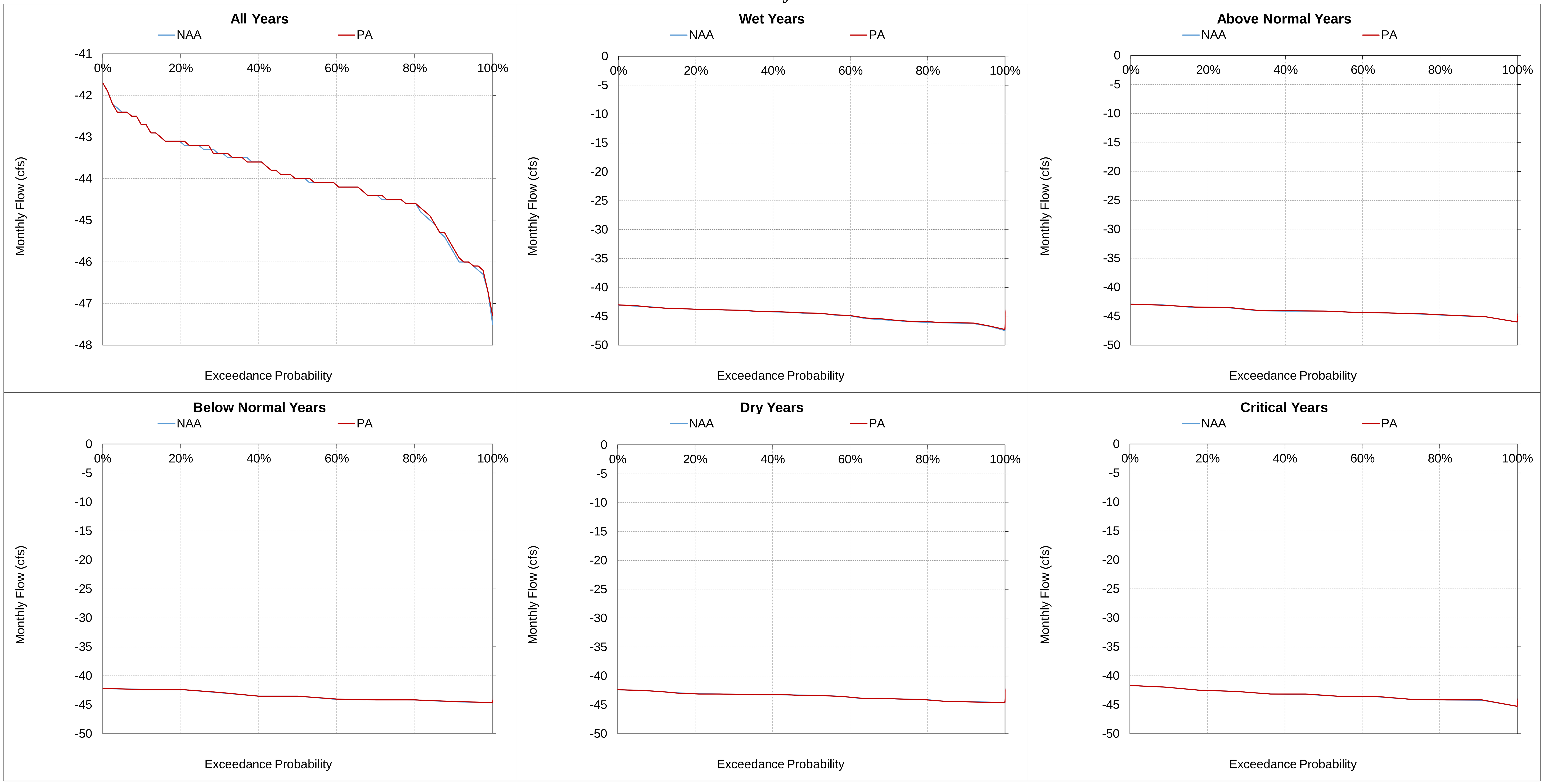
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-14. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow April



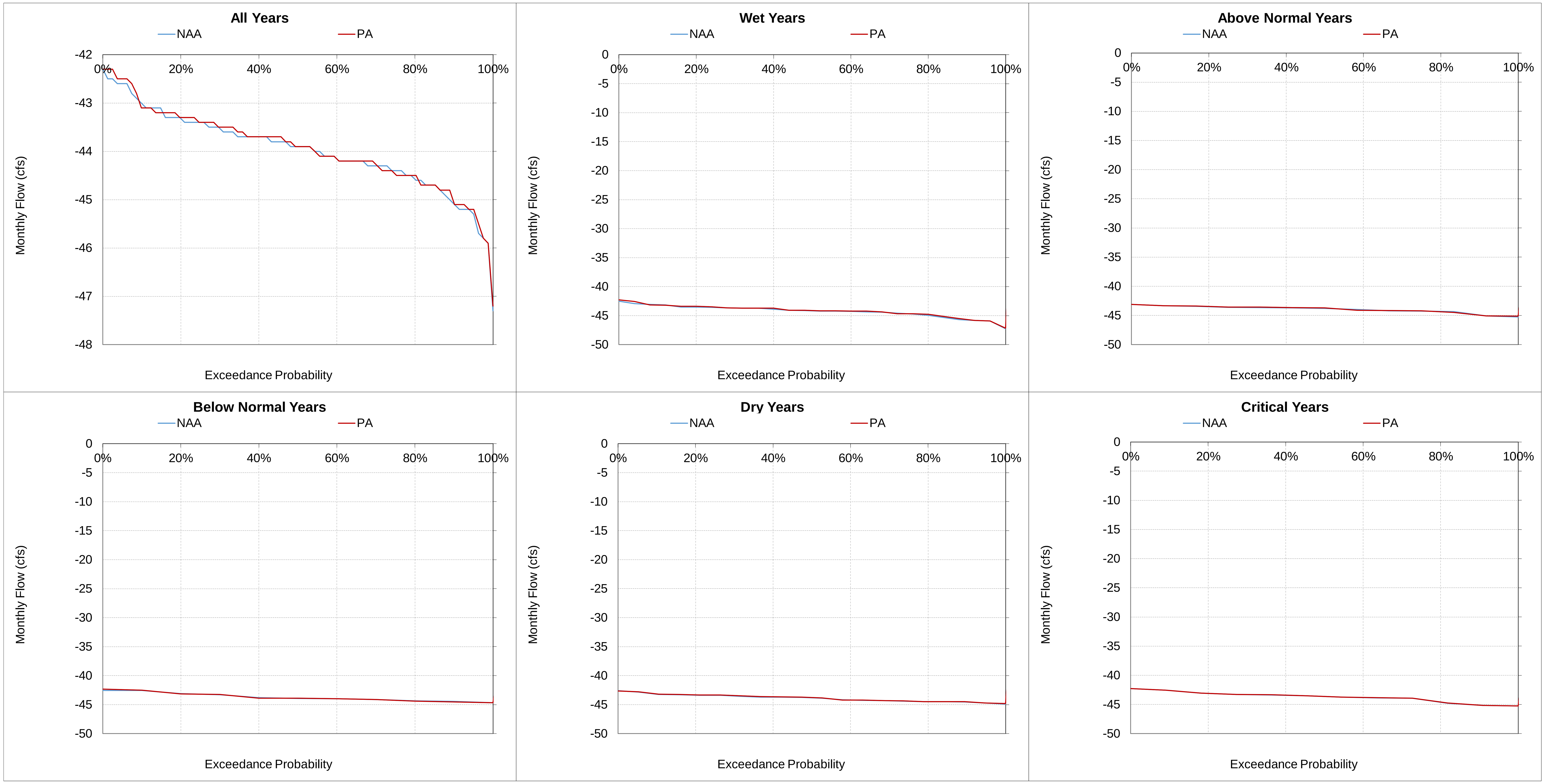
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-15. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow
May



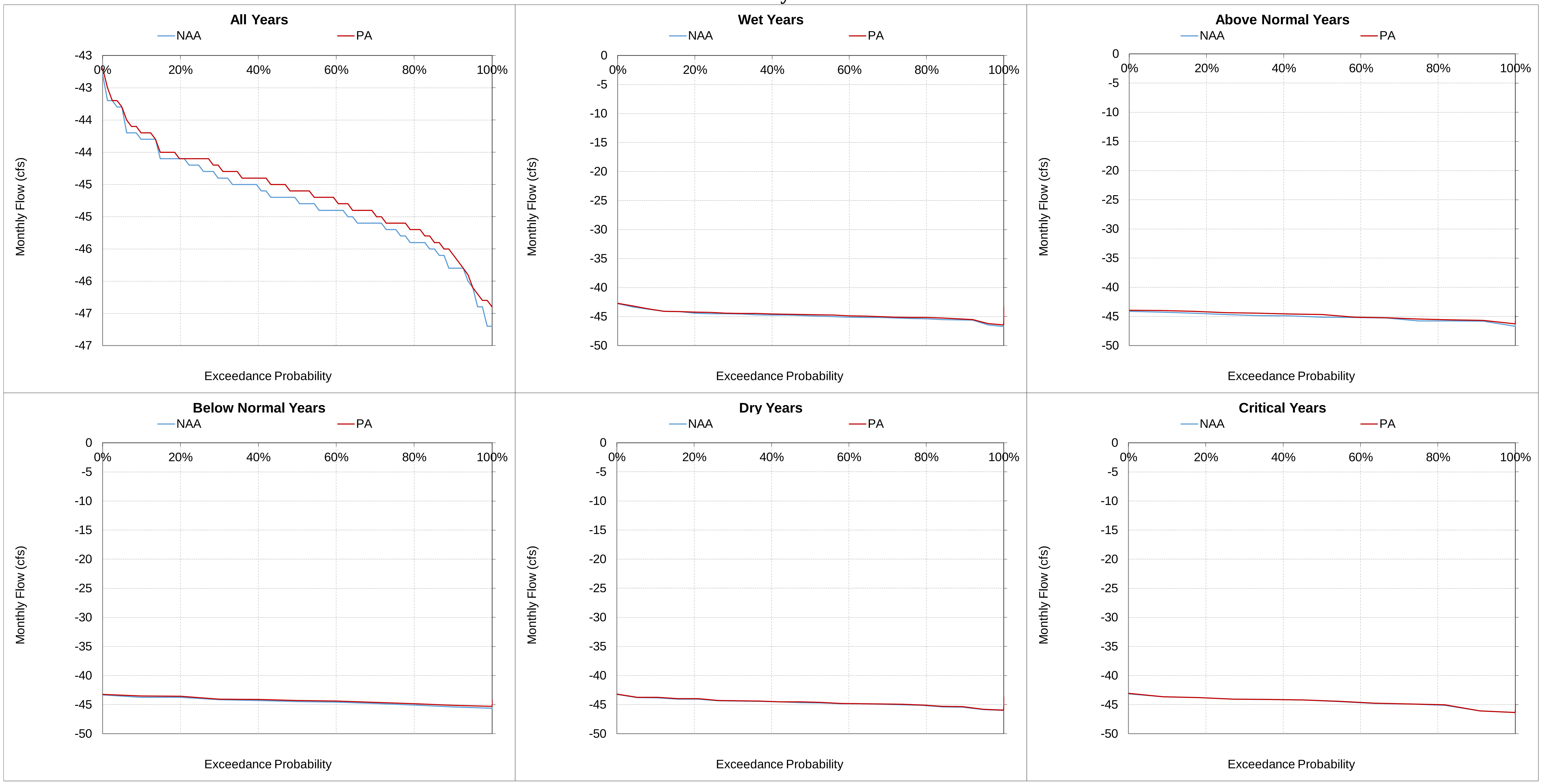
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-16. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow
June



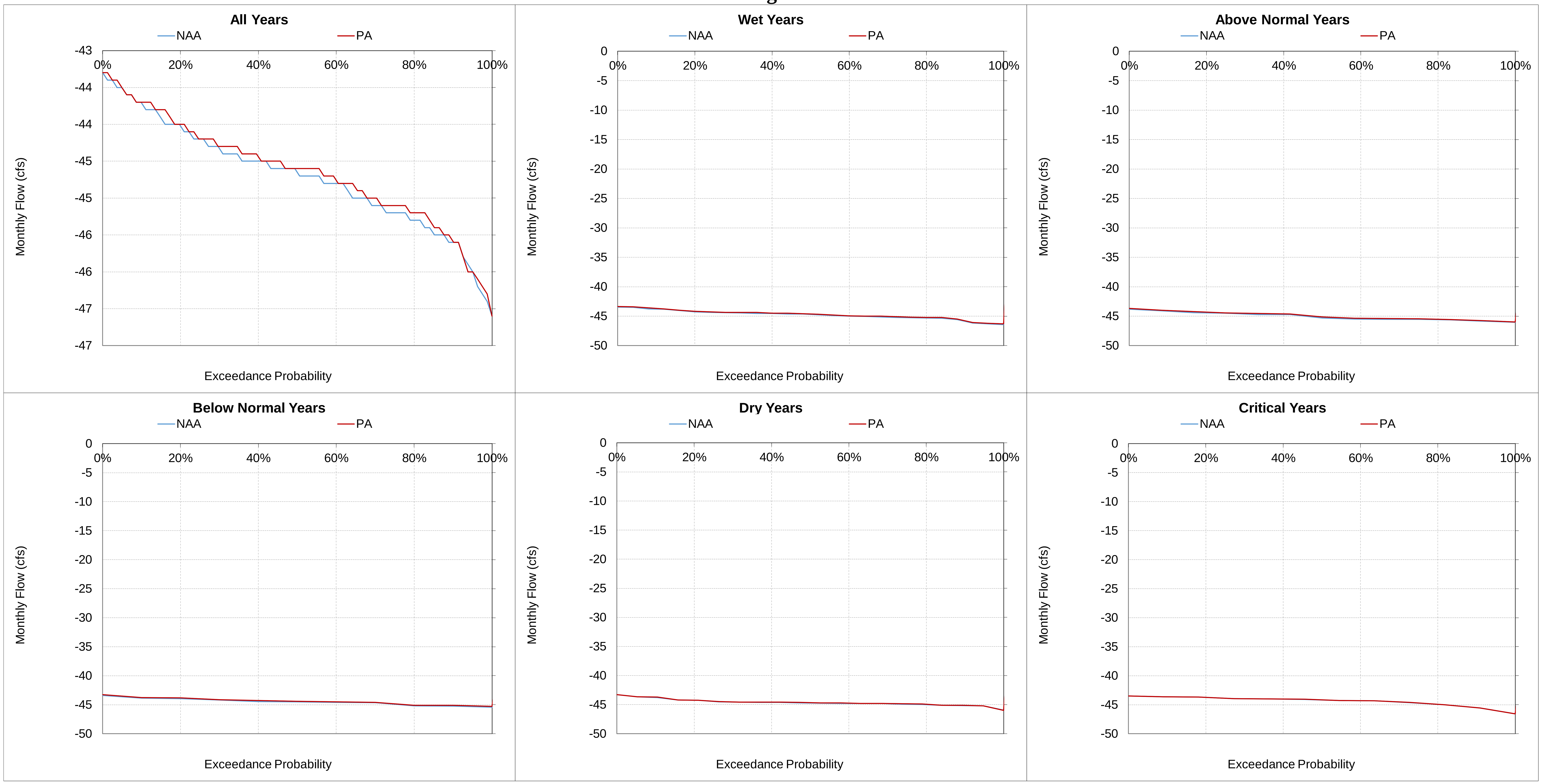
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-17. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow July



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-18. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow August



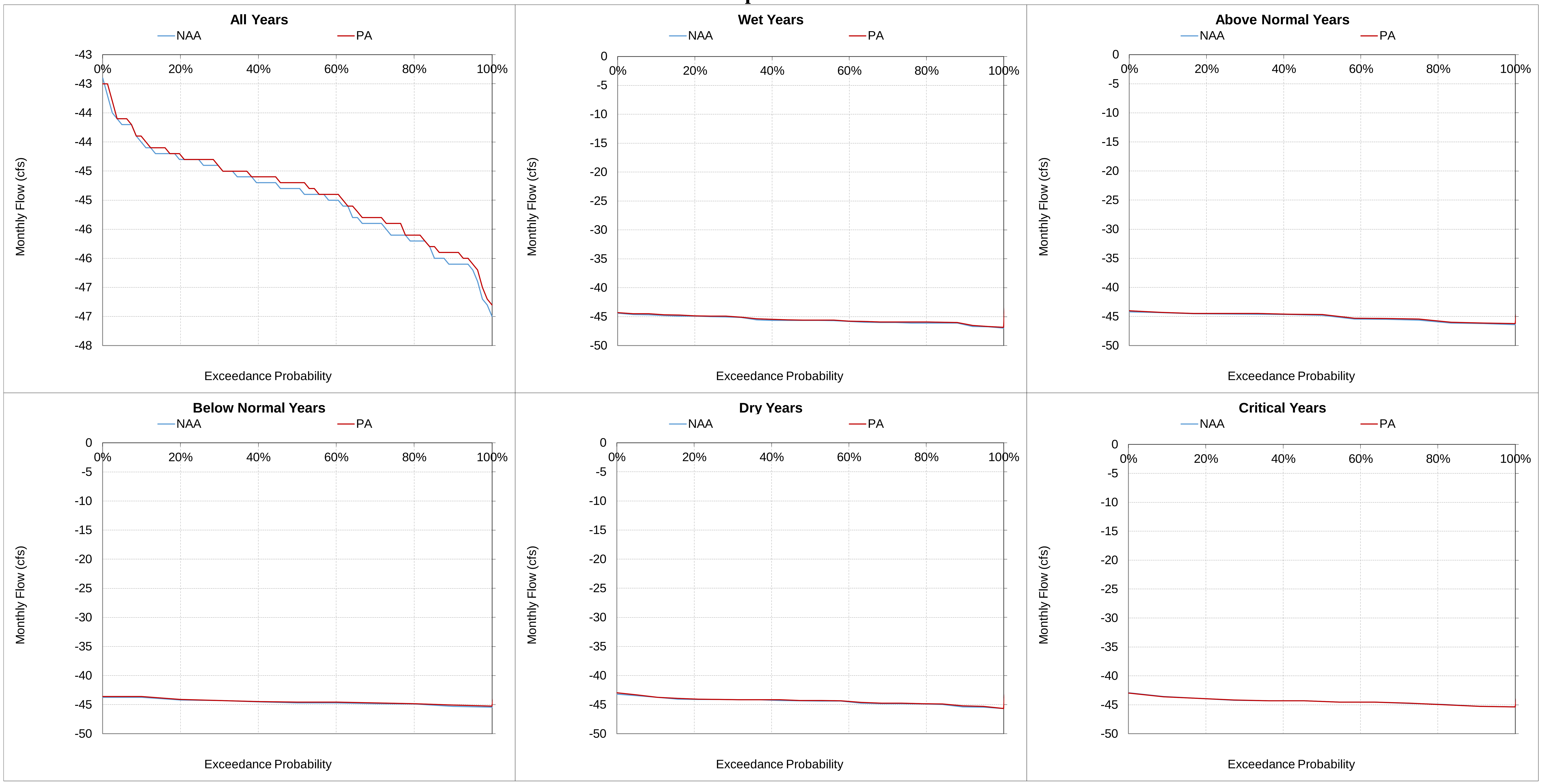
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-34-19. Goodyear Slough upstream of Goodyear Outfall, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-35. Barker Slough at North Bay Aqueduct Intake, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.
Probability of Exceedance[a]																								
10%	-38	-46	-8	20%	-37	-31	6	-16%	-58	-51	7	-12%	-76	-76	0	0%	-81	-81	0	0%	-76	-76	0	0%
20%	-59	-57	2	-4%	-45	-39	6	-14%	-94	-93	2	-2%	-76	-76	0	0%	-81	-82	0	0%	-76	-76	0	0%
30%	-66	-62	4	-6%	-59	-48	11	-19%	-106	-98	8	-8%	-76	-76	0	0%	-84	-84	0	0%	-76	-76	0	0%
40%	-86	-86	0	0%	-65	-65	-1	1%	-111	-109	2	-2%	-76	-76	0	0%	-84	-84	0	0%	-76	-76	0	0%
50%	-92	-100	-8	8%	-72	-70	3	-4%	-120	-115	5	-4%	-77	-77	0	0%	-84	-84	0	0%	-77	-82	-6	7%
60%	-98	-103	-5	5%	-82	-73	9	-11%	-128	-130	-2	2%	-77	-77	0	0%	-84	-84	0	0%	-85	-106	-21	24%
70%	-106	-107	-1	1%	-99	-85	14	-14%	-131	-135	-4	3%	-77	-77	0	0%	-92	-115	-23	25%	-103	-107	-5	5%
80%	-120	-122	-2	1%	-117	-105	12	-10%	-137	-138	-1	0%	-78	-102	-24	31%	-114	-119	-5	5%	-106	-110	-4	3%
90%	-139	-142	-3	2%	-138	-118	20	-15%	-155	-157	-3	2%	-113	-117	-4	4%	-118	-120	-2	1%	-108	-111	-3	3%
Long Term Full Simulation Period[b]	-89	-91	-2	2%	-80	-72	7	-9%	-113	-111	1	-1%	-82	-84	-2	3%	-88	-91	-3	4%	-82	-85	-3	3%
Water Year Types[c]																								
Wet (32%)	-113	-118	-5	5%	-86	-88	-2	2%	-133	-135	-2	2%	-87	-90	-3	3%	-108	-115	-8	7%	-103	-107	-5	4%
Above Normal (16%)	-101	-112	-11	11%	-74	-78	-5	7%	-123	-121	2	-2%	-82	-83	-1	1%	-93	-101	-8	9%	-91	-100	-9	10%
Below Normal (13%)	-86	-85	1	-1%	-89	-76	13	-14%	-102	-96	6	-6%	-82	-84	-2	3%	-72	-72	0	0%	-82	-87	-5	6%
Dry (24%)	-80	-69	12	-15%	-87	-69	18	-20%	-92	-90	2	-2%	-80	-82	-2	2%	-79	-76	3	-4%	-73	-69	4	-5%
Critical (15%)	-41	-48	-7	18%	-52	-35	17	-33%	-102	-99	3	-3%	-70	-73	-3	4%	-66	-70	-4	6%	-45	-45	0	0%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.	NAA	PA	Diff.	Percent Diff.
Probability of Exceedance[a]																								
10%	-2	-25	-22	928%	-28	-44	-16	57%	-47	-54	-7	15%	-50	-51	-1	1%	-75	-70	5	-6%	-43	-41	2	-4%
20%	-79	-79	0	0%	-58	-72	-14	24%	-77	-88	-11	14%	-81	-86	-5	6%	-105	-102	3	-3%	-71	-82	-11	15%
30%	-79	-79	0	0%	-95	-99	-4	4%	-111	-98	14	-12%	-109	-100	9	-8%	-114	-117	-3	3%	-102	-100	3	-3%
40%	-79	-81	-2	3%	-106	-112	-6	6%	-119	-119	0	0%	-121	-119	2	-2%	-121	-123	-2	2%	-122	-125	-3	2%
50%	-93	-141	-48	51%	-132	-142	-10	8%	-123	-123	0	0%	-131	-122	10	-7%	-127	-129	-2	2%	-128	-128	-1	0%
60%	-140	-141	-1	1%	-142	-142	0	0%	-136	-139	-3	2%	-146	-130	15	-10%	-132	-147	-15	11%	-134	-131	3	-2%
70%	-141	-141	0	0%	-142	-143	0	0%	-157	-158	0	0%	-150	-146	4	-3%	-149	-162	-12	8%	-141	-133	8	-5%
80%	-141	-141	0	0%	-143	-143	0	0%	-158	-158	0	0%	-155	-152	3	-2%	-156	-173	-18	11%	-141	-141	0	0%
90%	-141	-141	0	0%	-143	-143	0	0%	-158	-158	0	0%	-161	-160	1	-1%	-170	-175	-5	3%	-141	-142	0	0%
Long Term Full Simulation Period[b]	-98	-105	-7	7%	-107	-111	-4	4%	-118	-119	-1	1%	-121	-118	3	-2%	-126	-130	-4	3%	-110	-110	0	0%
Water Year Types[c]																								
Wet (32%)	-133	-138	-5	4%	-141	-141	0	0%	-149	-151	-1	1%	-148	-152	-4	3%	-137	-159	-21	15%	-134	-136	-2	1%
Above Normal (16%)	-117	-133	-16	14%	-129	-138	-9	7%	-136	-139	-3	2%	-149	-142	7	-5%	-139	-133	5	-4%	-130	-131	-1	1%
Below Normal (13%)	-88	-97	-9	11%	-110	-108	3	-2%	-134	-126	7	-5%	-140	-112	28	-20%	-136	-129	7	-5%	-131	-117	13	-10%
Dry (24%)	-79	-86	-7	8%	-85	-94	-9	11%	-93	-97	-4	4%	-94	-97	-3	3%	-125	-124	1	-1%	-94	-98	-4	4%
Critical (15%)	-40	-40	0	0%	-40	-47	-6	16%	-59	-59	0	0%	-57	-56	1	-1%	-81	-77	4	-5%	-47	-48	-1	1%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

e Negative flow indicates flow towards the North Bay Aqueduct.

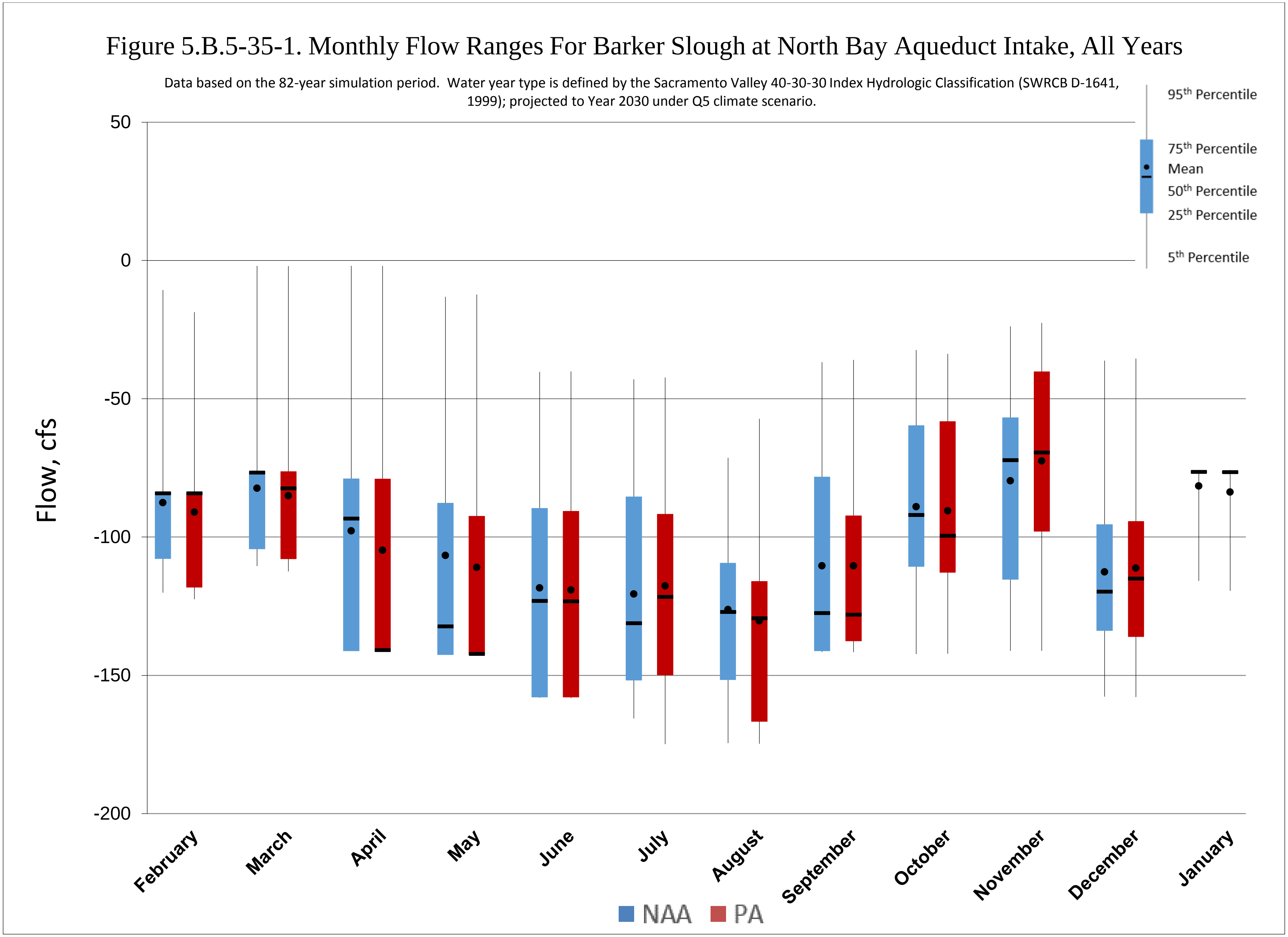


Figure 5.B.5-35-1. Monthly Flow Ranges For Barker Slough at North Bay Aqueduct Intake, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
50
0
-50
-100
-150
-200
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-35-2. Monthly Flow Ranges For Barker Slough at North Bay Aqueduct Intake, Wet Years

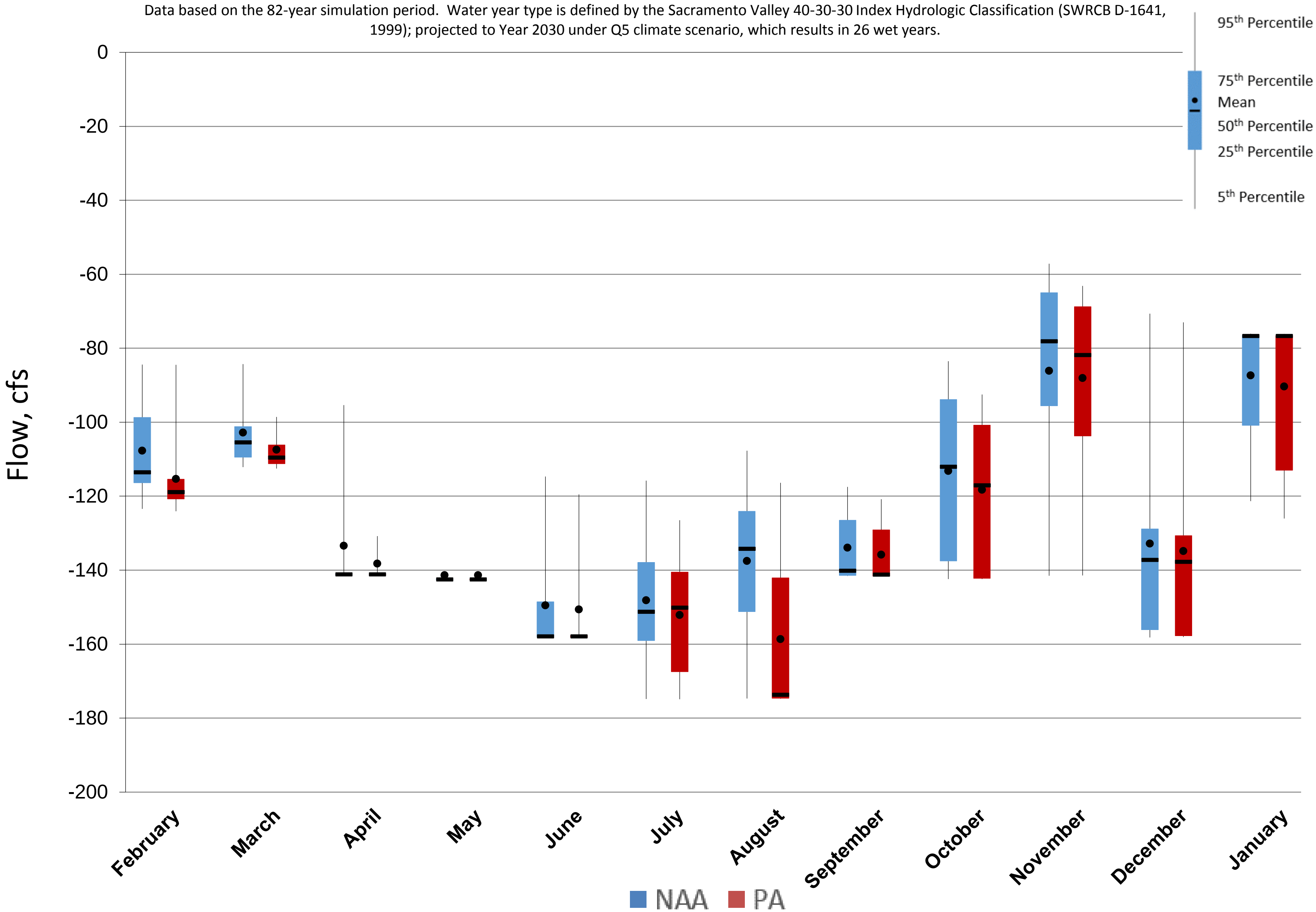


Figure 5.B.5-35-3. Monthly Flow Ranges For Barker Slough at North Bay Aqueduct Intake, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

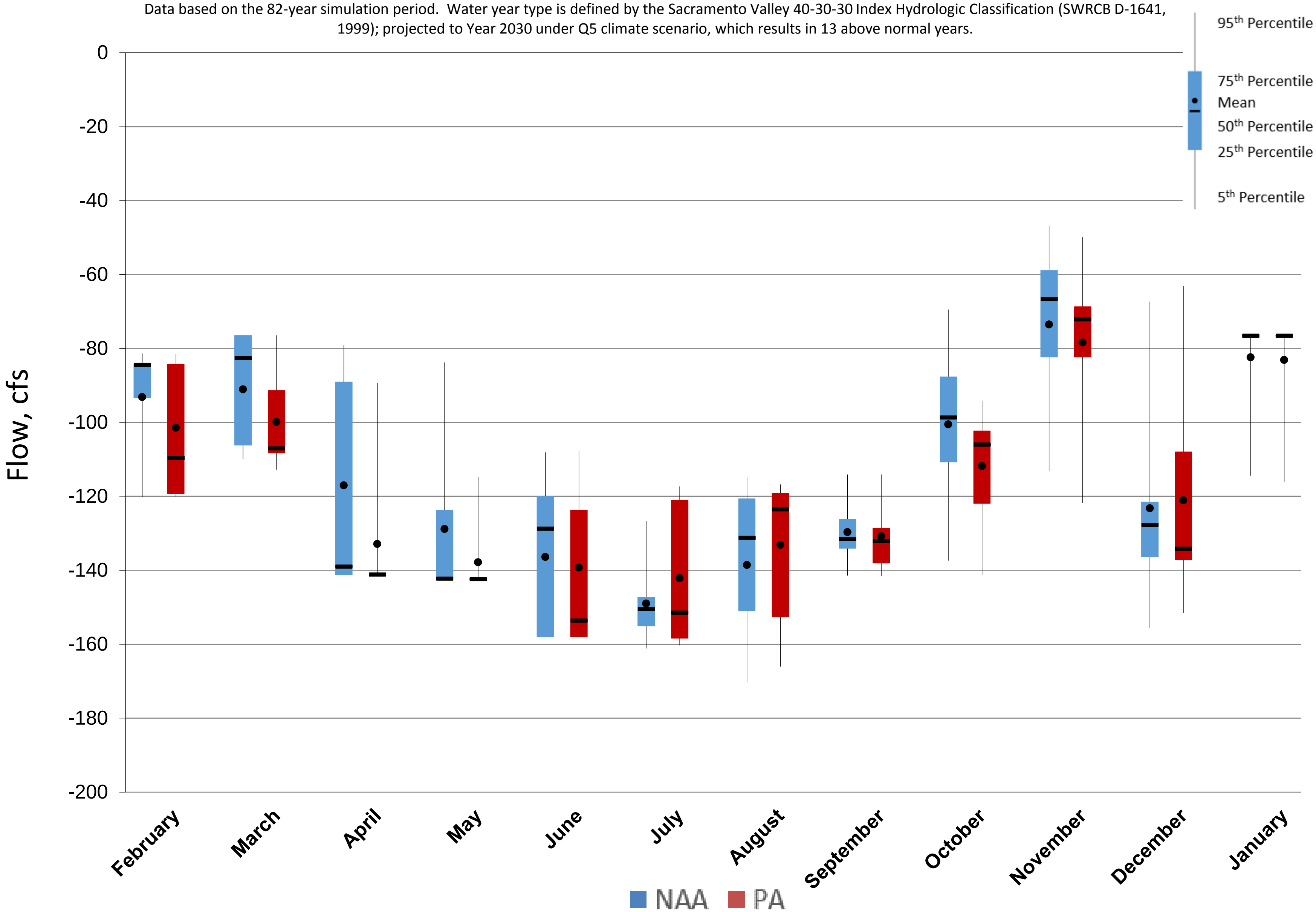
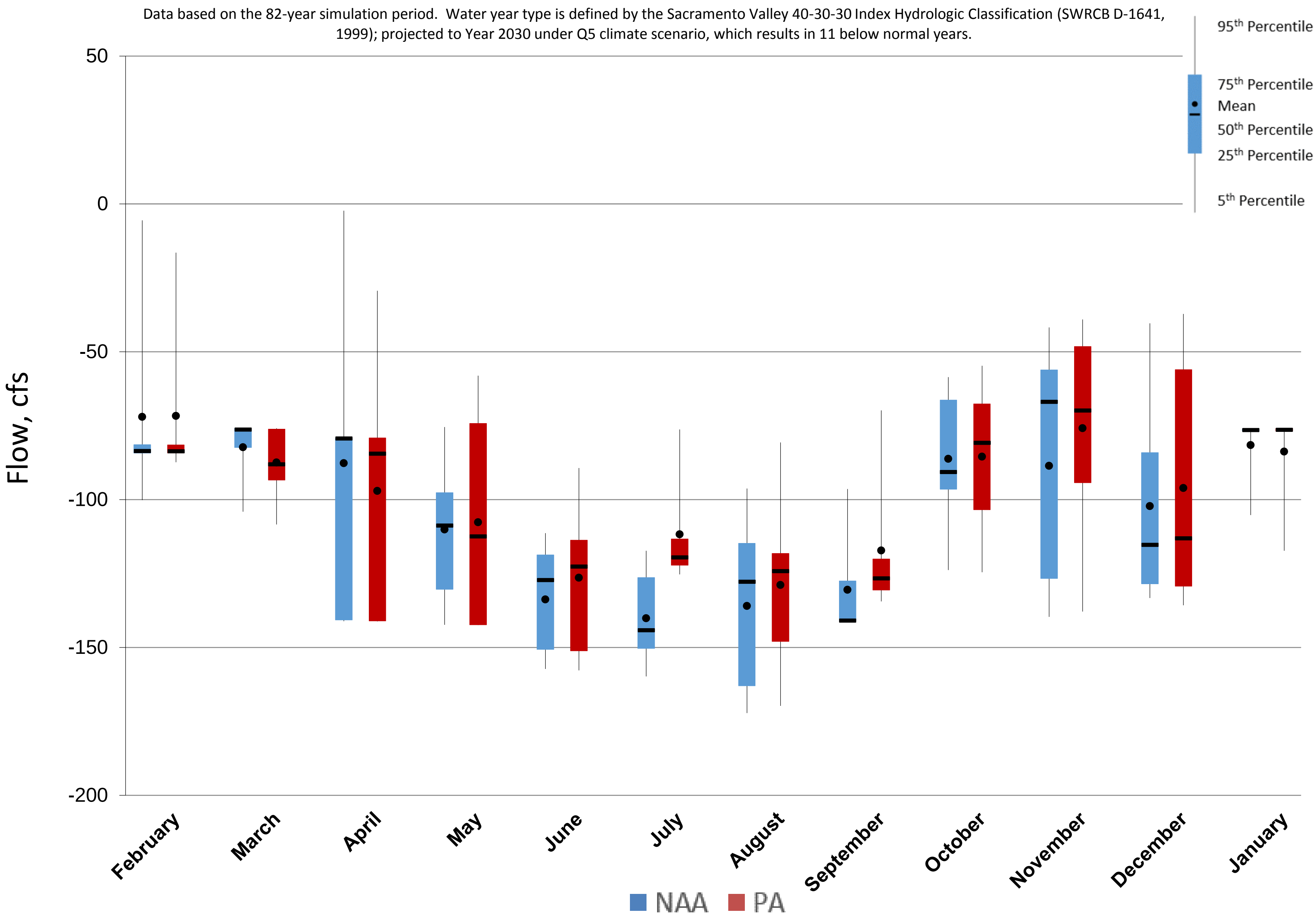


Figure 5.B.5-35-4. Monthly Flow Ranges For Barker Slough at North Bay Aqueduct Intake, Below Normal Years



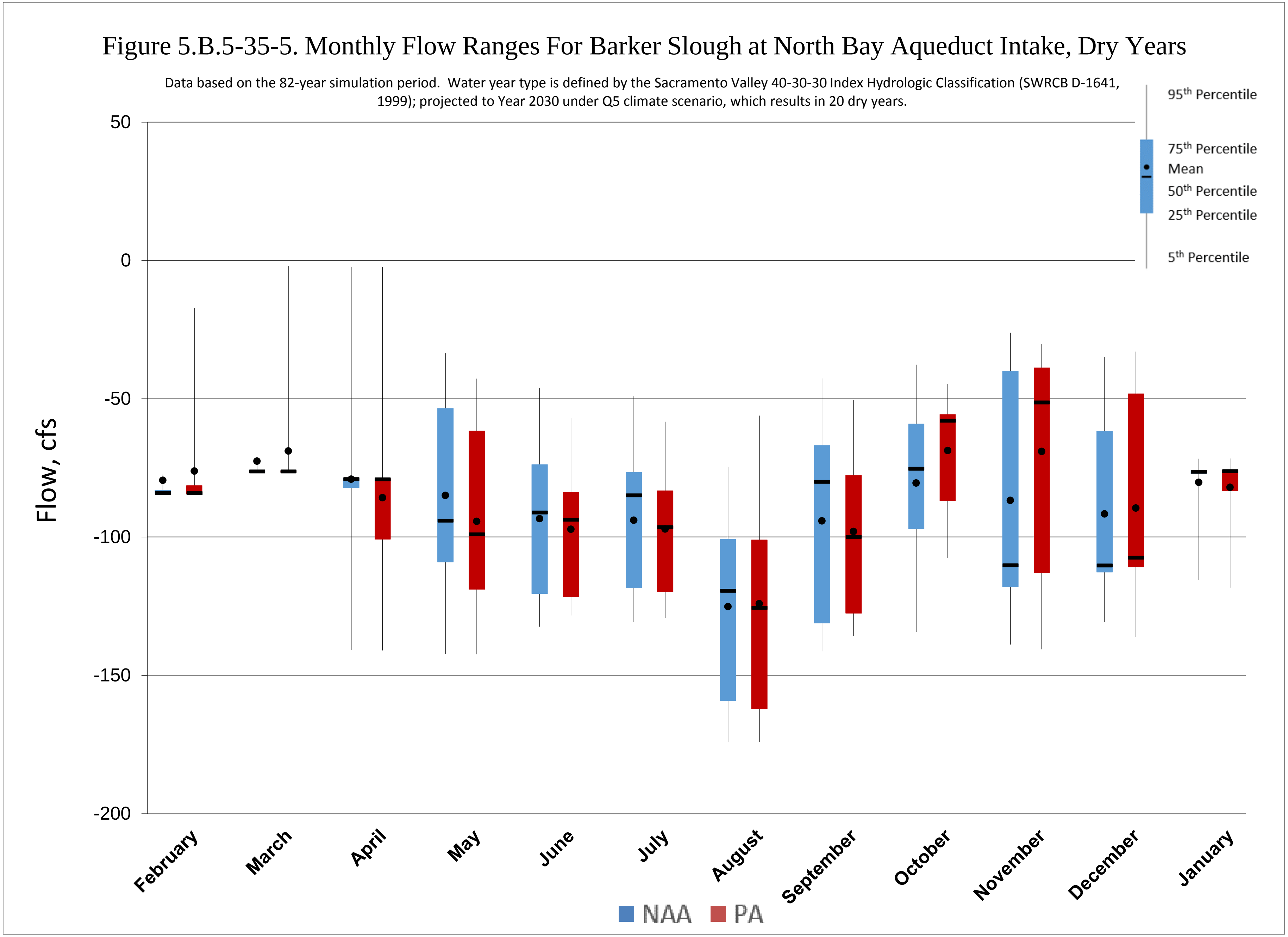


Figure 5.B.5-35-5. Monthly Flow Ranges For Barker Slough at North Bay Aqueduct Intake, Dry Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
50
0
-50
-100
-150
-200
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-35-6. Monthly Flow Ranges For Barker Slough at North Bay Aqueduct Intake, Critical Years

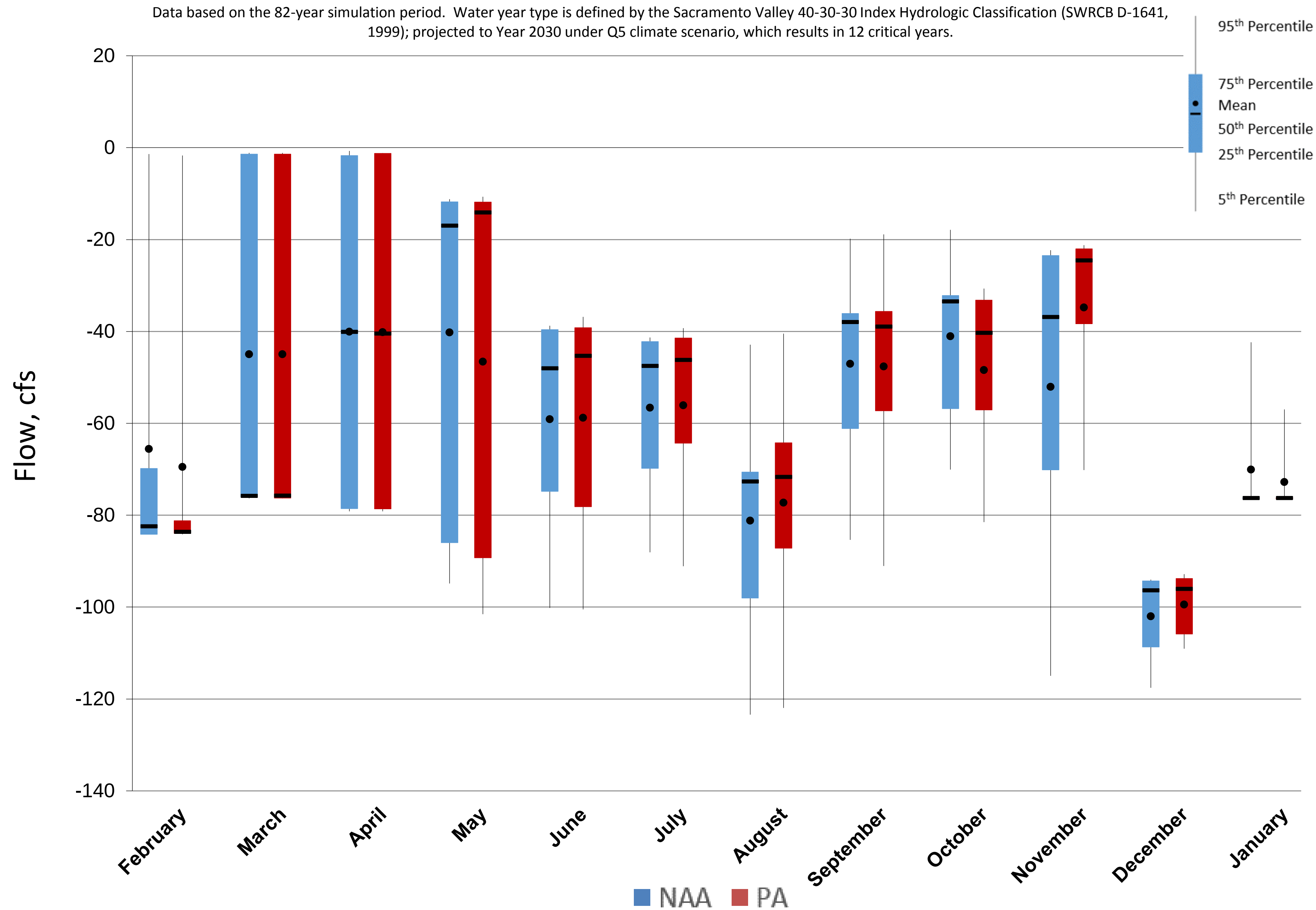
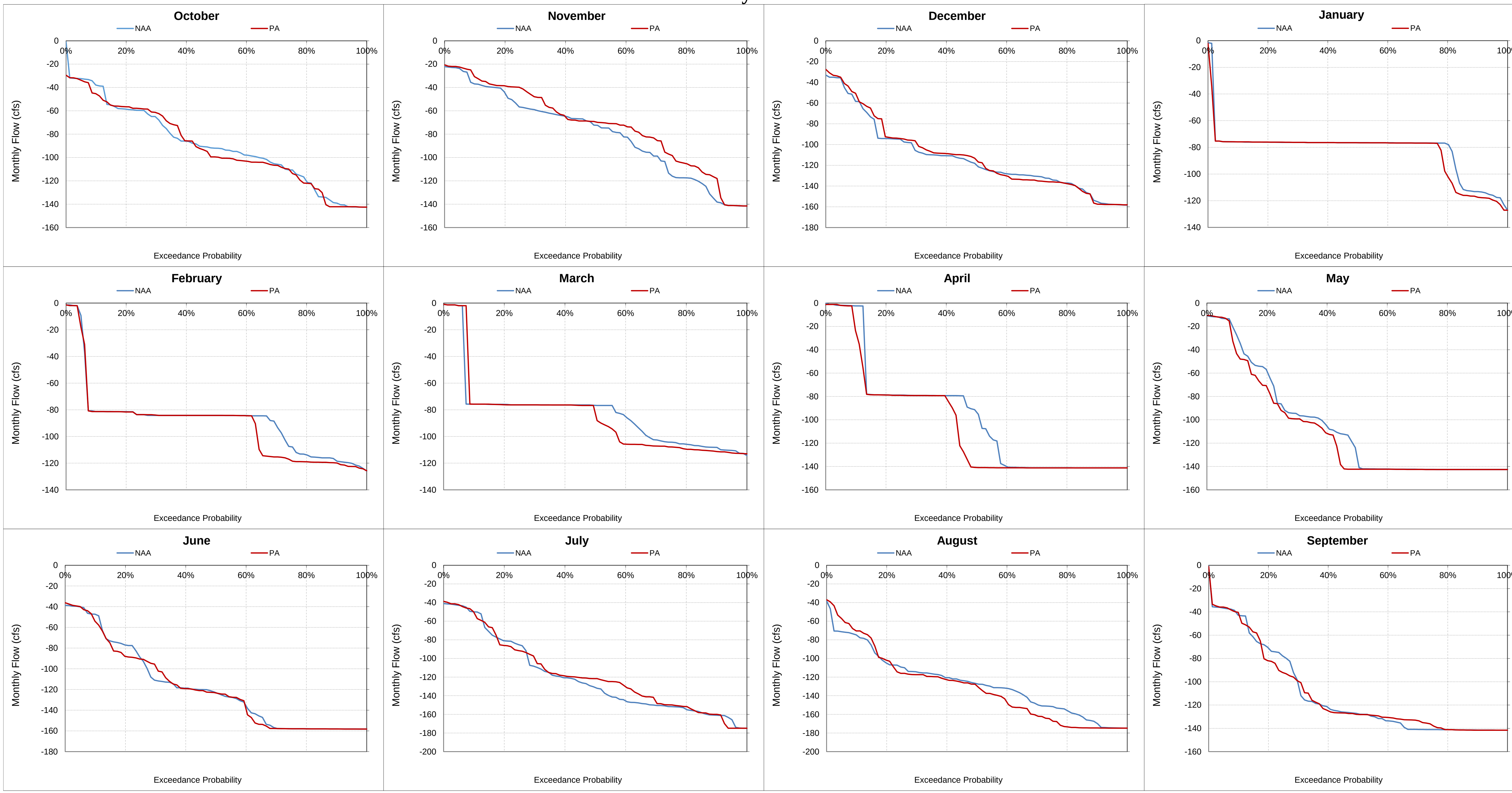
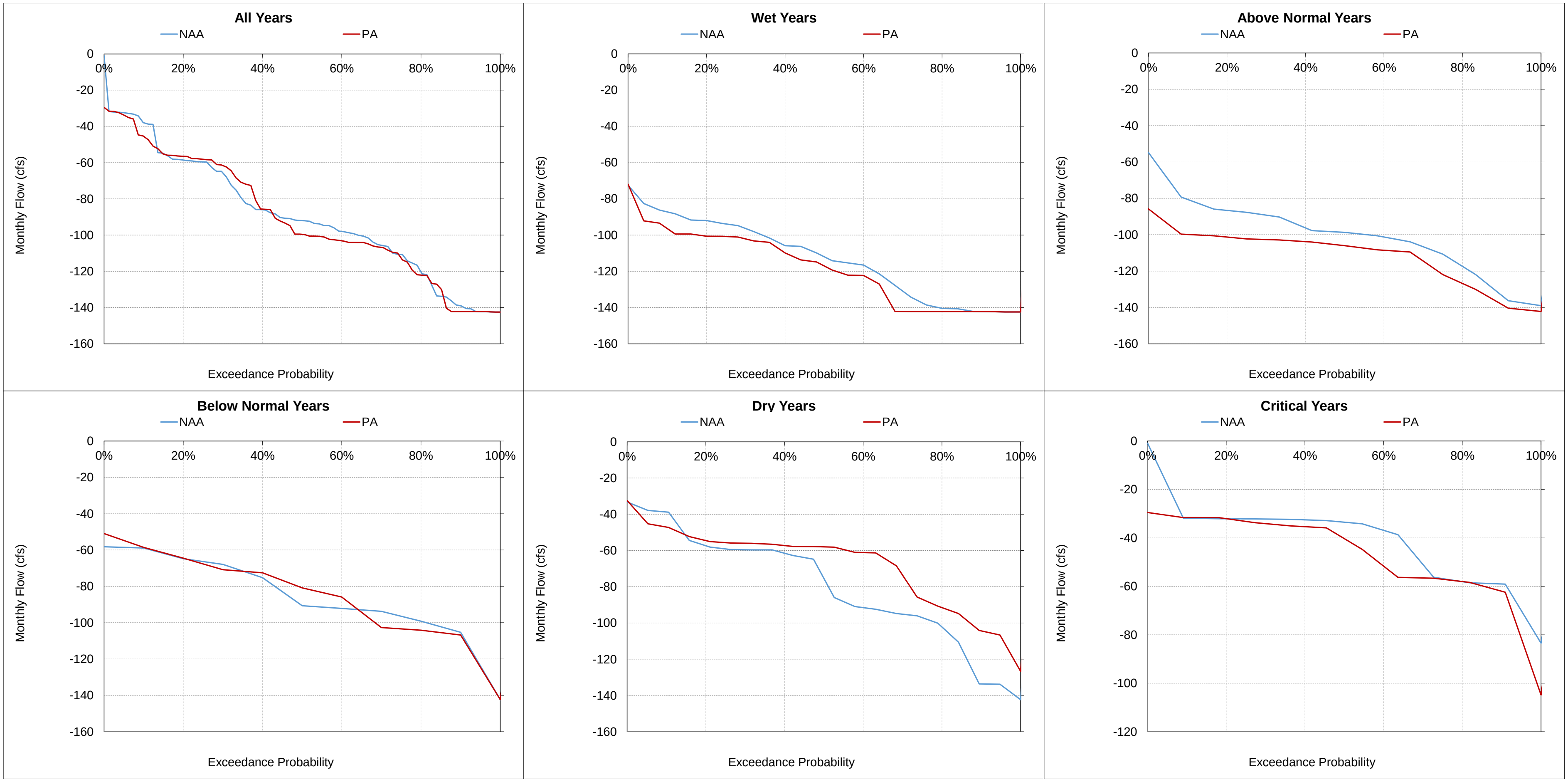


Figure 5.B.5-35-7. Barker Slough at North Bay Aqueduct Intake, Monthly Flow Probability of Exceedance



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-8. Barker Slough at North Bay Aqueduct Intake, Monthly Flow October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

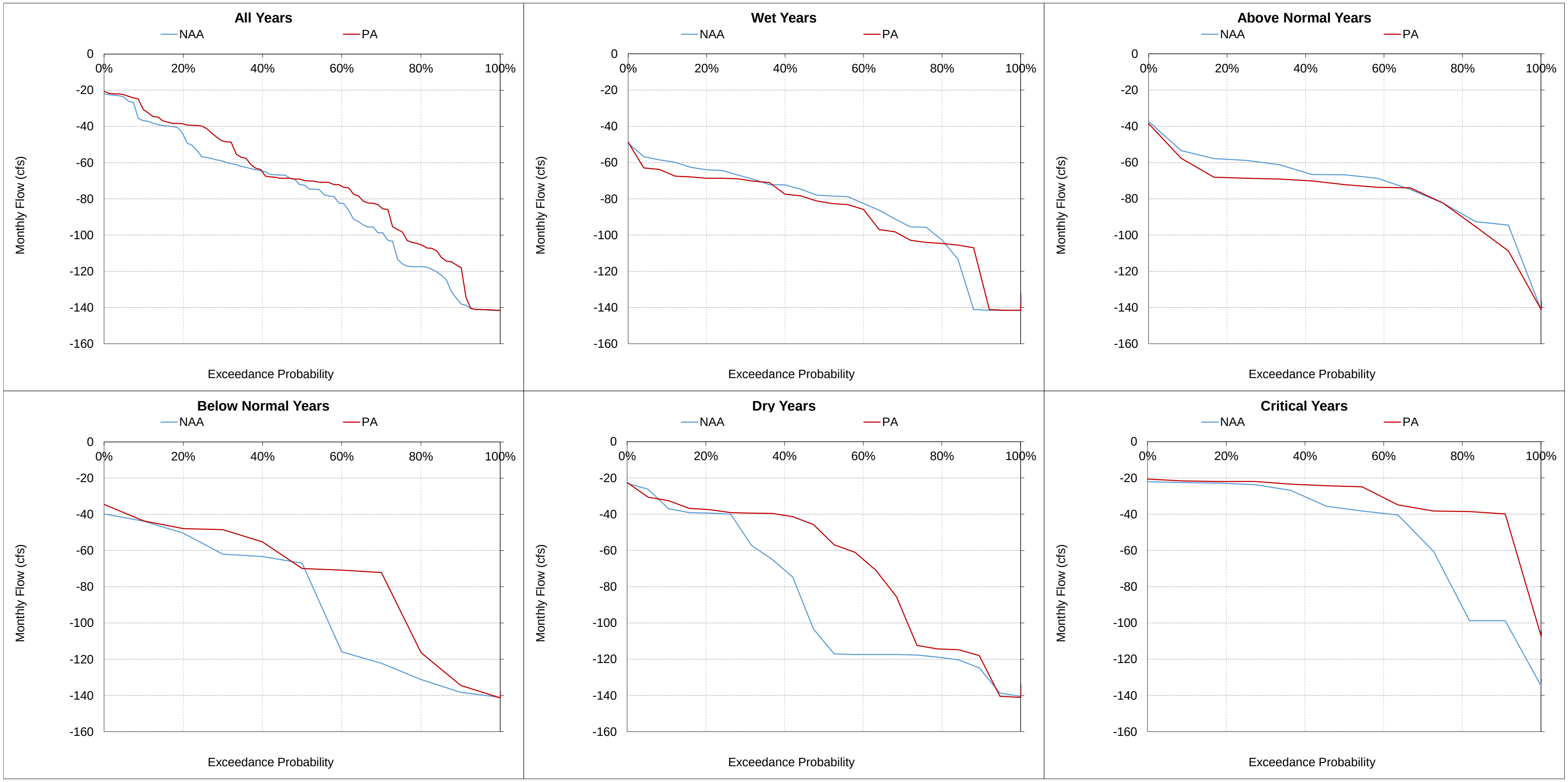
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-9. Barker Slough at North Bay Aqueduct Intake, Monthly Flow November



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

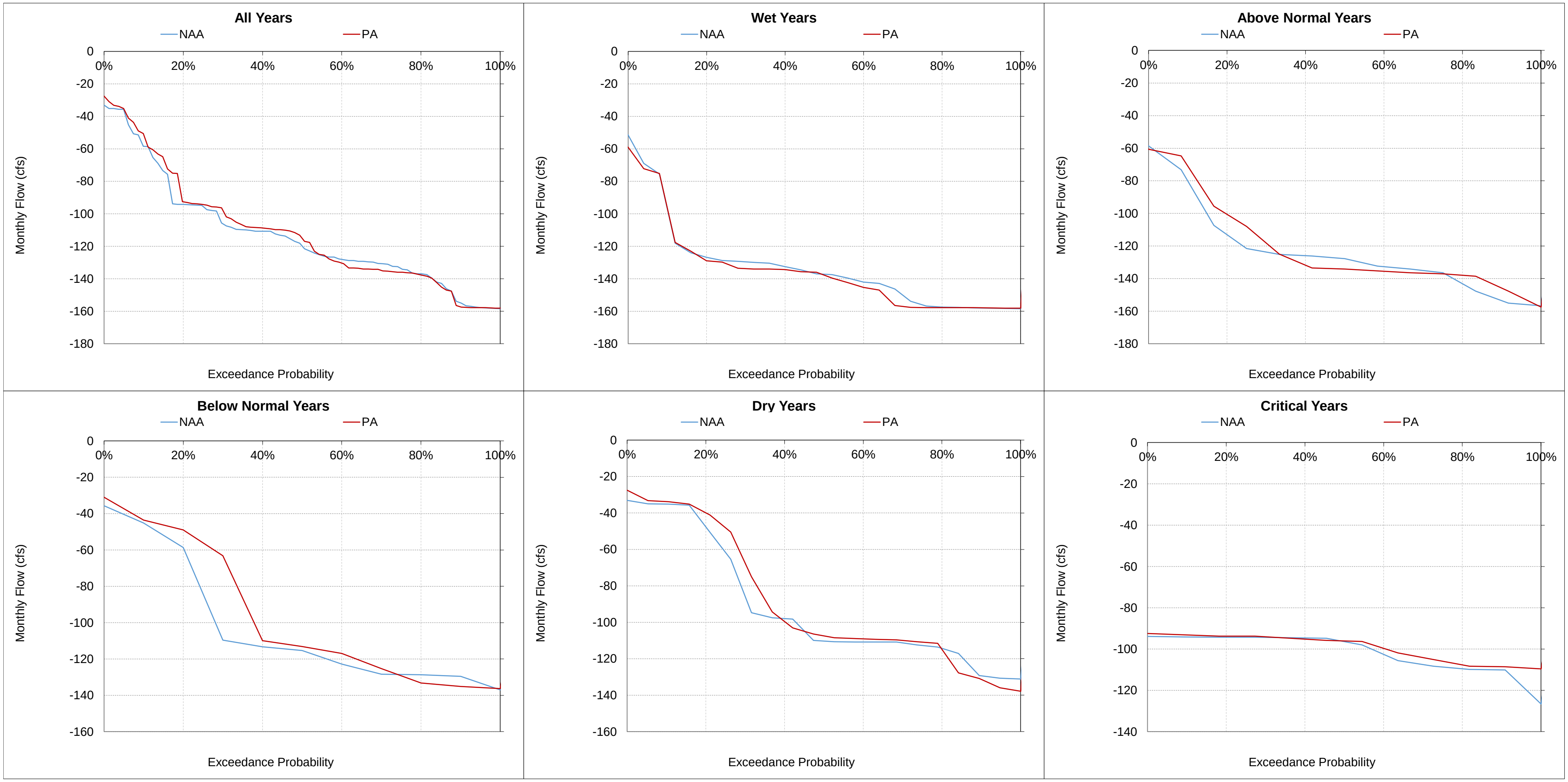
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-10. Barker Slough at North Bay Aqueduct Intake, Monthly Flow December



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

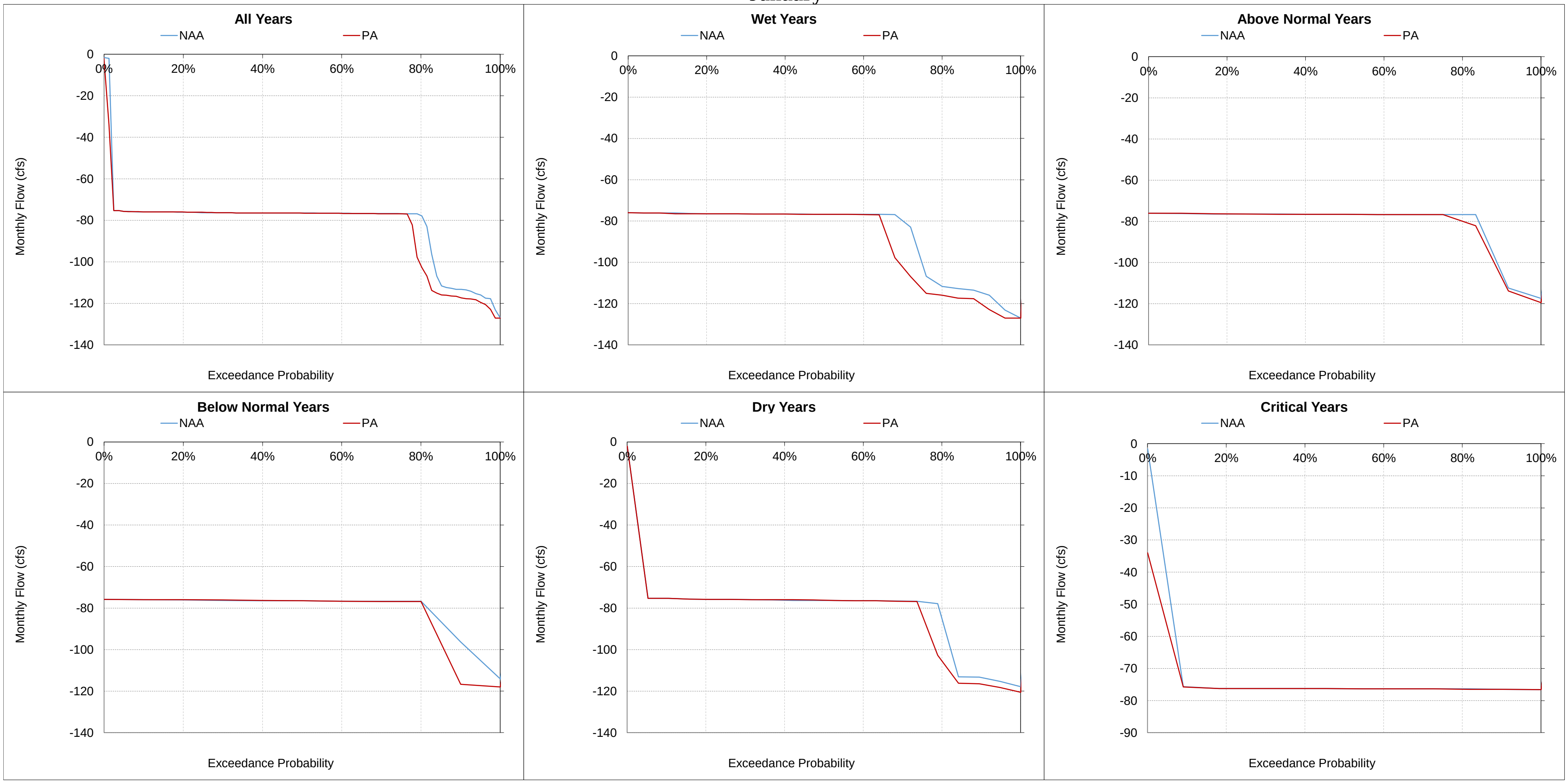
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

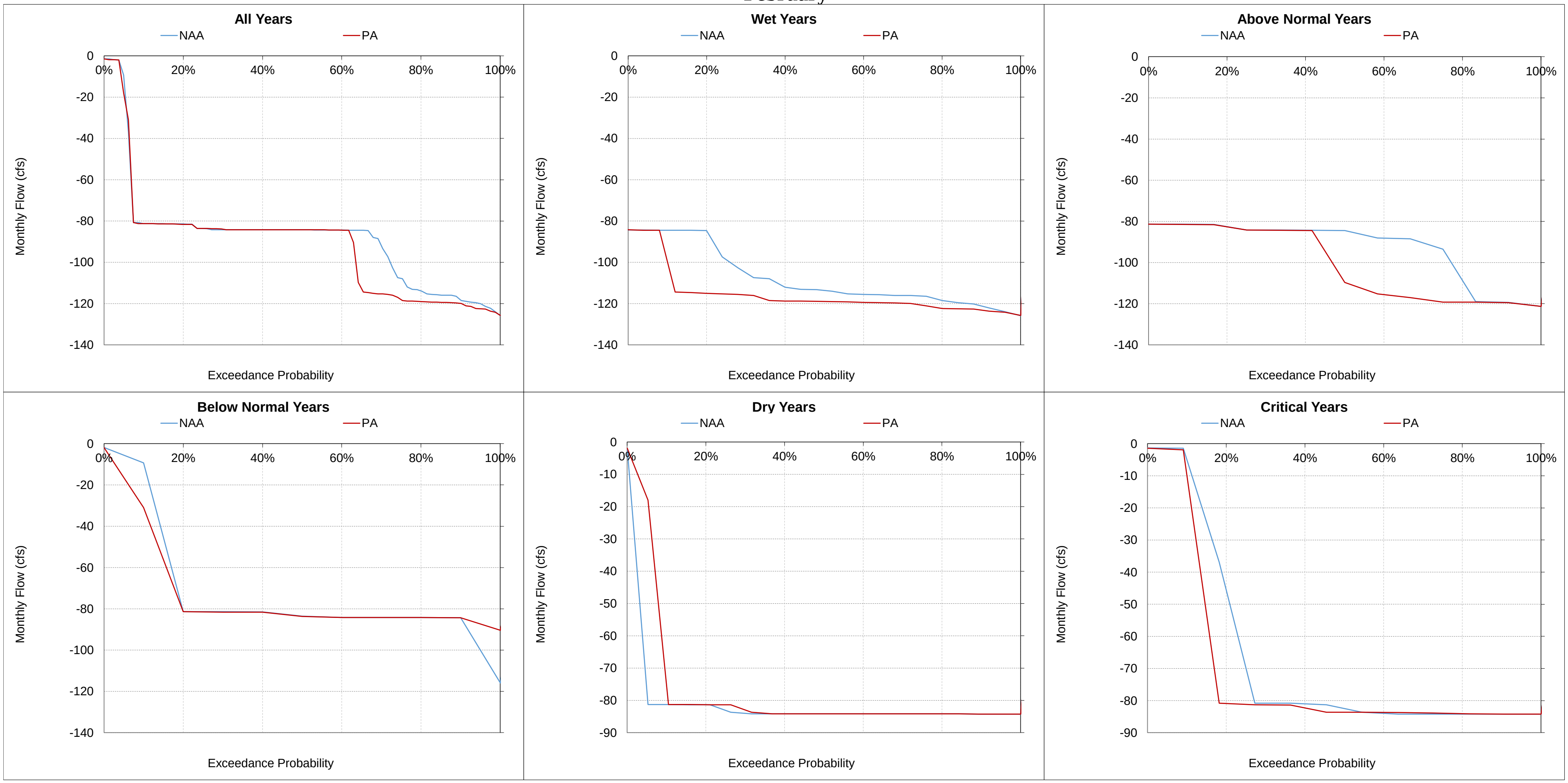
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-11. Barker Slough at North Bay Aqueduct Intake, Monthly Flow
January



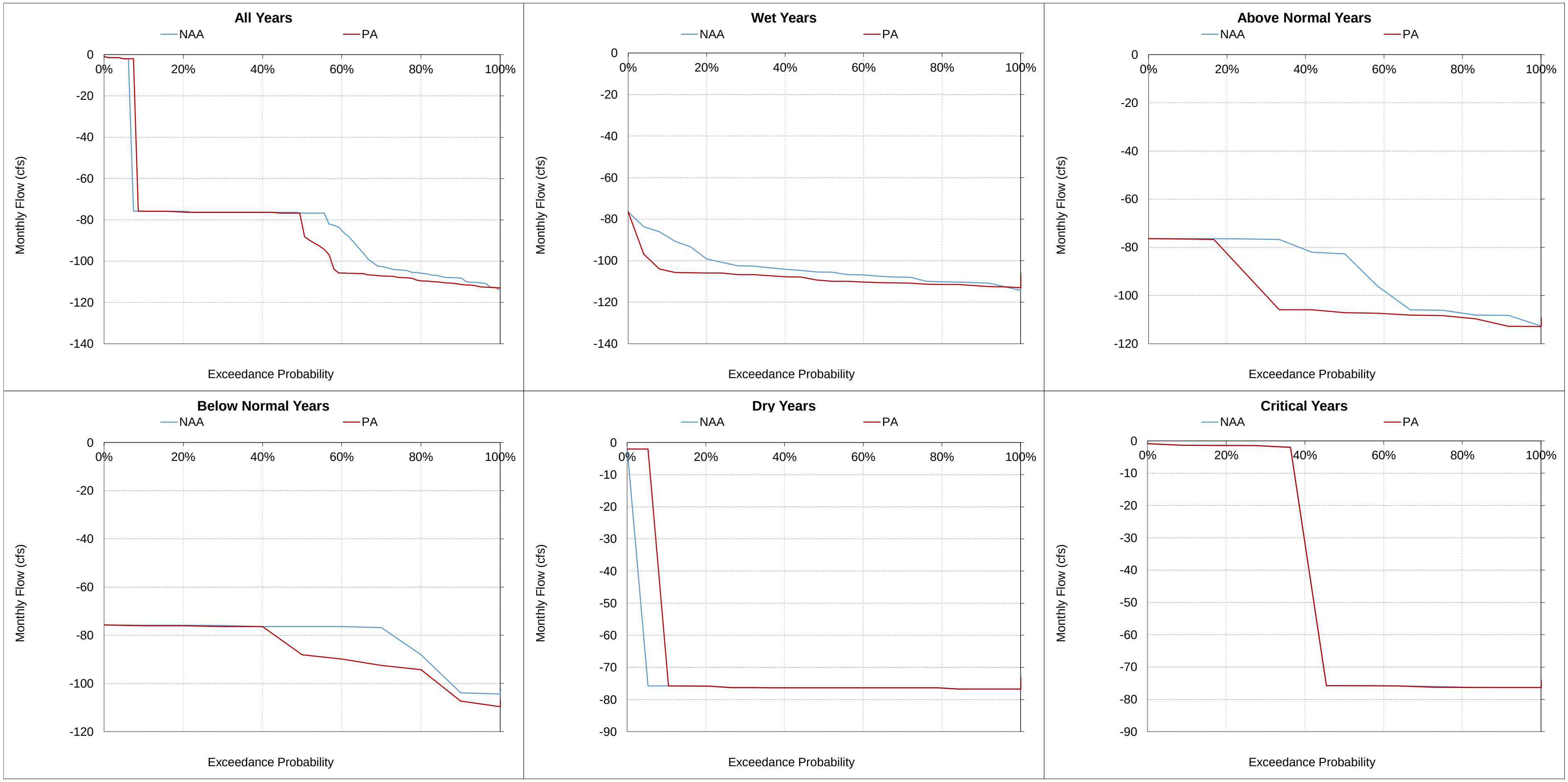
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-12. Barker Slough at North Bay Aqueduct Intake, Monthly Flow February



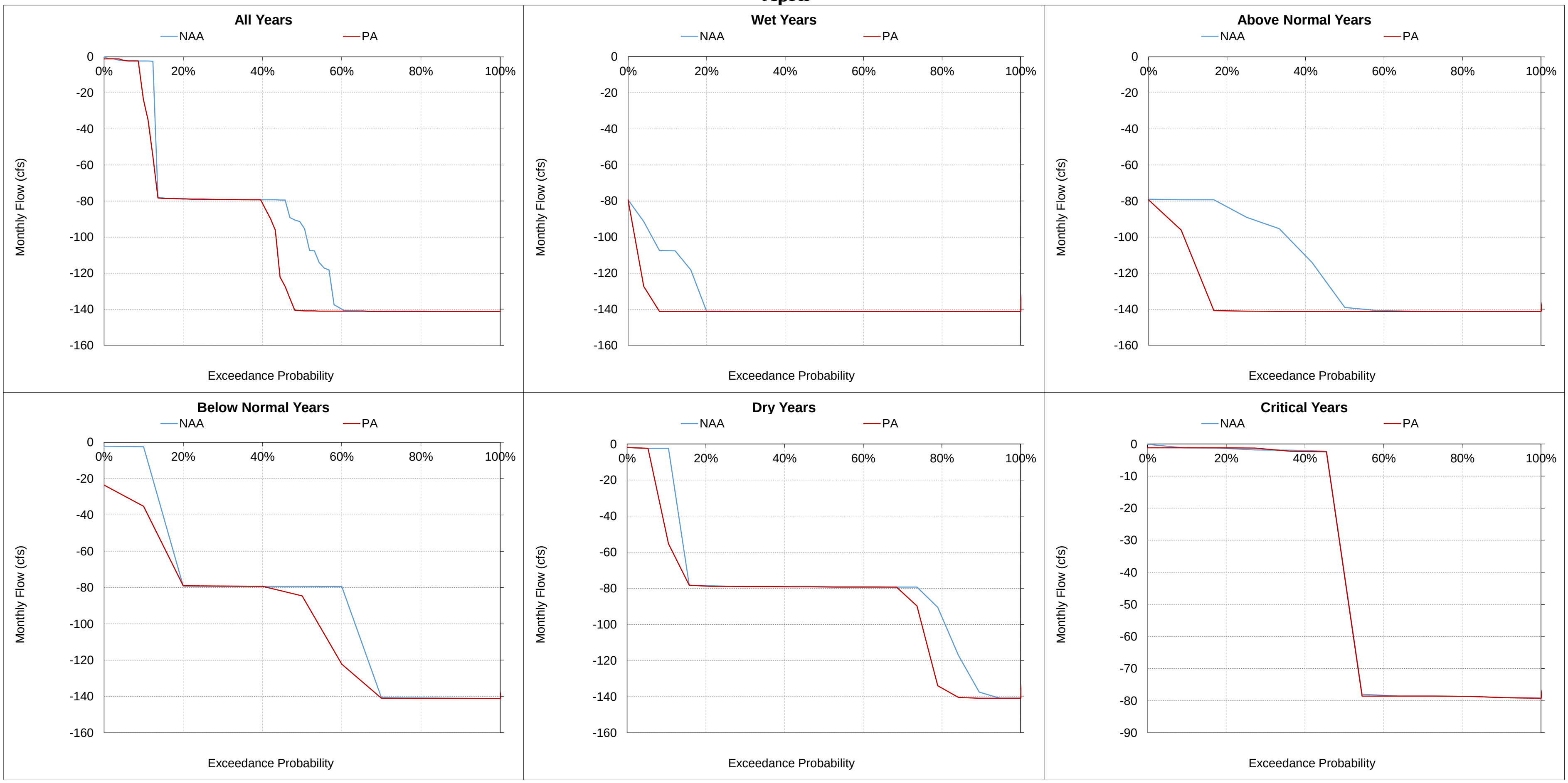
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-13. Barker Slough at North Bay Aqueduct Intake, Monthly Flow
March



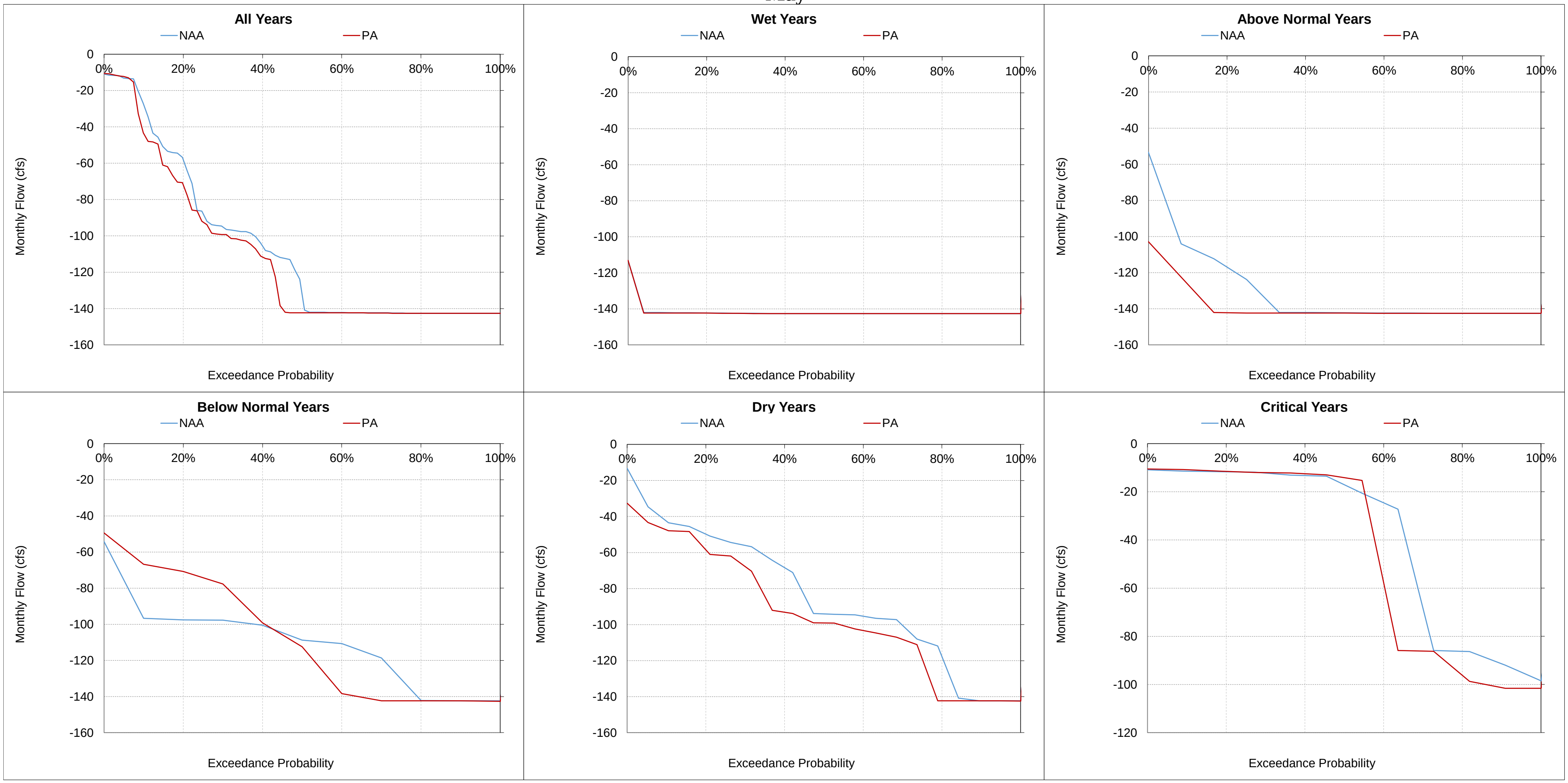
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-14. Barker Slough at North Bay Aqueduct Intake, Monthly Flow April



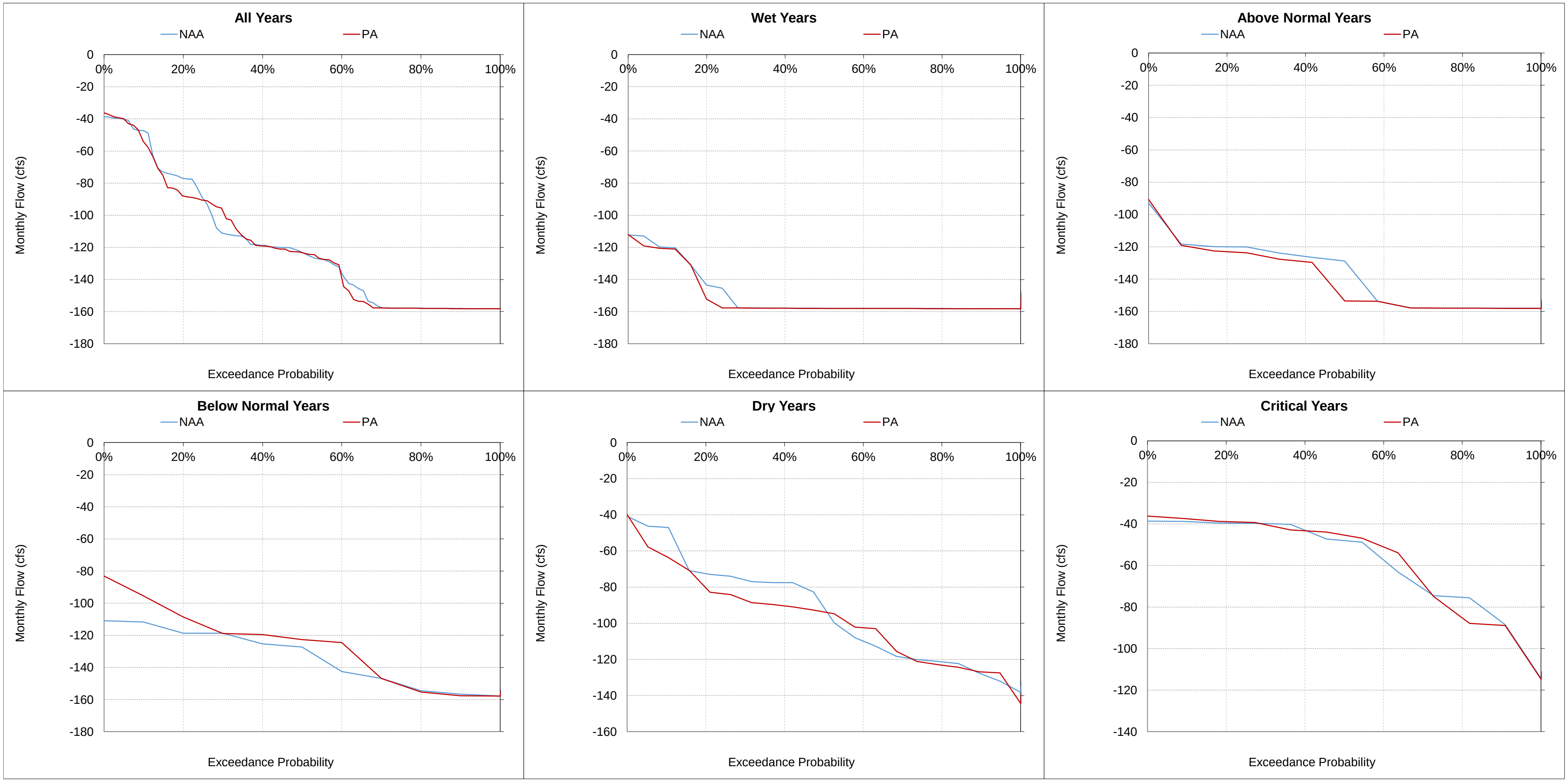
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-15. Barker Slough at North Bay Aqueduct Intake, Monthly Flow May



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-16. Barker Slough at North Bay Aqueduct Intake, Monthly Flow June



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

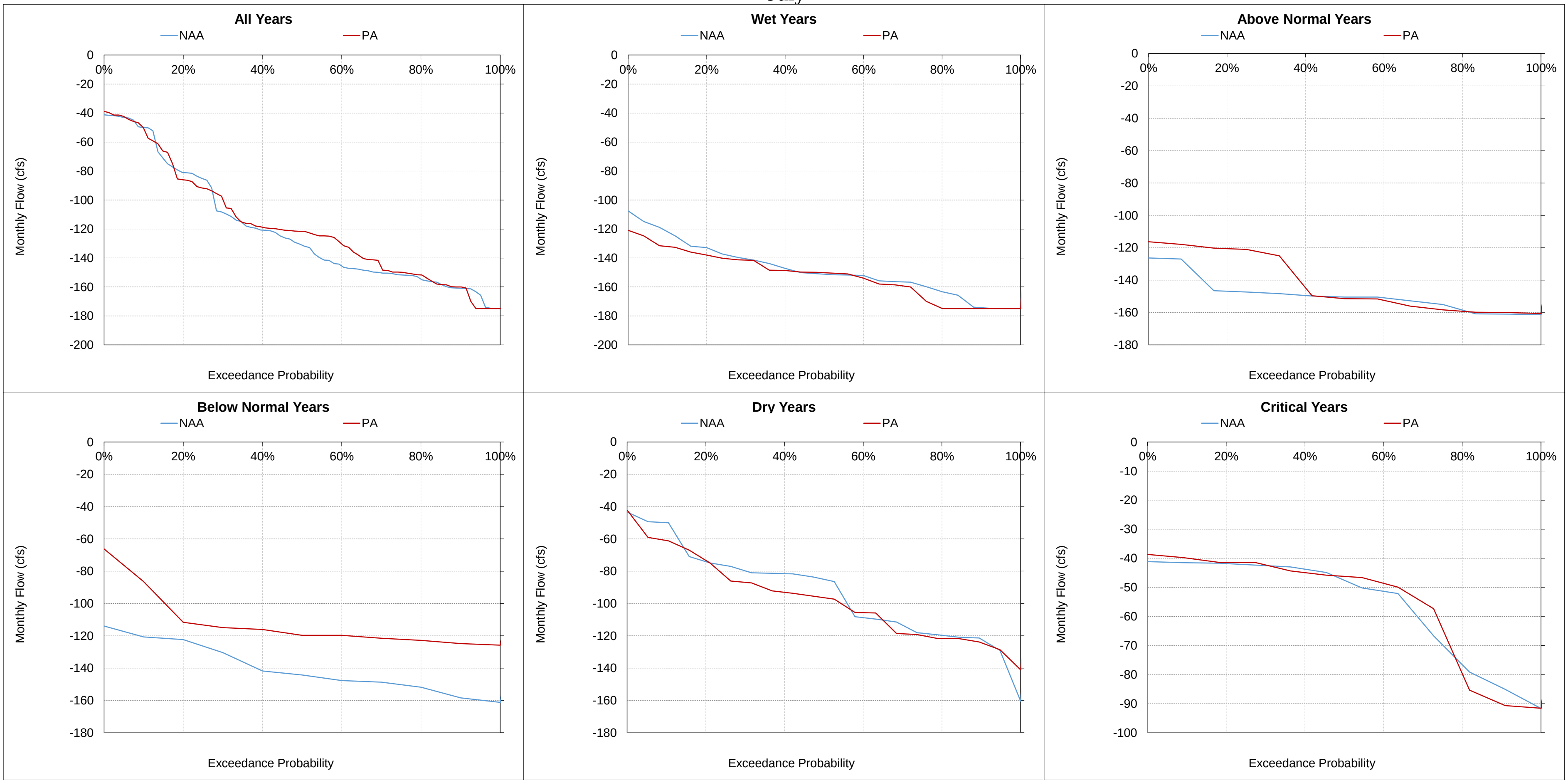
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

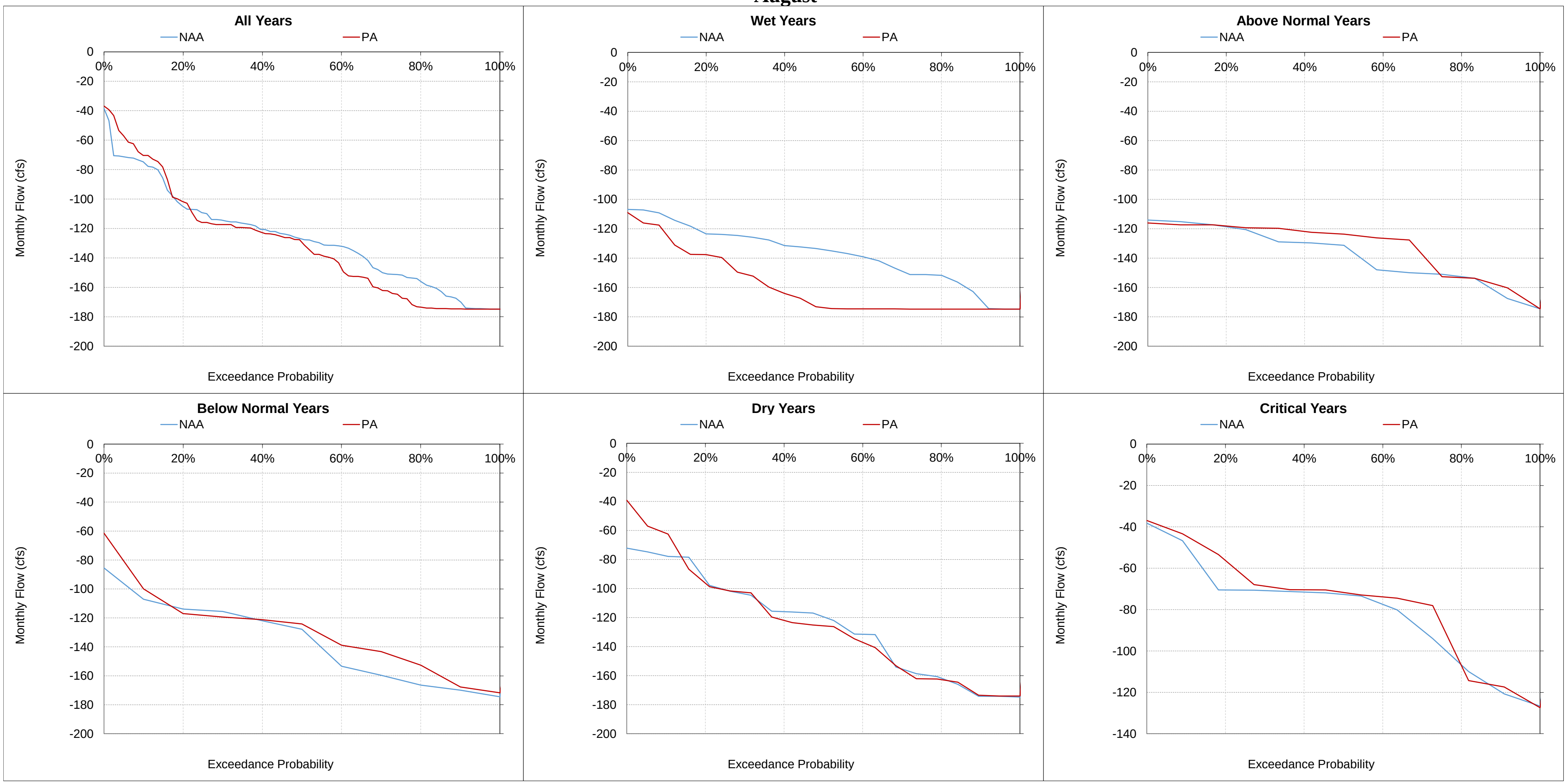
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-17. Barker Slough at North Bay Aqueduct Intake, Monthly Flow
July



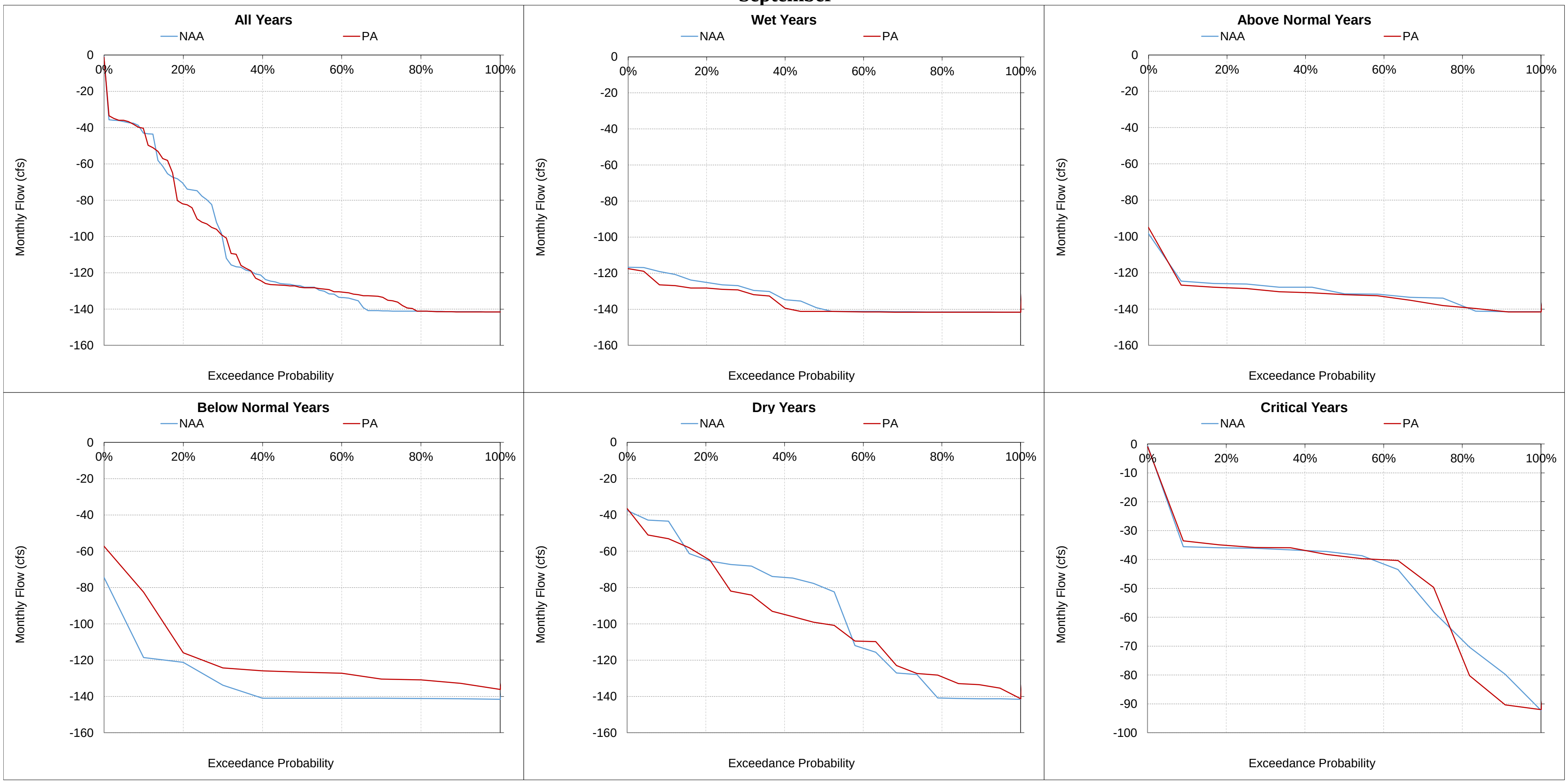
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-18. Barker Slough at North Bay Aqueduct Intake, Monthly Flow August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Figure 5.B.5-35-19. Barker Slough at North Bay Aqueduct Intake, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative flow indicates flow towards the North Bay Aqueduct.

Table 5.B.5-36. Rock Slough at Contra Costa Canal Intake, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	-5	-5	0	0%	-3	-3	0	0%	-3	-3	0	0%	-3	-3	0	0%	-60	-46	14	-24%	-3	-3	0	0%
20%	-6	-6	0	0%	-4	-4	0	0%	-4	-4	0	0%	-4	-4	0	0%	-87	-85	2	-3%	-3	-4	0	4%
30%	-7	-7	0	0%	-4	-4	0	0%	-4	-4	0	0%	-4	-4	0	5%	-118	-104	14	-12%	-5	-5	0	-2%
40%	-7	-7	0	0%	-4	-4	0	0%	-4	-4	0	0%	-5	-35	-31	658%	-125	-125	0	0%	-5	-5	0	-1%
50%	-7	-7	0	0%	-4	-4	0	0%	-103	-103	0	0%	-47	-52	-5	11%	-130	-130	0	0%	-6	-6	0	0%
60%	-249	-249	0	0%	-164	-164	0	0%	-113	-113	0	0%	-89	-90	-1	1%	-131	-131	0	0%	-7	-7	0	0%
70%	-251	-251	0	0%	-169	-169	0	0%	-121	-121	0	0%	-112	-112	0	0%	-162	-162	0	0%	-8	-8	0	0%
80%	-252	-252	0	0%	-170	-170	0	0%	-122	-122	0	0%	-134	-134	0	0%	-174	-174	0	0%	-105	-112	-7	7%
90%	-257	-257	0	0%	-183	-183	0	0%	-167	-167	0	0%	-176	-176	0	0%	-203	-203	0	0%	-151	-152	-1	1%
Long Term																								
Full Simulation Period[b]	-116	-116	0	0%	-78	-78	0	0%	-73	-73	0	0%	-67	-70	-3	4%	-127	-125	2	-2%	-36	-37	-1	3%
Water Year Types[c]																								
Wet (32%)	-251	-251	0	0%	-162	-162	0	0%	-116	-116	0	0%	-59	-68	-9	15%	-102	-100	2	-2%	-4	-4	0	0%
Above Normal (16%)	-210	-211	0	0%	-145	-145	0	0%	-131	-131	0	0%	-50	-50	0	1%	-148	-148	0	0%	-31	-31	0	0%
Below Normal (13%)	-6	-6	0	0%	-21	-21	0	0%	-27	-27	0	0%	-63	-63	0	0%	-123	-123	0	0%	-40	-41	0	0%
Dry (24%)	-6	-6	0	0%	-4	-4	0	0%	-45	-45	0	0%	-85	-85	0	0%	-137	-131	6	-4%	-38	-39	-1	3%
Critical (15%)	-7	-7	0	0%	-3	-3	0	0%	-4	-4	0	0%	-74	-74	0	0%	-148	-148	0	0%	-104	-108	-4	4%

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	-12	-15	-3	30%	-11	-15	-5	43%	-285	-285	0	0%	-61	-61	0	0%	-12	-12	0	0%	-7	-7	0	0%
20%	-38	-38	0	0%	-46	-97	-50	108%	-286	-286	-1	0%	-176	-176	0	0%	-13	-13	0	0%	-8	-8	0	0%
30%	-45	-45	-1	1%	-95	-210	-114	120%	-287	-287	0	0%	-224	-224	0	0%	-21	-21	0	0%	-8	-8	0	0%
40%	-66	-94	-28	43%	-97	-214	-117	120%	-308	-308	0	0%	-233	-233	0	0%	-46	-46	0	0%	-9	-9	0	0%
50%	-120	-124	-4	3%	-211	-215	-4	2%	-309	-309	0	0%	-333	-333	0	0%	-47	-48	0	1%	-9	-9	0	0%
60%	-171	-183	-12	7%	-225	-235	-10	4%	-310	-310	0	0%	-334	-334	0	0%	-66	-71	-4	7%	-10	-10	0	0%
70%	-211	-211	0	0%	-259	-269	-10	4%	-317	-317	0	0%	-335	-335	0	0%	-130	-130	0	0%	-11	-11	0	0%
80%	-222	-222	0	0%	-271	-272	0	0%	-319	-319	0	0%	-338	-338	0	0%	-225	-225	0	0%	-11	-11	0	0%
90%	-238	-238	0	0%	-288	-288	0	0%	-334	-334	0	0%	-339	-339	0	0%	-229	-229	0	0%	-78	-84	-6	8%
Long Term																								
Full Simulation Period[b]	-125	-129	-4	3%	-165	-196	-31	19%	-295	-300	-4	1%	-252	-252	0	0%	-101	-101	0	0%	-30	-32	-1	4%
Water Year Types[c]																								
Wet (32%)	-33	-33	0	1%	-62	-113	-51	81%	-286	-286	0	0%	-324	-324	0	0%	-156	-156	0	0%	-62	-62	0	0%
Above Normal (16%)	-103	-108	-5	5%	-133	-184	-52	39%	-309	-309	0	0%	-320	-320	0	0%	-163	-163	0	0%	-41	-49	-8	20%
Below Normal (13%)	-142	-164	-22	15%	-202	-233	-31	15%	-309	-309	0	0%	-215	-215	0	0%	-75	-77	-2	3%	-8	-8	0	0%
Dry (24%)	-192	-192	0	0%	-237	-247	-10	4%	-303	-311	-8	3%	-189	-189	0	0%	-36	-36	0	0%	-8	-8	0	0%
Critical (15%)	-221	-221	0	0%	-271	-271	0	0%	-277	-292	-15	5%	-158	-159	0	0%	-43	-43	0	0%	-8	-8	0	0%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-1. Monthly Flow Ranges For Rock Slough at Contra Costa Canal Intake, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.

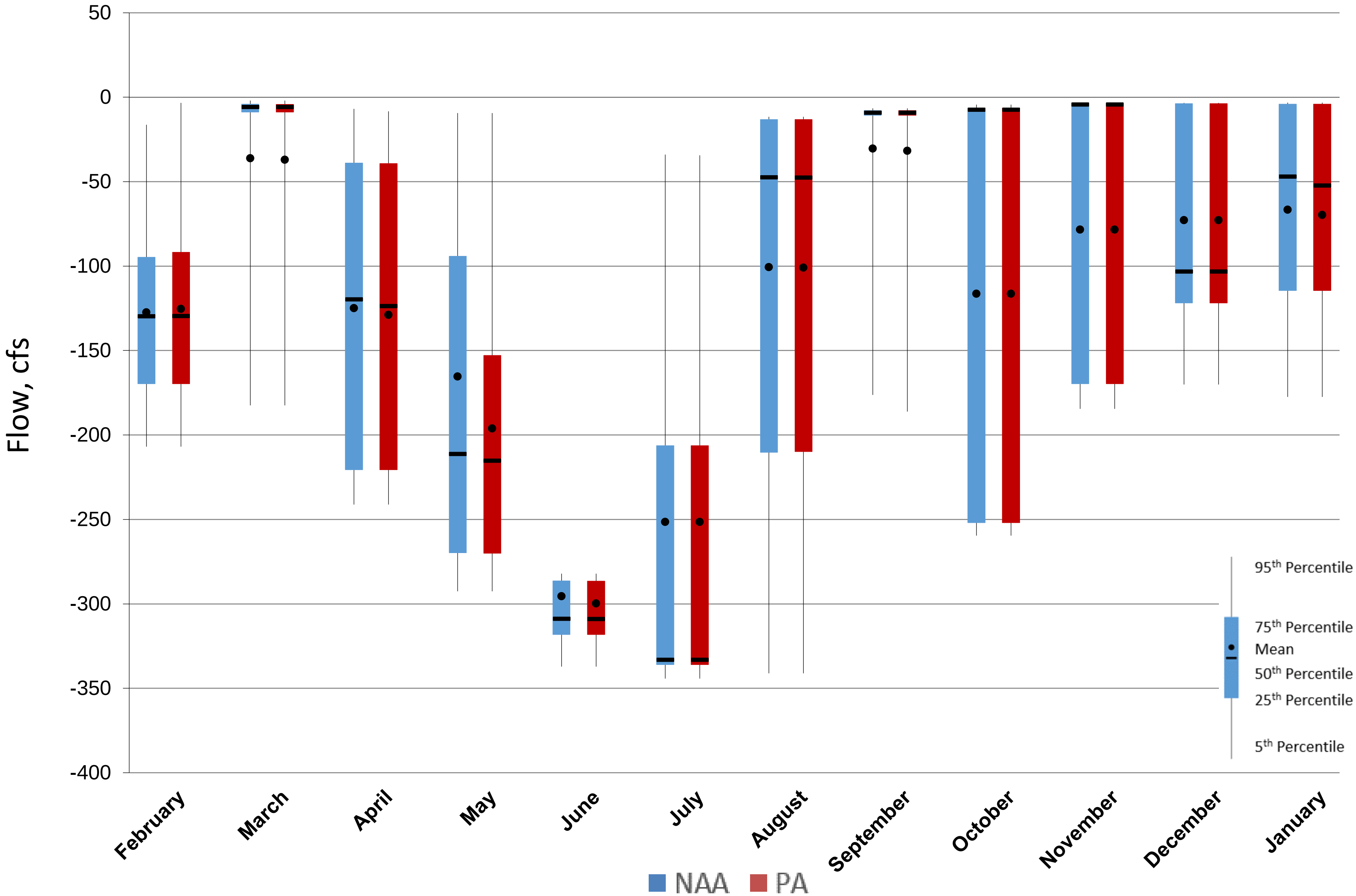


Figure 5.B.5-36-2. Monthly Flow Ranges For Rock Slough at Contra Costa Canal Intake, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

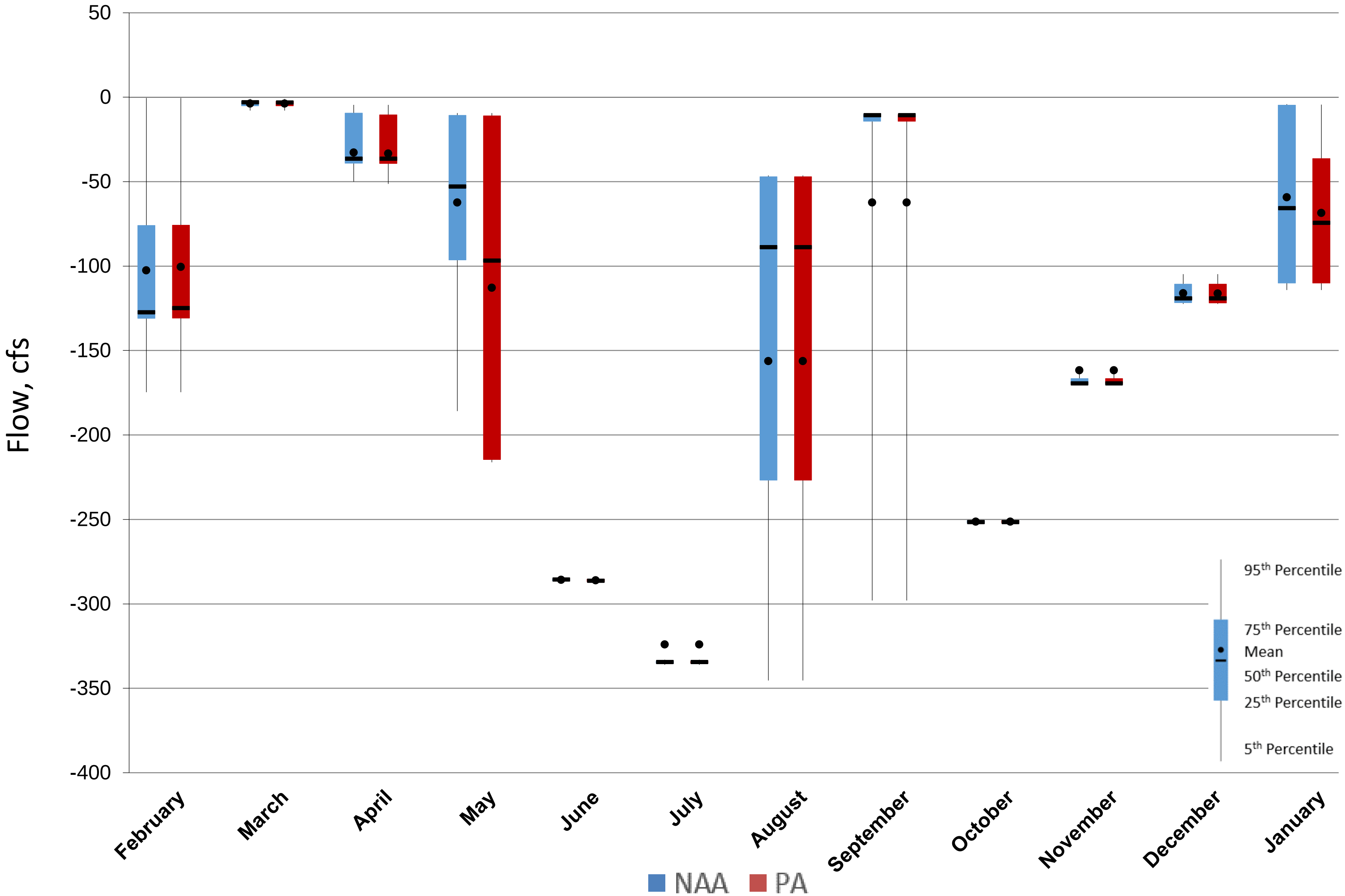


Figure 5.B.5-36-3. Monthly Flow Ranges For Rock Slough at Contra Costa Canal Intake, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

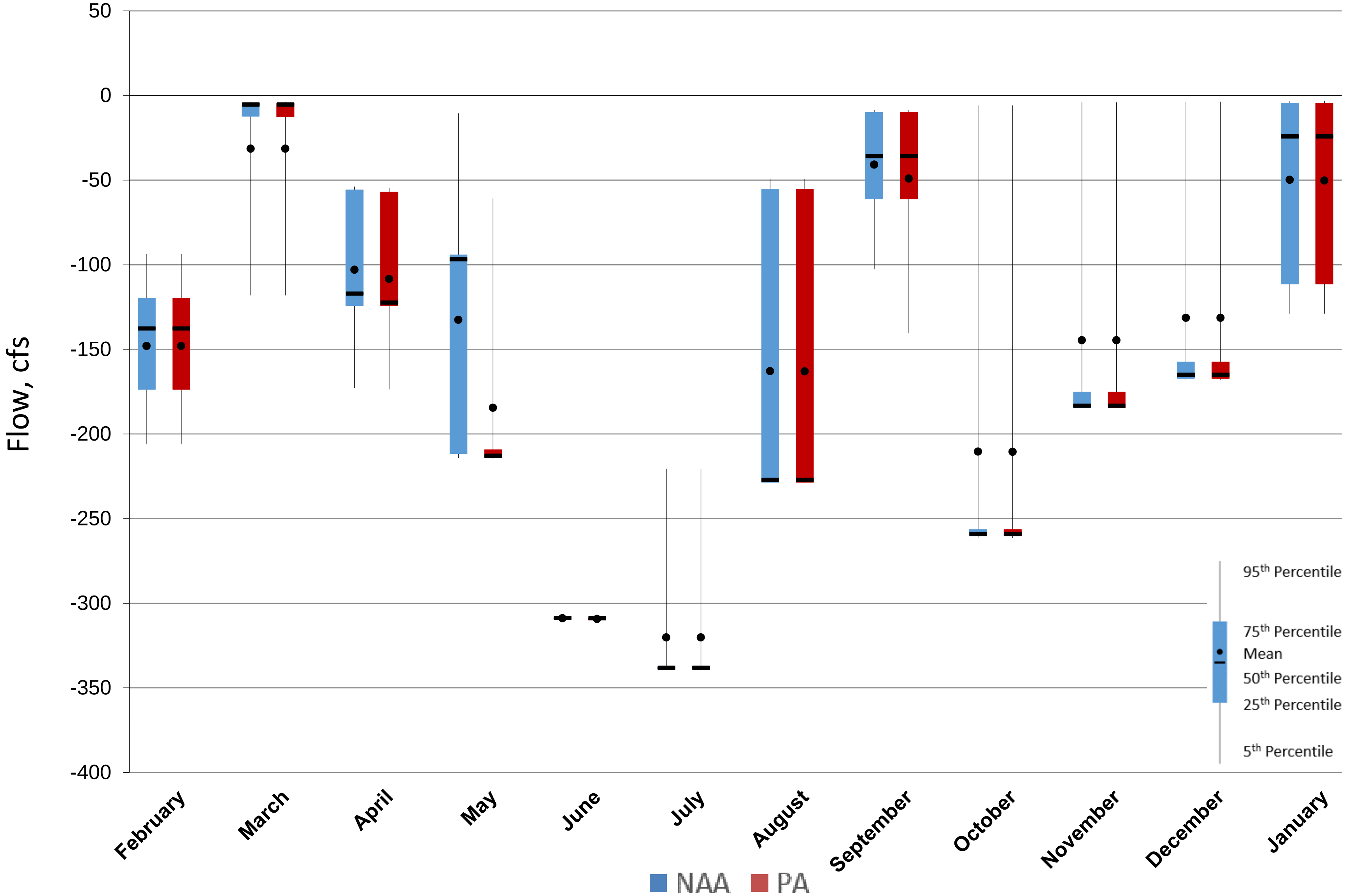


Figure 5.B.5-36-4. Monthly Flow Ranges For Rock Slough at Contra Costa Canal Intake, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

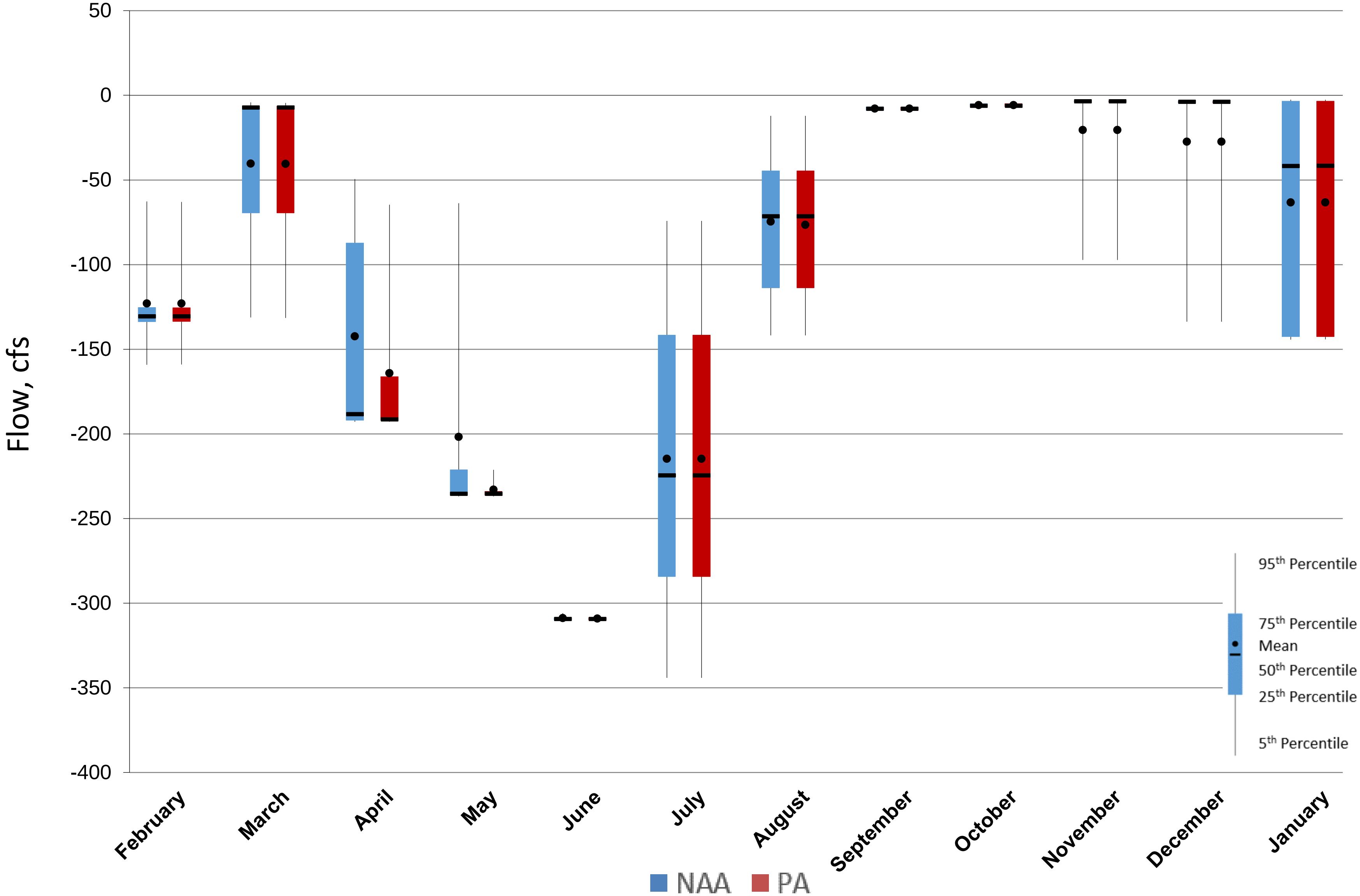


Figure 5.B.5-36-5. Monthly Flow Ranges For Rock Slough at Contra Costa Canal Intake, Dry Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 20 dry years.

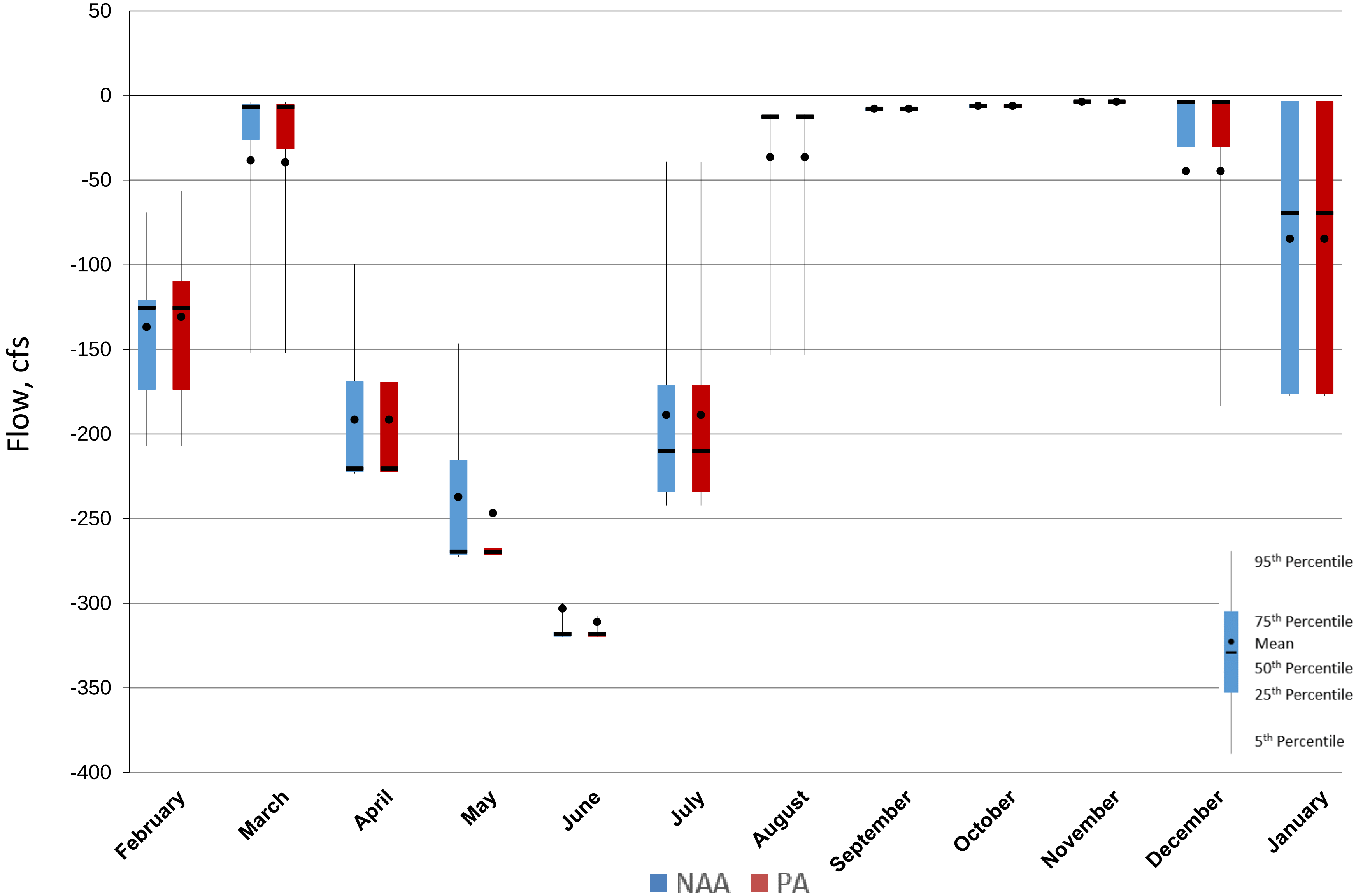


Figure 5.B.5-36-6. Monthly Flow Ranges For Rock Slough at Contra Costa Canal Intake, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

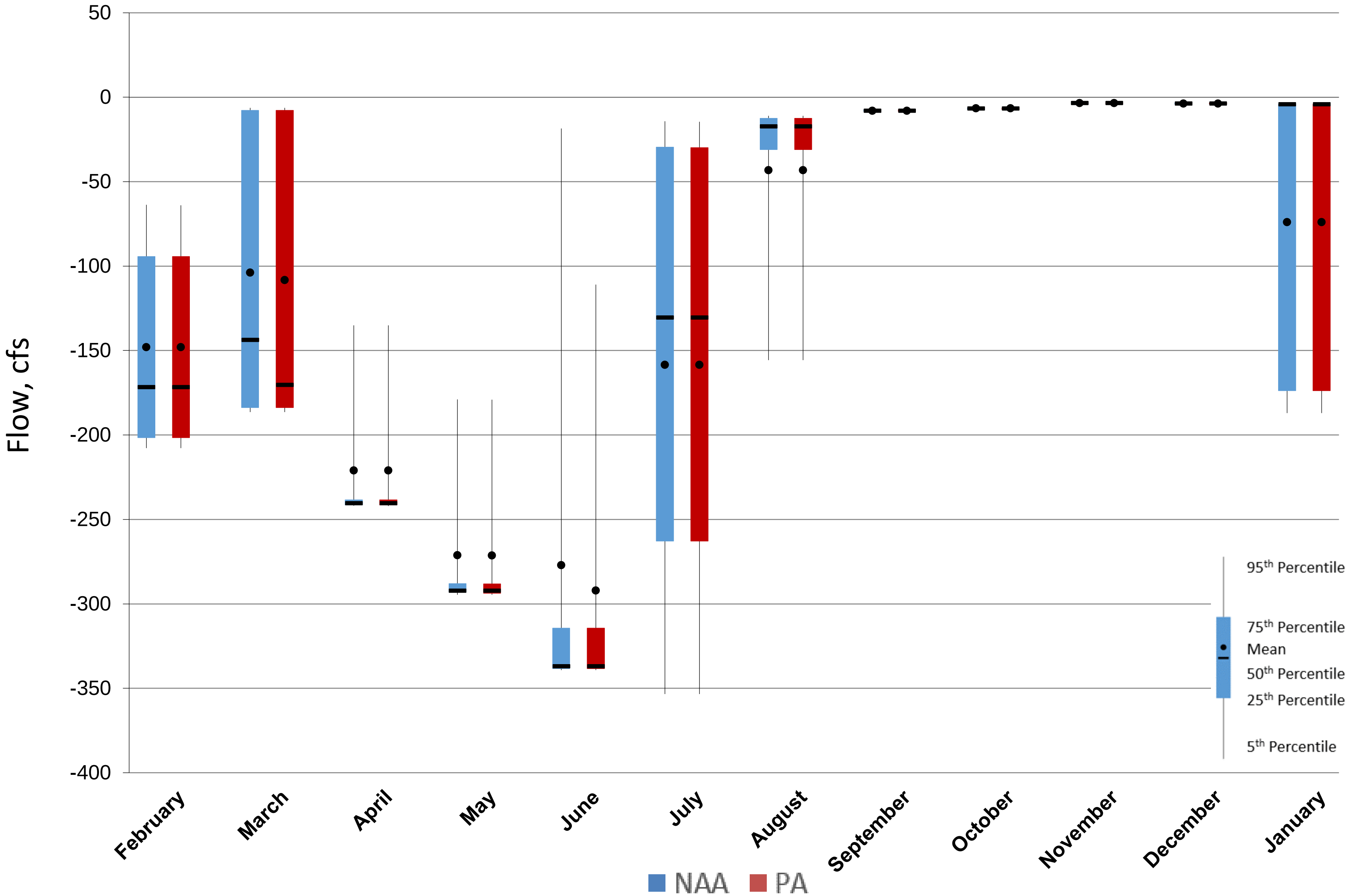
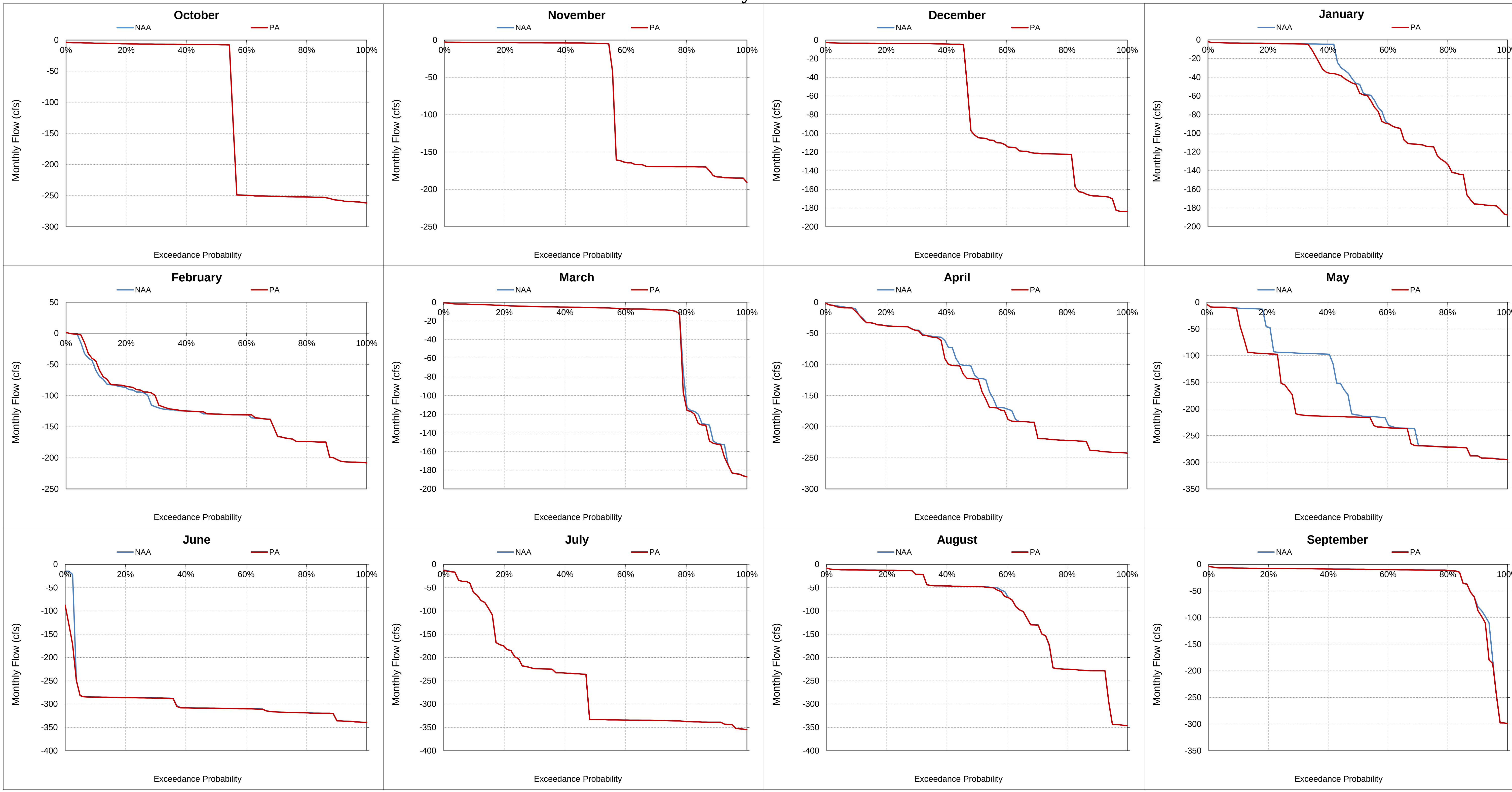
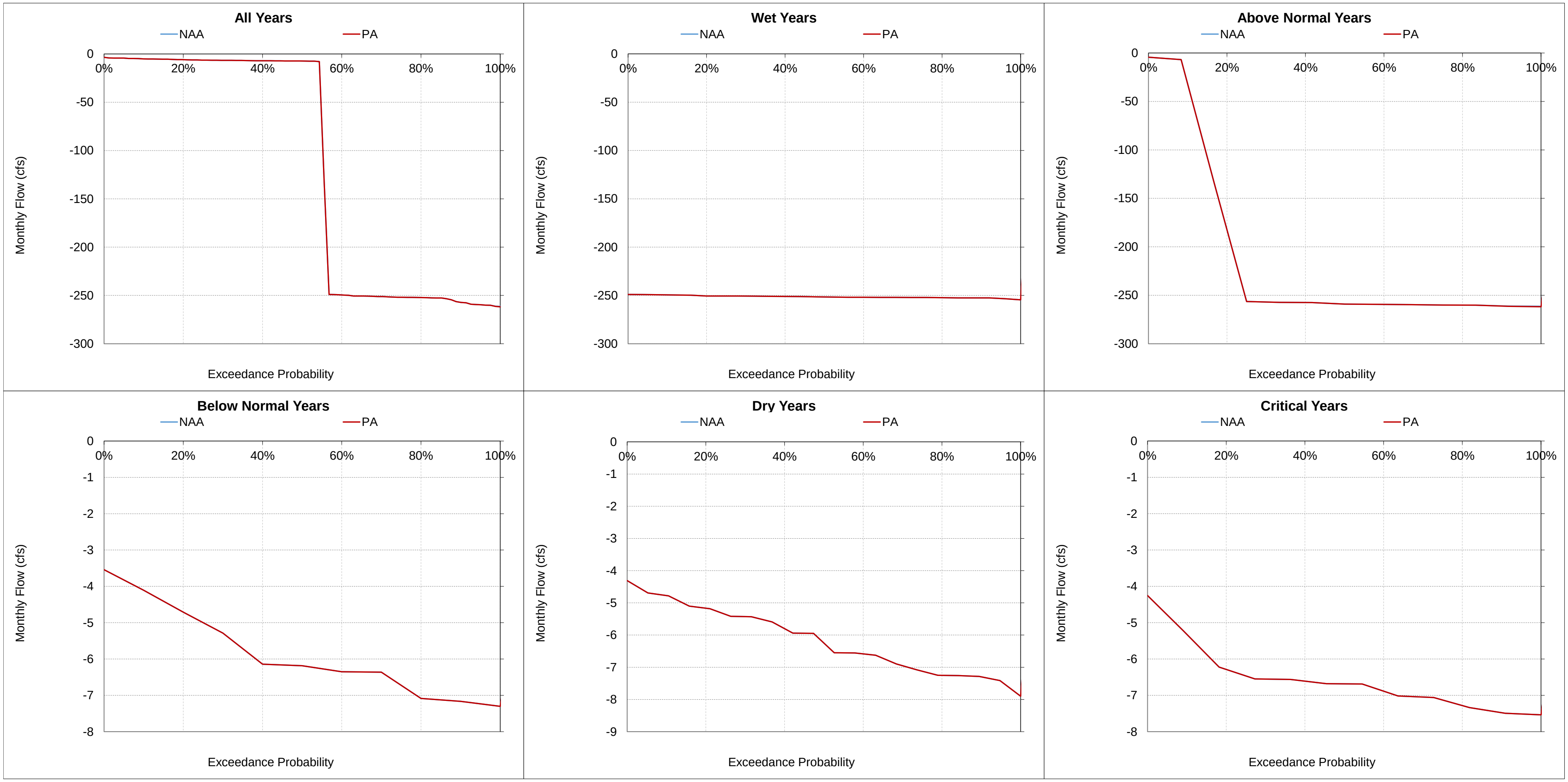


Figure 5.B.5-36-7. Rock Slough at Contra Costa Canal Intake, Monthly Flow Probability of Exceedance



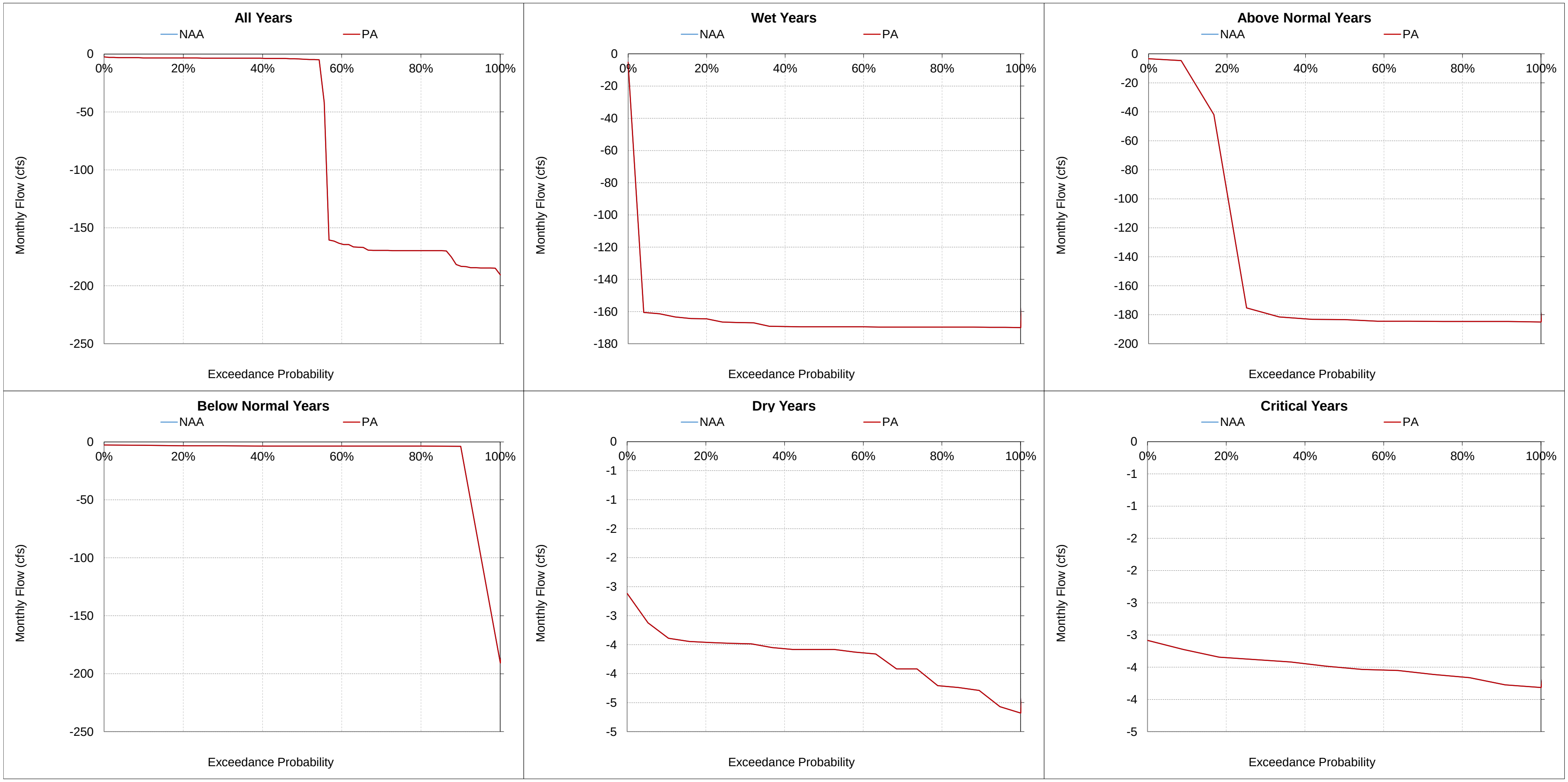
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-8. Rock Slough at Contra Costa Canal Intake, Monthly Flow October



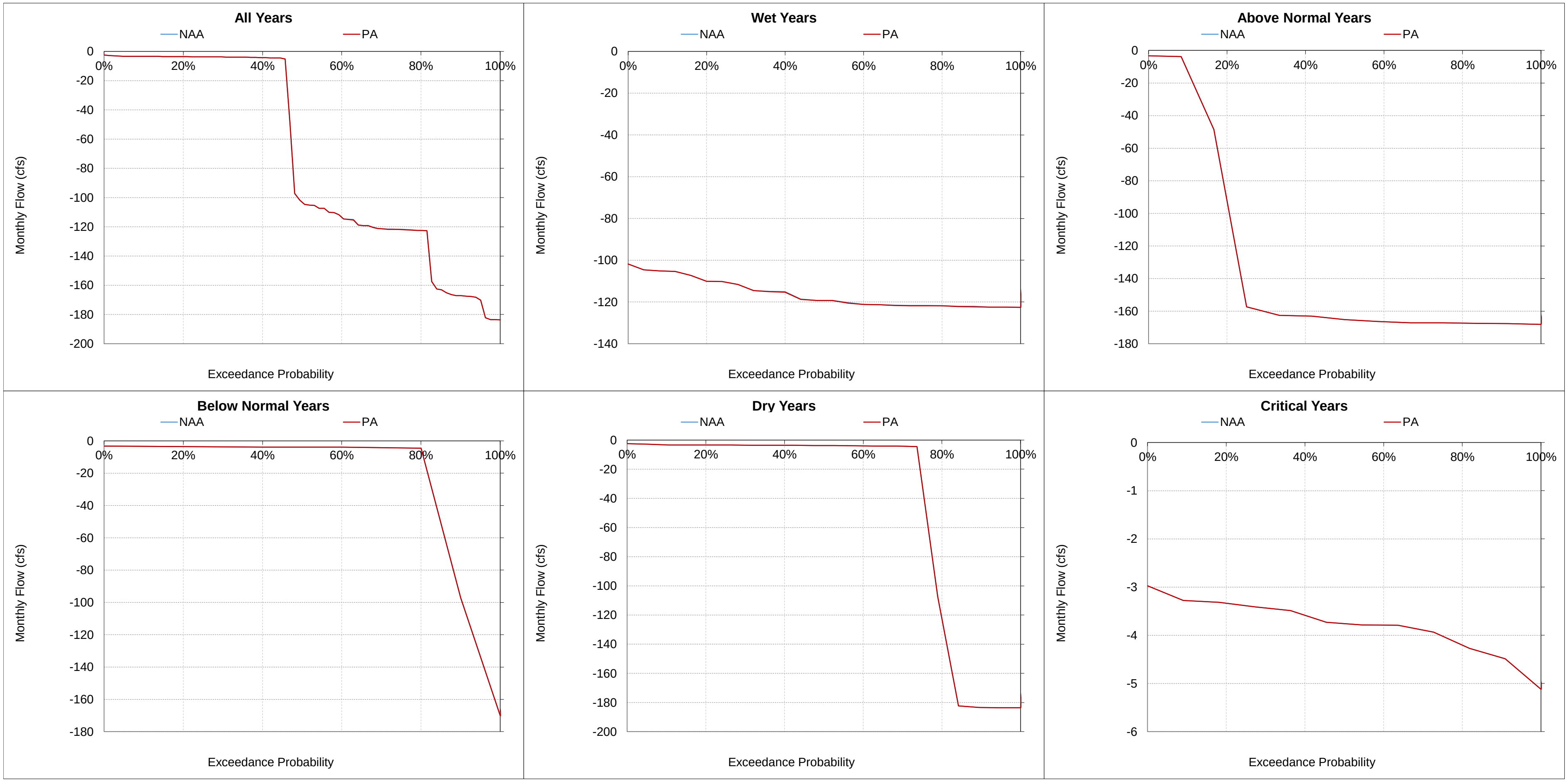
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-9. Rock Slough at Contra Costa Canal Intake, Monthly Flow
November



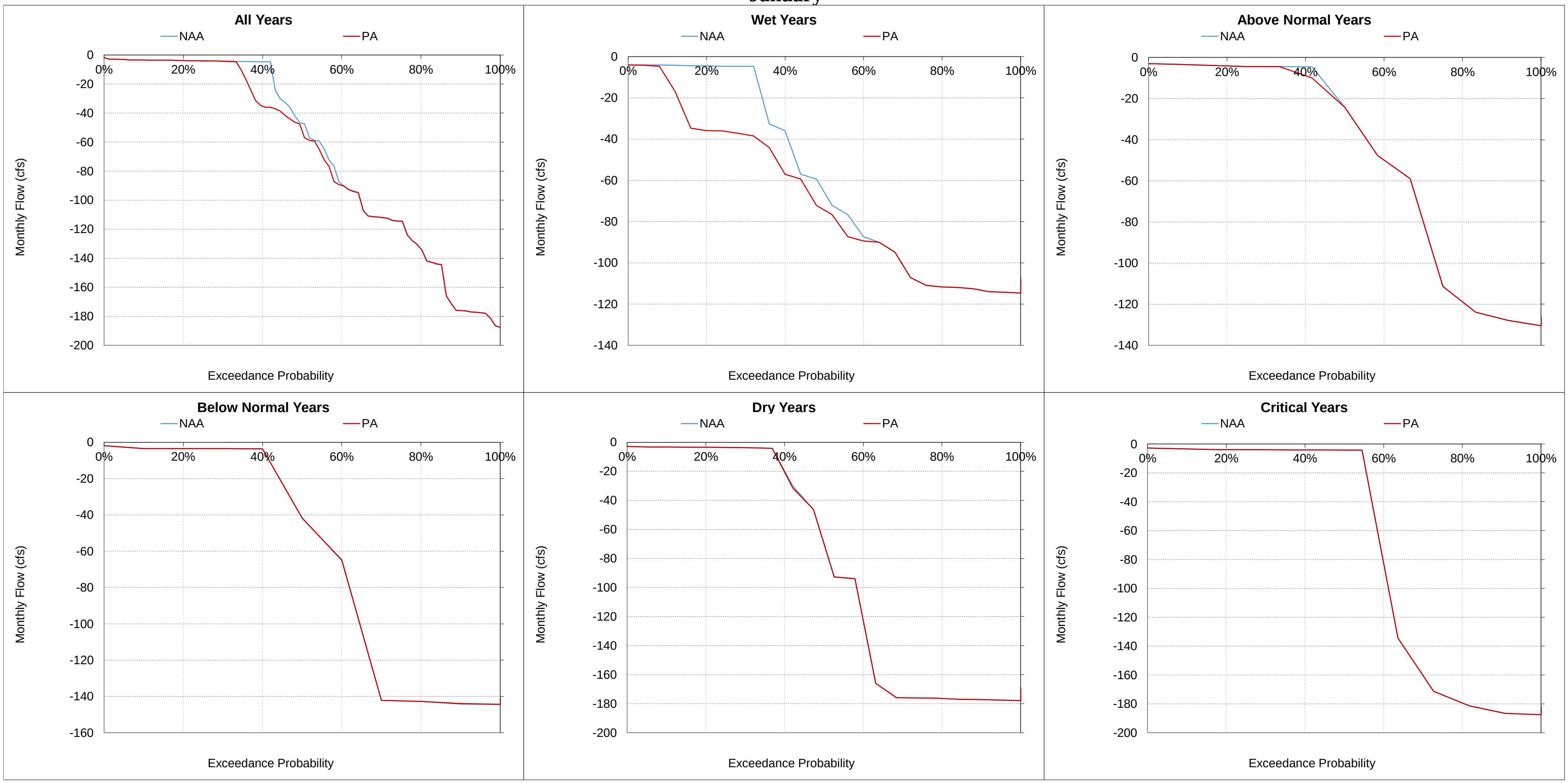
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-10. Rock Slough at Contra Costa Canal Intake, Monthly Flow December



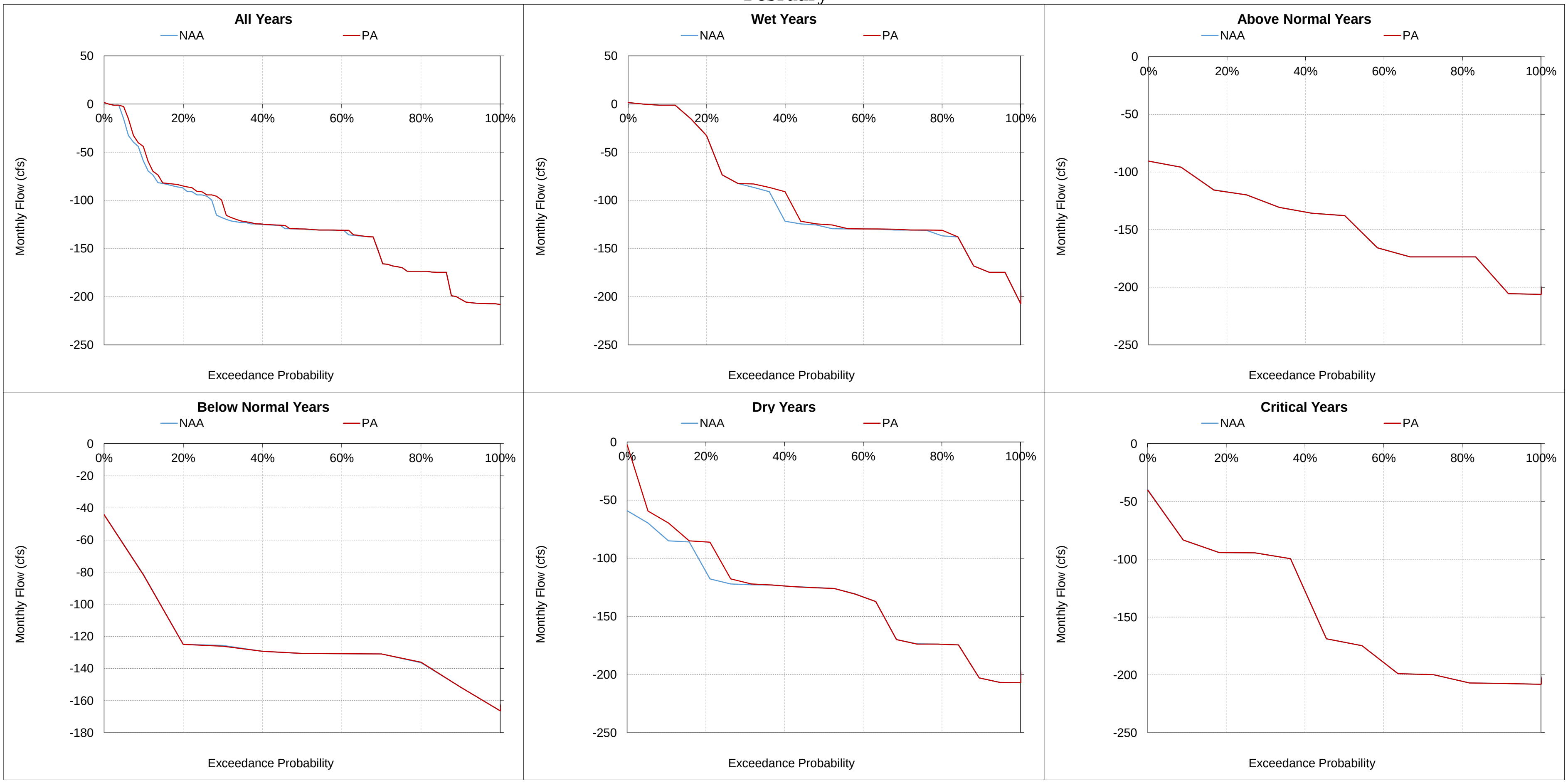
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-11. Rock Slough at Contra Costa Canal Intake, Monthly Flow
January



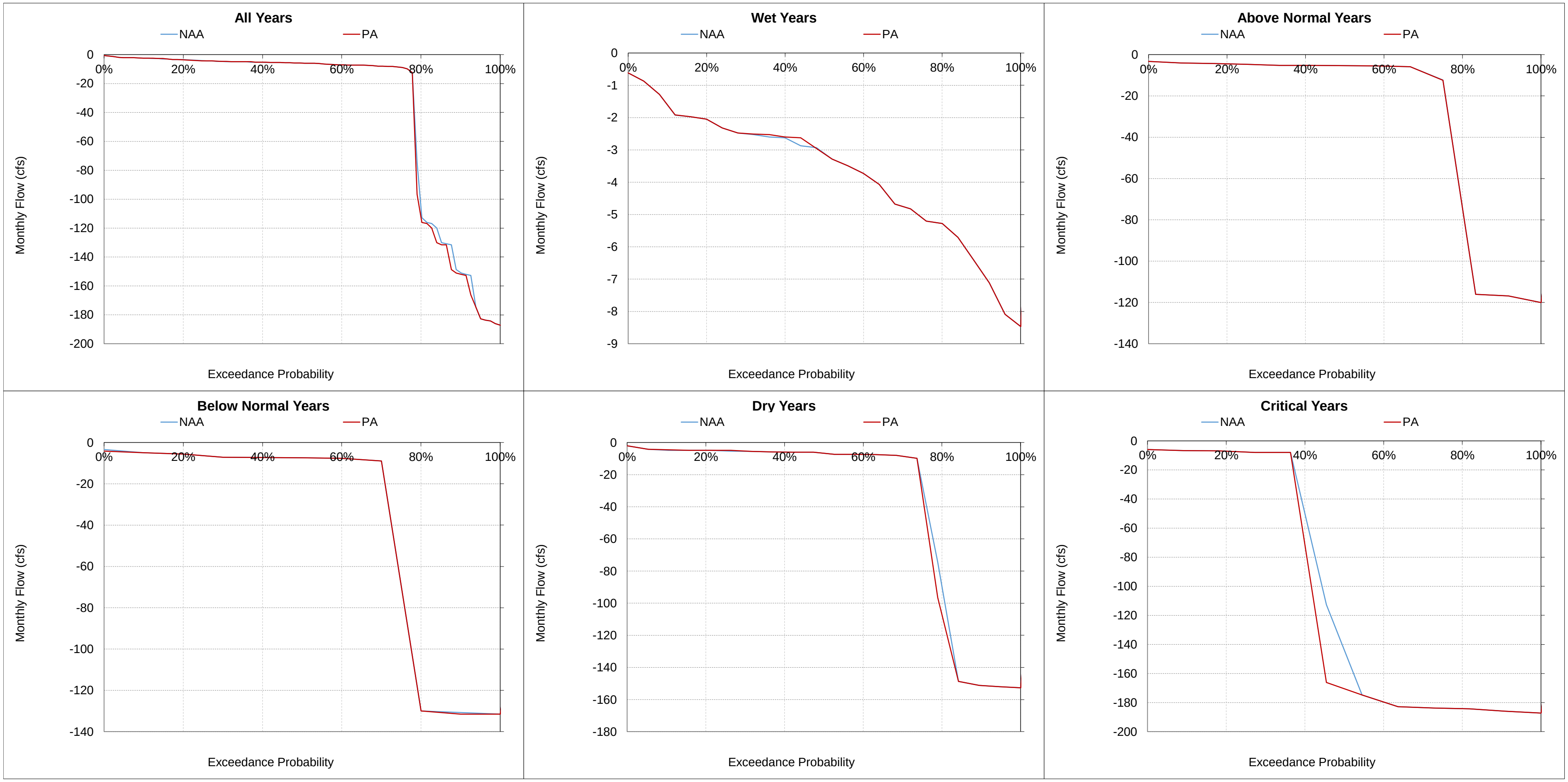
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-12. Rock Slough at Contra Costa Canal Intake, Monthly Flow
February



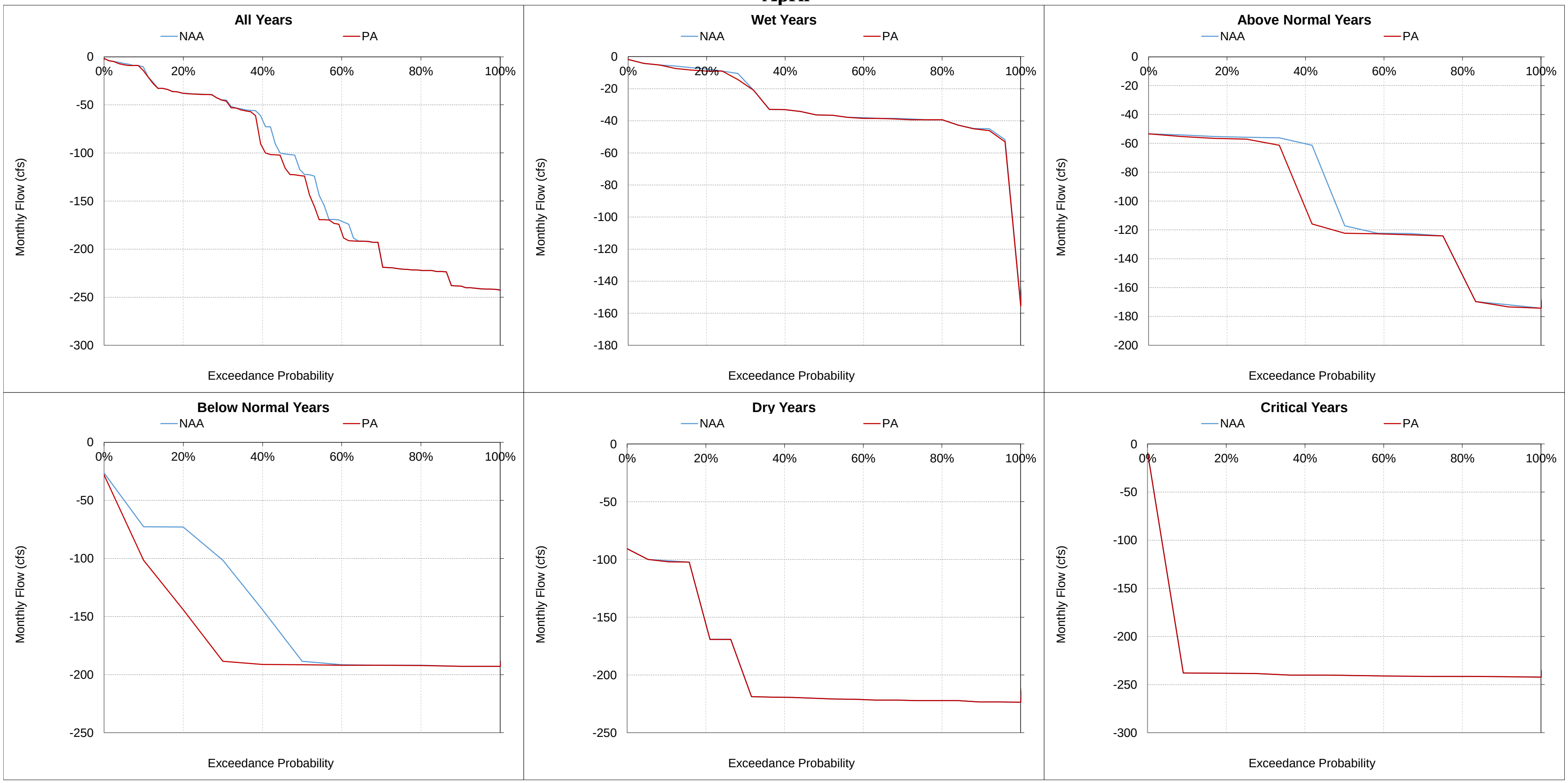
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-13. Rock Slough at Contra Costa Canal Intake, Monthly Flow March



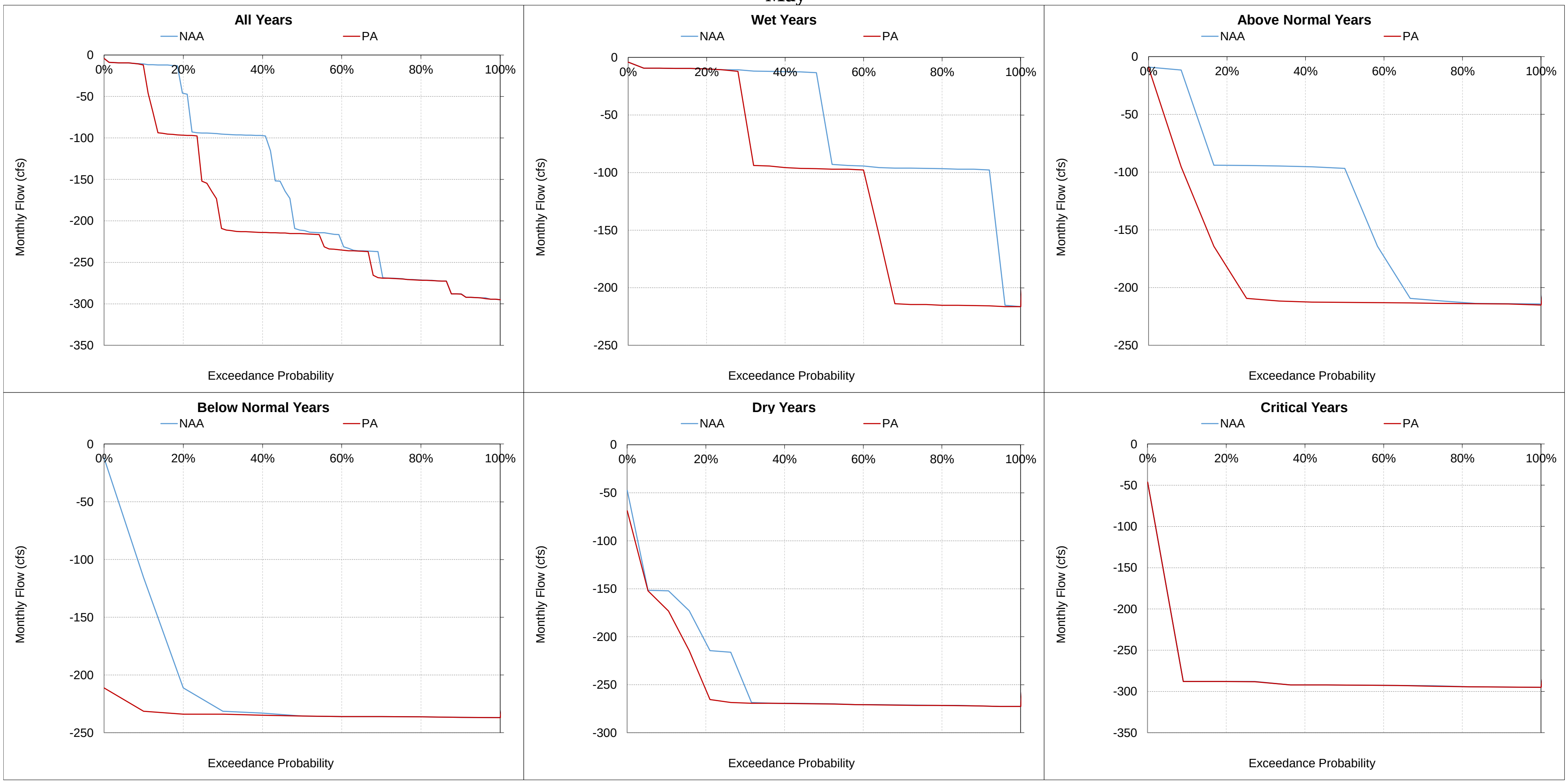
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-14. Rock Slough at Contra Costa Canal Intake, Monthly Flow April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-15. Rock Slough at Contra Costa Canal Intake, Monthly Flow May



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

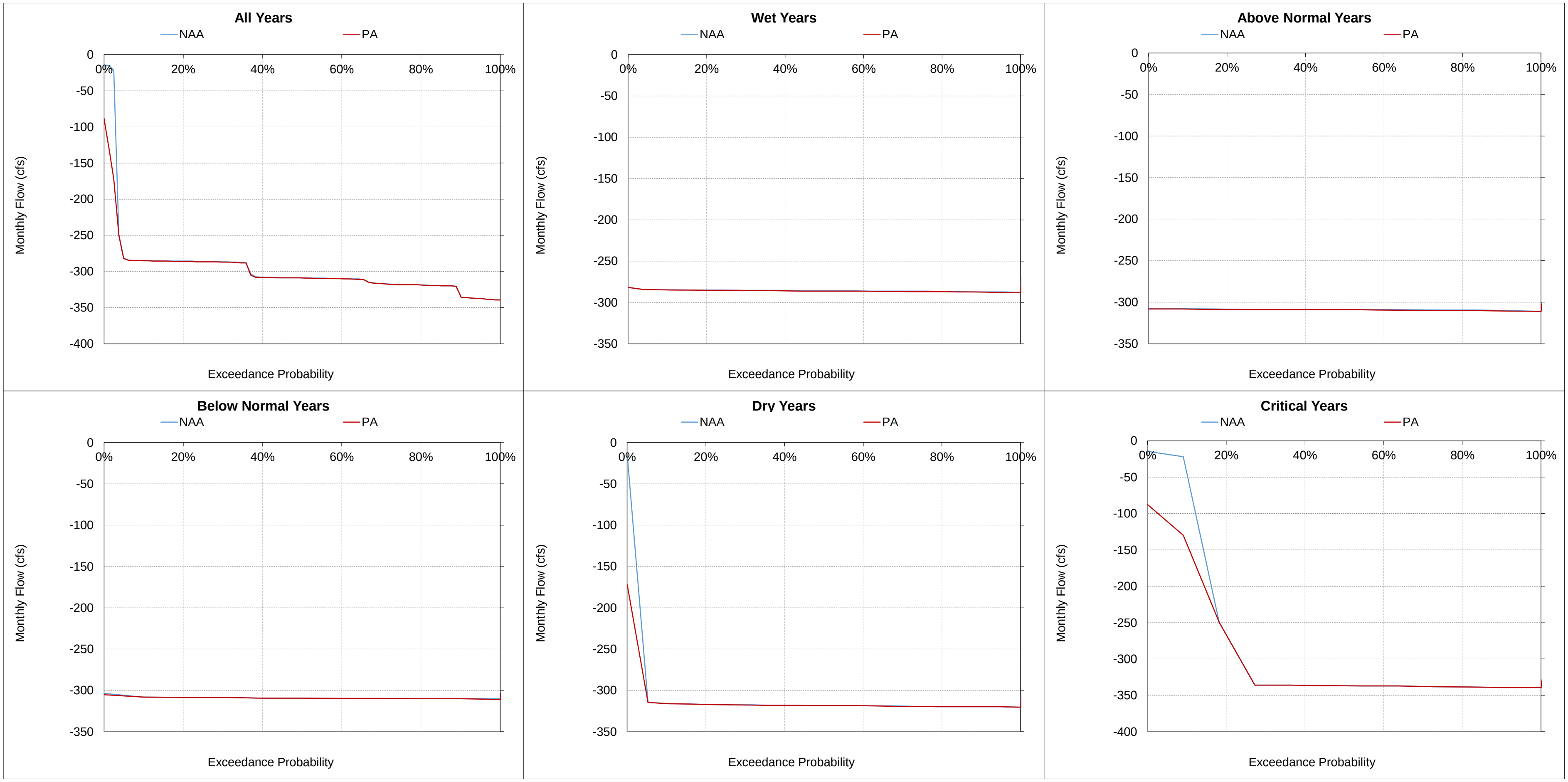
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

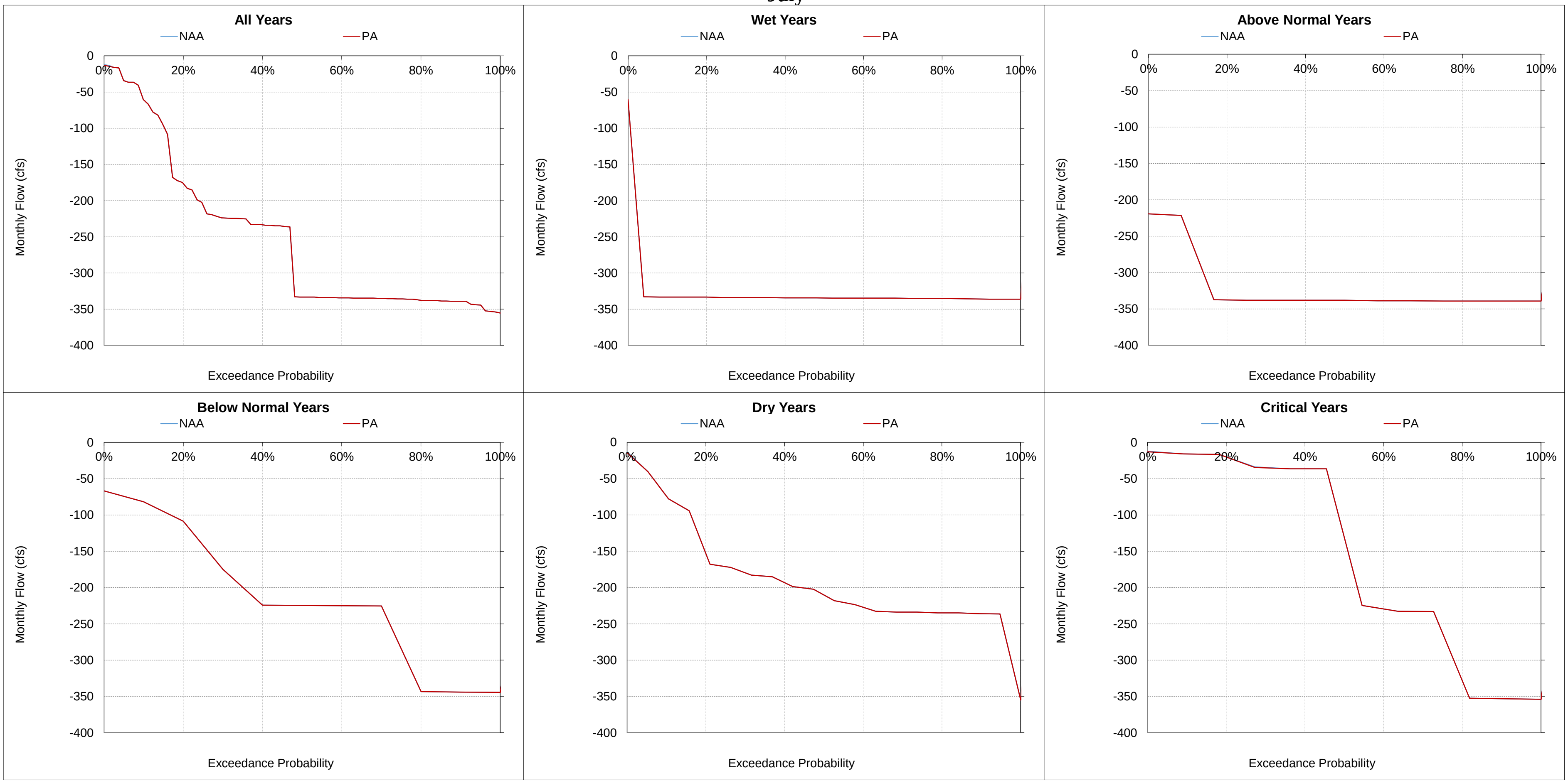
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-16. Rock Slough at Contra Costa Canal Intake, Monthly Flow
June



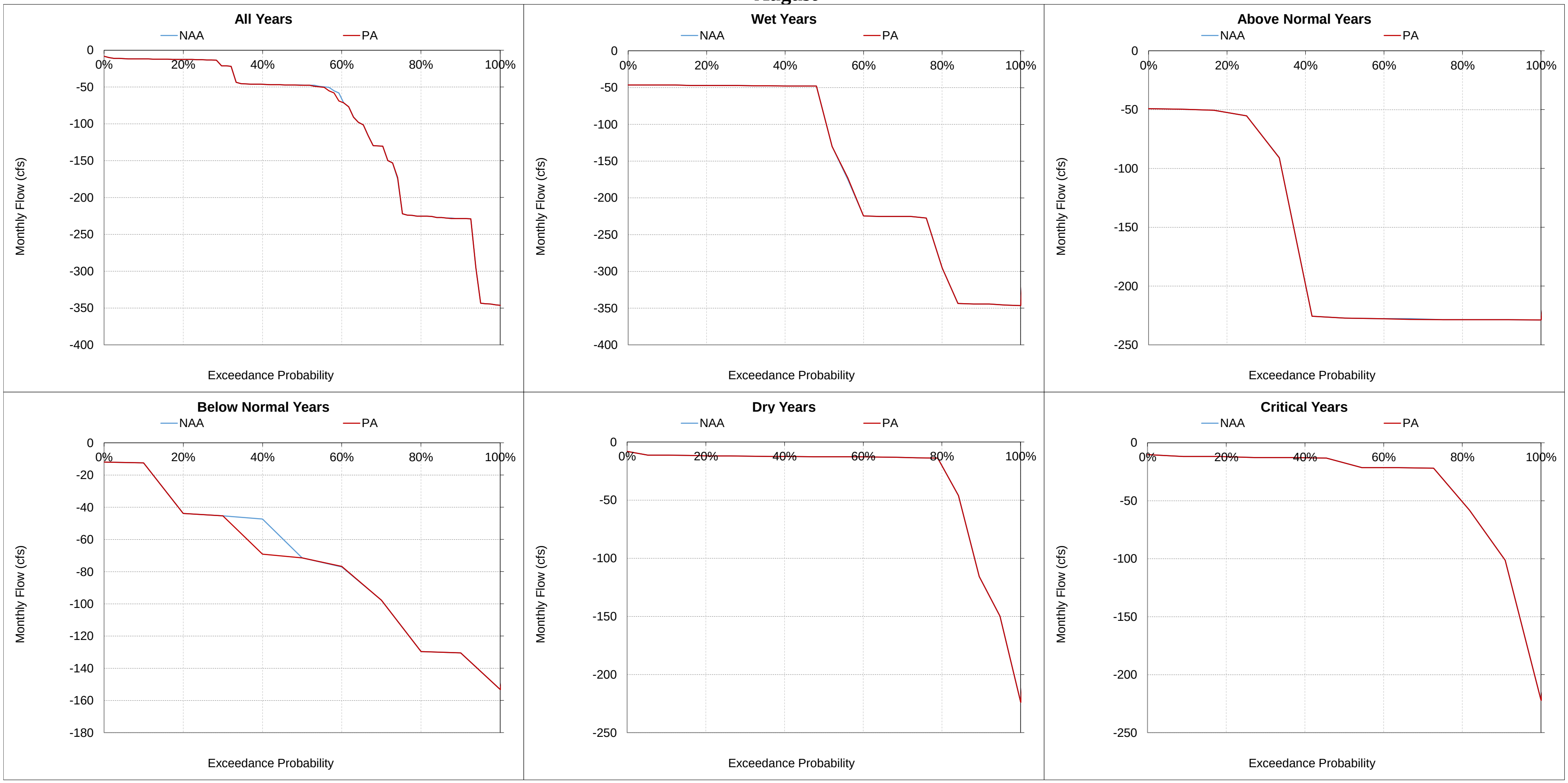
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-17. Rock Slough at Contra Costa Canal Intake, Monthly Flow July



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-18. Rock Slough at Contra Costa Canal Intake, Monthly Flow August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

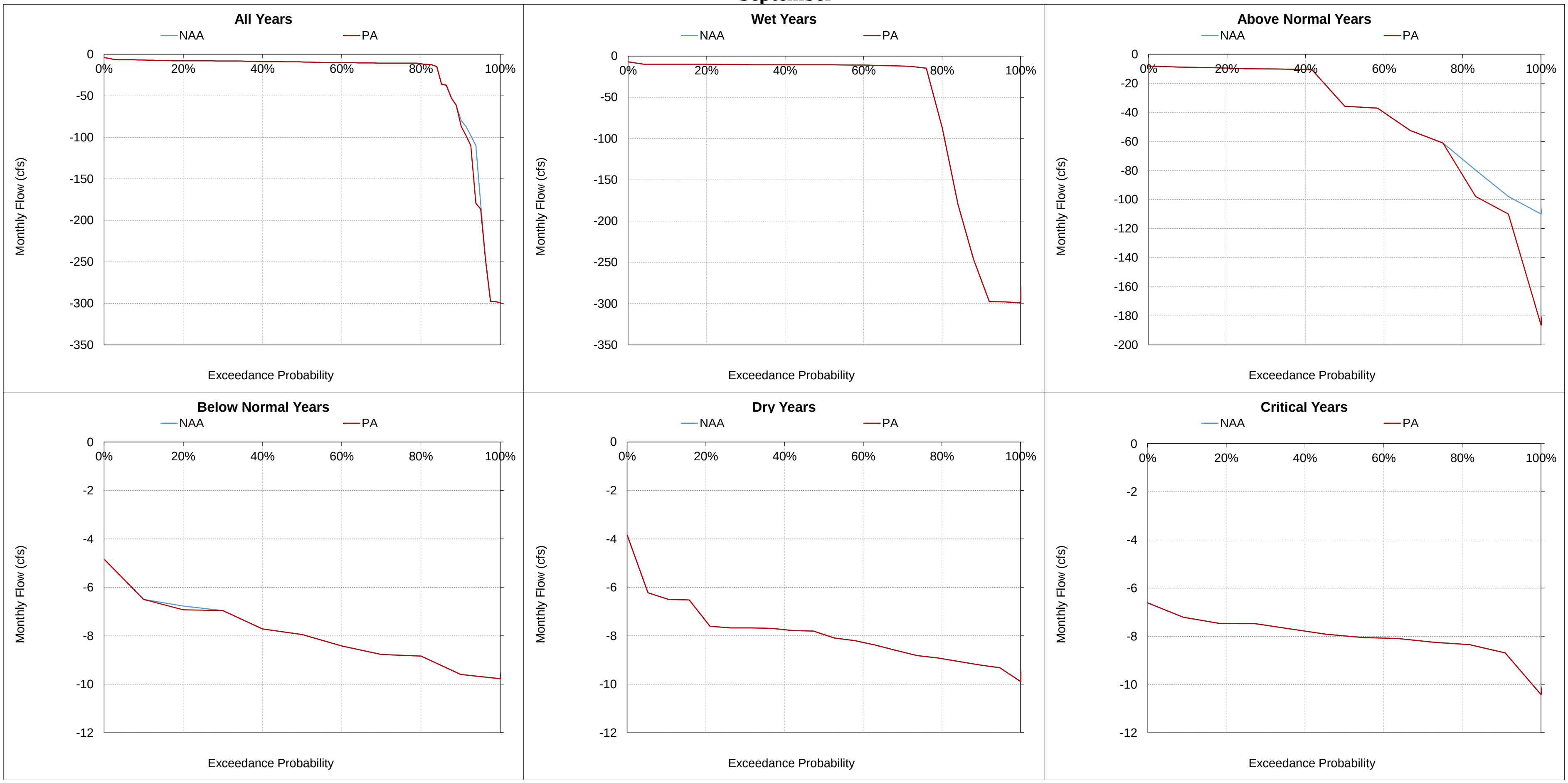
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

e Negative values indicate flow towards the Contra Costa Canal.

Figure 5.B.5-36-19. Rock Slough at Contra Costa Canal Intake, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.
e Negative values indicate flow towards the Contra Costa Canal.

Table 5.B.5-37. San Joaquin River at Prisoner's Point, Monthly EC

Statistic	Monthly EC (UMHOS/CM)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	724	599	-125	-17%	903	637	-266	-29%	837	754	-83	-10%	712	665	-47	-7%	455	512	57	13%	370	514	144	39%
20%	675	523	-152	-23%	769	481	-288	-37%	719	583	-136	-19%	631	565	-67	-11%	416	499	83	20%	342	481	139	41%
30%	626	497	-129	-21%	665	419	-245	-37%	641	516	-125	-19%	540	492	-48	-9%	395	469	74	19%	327	456	129	40%
40%	585	469	-116	-20%	559	388	-171	-31%	547	423	-124	-23%	464	456	-8	-2%	367	452	85	23%	309	424	114	37%
50%	550	417	-134	-24%	481	379	-102	-21%	395	331	-64	-16%	413	434	21	5%	343	427	84	24%	290	402	112	39%
60%	282	335	54	19%	289	368	79	27%	319	290	-29	-9%	371	415	44	12%	331	394	63	19%	283	360	77	27%
70%	267	326	58	22%	254	362	108	42%	281	279	-2	-1%	347	403	56	16%	311	378	67	22%	270	338	68	25%
80%	259	311	51	20%	242	352	109	45%	262	273	11	4%	324	379	55	17%	288	356	68	24%	260	306	46	18%
90%	246	295	49	20%	229	330	101	44%	237	255	18	8%	287	339	51	18%	265	319	53	20%	242	291	48	20%
Long Term Full Simulation Period[b]	469	427	-42	-9%	508	427	-81	-16%	504	445	-60	-12%	466	469	3	1%	359	422	63	17%	303	396	93	31%
Water Year Types[c]																								
Wet (32%)	263	319	56	21%	242	352	110	45%	251	267	16	6%	373	405	32	9%	309	383	74	24%	273	341	68	25%
Above Normal (16%)	257	296	38	15%	303	351	48	16%	356	305	-50	-14%	476	444	-32	-7%	345	429	84	24%	294	443	149	51%
Below Normal (13%)	652	452	-200	-31%	610	382	-227	-37%	582	453	-129	-22%	510	515	6	1%	364	442	78	22%	313	419	107	34%
Dry (24%)	613	502	-111	-18%	703	428	-275	-39%	623	500	-124	-20%	486	464	-21	-4%	380	432	52	14%	311	398	87	28%
Critical (15%)	736	654	-82	-11%	889	711	-178	-20%	944	882	-62	-7%	583	596	13	2%	443	461	18	4%	357	439	82	23%

Statistic	Monthly EC (UMHOS/CM)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	374	461	87	23%	333	374	41	12%	296	366	71	24%	435	332	-103	-24%	532	458	-74	-14%	644	656	12	2%
20%	344	430	86	25%	324	357	33	10%	275	330	55	20%	359	309	-50	-14%	460	399	-62	-13%	594	568	-26	-4%
30%	334	415	80	24%	313	350	37	12%	262	304	42	16%	321	297	-23	-7%	433	361	-72	-17%	558	524	-34	-6%
40%	318	388	70	22%	307	341	34	11%	258	289	31	12%	292	281	-12	-4%	406	305	-101	-25%	527	438	-88	-17%
50%	306	368	62	20%	299	333	33	11%	253	278	26	10%	282	265	-17	-6%	364	275	-89	-24%	489	389	-100	-21%
60%	296	350	54	18%	293	326	33	11%	248	274	26	11%	265	254	-11	-4%	338	258	-80	-24%	458	278	-180	-39%
70%	285	332	47	17%	286	320	33	12%	243	272	29	12%	247	248	1	0%	320	249	-71	-22%	423	272	-151	-36%
80%	268	302	35	13%	268	299	31	11%	236	263	27	11%	235	240	5	2%	295	245	-50	-17%	389	266	-124	-32%
90%	236	242	7	3%	203	204	0	0%	226	252	26	12%	229	228	-1	0%	282	239	-43	-15%	355	256	-99	-28%
Long Term Full Simulation Period[b]	309	364	55	18%	291	319	29	10%	262	297	35	14%	310	285	-25	-8%	388	325	-63	-16%	493	411	-81	-17%
Water Year Types[c]																								
Wet (32%)	271	291	21	8%	253	265	12	5%	251	295	44	18%	248	269	21	9%	309	254	-55	-18%	420	261	-158	-38%
Above Normal (16%)	319	391	72	23%	306	334	28	9%	249	297	48	19%	252	251	0	0%	312	245	-67	-21%	368	272	-96	-26%
Below Normal (13%)	340	399	59	17%	322	347	25	8%	253	277	24	10%	307	247	-60	-20%	381	276	-105	-28%	565	412	-153	-27%
Dry (24%)	321	392	71	22%	296	339	43	14%	247	276	29	12%	365	282	-83	-23%	461	374	-88	-19%	558	541	-17	-3%
Critical (15%)	330	411	80	24%	316	363	47	15%	331	354	24	7%	419	399	-20	-5%	525	529	3	1%	612	671	58	10%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

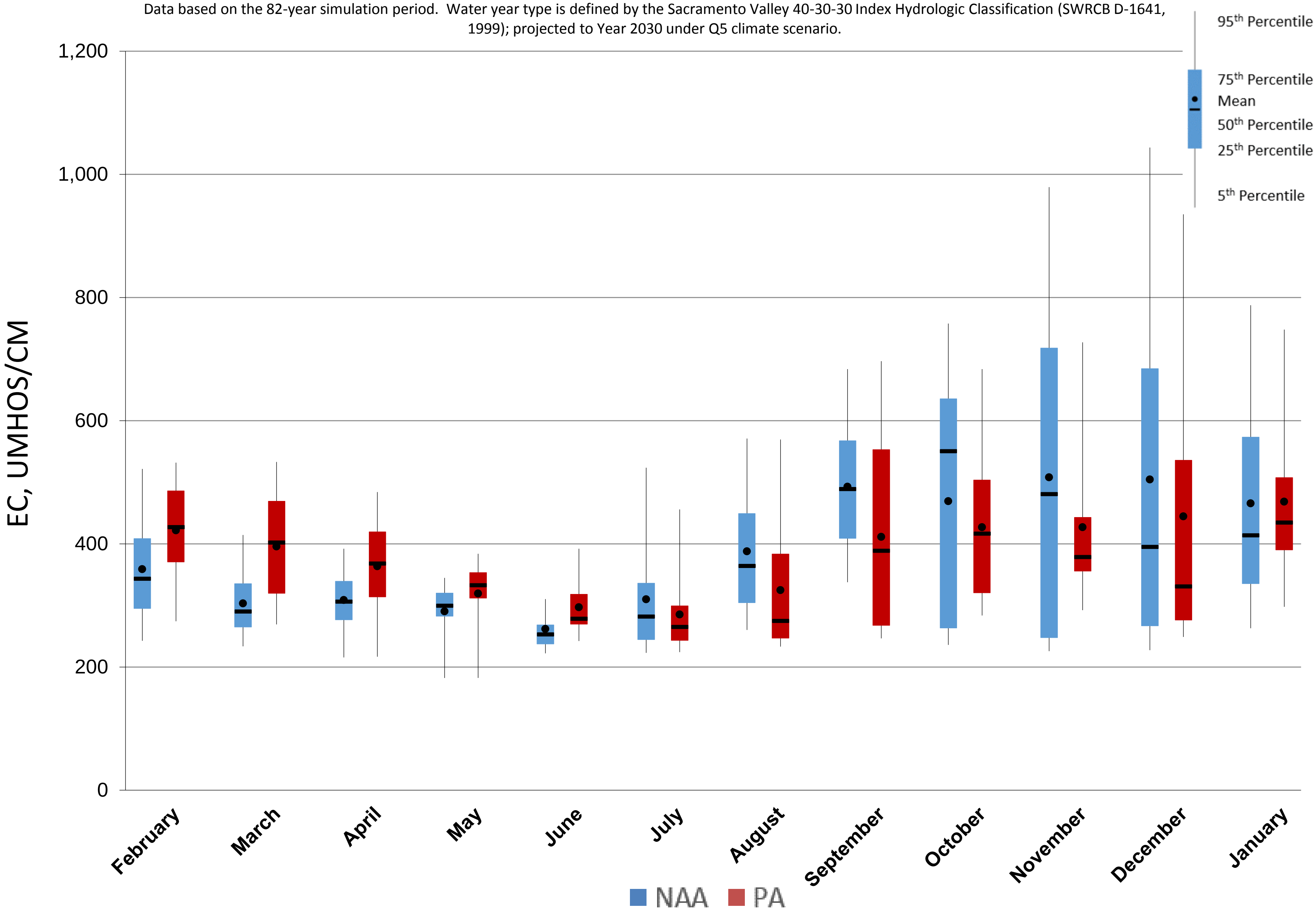
b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-1. Monthly EC Ranges For San Joaquin River at Prisoner's Point, All Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.



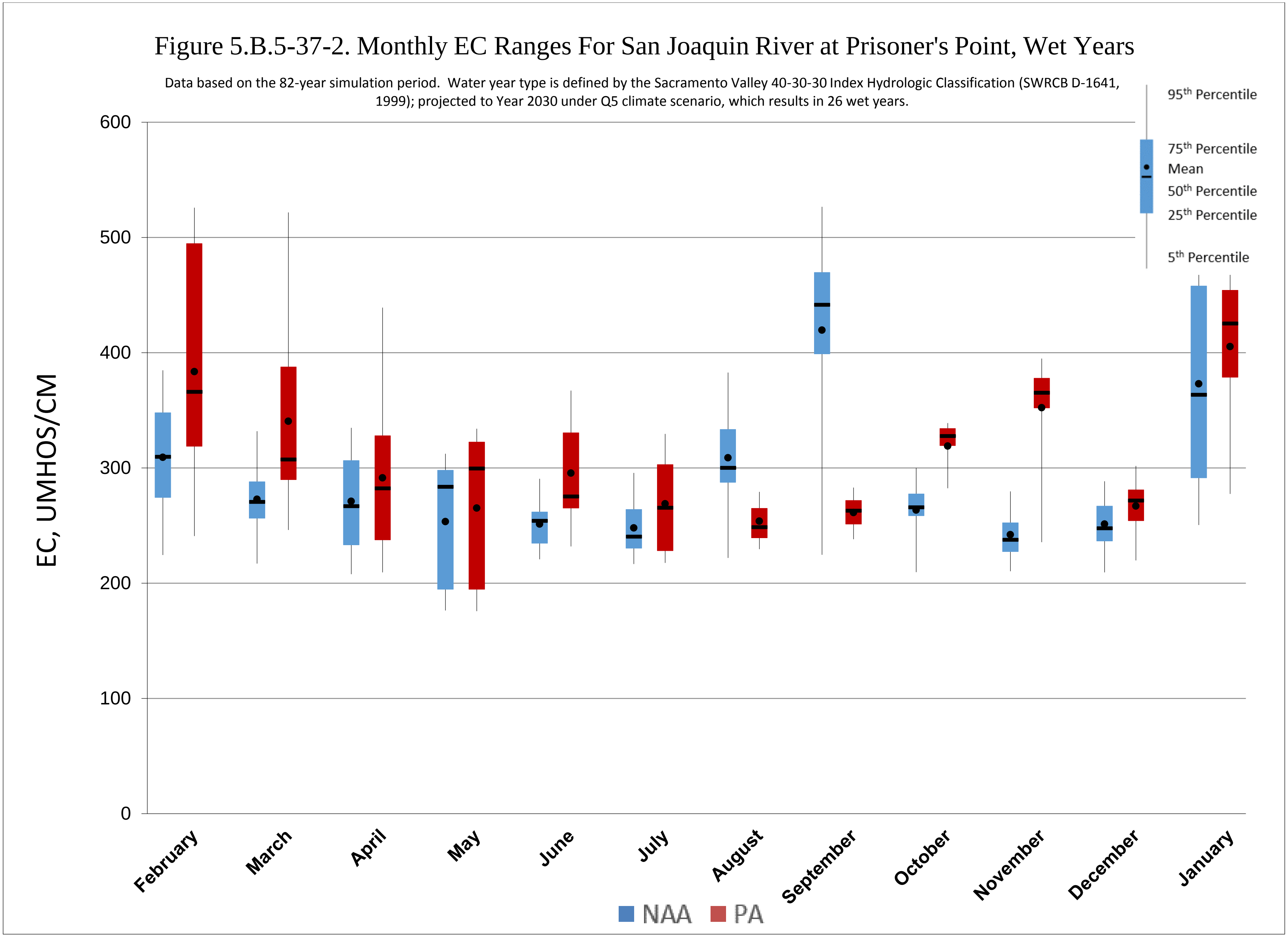


Figure 5.B.5-37-2. Monthly EC Ranges For San Joaquin River at Prisoner's Point, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
EC, UMHOS/CM
600
500
400
300
200
100
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-37-3. Monthly EC Ranges For San Joaquin River at Prisoner's Point, Above Normal Years

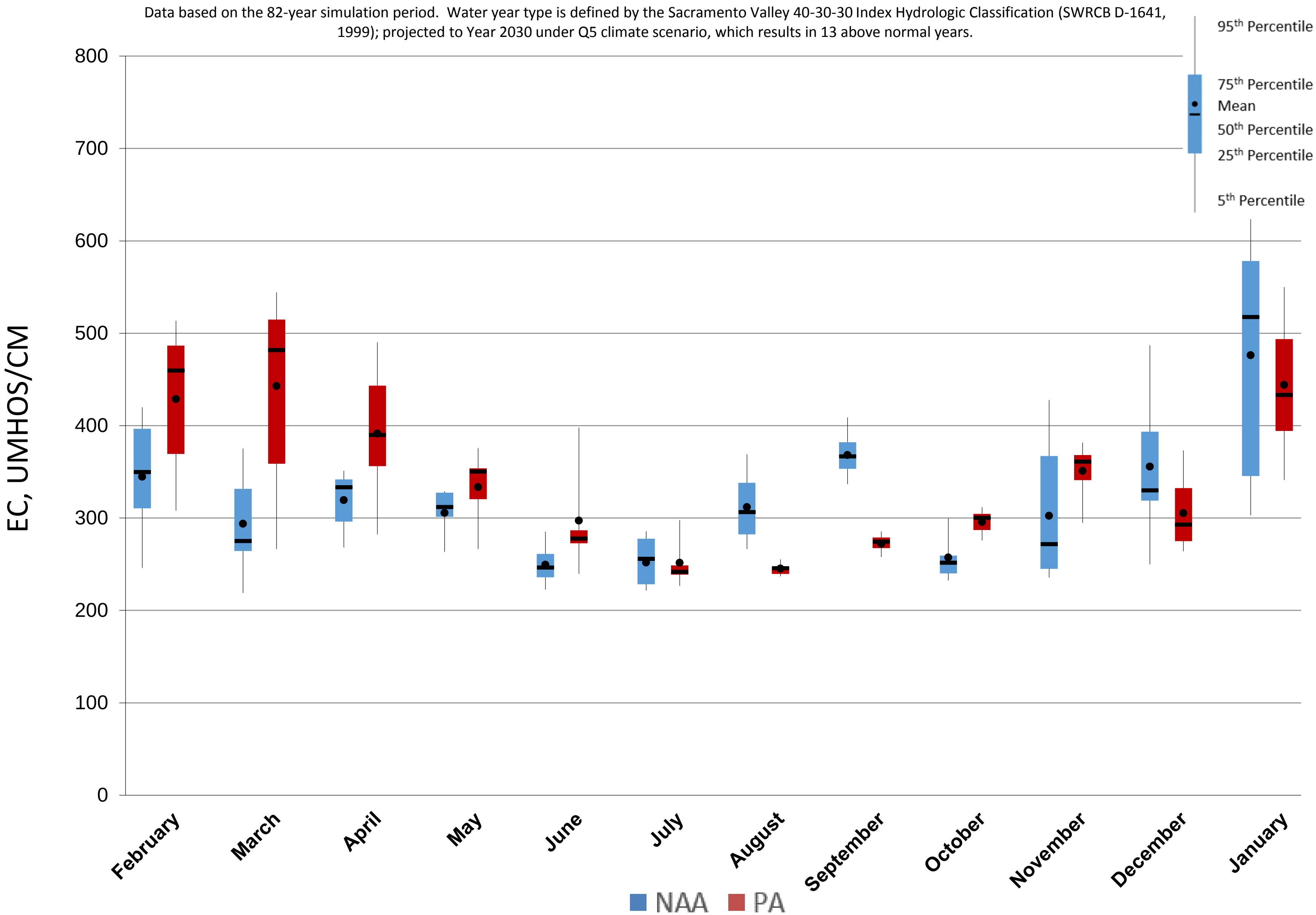


Figure 5.B.5-37-4. Monthly EC Ranges For San Joaquin River at Prisoner's Point, Below Normal Years

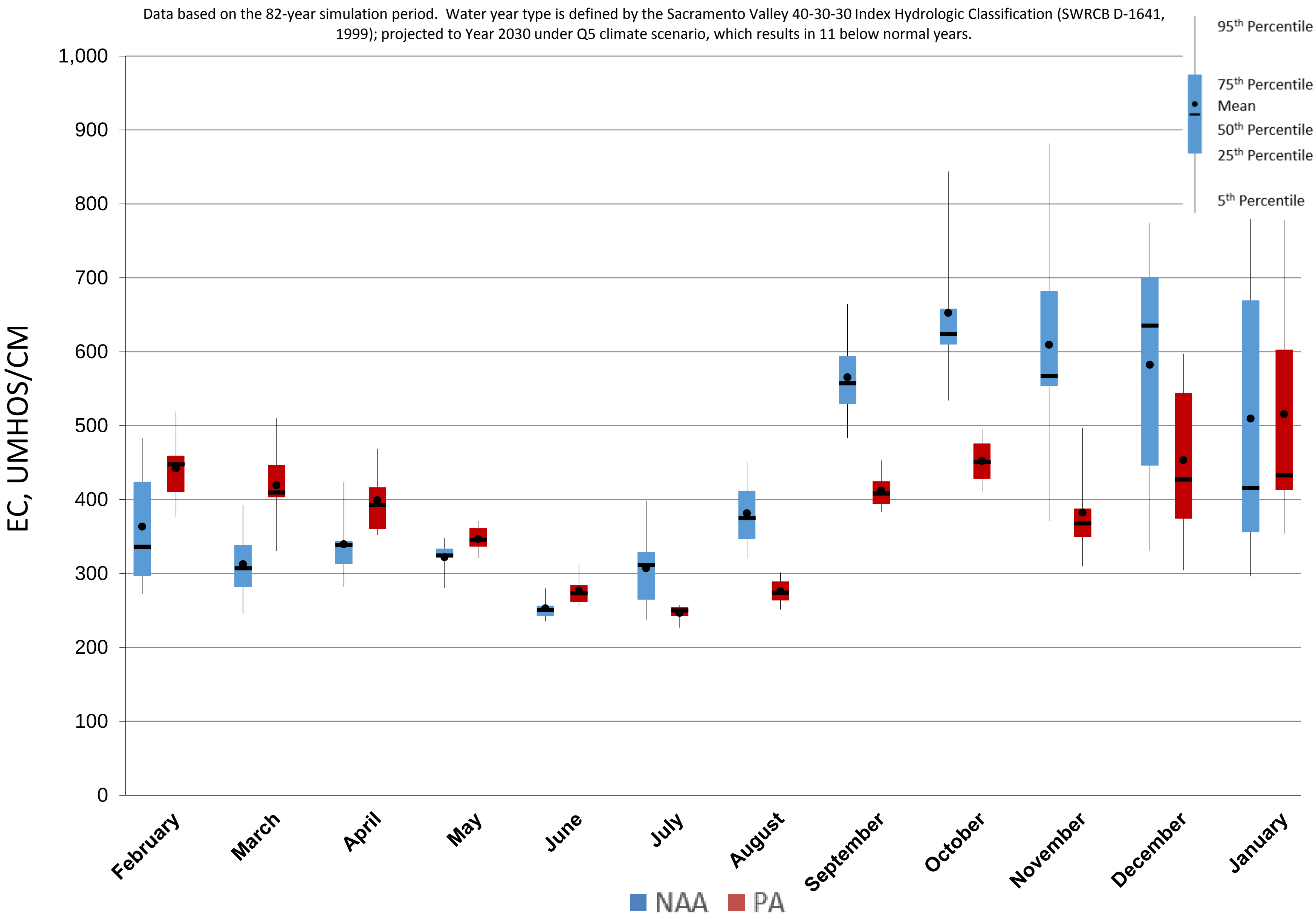
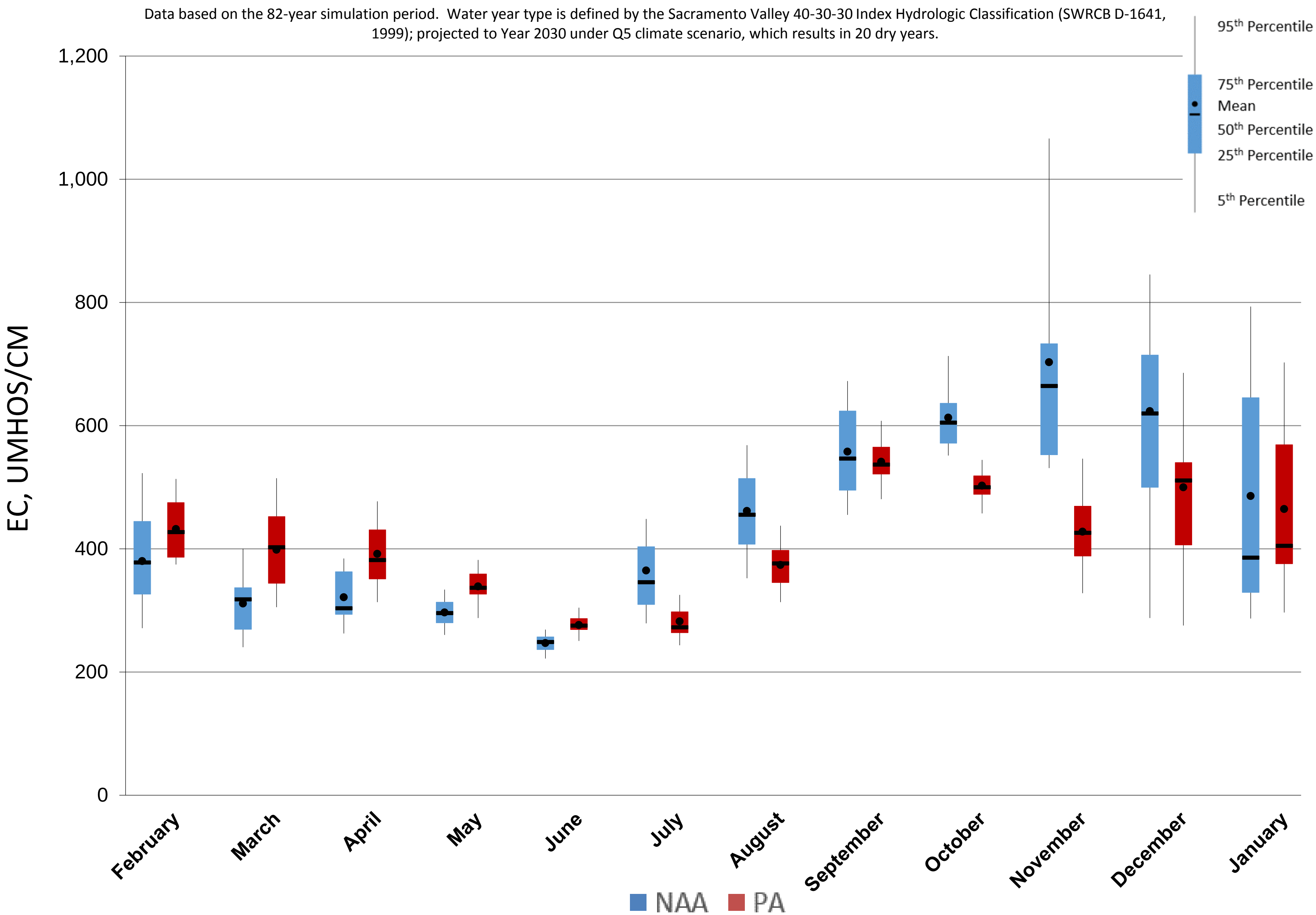


Figure 5.B.5-37-5. Monthly EC Ranges For San Joaquin River at Prisoner's Point, Dry Years



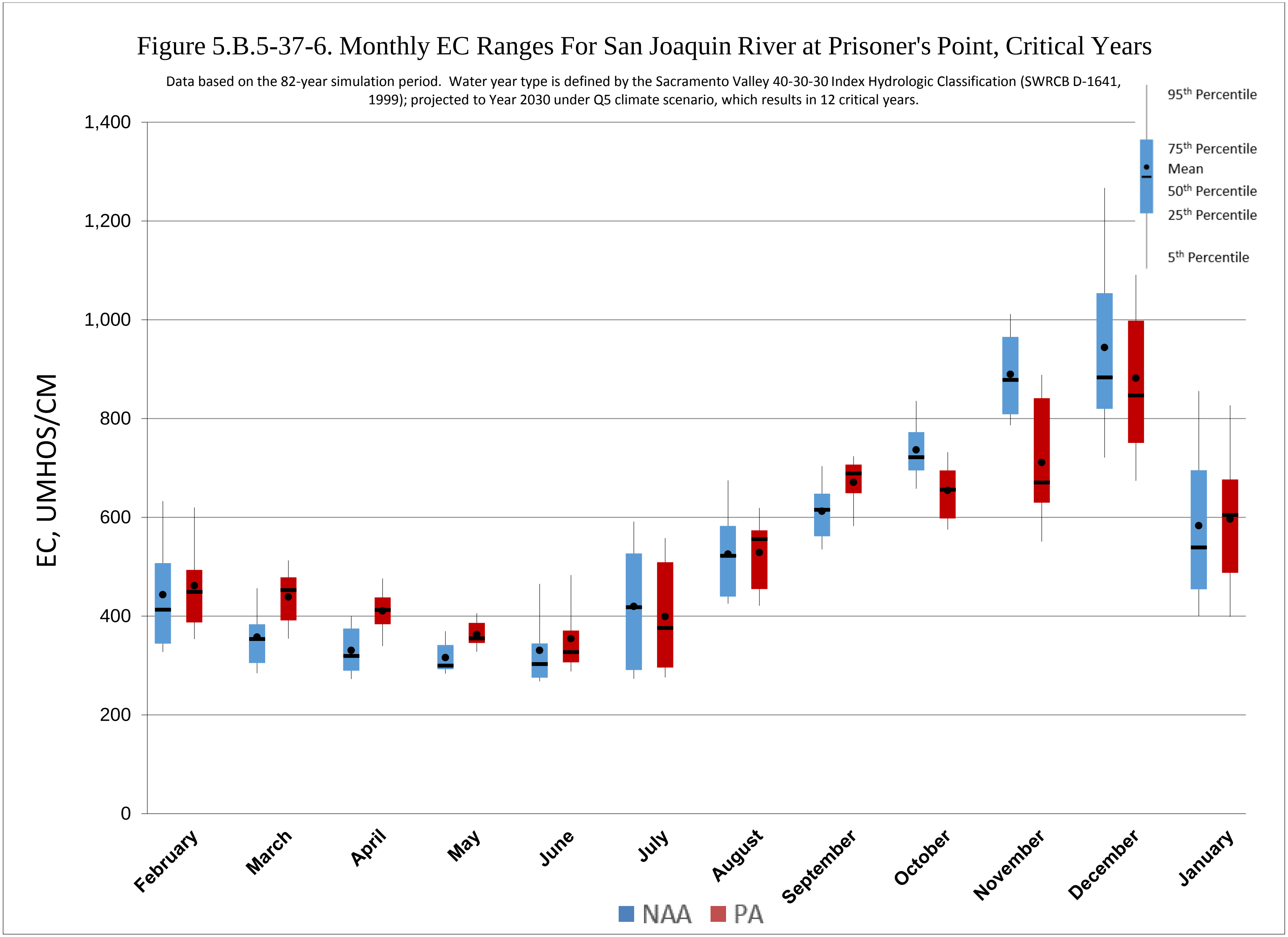
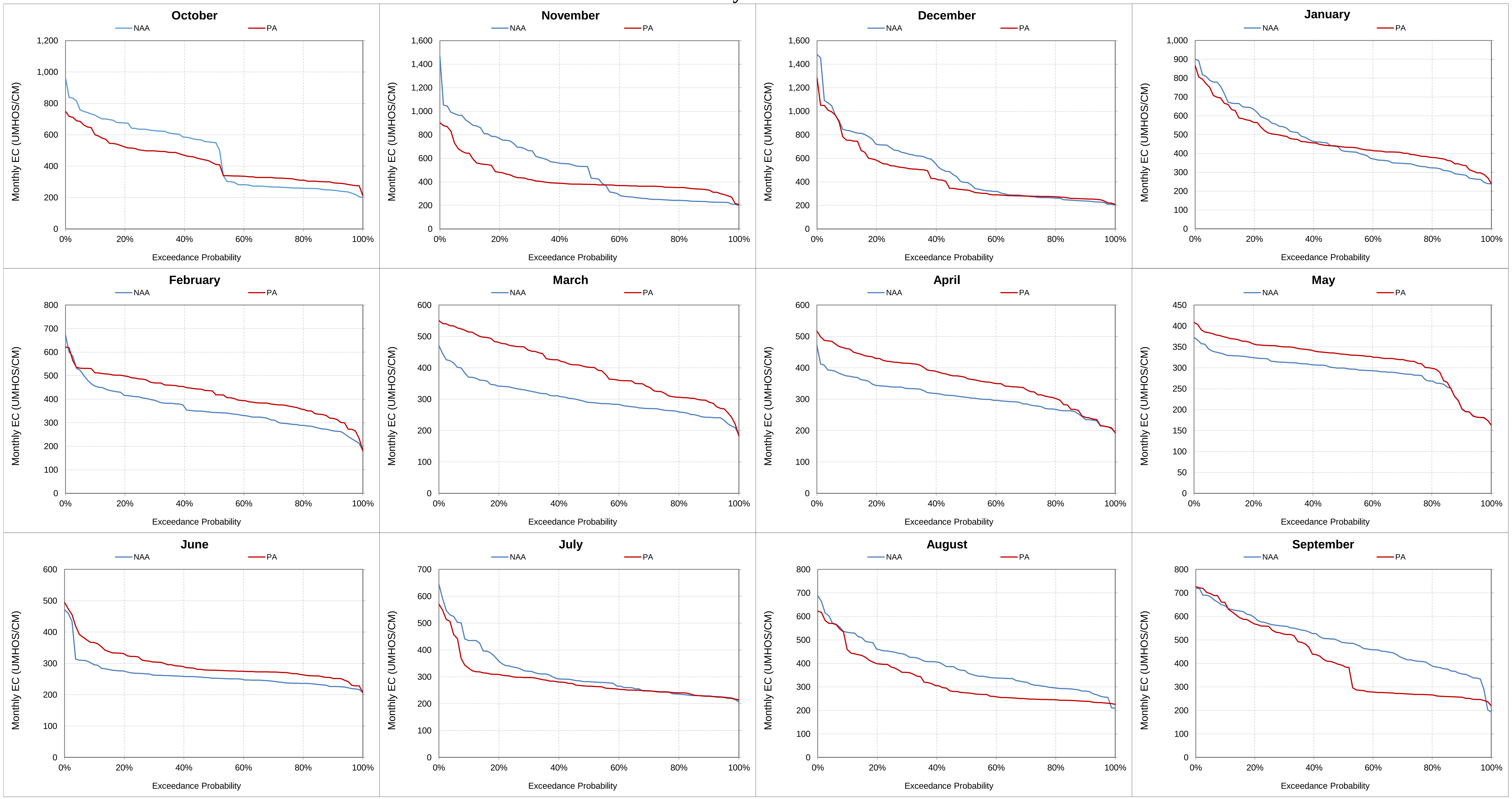


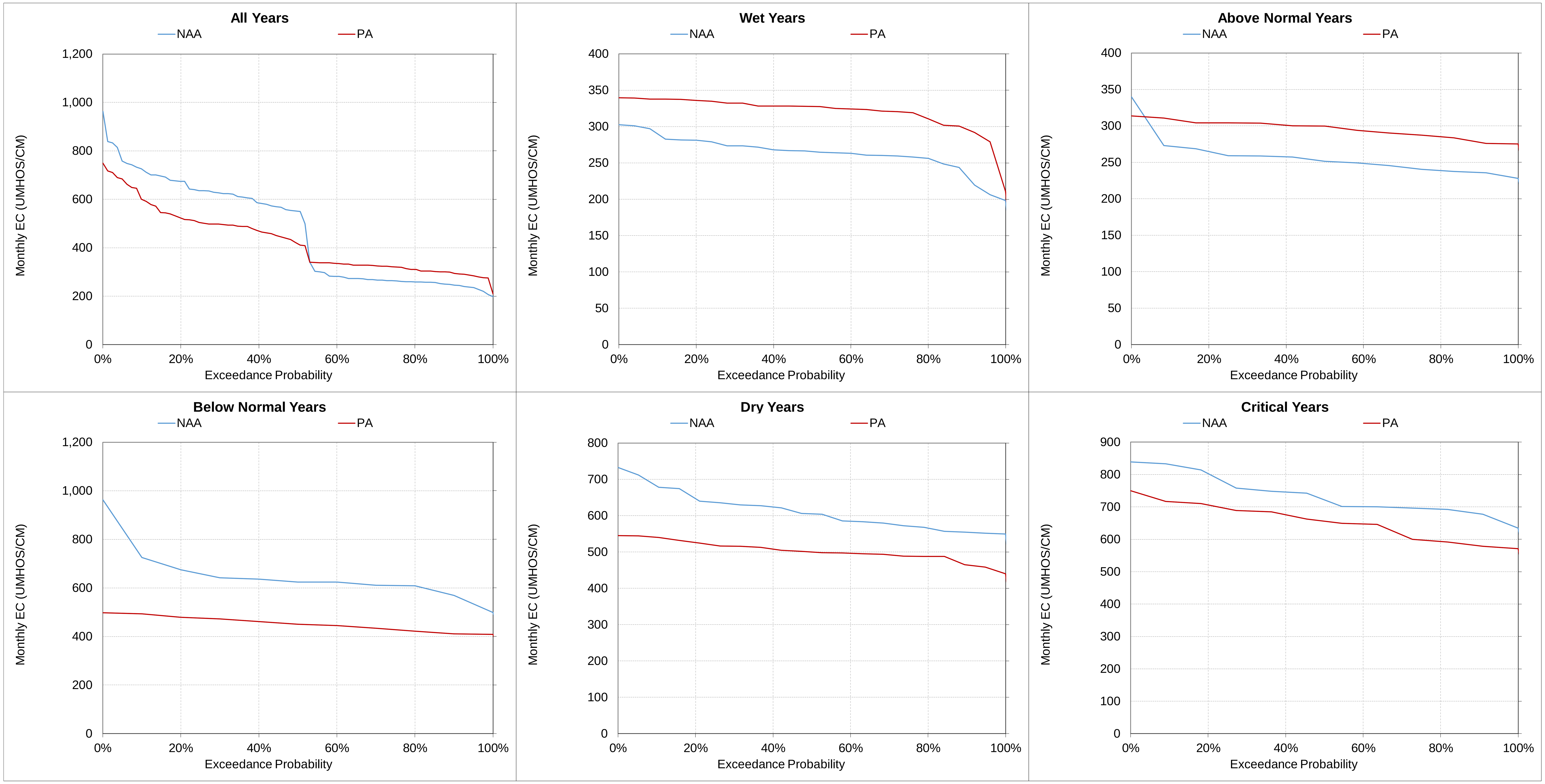
Figure 5.B.5-37-6. Monthly EC Ranges For San Joaquin River at Prisoner's Point, Critical Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.
EC, UMHOS/CM
1,400
1,200
1,000
800
600
400
200
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile

Figure 5.B.5-37-7. San Joaquin River at Prisoner's Point, Monthly EC Probability of Exceedance



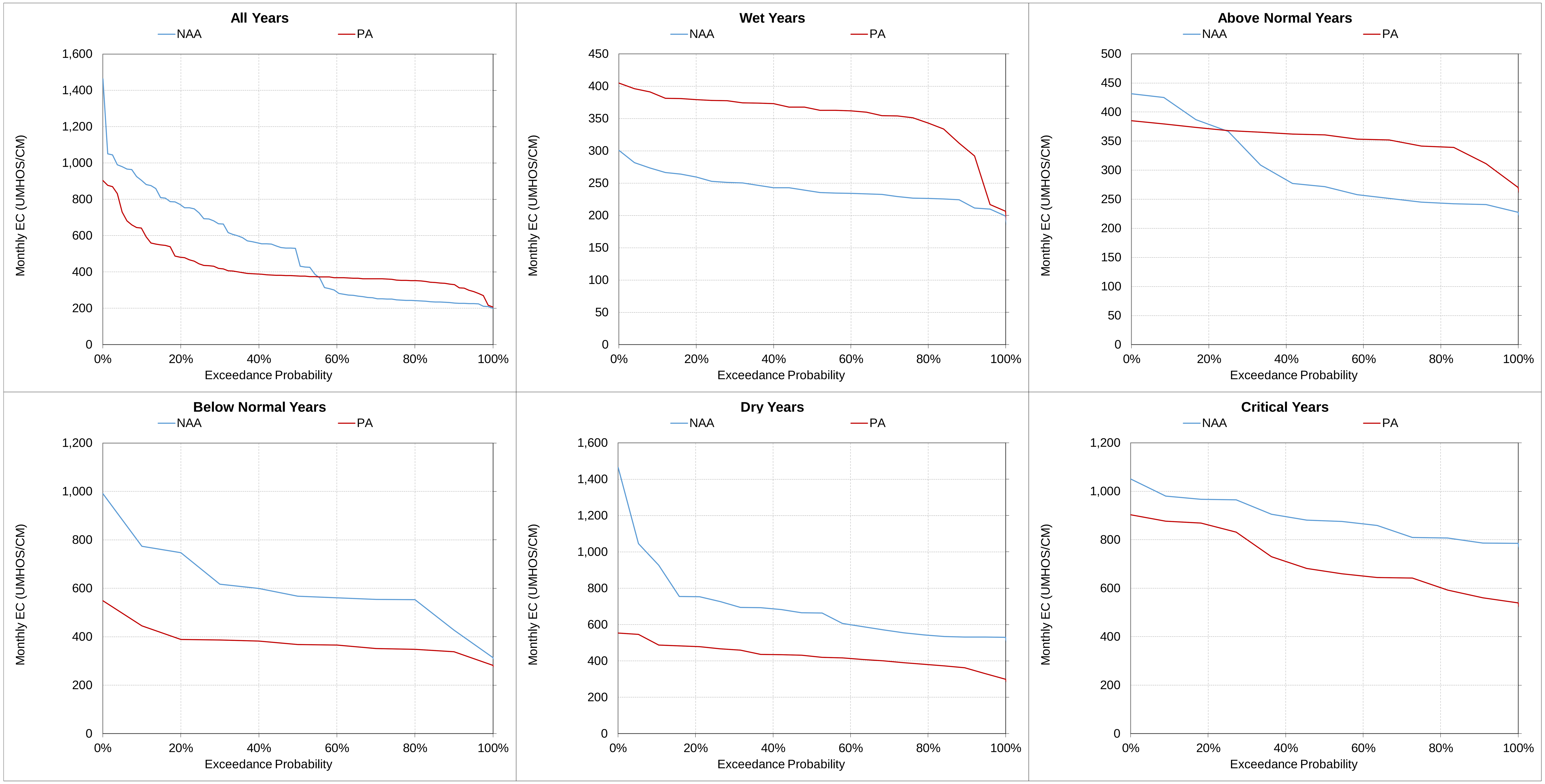
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-8. San Joaquin River at Prisoner's Point, Monthly EC October



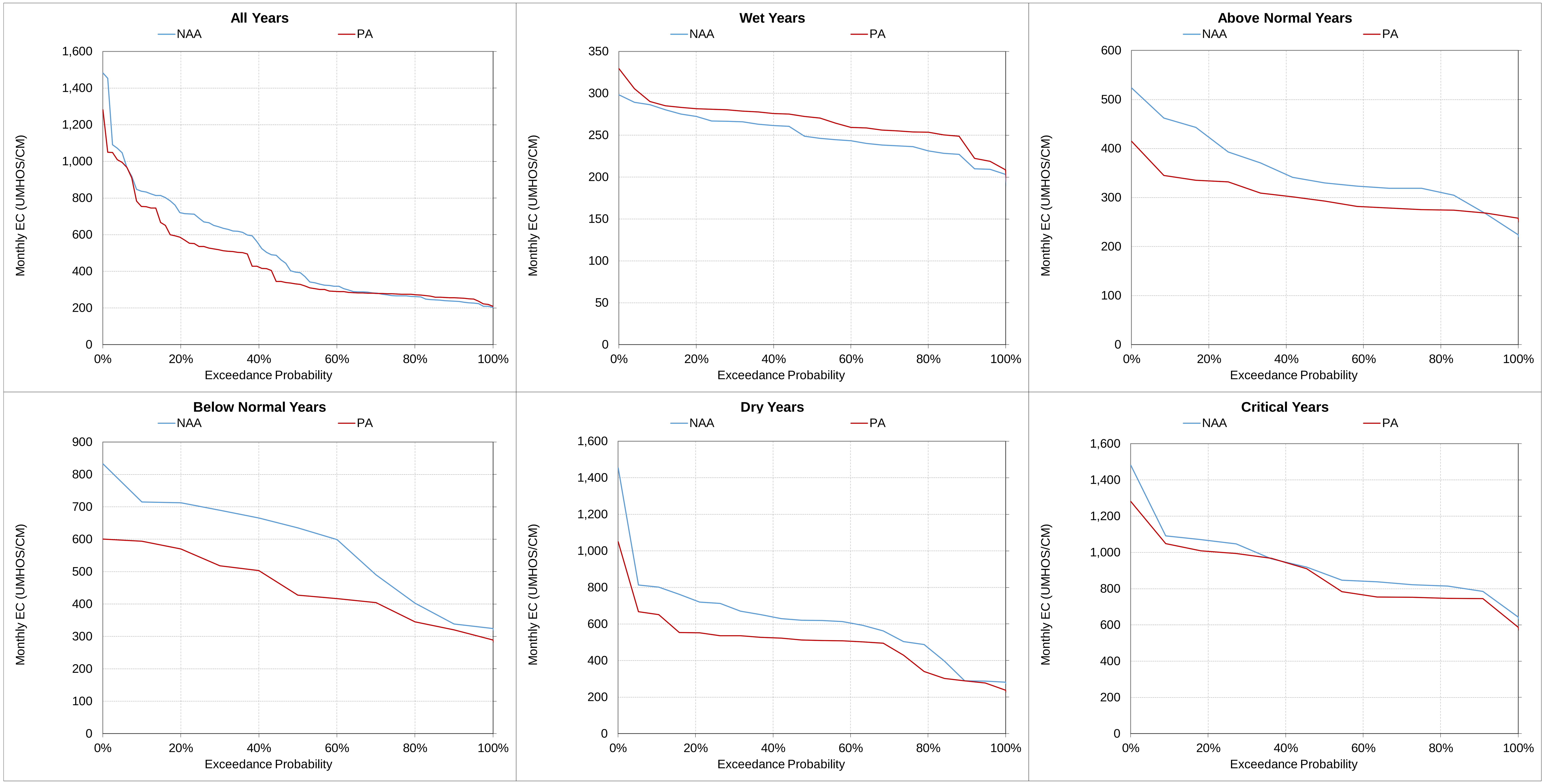
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-9. San Joaquin River at Prisoner's Point, Monthly EC November



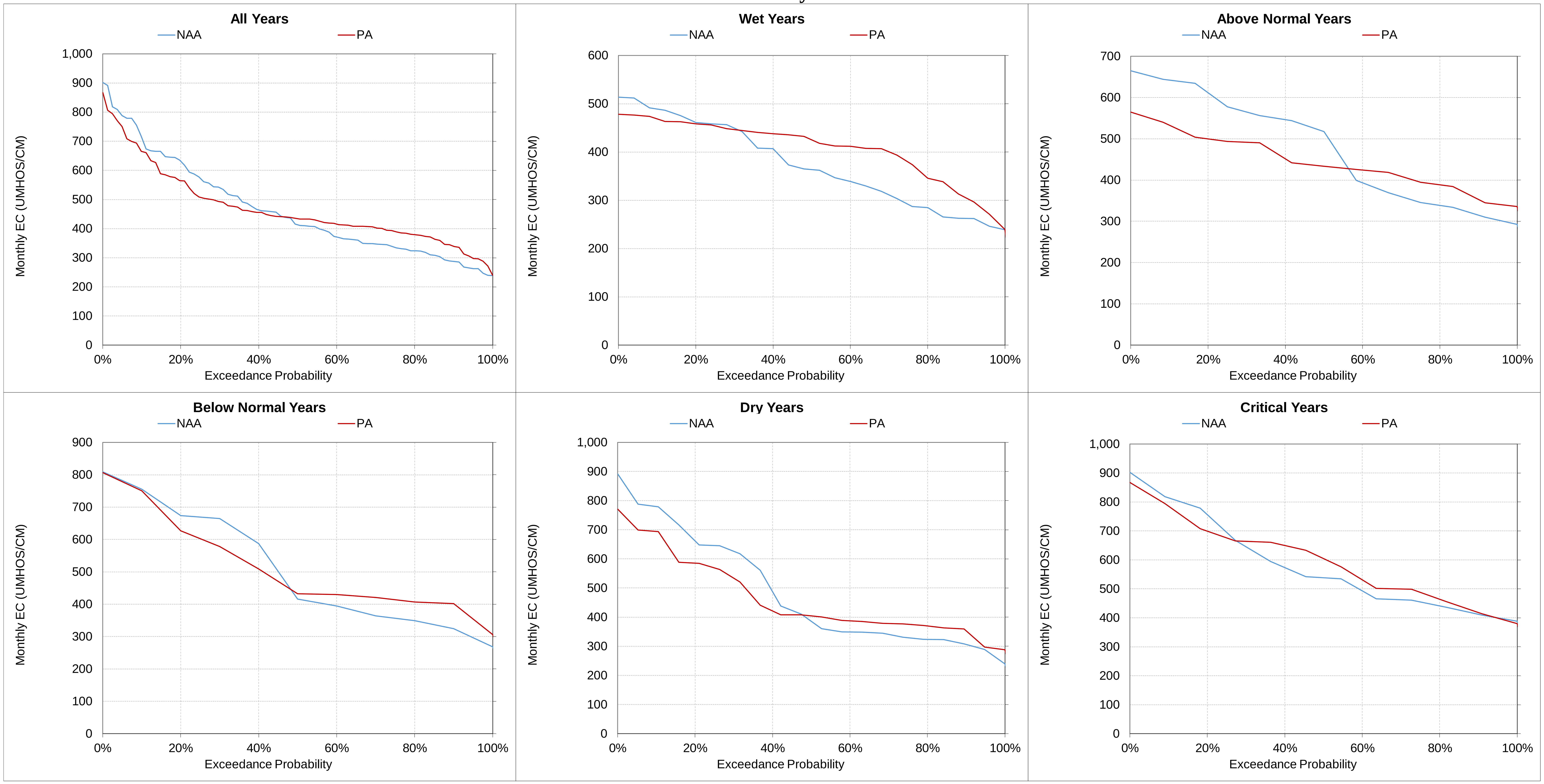
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-10. San Joaquin River at Prisoner's Point, Monthly EC
December



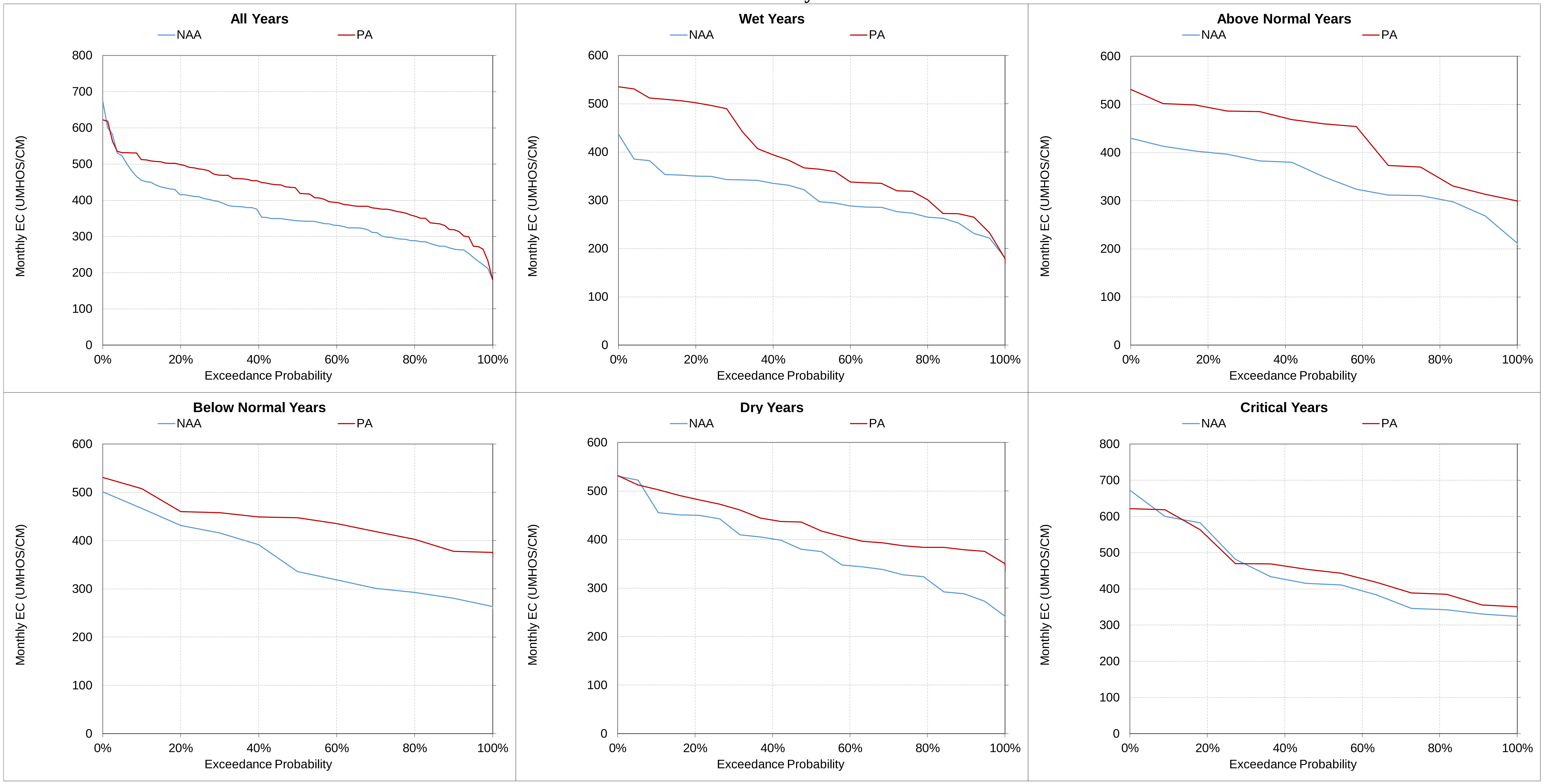
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-11. San Joaquin River at Prisoner's Point, Monthly EC January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-12. San Joaquin River at Prisoner's Point, Monthly EC February



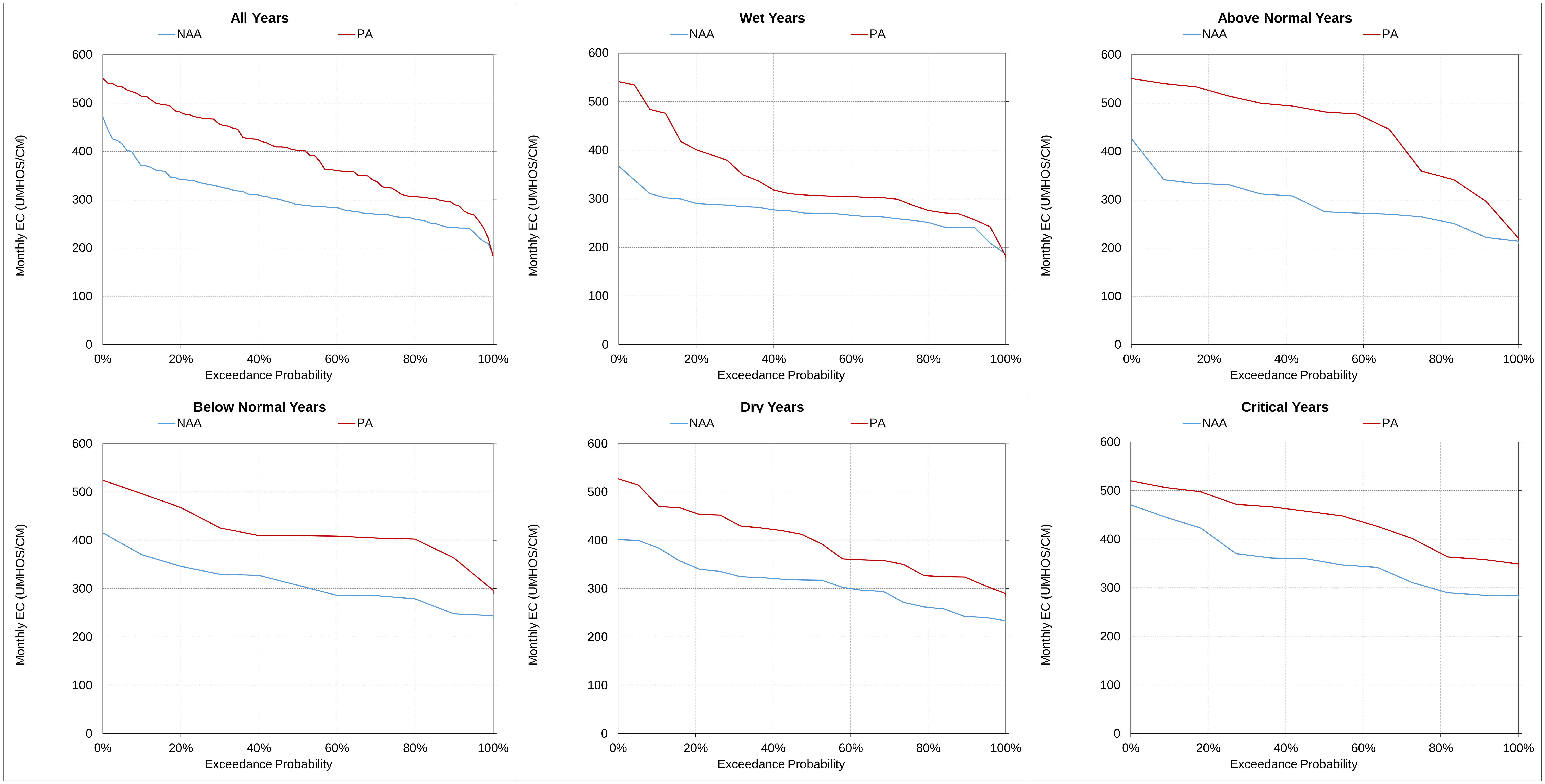
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

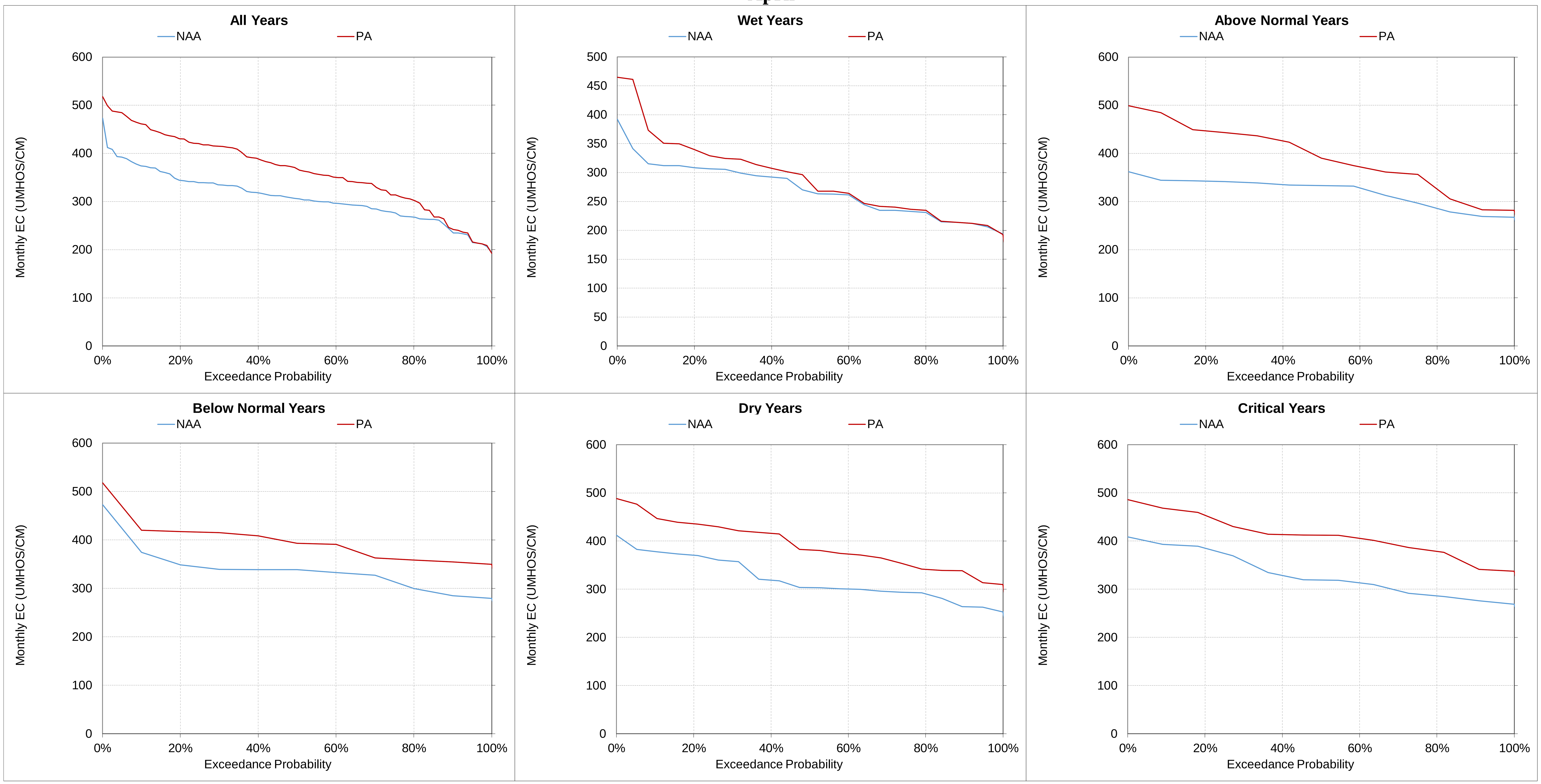
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-13. San Joaquin River at Prisoner's Point, Monthly EC
March



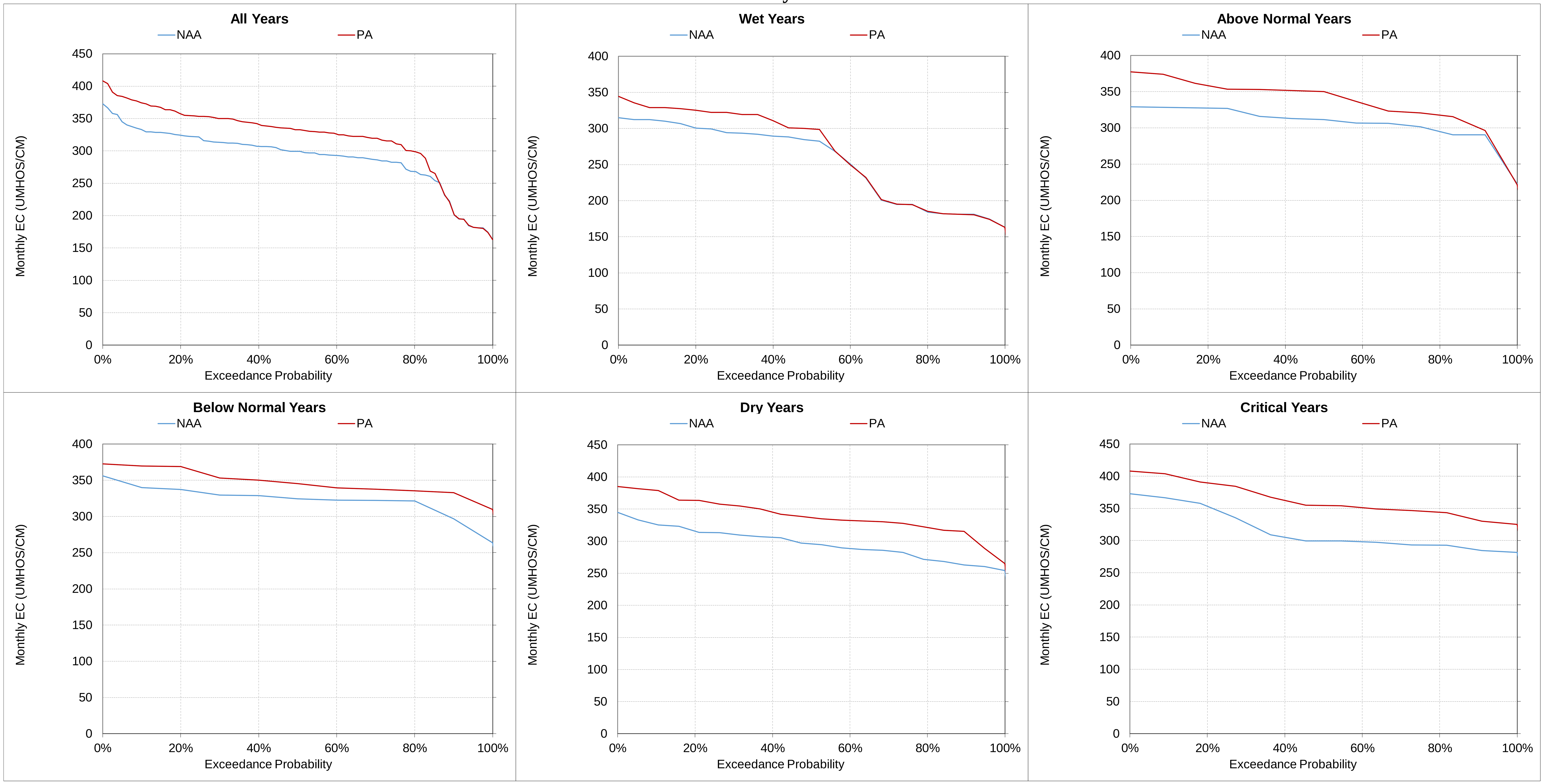
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-14. San Joaquin River at Prisoner's Point, Monthly EC April



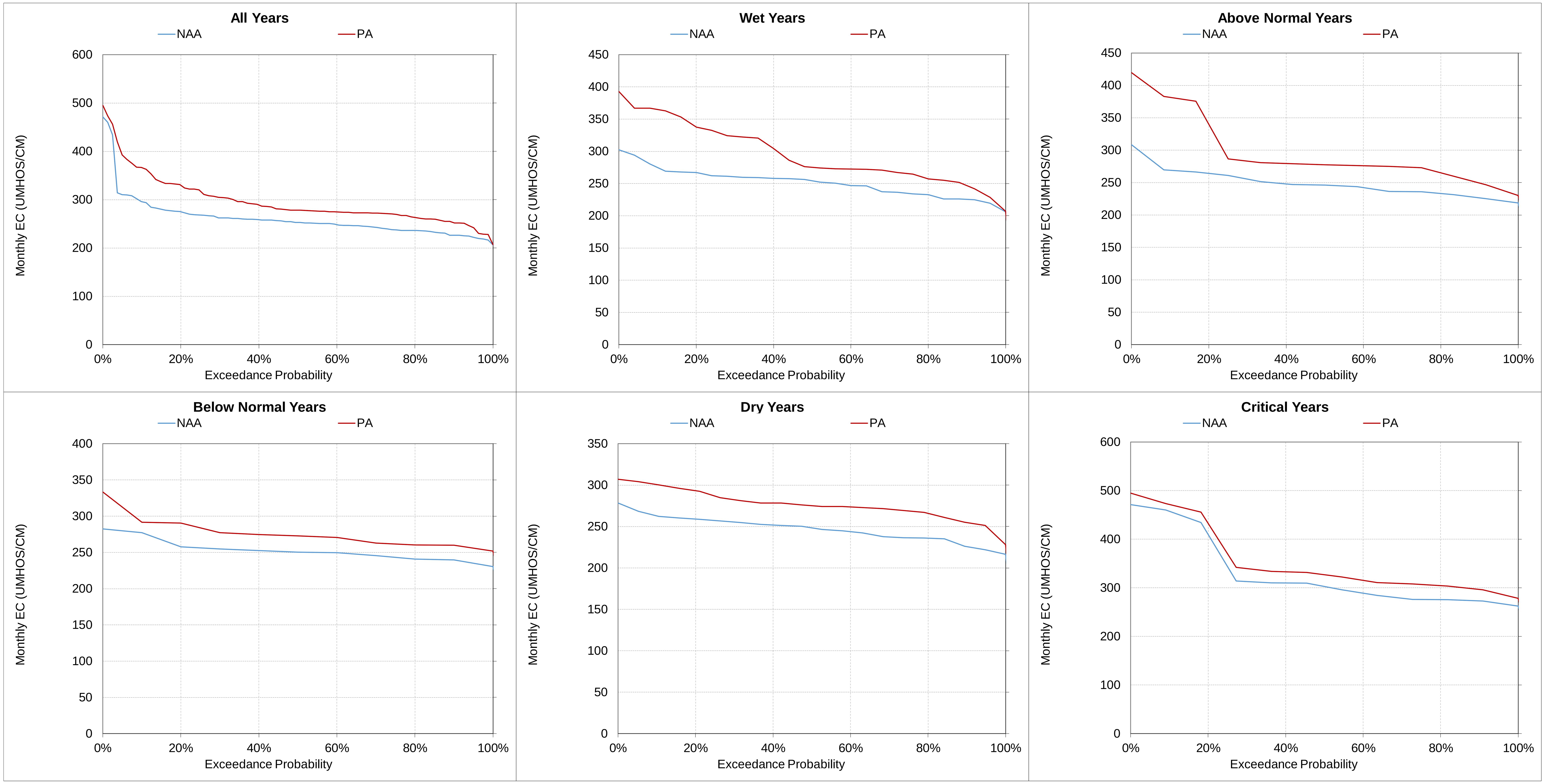
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-15. San Joaquin River at Prisoner's Point, Monthly EC
May



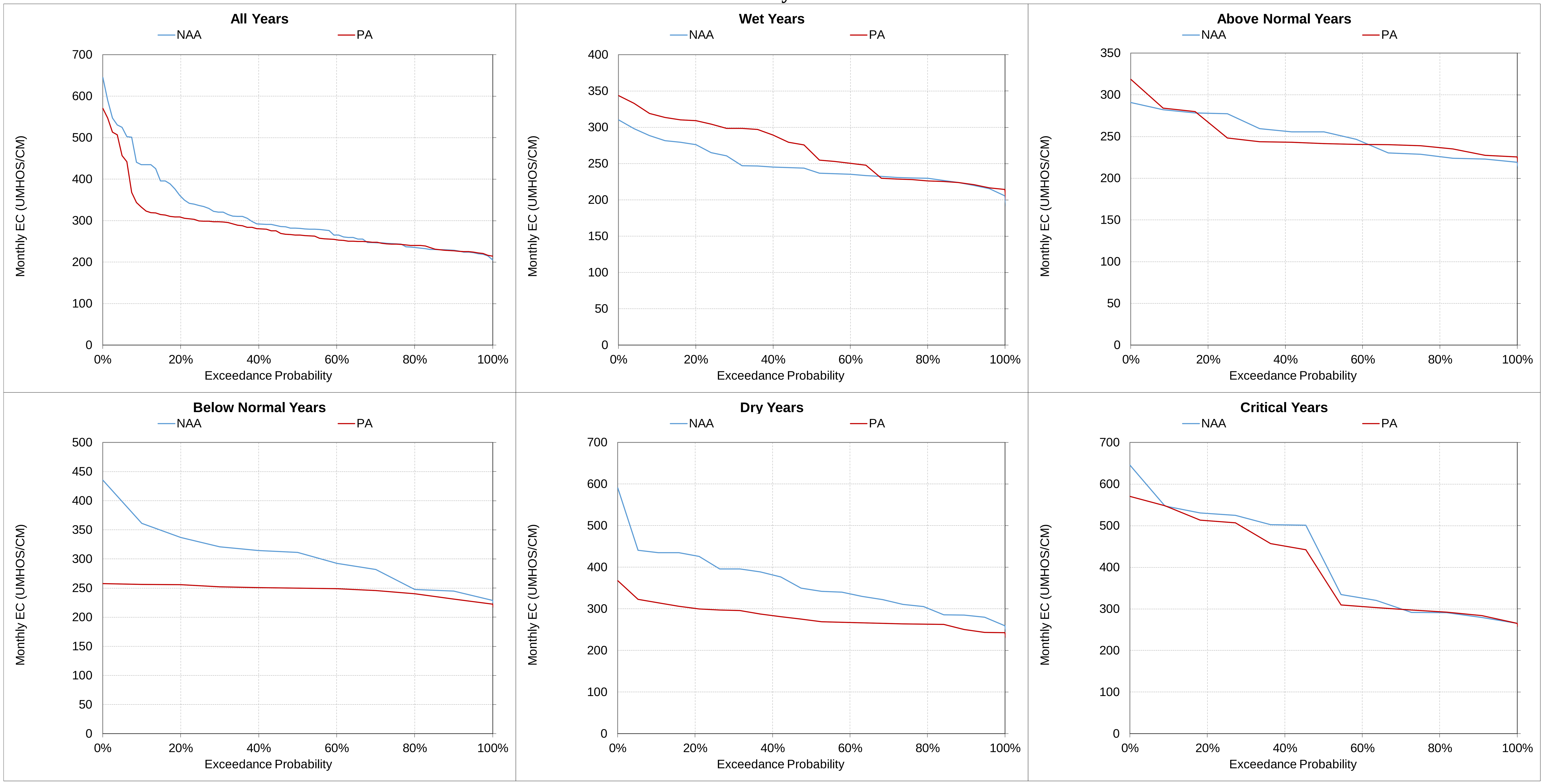
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-16. San Joaquin River at Prisoner's Point, Monthly EC
June



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-17. San Joaquin River at Prisoner's Point, Monthly EC July



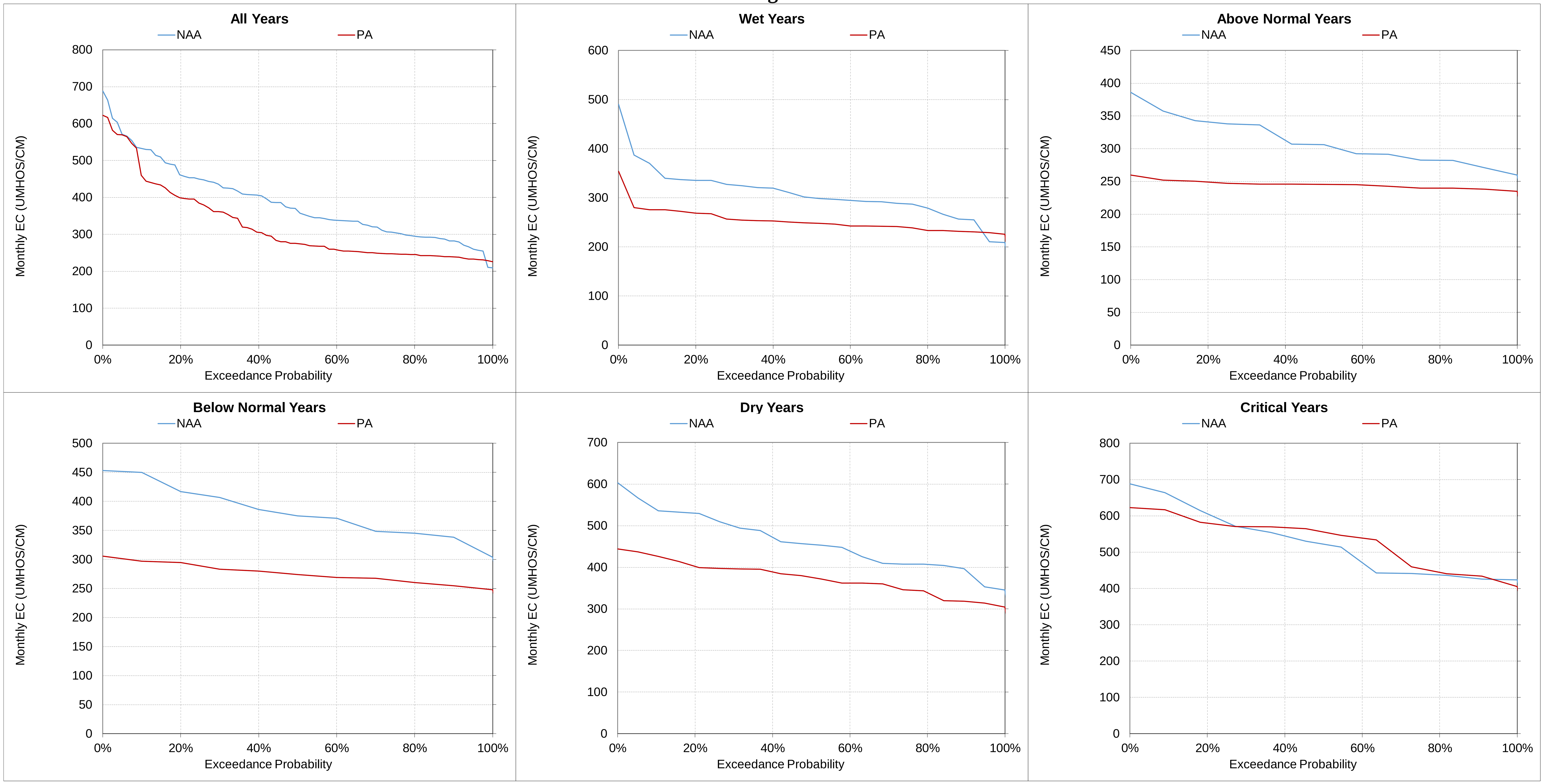
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

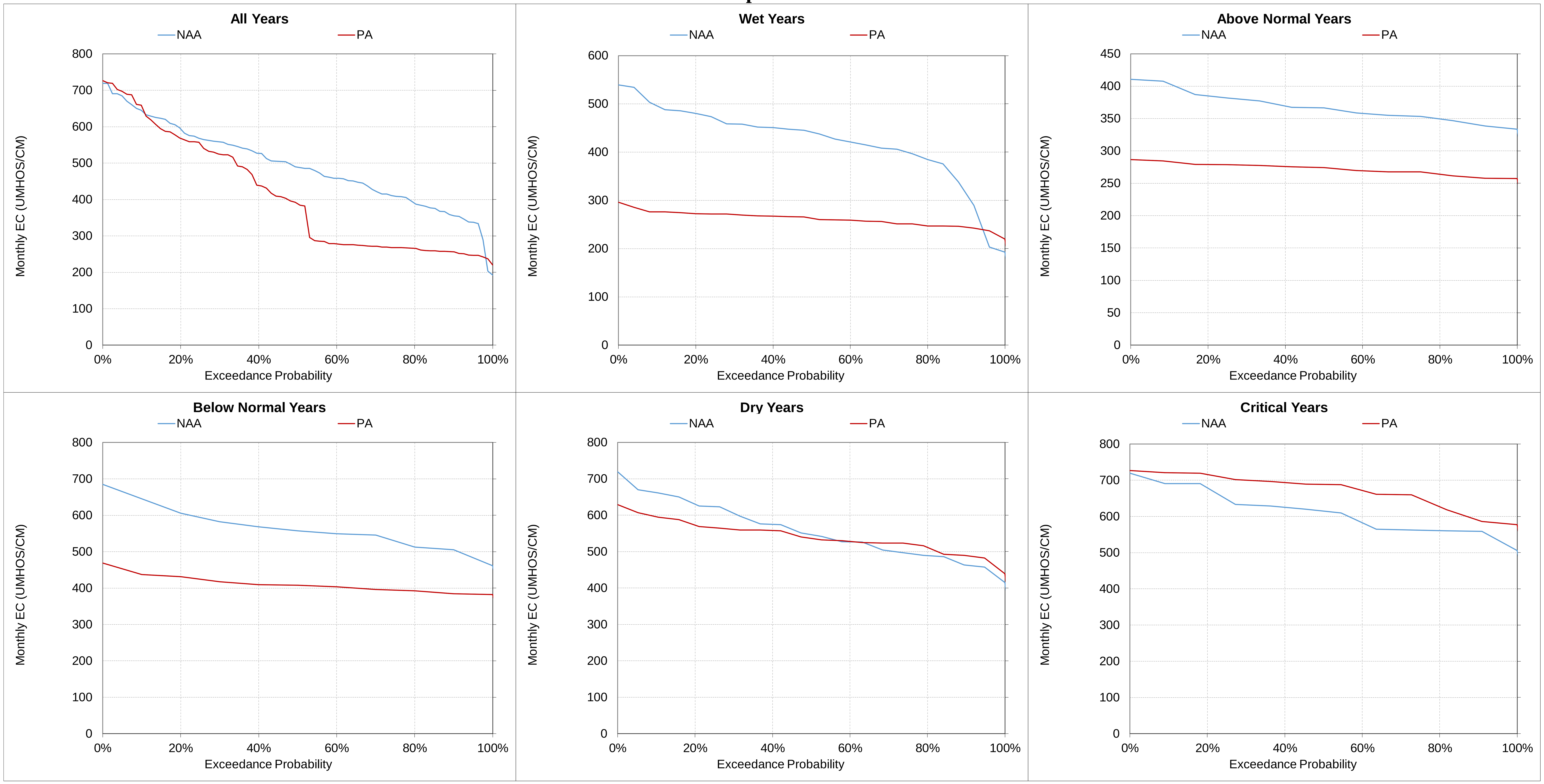
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-18. San Joaquin River at Prisoner's Point, Monthly EC August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-37-19. San Joaquin River at Prisoner's Point, Monthly EC September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-38. Sacramento River at Freeport Flow, Monthly Flow

Statistic	Monthly Flow (cfs) October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	15,304	13,841	-1,463	-10%	21,866	20,727	-1,139	-5%	47,548	47,502	-46	0%	63,494	62,755	-740	-1%	69,636	69,613	-23	0%	62,730	63,767	1,037	2%
20%	13,959	13,316	-643	-5%	18,879	15,661	-3,218	-17%	32,895	33,568	673	2%	53,695	54,252	558	1%	61,714	62,219	505	1%	50,086	50,413	328	1%
30%	13,449	12,681	-768	-6%	18,027	14,651	-3,376	-19%	20,885	21,818	932	4%	37,397	37,425	28	0%	48,905	49,548	643	1%	37,673	38,908	1,235	3%
40%	12,058	12,063	5	0%	16,763	13,678	-3,085	-18%	18,044	18,169	125	1%	24,725	25,663	938	4%	42,113	43,550	1,438	3%	30,092	29,853	-239	-1%
50%	11,067	11,516	449	4%	15,079	12,460	-2,618	-17%	15,763	15,232	-530	-3%	20,576	21,366	790	4%	32,210	31,739	-471	-1%	24,238	24,255	17	0%
60%	9,346	10,265	919	10%	13,091	11,302	-1,789	-14%	15,102	13,897	-1,205	-8%	18,037	18,112	74	0%	25,135	25,167	32	0%	21,039	21,189	150	1%
70%	8,385	9,284	899	11%	10,080	9,920	-160	-2%	13,518	13,522	4	0%	14,852	14,705	-147	-1%	19,447	19,452	5	0%	18,524	18,556	33	0%
80%	7,902	8,108	206	3%	8,599	8,315	-284	-3%	10,632	10,718	85	1%	13,455	13,380	-74	-1%	16,184	16,172	-12	0%	15,170	15,160	-10	0%
90%	6,419	6,679	260	4%	7,400	7,448	49	1%	9,367	9,149	-218	-2%	11,699	11,772	72	1%	14,009	13,808	-200	-1%	11,532	11,479	-53	0%
Long Term Full Simulation Period[b]	11,117	11,101	-16	0%	15,474	14,036	-1,438	-9%	22,399	22,482	84	0%	30,189	30,448	259	1%	37,325	37,574	249	1%	31,397	31,707	310	1%
Water Year Types[c]																								
Wet (32%)	14,328	13,215	-1,113	-8%	20,325	17,308	-3,018	-15%	25,173	25,215	42	0%	31,670	32,295	625	2%	56,676	57,150	473	1%	48,094	48,296	202	0%
Above Normal (16%)	12,786	13,017	230	2%	17,957	15,326	-2,631	-15%	22,329	22,498	169	1%	28,635	28,720	85	0%	46,219	46,724	504	1%	41,190	42,378	1,189	3%
Below Normal (13%)	11,372	12,524	1,152	10%	12,129	11,891	-238	-2%	20,244	20,685	440	2%	28,383	28,414	31	0%	29,876	30,417	542	2%	18,980	18,960	-20	0%
Dry (24%)	8,647	9,242	595	7%	14,331	14,024	-307	-2%	26,067	25,996	-71	0%	33,601	33,498	-103	0%	23,307	23,438	131	1%	21,418	21,526	108	1%
Critical (15%)	6,234	6,242	8	0%	7,244	7,539	295	4%	12,323	12,336	13	0%	24,631	25,098	466	2%	15,952	15,366	-585	-4%	12,624	12,855	231	2%

Statistic	Monthly Flow (cfs) April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	46,653	46,643	-9	0%	38,376	38,400	23	0%	20,245	21,769	1,524	8%	24,235	23,325	-910	-4%	17,311	18,439	1,128	7%	28,858	25,880	-2,978	-10%
20%	32,295	32,296	0	0%	25,759	25,304	-456	-2%	16,152	19,218	3,066	19%	23,752	22,294	-1,458	-6%	16,962	17,521	559	3%	28,141	23,844	-4,297	-15%
30%	23,298	23,368	70	0%	16,455	16,464	9	0%	13,951	18,231	4,281	31%	22,641	21,721	-919	-4%	16,395	16,350	-46	0%	22,211	21,965	-246	-1%
40%	20,340	20,333	-8	0%	13,586	13,618	32	0%	13,293	17,417	4,125	31%	20,603	21,105	502	2%	15,873	14,324	-1,548	-10%	21,373	16,537	-4,836	-23%
50%	16,025	16,303	277	2%	12,447	12,605	158	1%	13,042	16,326	3,284	25%	18,784	19,728	944	5%	15,001	12,851	-2,150	-14%	14,500	10,467	-4,033	-28%
60%	13,146	12,846	-300	-2%	11,569	11,643	74	1%	12,474	14,912	2,438	20%	17,968	18,320	352	2%	13,925	11,952	-1,972	-14%	11,899	9,486	-2,412	-20%
70%	11,629	11,952	323	3%	10,924	11,146	222	2%	12,010	13,251	1,241	10%	16,864	16,584	-280	-2%	11,590	10,954	-636	-5%	10,011	9,162	-849	-8%
80%	10,913	11,293	381	3%	10,050	10,393	343	3%	11,071	12,156	1,085	10%	15,180	13,539	-1,641	-11%	9,791	10,741	950	10%	8,472	8,317	-155	-2%
90%	9,994	10,255	261	3%	8,997	9,124	127	1%	10,110	9,935	-176	-2%	11,821	10,046	-1,774	-15%	8,232	9,676	1,444	18%	6,992	7,145	153	2%
Long Term Full Simulation Period[b]	22,202	22,309	107	0%	17,968	18,053	85	0%	14,850	16,895	2,045	14%	18,790	18,264	-526	-3%	13,795	13,667	-128	-1%	17,275	15,266	-2,009	-12%
Water Year Types[c]																								
Wet (32%)	35,455	35,444	-11	0%	29,920	29,868	-52	0%	20,399	21,793	1,393	7%	20,399	20,992	592	3%	16,137	16,099	-38	0%	27,707	25,213	-2,494	-9%
Above Normal (16%)	24,385	24,637	252	1%	16,959	16,938	-20	0%	13,649	17,007	3,358	25%	22,759	21,844	-915	-4%	16,945	16,174	-771	-5%	21,139	17,729	-3,410	-16%
Below Normal (13%)	14,165	14,218	54	0%	12,630	12,704	74	1%	12,887	15,682	2,795	22%	21,948	21,319	-630	-3%	15,704	14,209	-1,494	-10%	12,105	9,455	-2,649	-22%
Dry (24%)	15,049	15,222	173	1%	11,810	12,130	320	3%	12,726	14,991	2,265	18%	16,935	15,798	-1,137	-7%	10,733	11,320	587	5%	10,073	8,829	-1,244	-12%
Critical (15%)	10,414	10,556	142	1%	8,322	8,439	118	1%	9,467	10,445	978	10%	11,199	9,786	-1,413	-13%	8,662	9,095	434	5%	7,230	7,104	-126	-2%

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

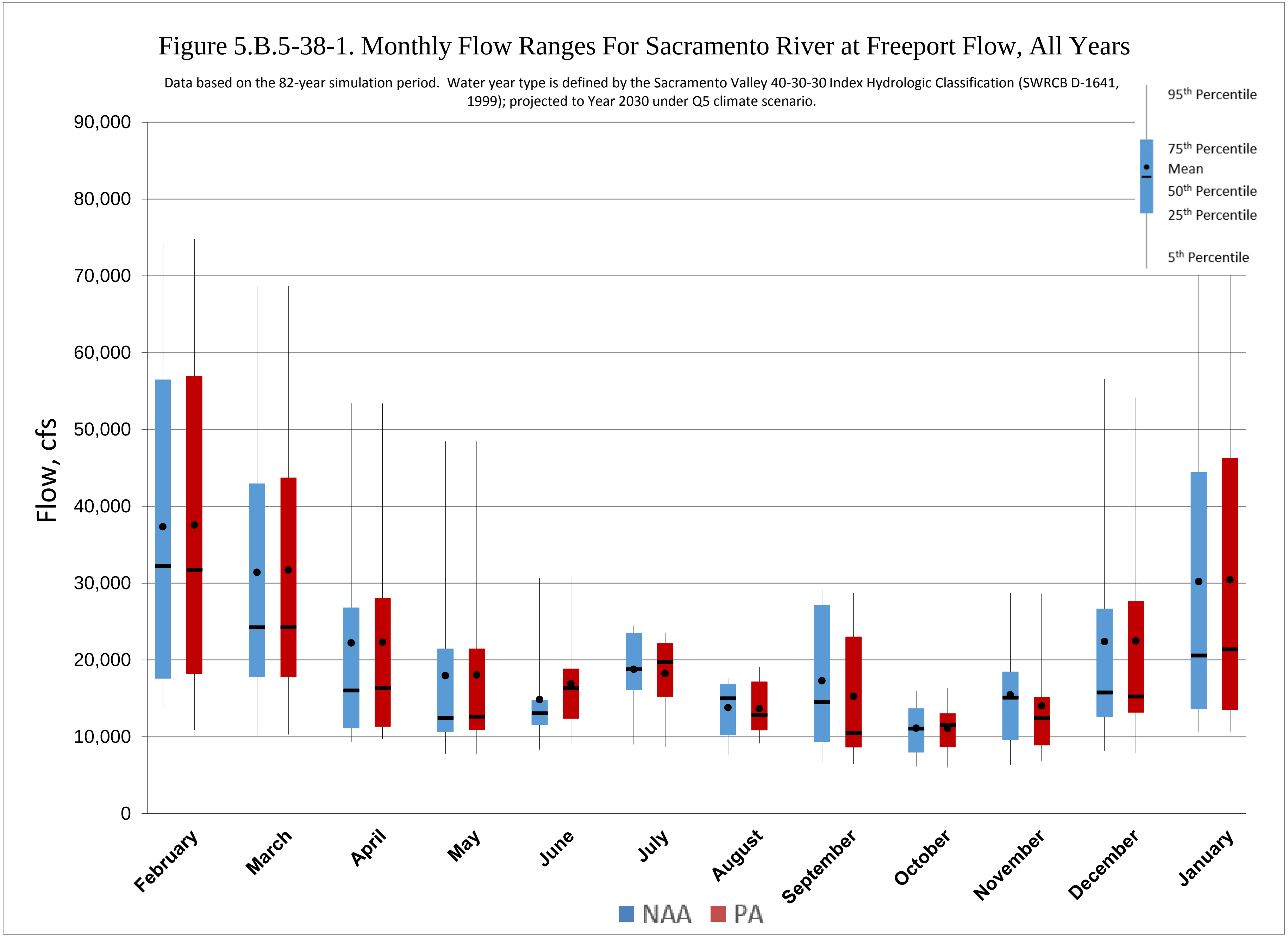


Figure 5.B.5-38-1. Monthly Flow Ranges For Sacramento River at Freeport Flow, All Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

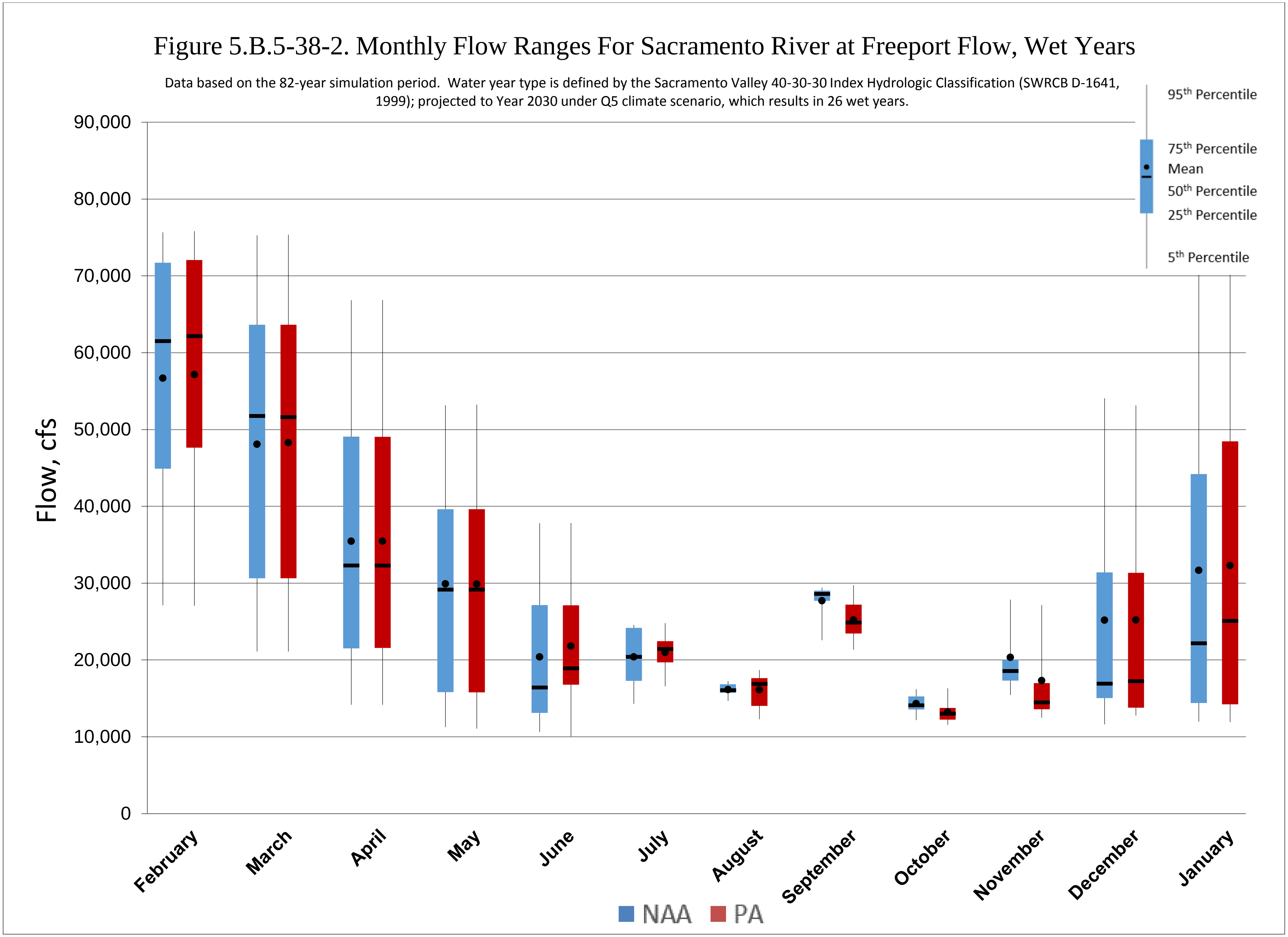


Figure 5.B.5-38-2. Monthly Flow Ranges For Sacramento River at Freeport Flow, Wet Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

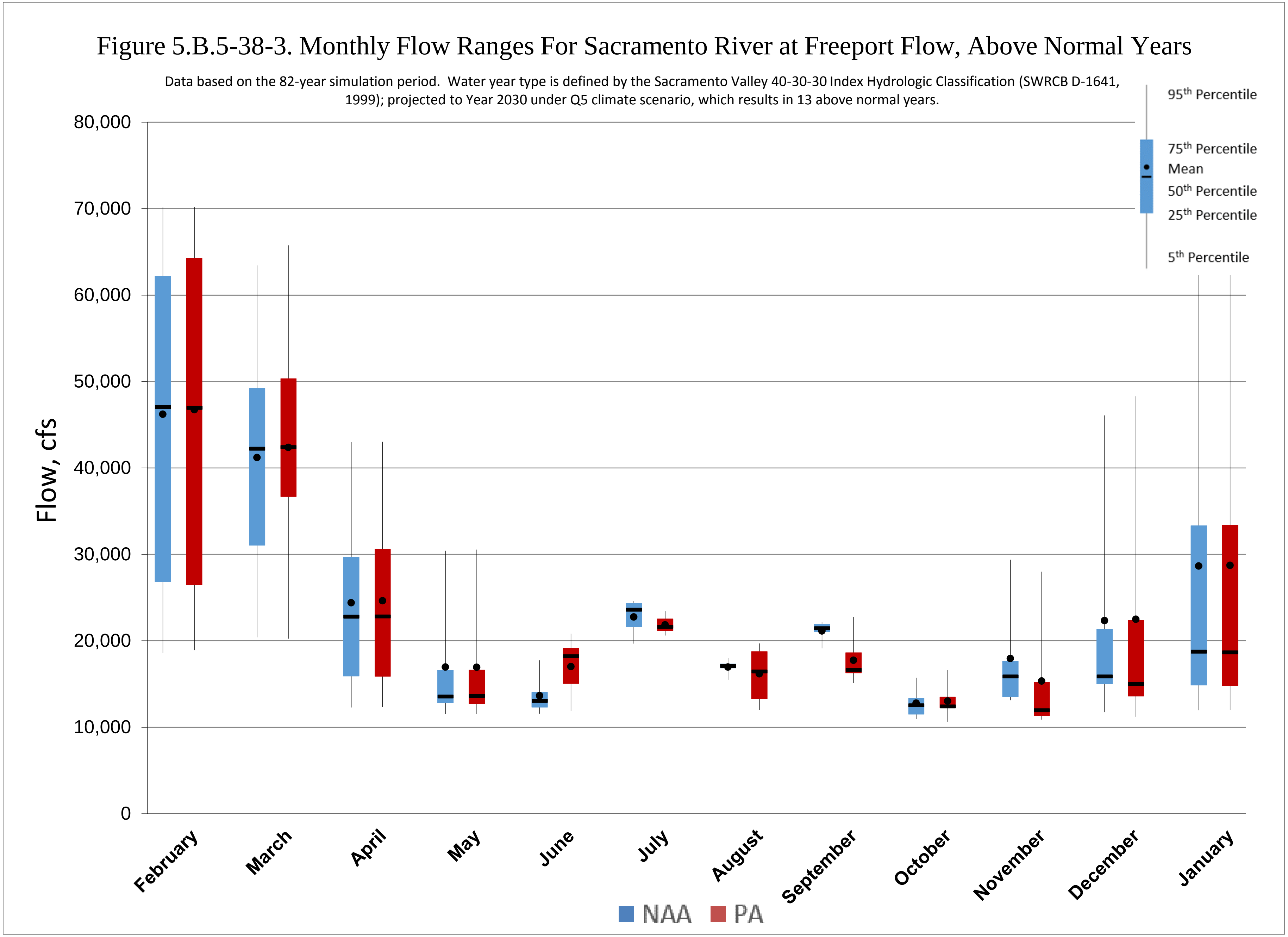


Figure 5.B.5-38-3. Monthly Flow Ranges For Sacramento River at Freeport Flow, Above Normal Years
Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.
95th Percentile
75th Percentile
Mean
50th Percentile
25th Percentile
5th Percentile
Flow, cfs
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
February
March
April
May
June
July
August
September
October
November
December
January
NAA
PA

Figure 5.B.5-38-4. Monthly Flow Ranges For Sacramento River at Freeport Flow, Below Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 11 below normal years.

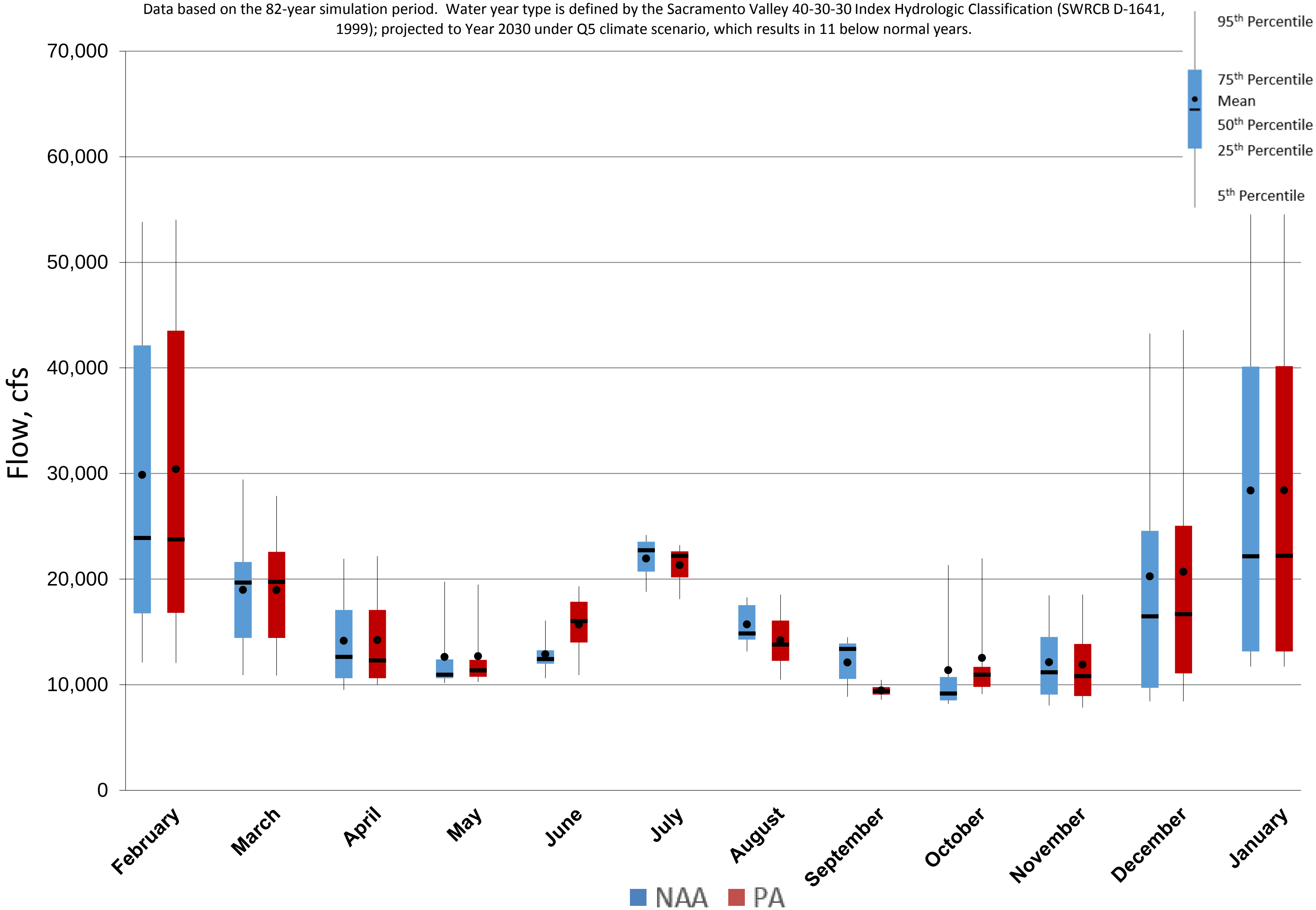


Figure 5.B.5-38-5. Monthly Flow Ranges For Sacramento River at Freeport Flow, Dry Years

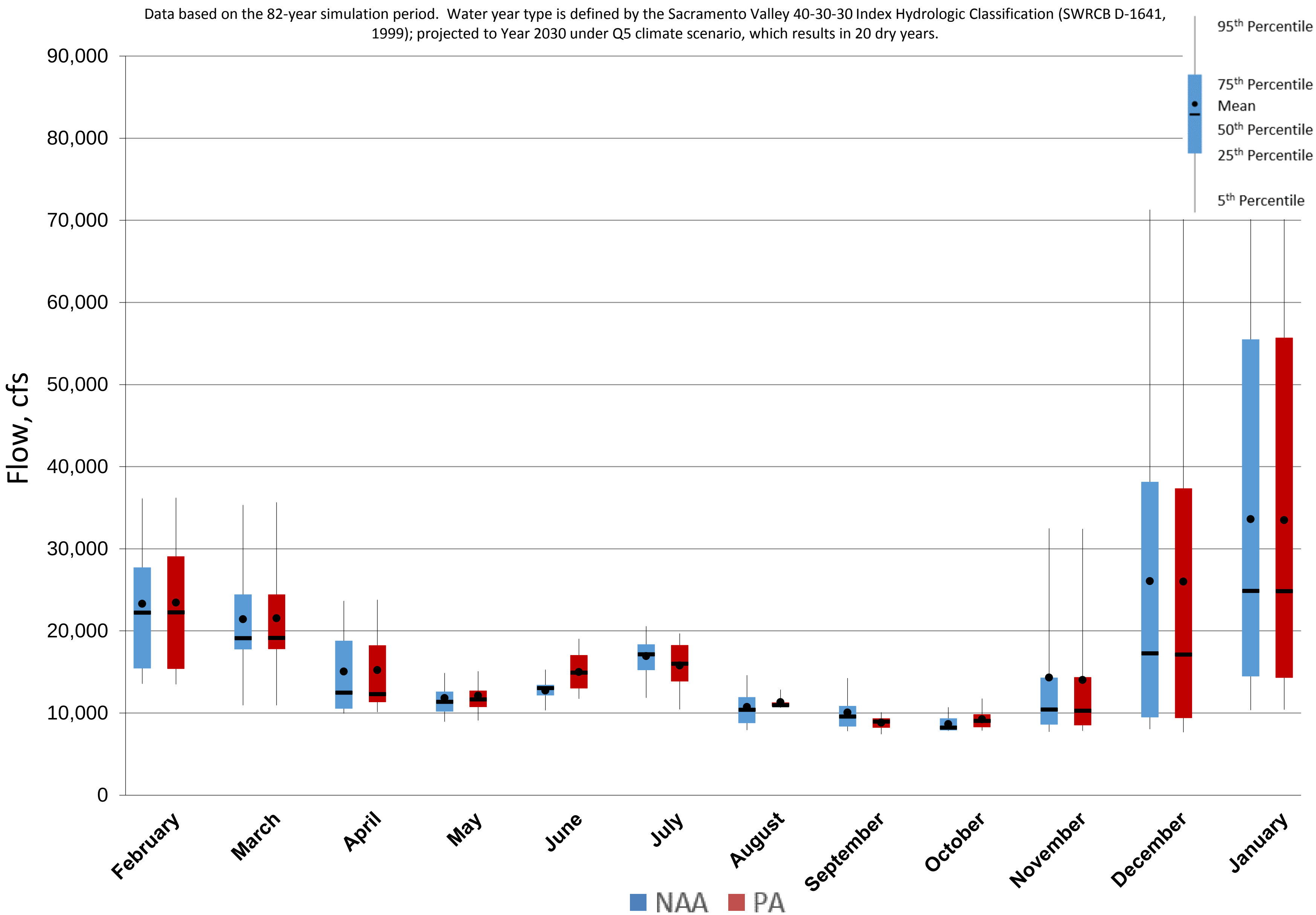


Figure 5.B.5-38-6. Monthly Flow Ranges For Sacramento River at Freeport Flow, Critical Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 12 critical years.

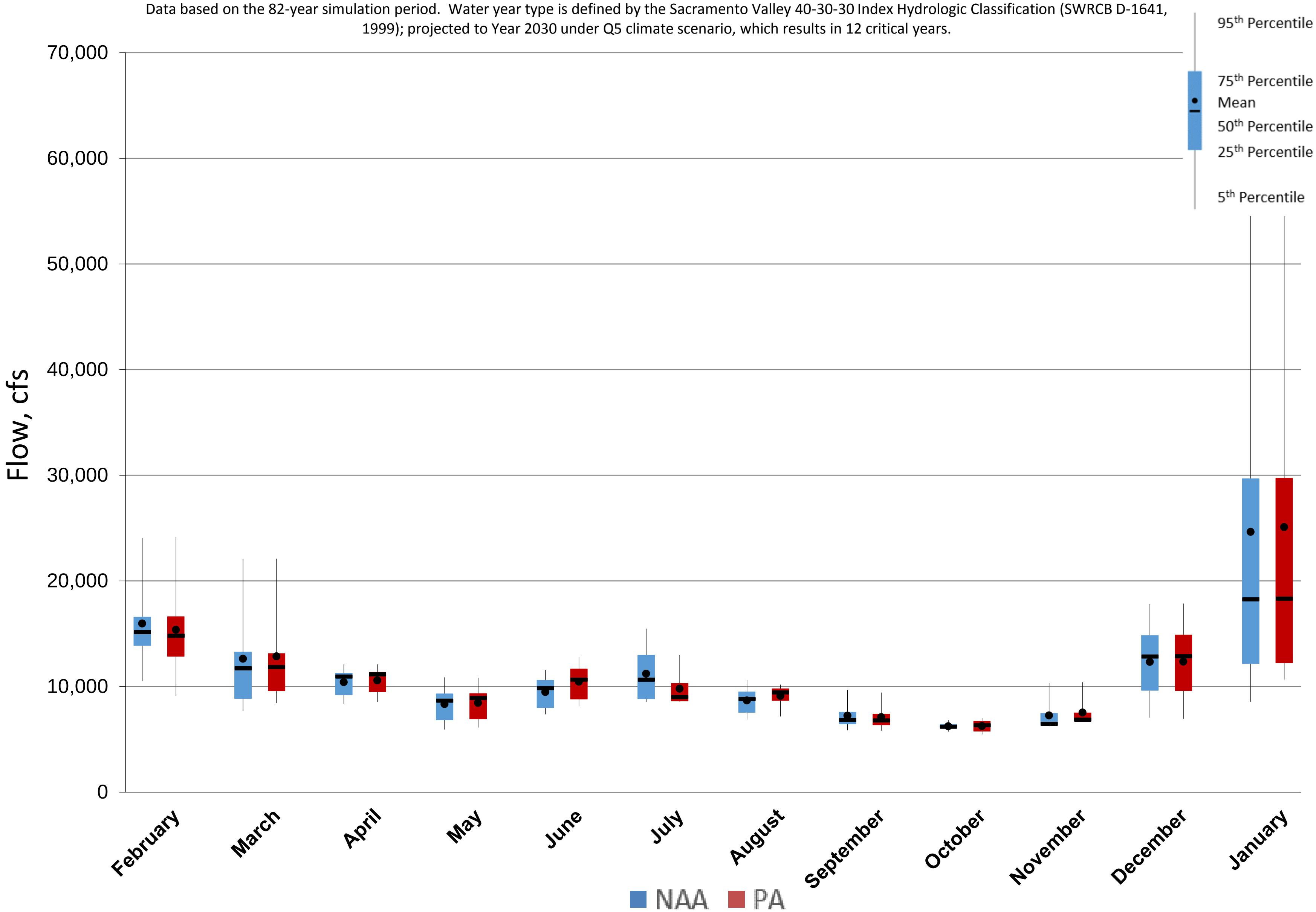
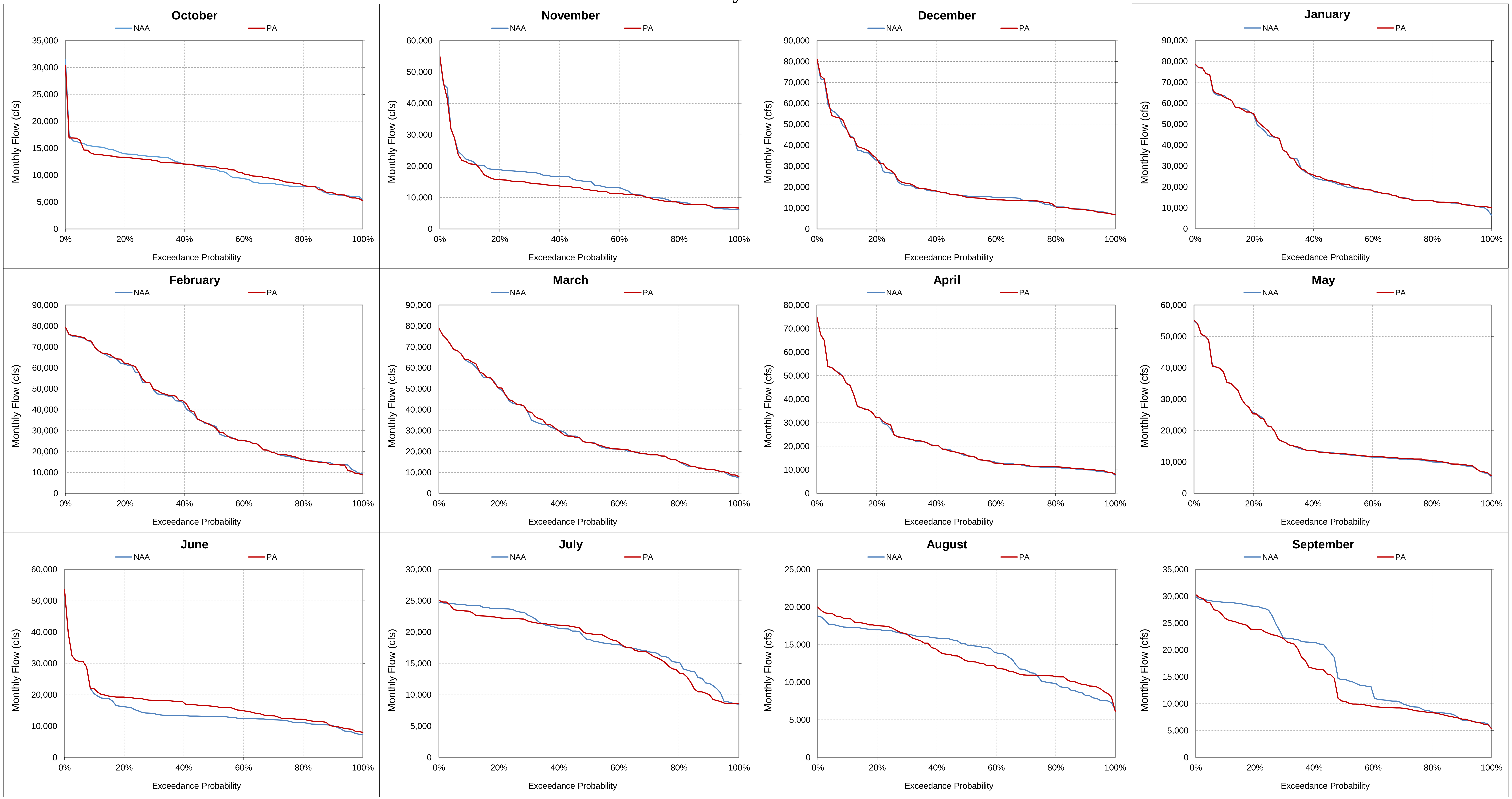
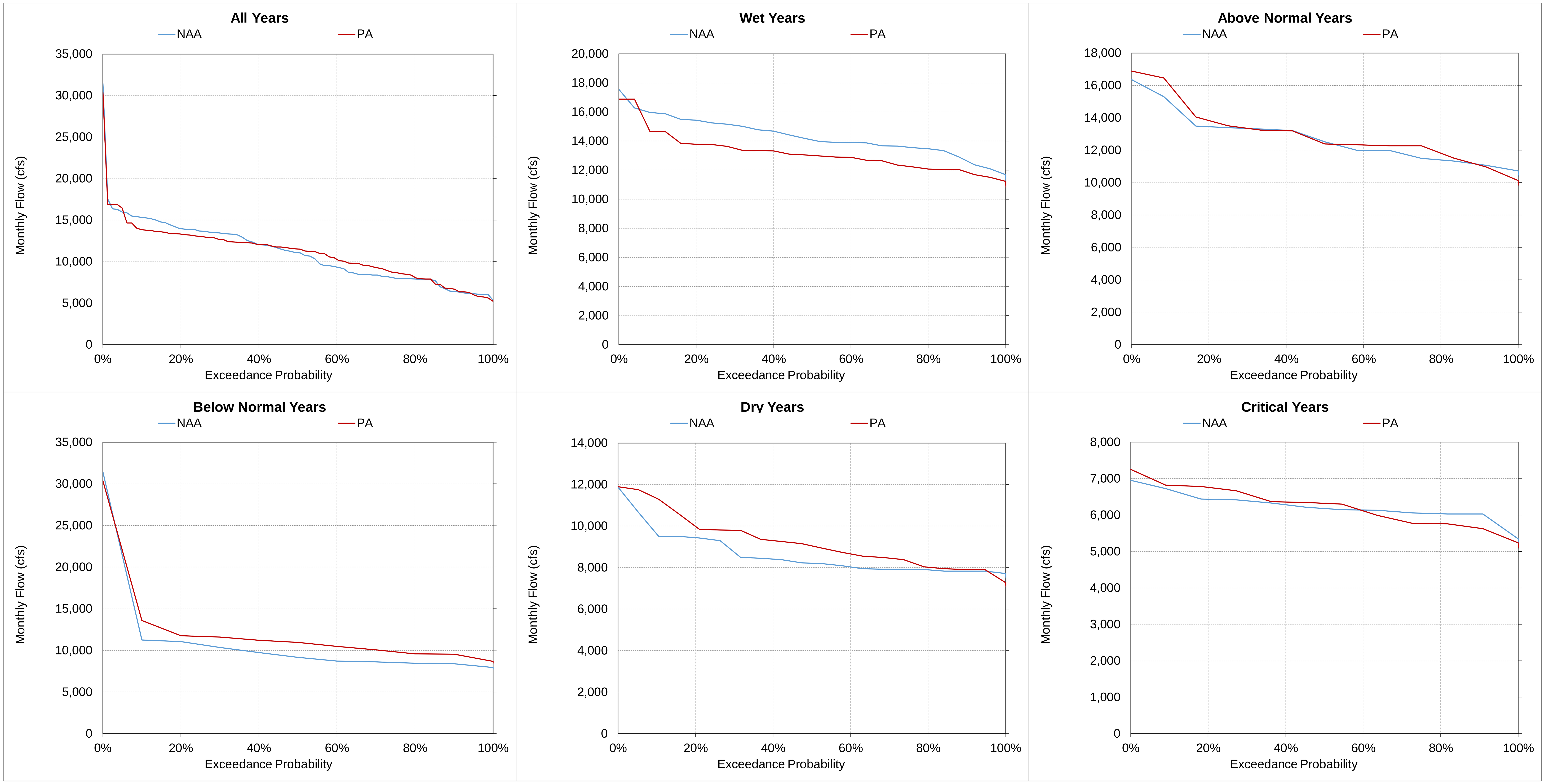


Figure 5.B.5-38-7. Sacramento River at Freeport Flow, Monthly Flow Probability of Exceedance



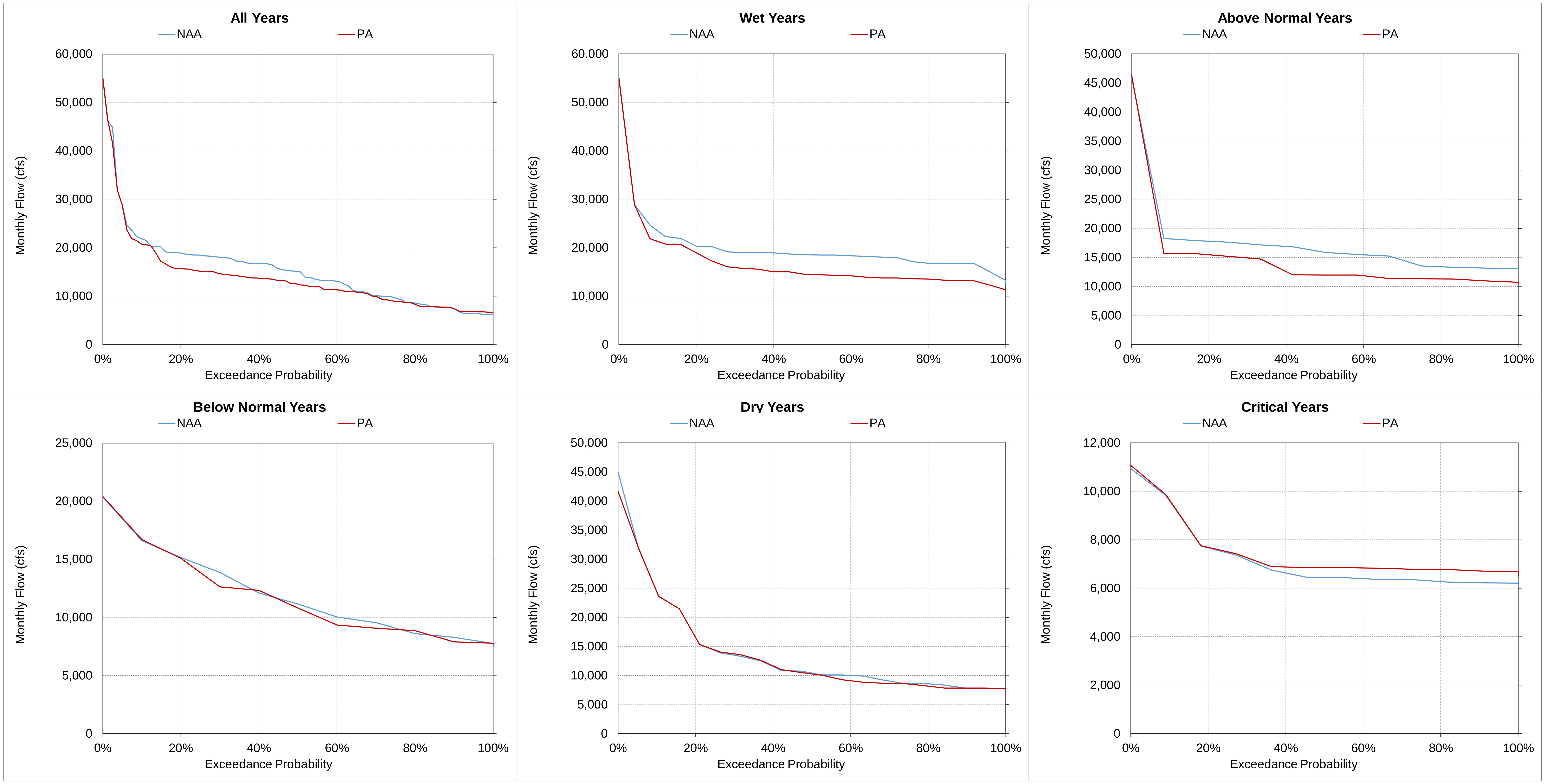
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-8. Sacramento River at Freeport Flow, Monthly Flow October



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-9. Sacramento River at Freeport Flow, Monthly Flow November



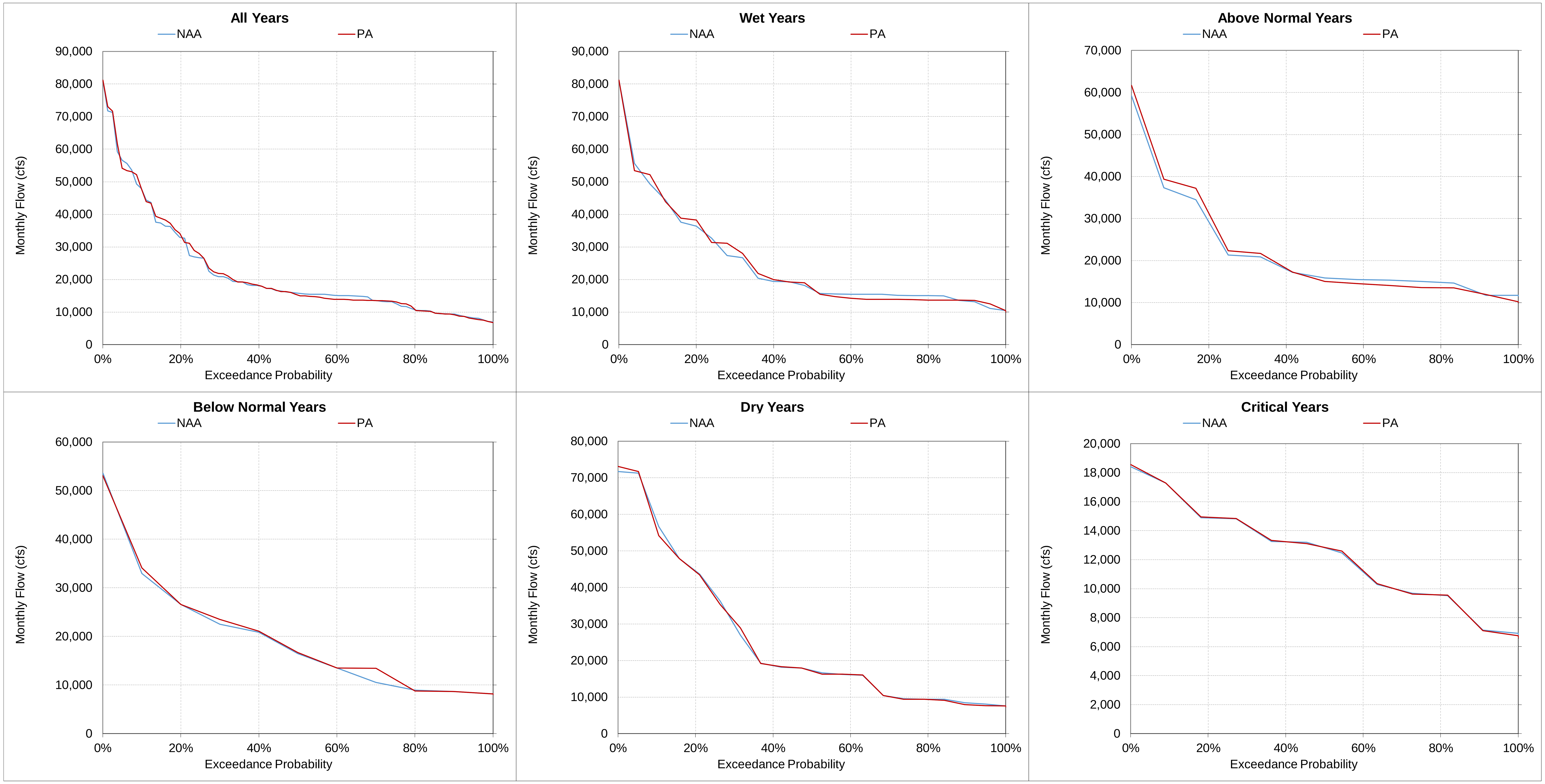
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

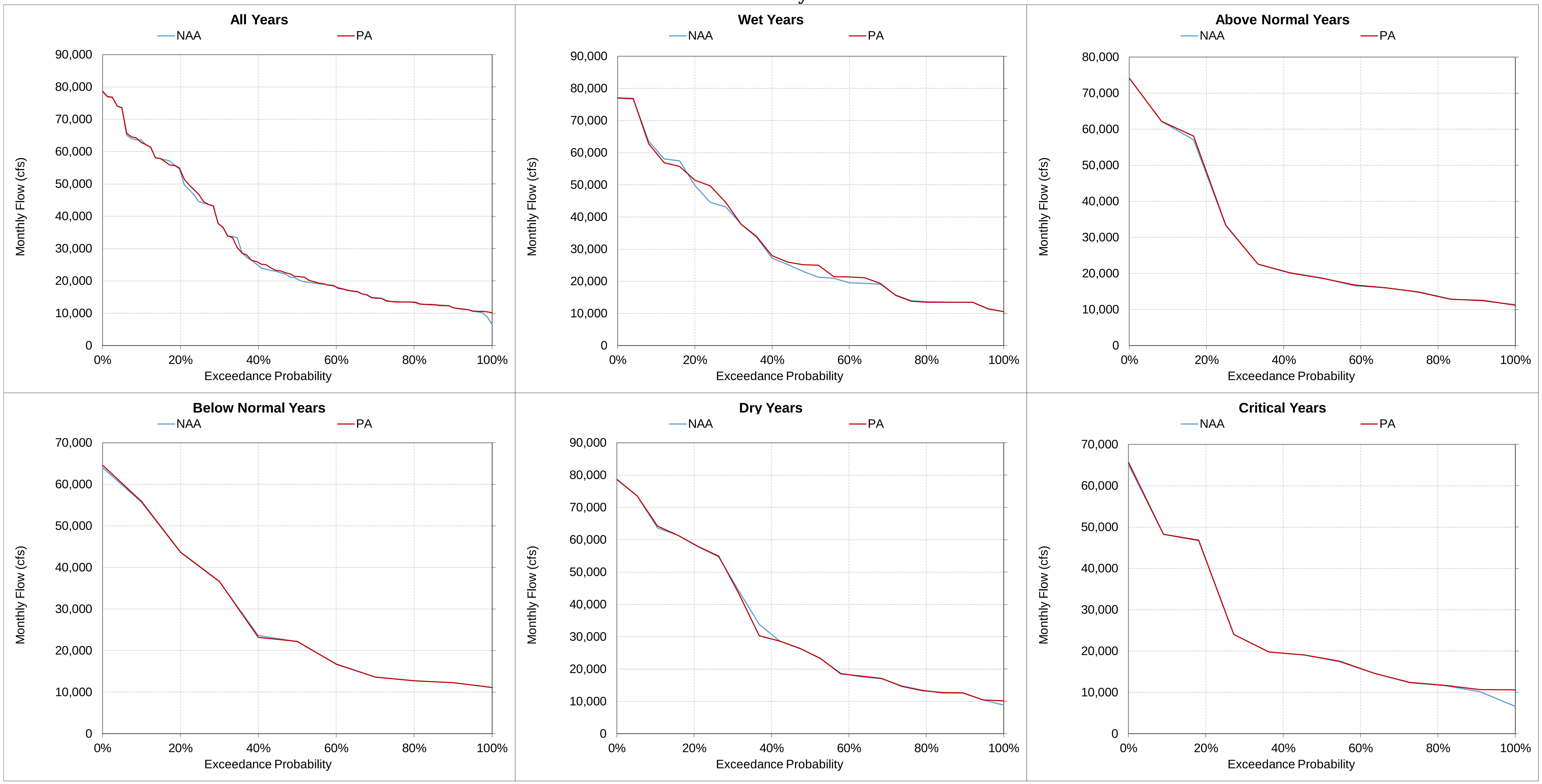
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-10. Sacramento River at Freeport Flow, Monthly Flow December



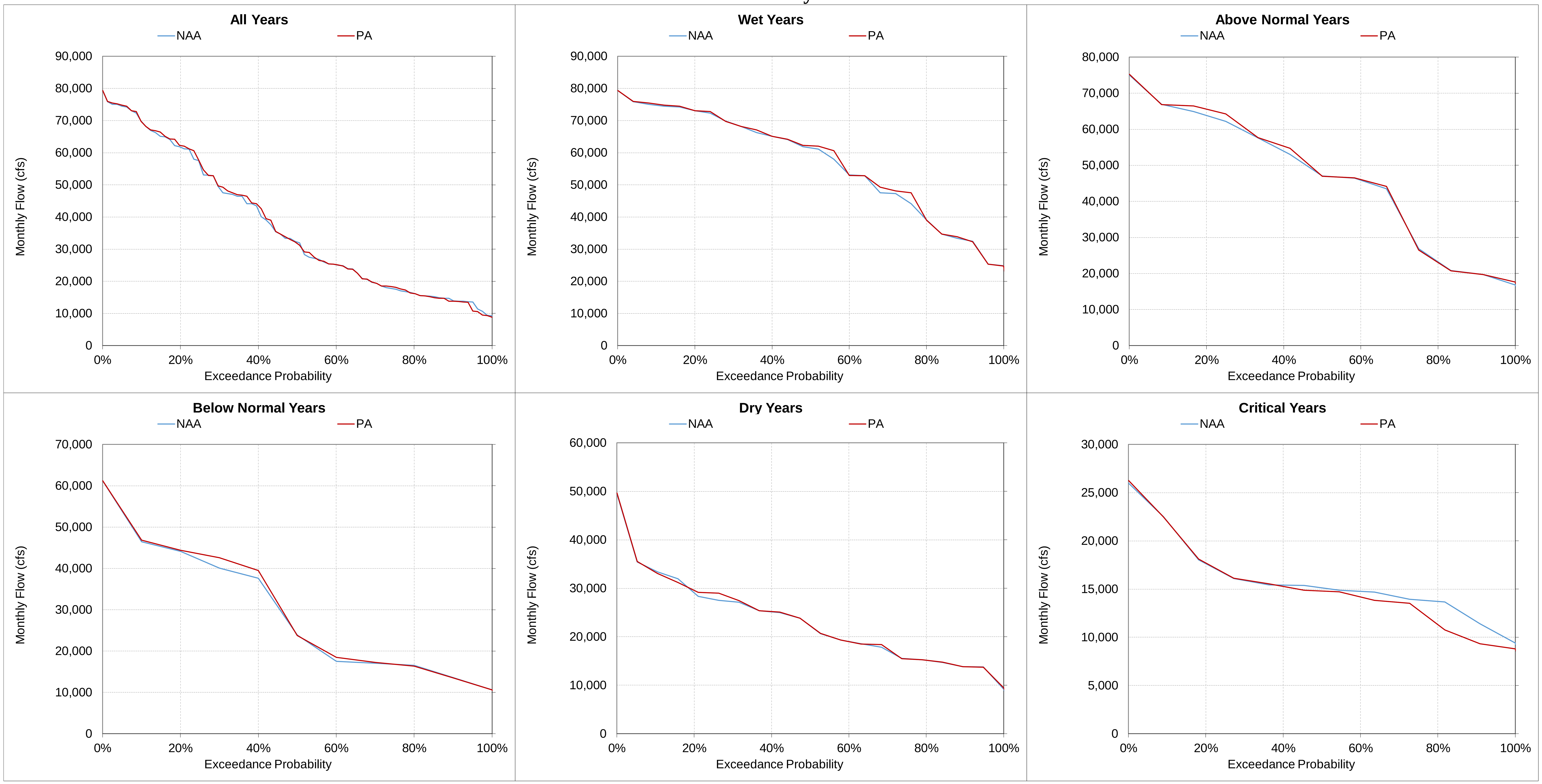
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-11. Sacramento River at Freeport Flow, Monthly Flow January



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-12. Sacramento River at Freeport Flow, Monthly Flow February



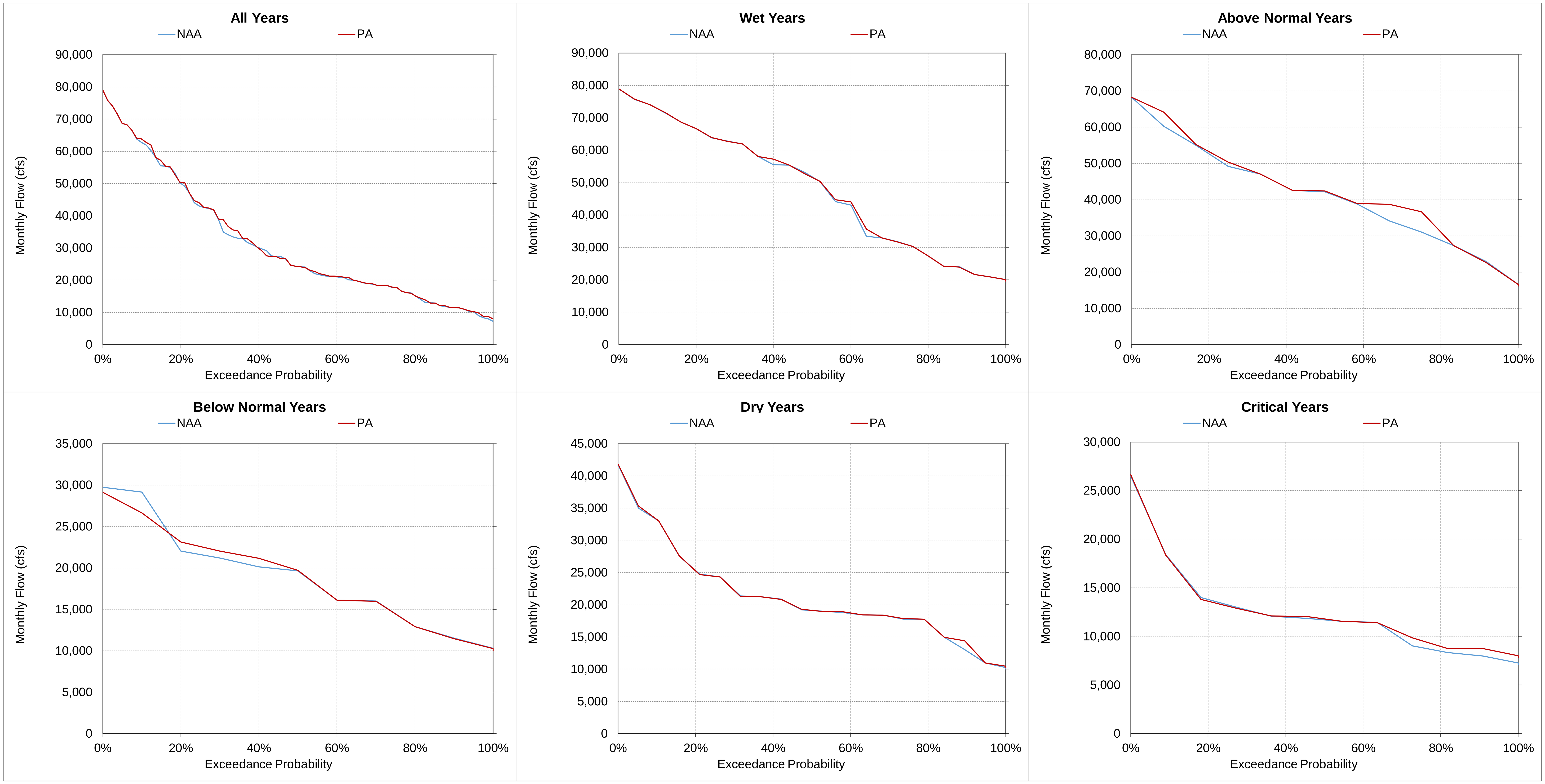
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

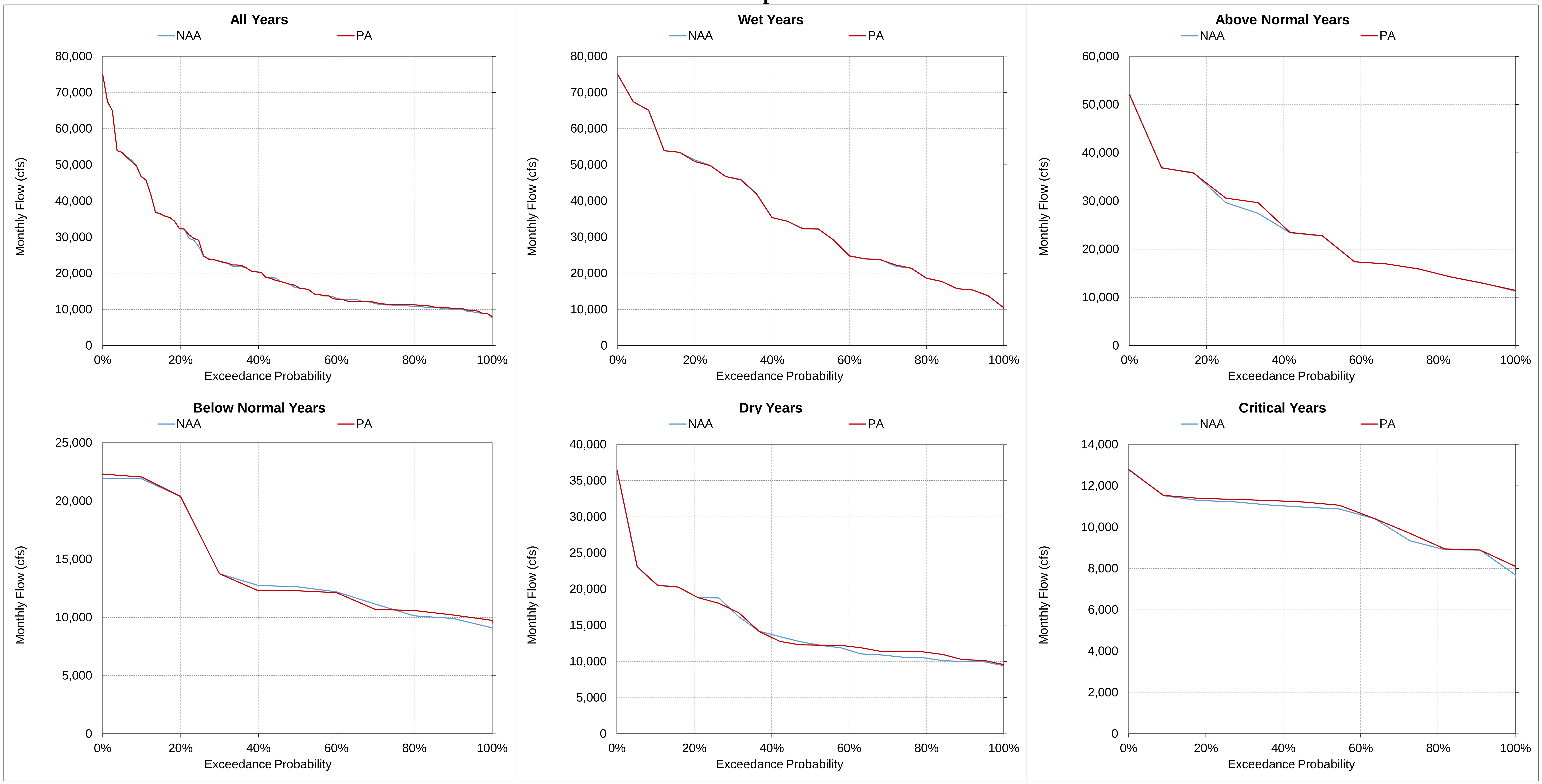
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-13. Sacramento River at Freeport Flow, Monthly Flow March



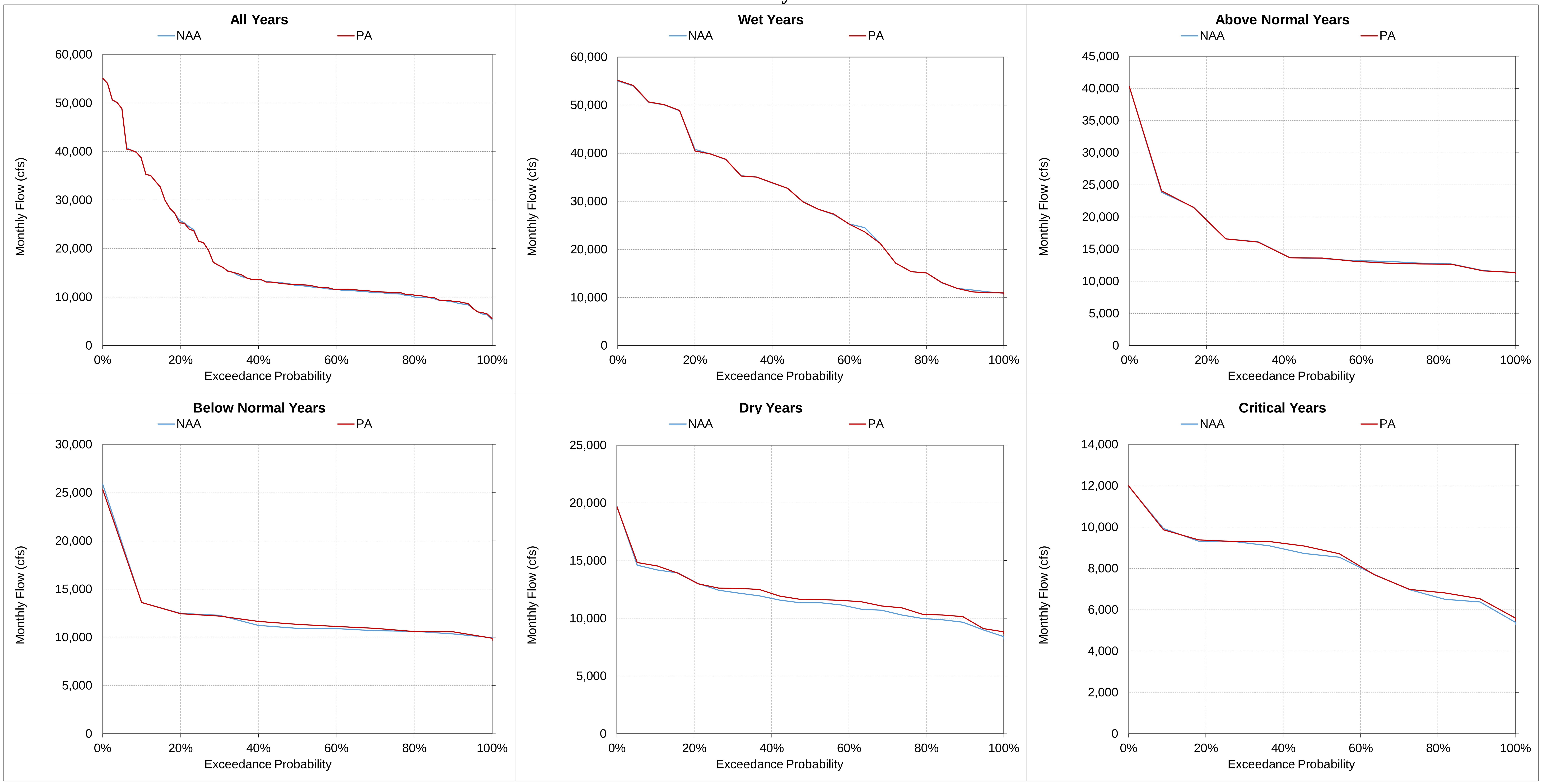
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-14. Sacramento River at Freeport Flow, Monthly Flow April



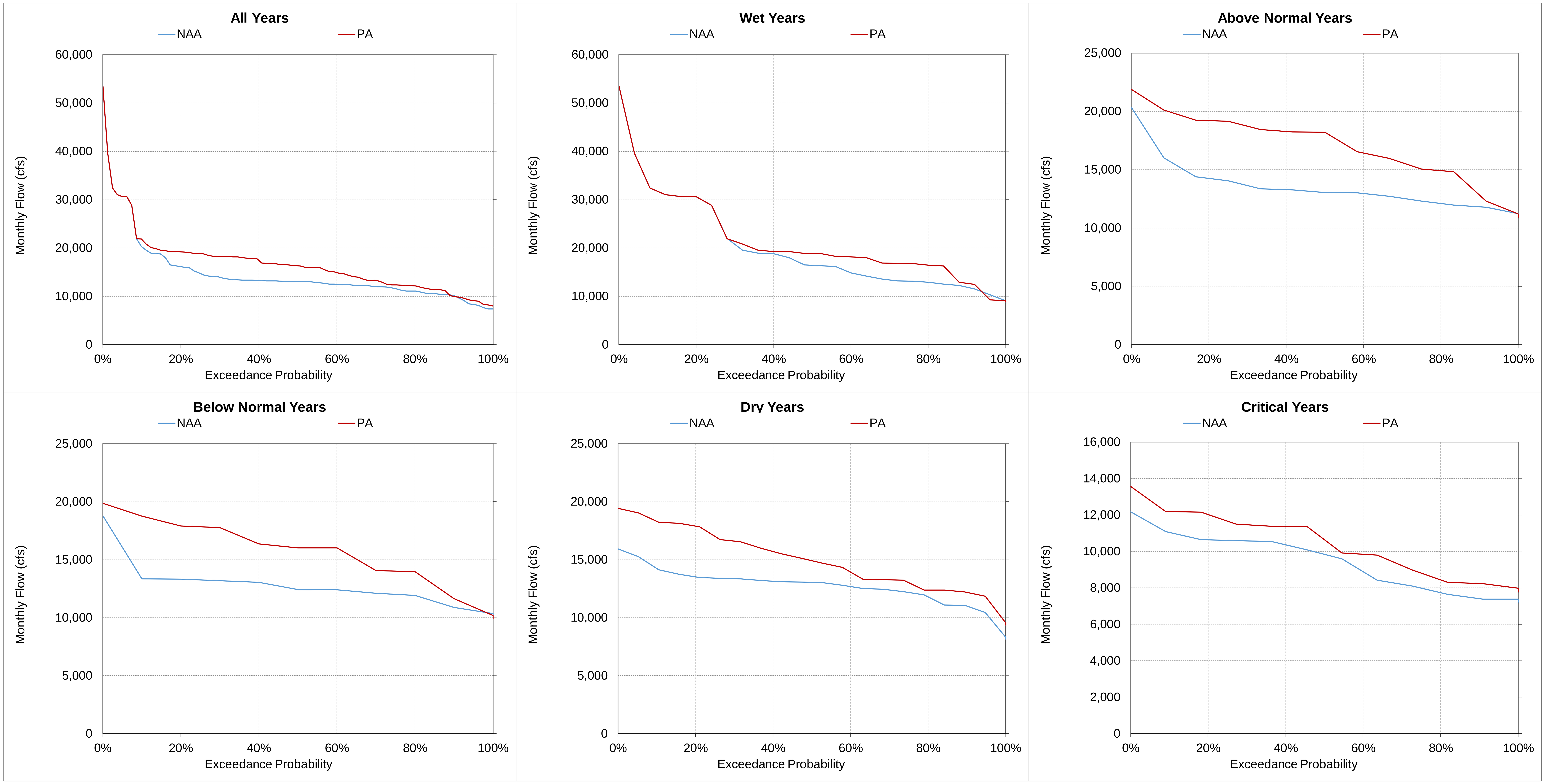
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-15. Sacramento River at Freeport Flow, Monthly Flow May



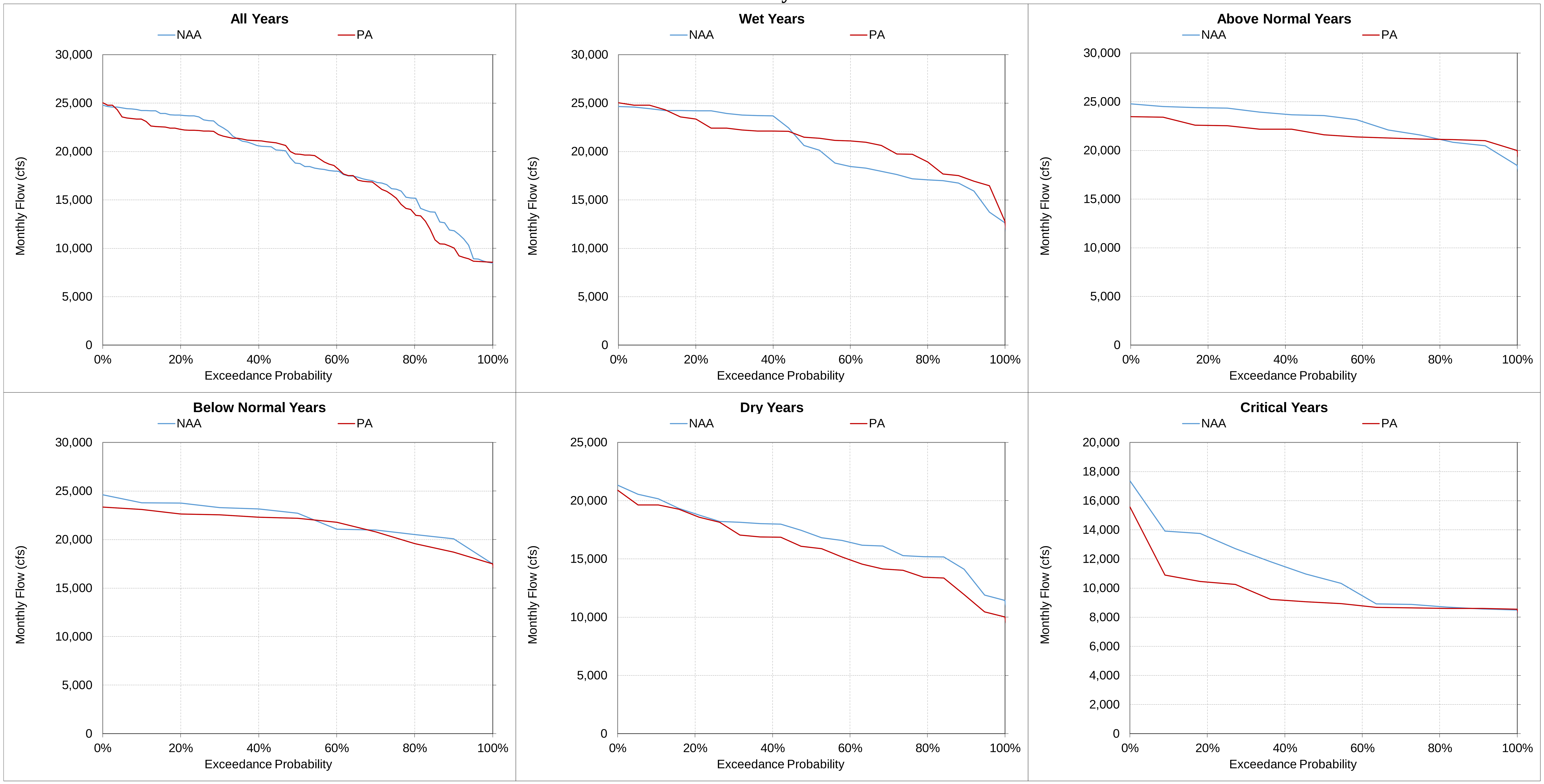
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-16. Sacramento River at Freeport Flow, Monthly Flow June



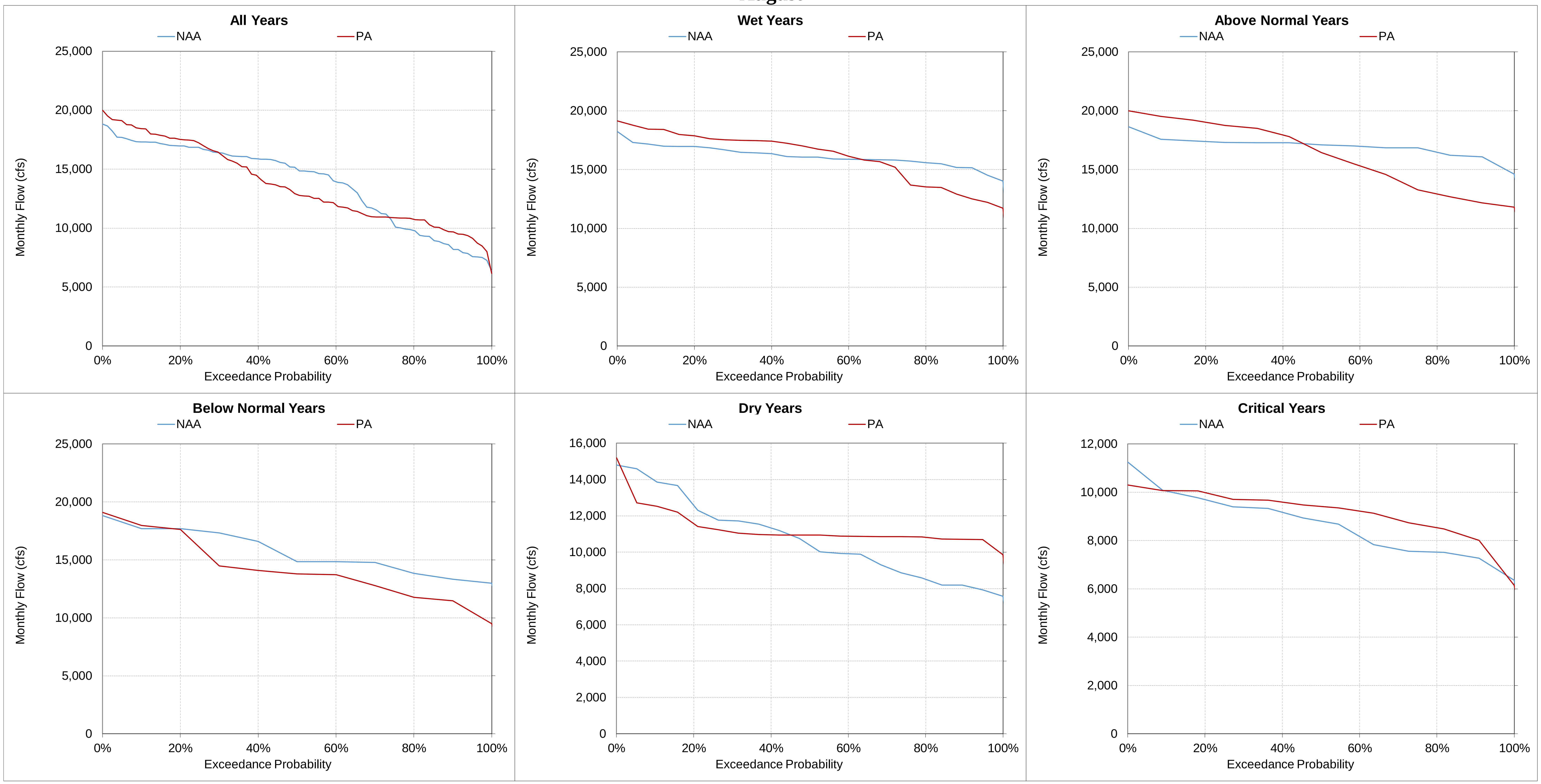
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-17. Sacramento River at Freeport Flow, Monthly Flow July



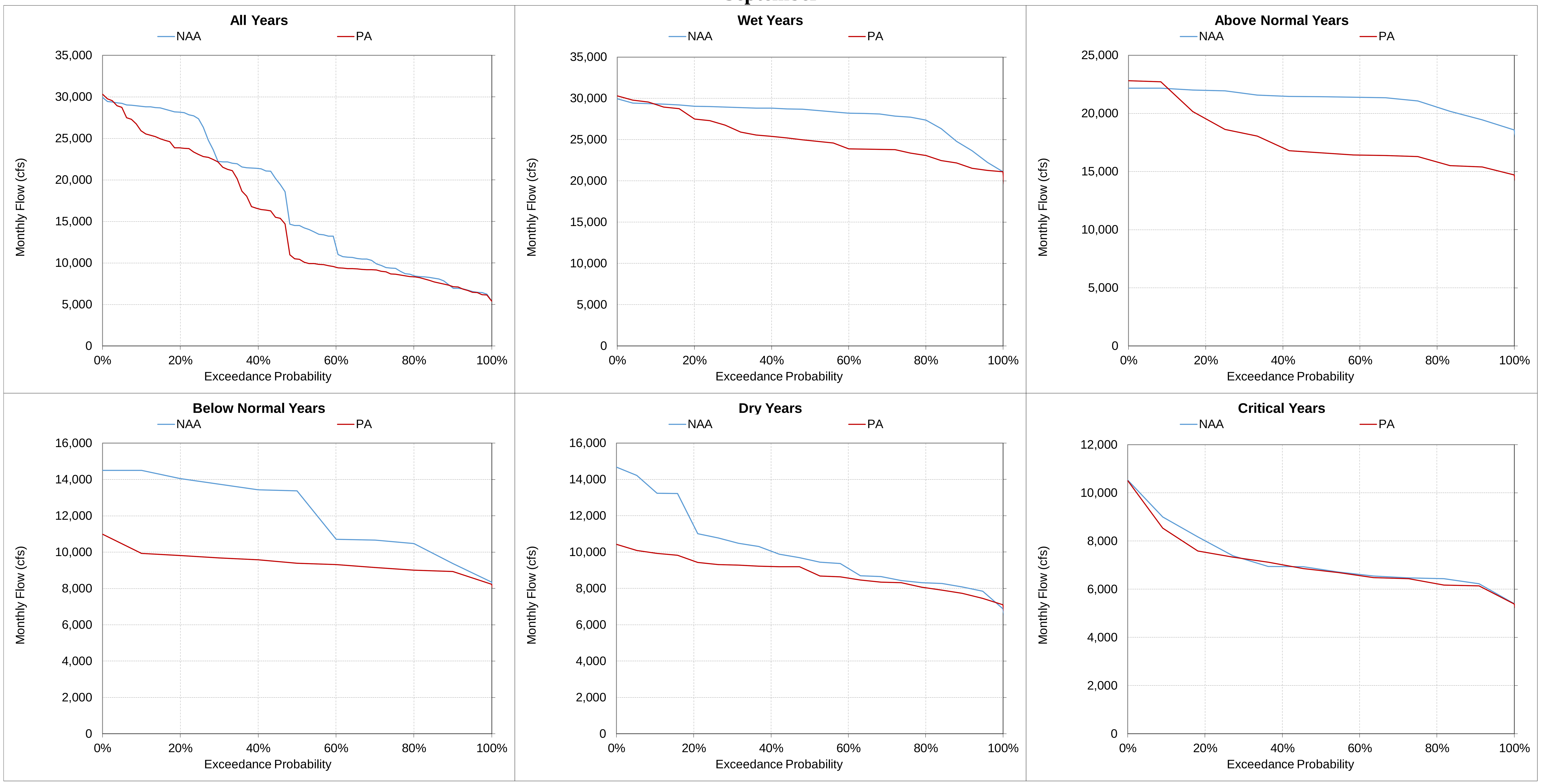
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-18. Sacramento River at Freeport Flow, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-38-19. Sacramento River at Freeport Flow, Monthly Flow
September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Table 5.B.5-39. North Delta Intakes Diversion Flow, Monthly Flow

Statistic	Monthly Flow (cfs)																							
	October				November				December				January				February				March			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	0	5,587	5,587	-	0	6,193	6,193	-	0	5,677	5,677	-	0	9,000	9,000	-	0	9,000	9,000	-	0	9,000	9,000	-
20%	0	5,094	5,094	-	0	4,626	4,626	-	0	4,329	4,329	-	0	8,262	8,262	-	0	9,000	9,000	-	0	8,944	8,944	-
30%	0	4,410	4,410	-	0	3,922	3,922	-	0	2,101	2,101	-	0	6,830	6,830	-	0	8,729	8,729	-	0	8,093	8,093	-
40%	0	3,772	3,772	-	0	3,196	3,196	-	0	1,237	1,237	-	0	4,967	4,967	-	0	7,254	7,254	-	0	7,480	7,480	-
50%	0	3,403	3,403	-	0	2,619	2,619	-	0	888	888	-	0	2,546	2,546	-	0	6,250	6,250	-	0	6,248	6,248	-
60%	0	2,394	2,394	-	0	1,778	1,778	-	0	826	826	-	0	1,299	1,299	-	0	4,861	4,861	-	0	4,734	4,734	-
70%	0	1,515	1,515	-	0	1,368	1,368	-	0	785	785	-	0	903	903	-	0	2,593	2,593	-	0	3,500	3,500	-
80%	0	572	572	-	0	421	421	-	0	614	614	-	0	815	815	-	0	1,071	1,071	-	0	1,616	1,616	-
90%	0	47	47	-	0	0	0	-	0	416	416	-	0	688	688	-	0	828	828	-	0	695	695	-
Long Term Full Simulation Period[b]	0	3,043	3,043	-	0	2,793	2,793	-	0	2,059	2,059	-	0	3,959	3,959	-	0	5,405	5,405	-	0	5,439	5,439	-
Water Year Types[c]																								
Wet (32%)	0	4,791	4,791	-	0	3,267	3,267	-	0	2,347	2,347	-	0	4,267	4,267	-	0	8,310	8,310	-	0	8,040	8,040	-
Above Normal (16%)	0	4,458	4,458	-	0	4,846	4,846	-	0	2,334	2,334	-	0	3,488	3,488	-	0	7,165	7,165	-	0	7,927	7,927	-
Below Normal (13%)	0	3,104	3,104	-	0	3,104	3,104	-	0	2,060	2,060	-	0	3,575	3,575	-	0	4,592	4,592	-	0	3,487	3,487	-
Dry (24%)	0	1,515	1,515	-	0	2,120	2,120	-	0	2,303	2,303	-	0	4,578	4,578	-	0	3,449	3,449	-	0	4,128	4,128	-
Critical (15%)	0	216	216	-	0	376	376	-	0	730	730	-	0	3,123	3,123	-	0	1,212	1,212	-	0	1,079	1,079	-

Statistic	Monthly Flow (cfs)																							
	April				May				June				July				August				September			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance[a]																								
10%	0	3,678	3,678	-	0	3,328	3,328	-	0	7,780	7,780	-	0	8,551	8,551	-	0	7,765	7,765	-	0	7,902	7,902	-
20%	0	2,018	2,018	-	0	1,639	1,639	-	0	6,898	6,898	-	0	8,435	8,435	-	0	7,521	7,521	-	0	3,869	3,869	-
30%	0	1,613	1,613	-	0	1,437	1,437	-	0	6,219	6,219	-	0	8,243	8,243	-	0	7,117	7,117	-	0	3,291	3,291	-
40%	0	1,316	1,316	-	0	1,297	1,297	-	0	5,219	5,219	-	0	8,109	8,109	-	0	5,158	5,158	-	0	2,955	2,955	-
50%	0	616	616	-	0	662	662	-	0	4,082	4,082	-	0	7,077	7,077	-	0	4,802	4,802	-	0	2,501	2,501	-
60%	0	492	492	-	0	541	541	-	0	2,339	2,339	-	0	5,992	5,992	-	0	3,780	3,780	-	0	2,131	2,131	-
70%	0	231	231	-	0	372	372	-	0	1,357	1,357	-	0	4,878	4,878	-	0	1,467	1,467	-	0	1,710	1,710	-
80%	0	89	89	-	0	240	240	-	0	689	689	-	0	2,742	2,742	-	0	265	265	-	0	1,098	1,098	-
90%	0	5	5	-	0	108	108	-	0	639	639	-	0	15	15	-	0	250	250	-	0	405	405	-
Long Term Full Simulation Period[b]	0	1,331	1,331	-	0	1,414	1,414	-	0	4,023	4,023	-	0	5,837	5,837	-	0	4,179	4,179	-	0	2,994	2,994	-
Water Year Types[c]																								
Wet (32%)	0	2,604	2,604	-	0	3,030	3,030	-	0	6,250	6,250	-	0	7,234	7,234	-	0	6,629	6,629	-	0	4,485	4,485	-
Above Normal (16%)	0	1,383	1,383	-	0	1,252	1,252	-	0	5,335	5,335	-	0	7,898	7,898	-	0	6,159	6,159	-	0	3,580	3,580	-
Below Normal (13%)	0	524	524	-	0	534	534	-	0	3,183	3,183	-	0	7,630	7,630	-	0	5,216	5,216	-	0	2,899	2,899	-
Dry (24%)	0	718	718	-	0	570	570	-	0	2,783	2,783	-	0	4,801	4,801	-	0	1,419	1,419	-	0	2,172	2,172	-
Critical (15%)	0	280	280	-	0	299	299	-	0	612	612	-	0	662	662	-	0	373	373	-	0	588	588	-

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-1. Monthly Flow Ranges For North Delta Intakes Diversion Flow, All Years

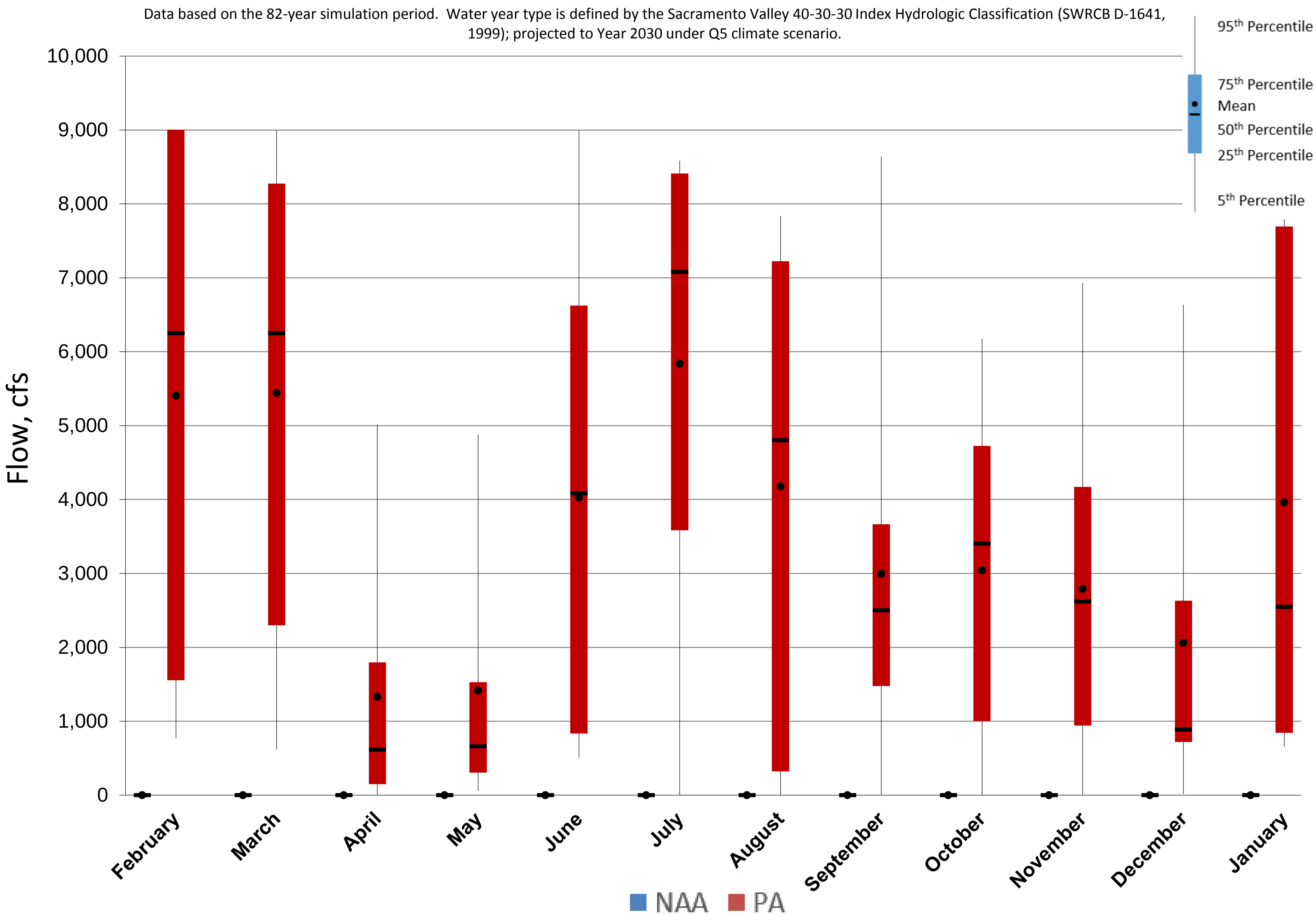


Figure 5.B.5-39-2. Monthly Flow Ranges For North Delta Intakes Diversion Flow, Wet Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 26 wet years.

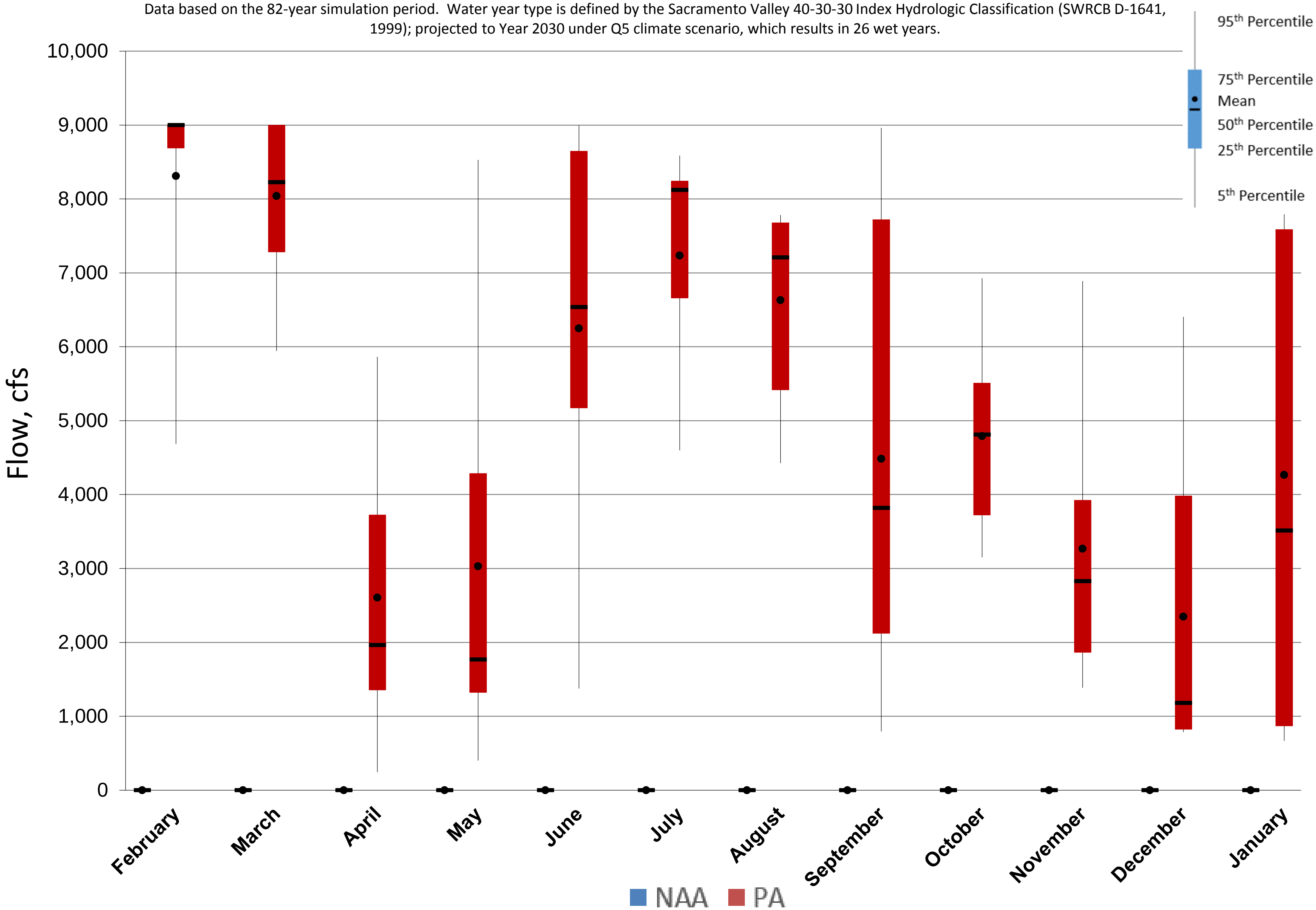


Figure 5.B.5-39-3. Monthly Flow Ranges For North Delta Intakes Diversion Flow, Above Normal Years

Data based on the 82-year simulation period. Water year type is defined by the Sacramento Valley 40-30-30 Index Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030 under Q5 climate scenario, which results in 13 above normal years.

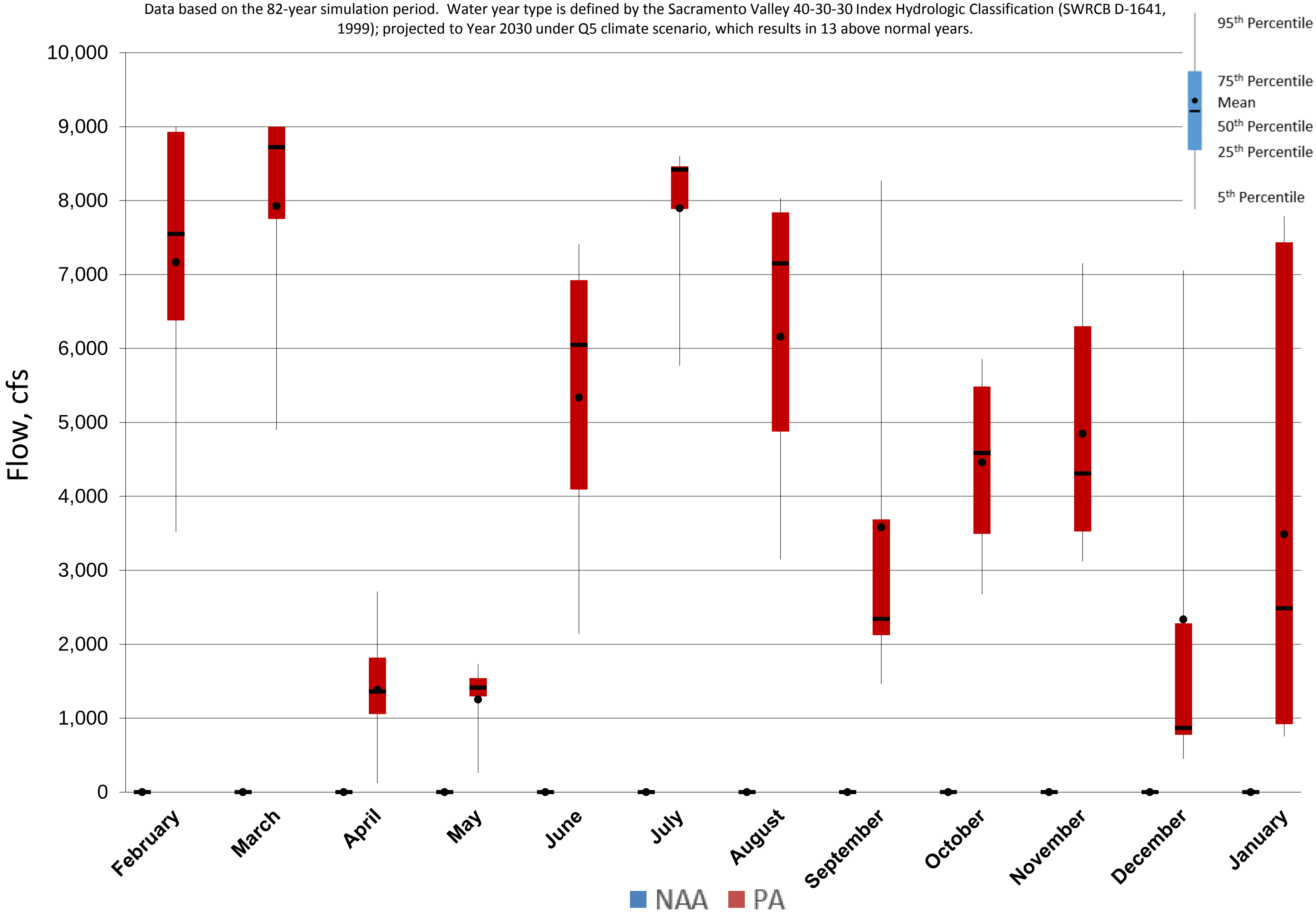


Figure 5.B.5-39-4. Monthly Flow Ranges For North Delta Intakes Diversion Flow, Below Normal Years

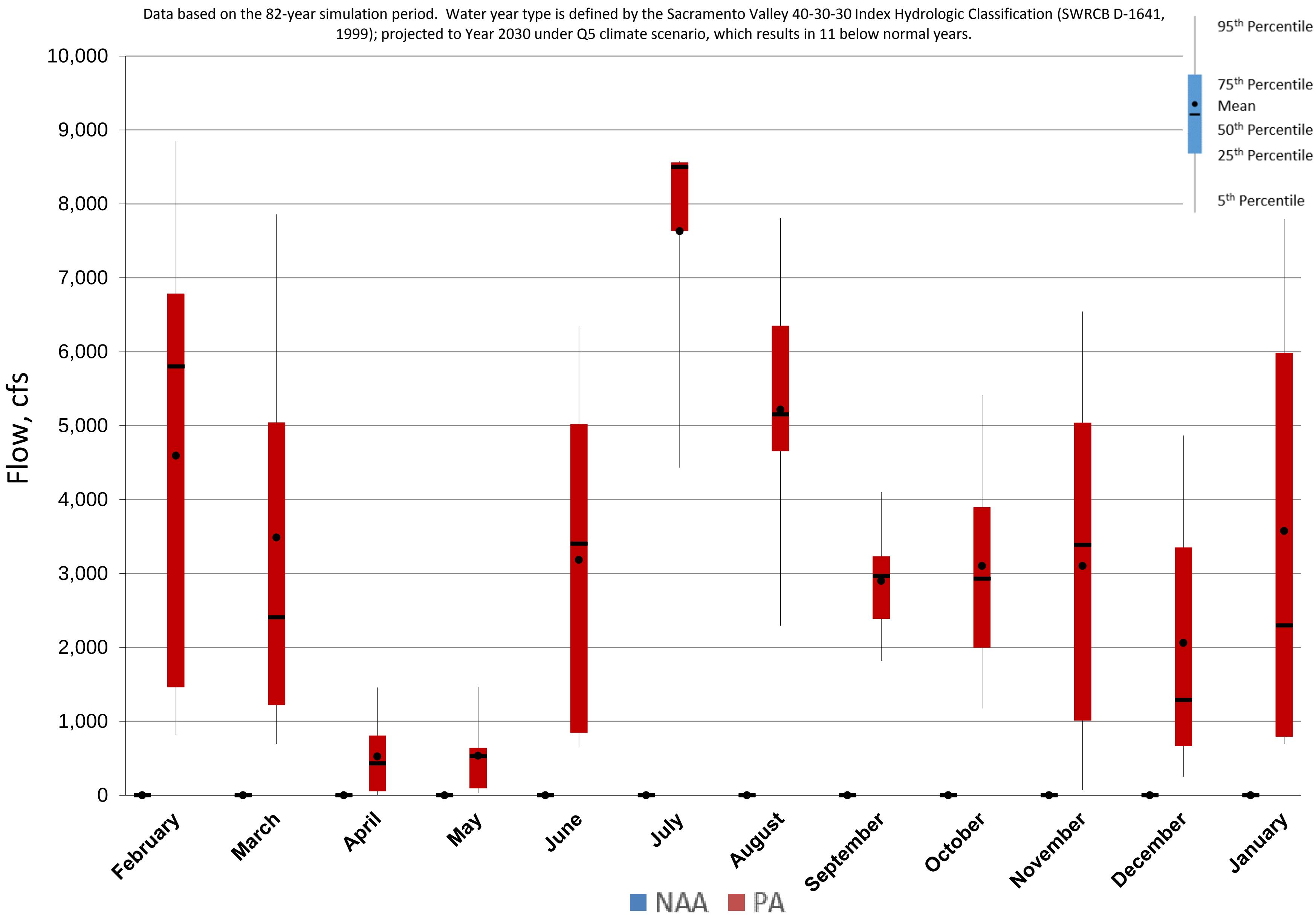


Figure 5.B.5-39-5. Monthly Flow Ranges For North Delta Intakes Diversion Flow, Dry Years

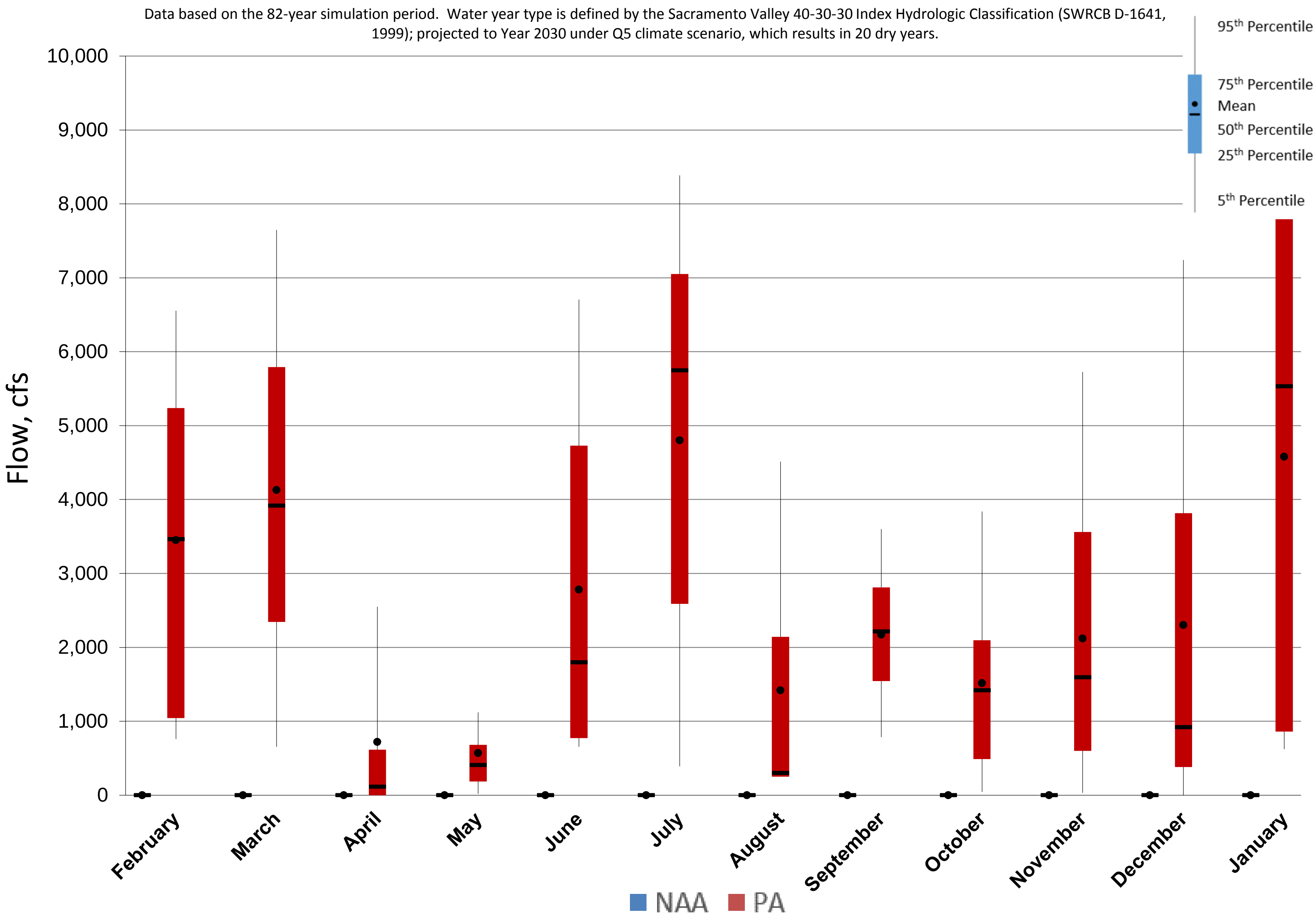


Figure 5.B.5-39-6. Monthly Flow Ranges For North Delta Intakes Diversion Flow, Critical Years

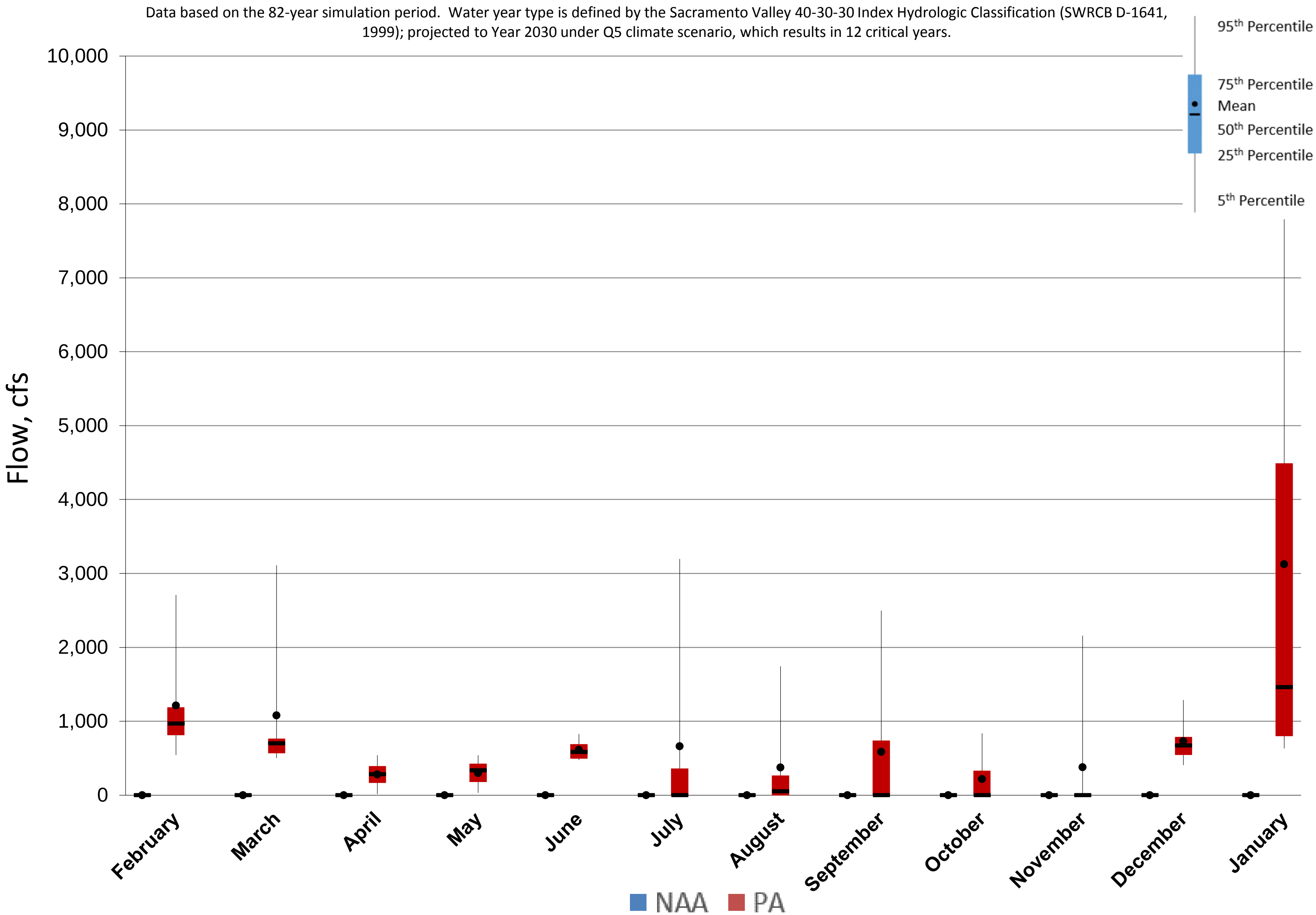
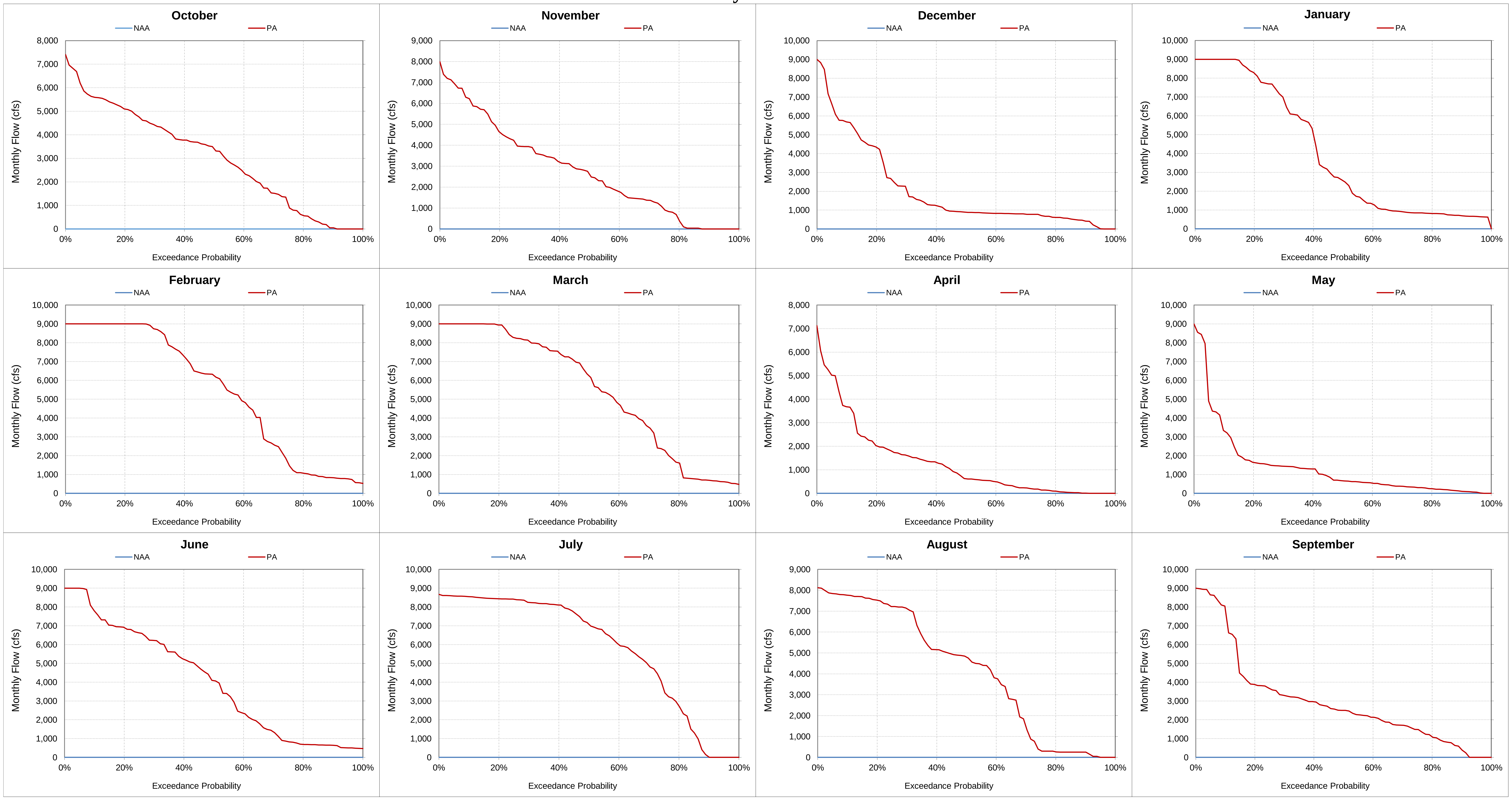
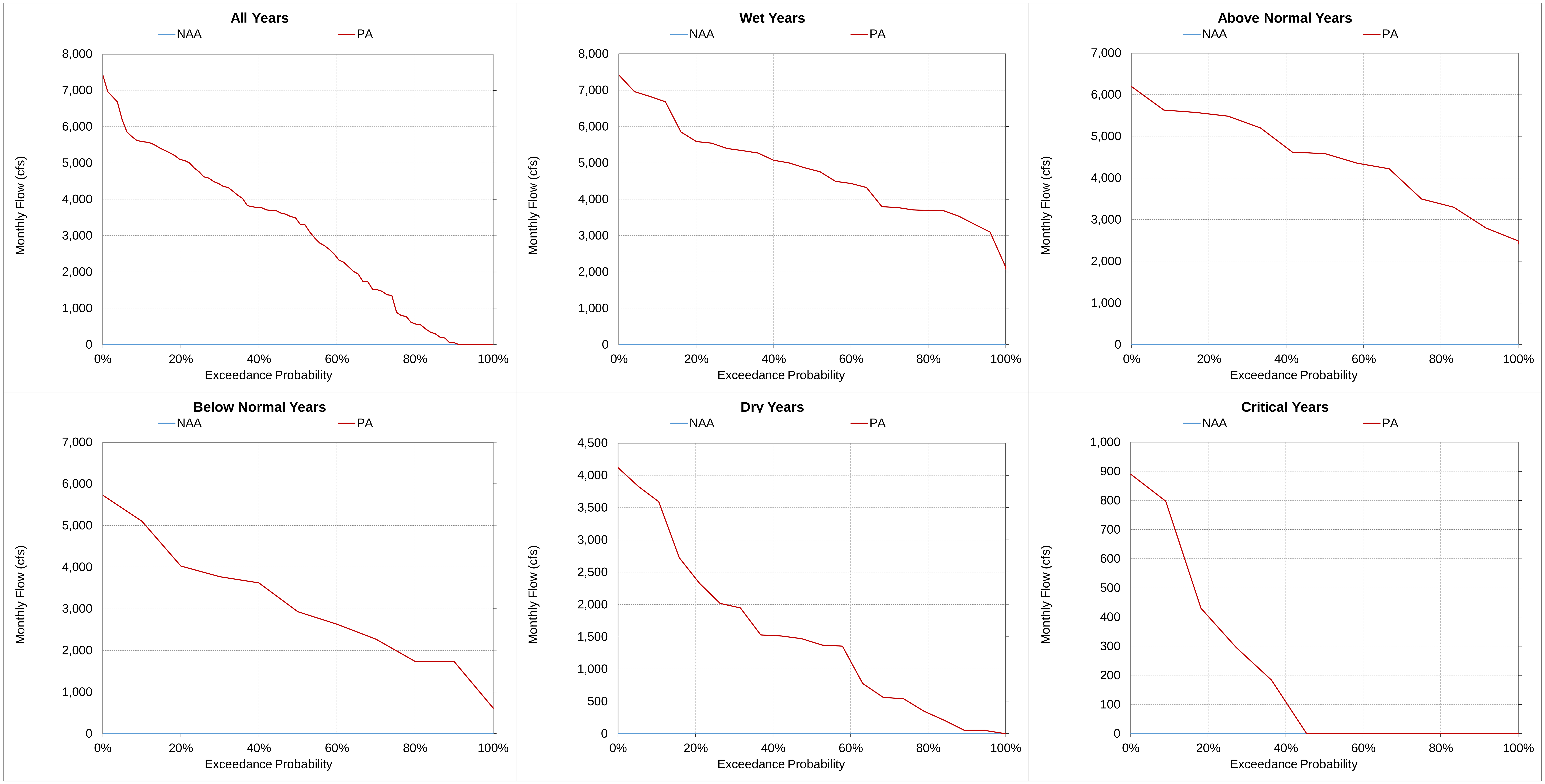


Figure 5.B.5-39-7. North Delta Intakes Diversion Flow, Monthly Flow Probability of Exceedance



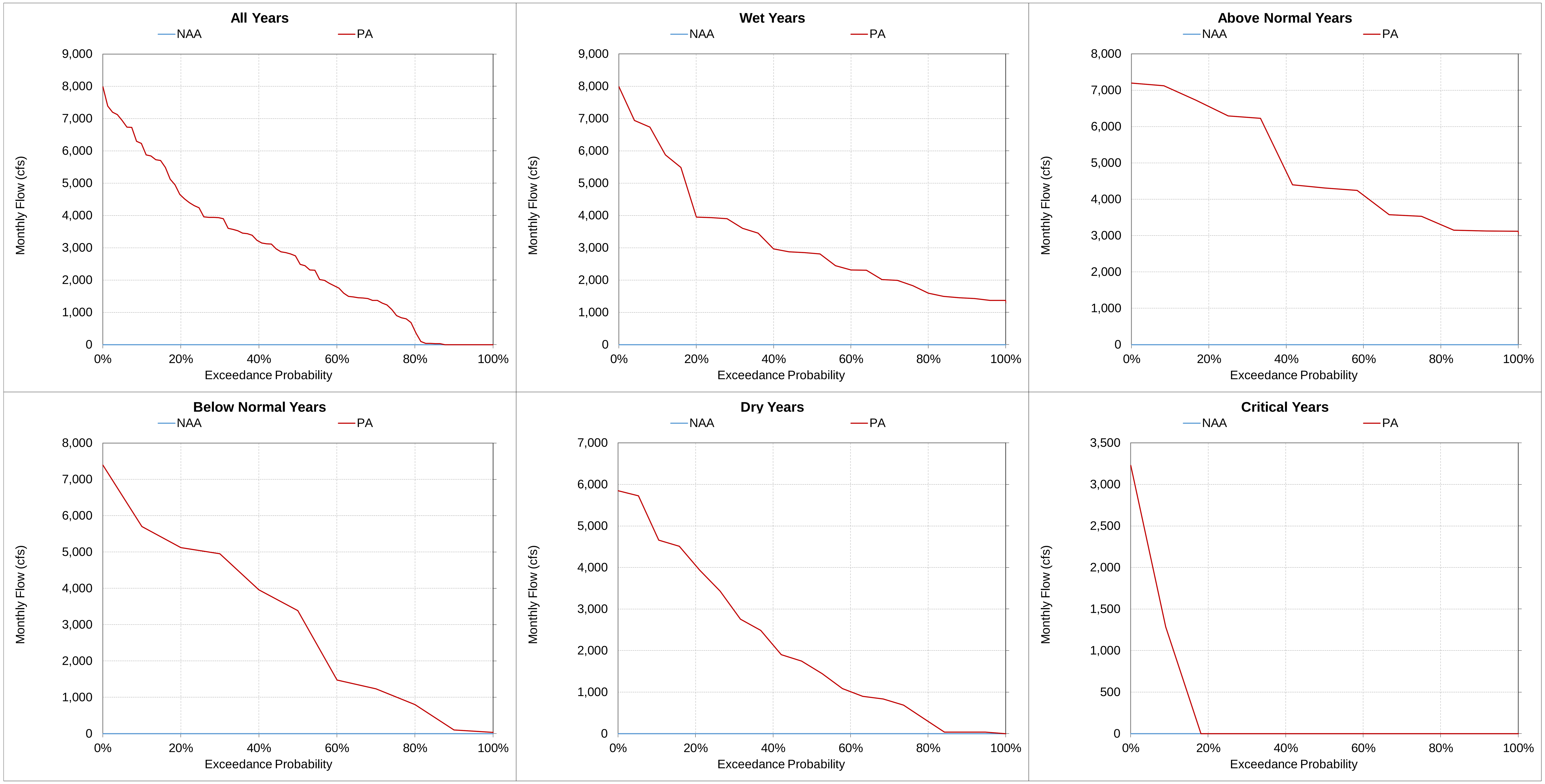
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-8. North Delta Intakes Diversion Flow, Monthly Flow October



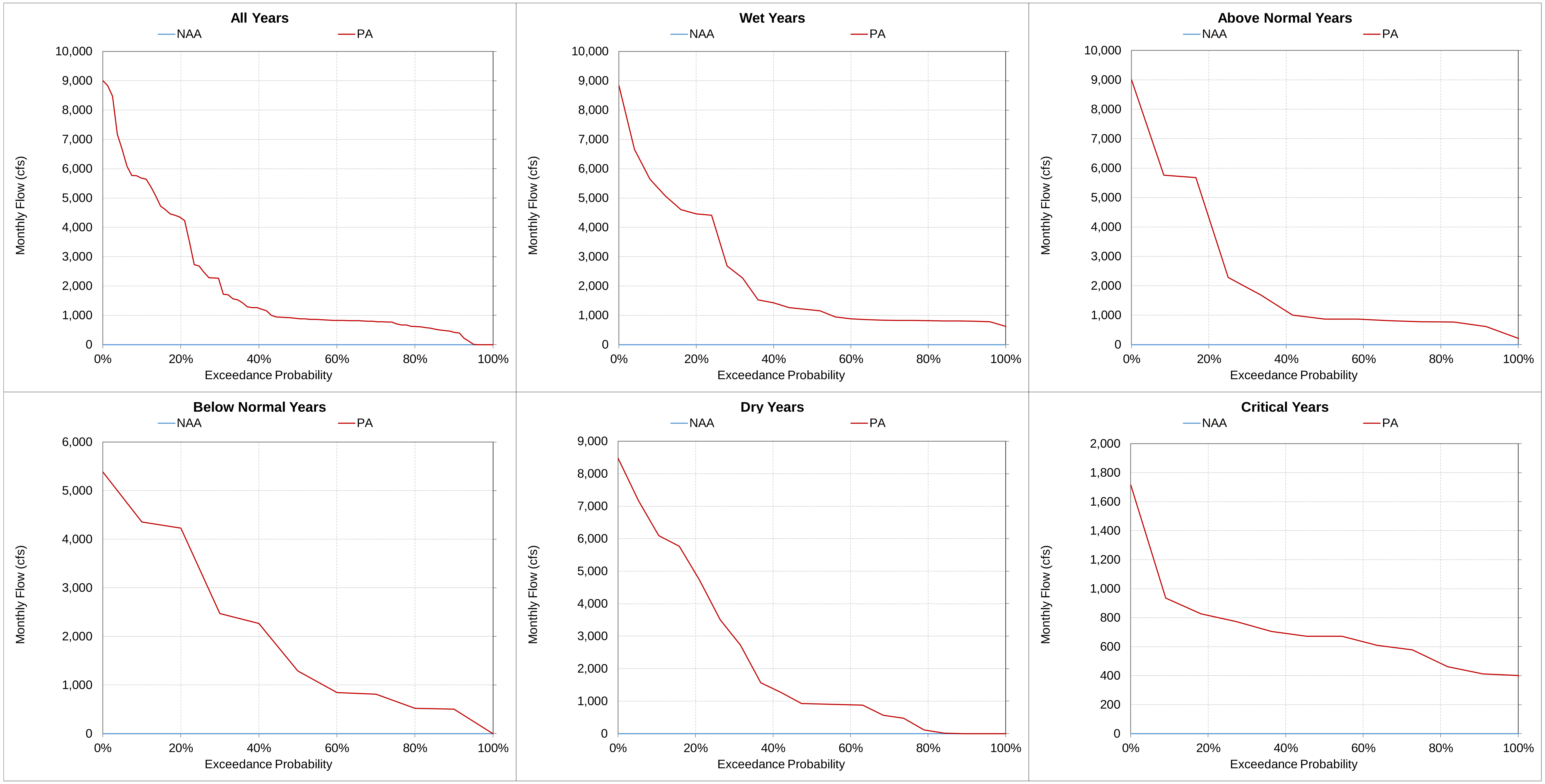
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-9. North Delta Intakes Diversion Flow, Monthly Flow November



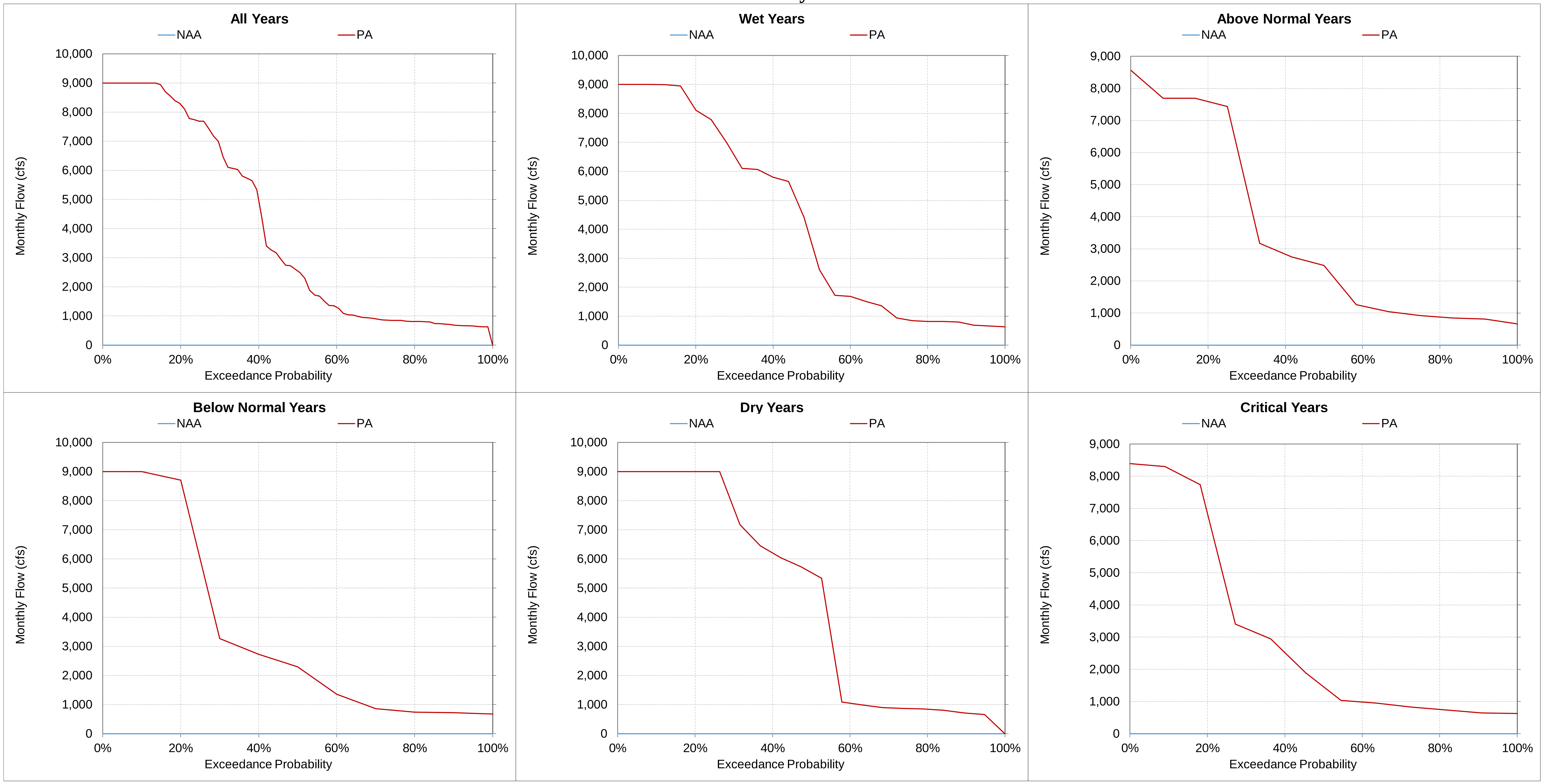
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-10. North Delta Intakes Diversion Flow, Monthly Flow
December



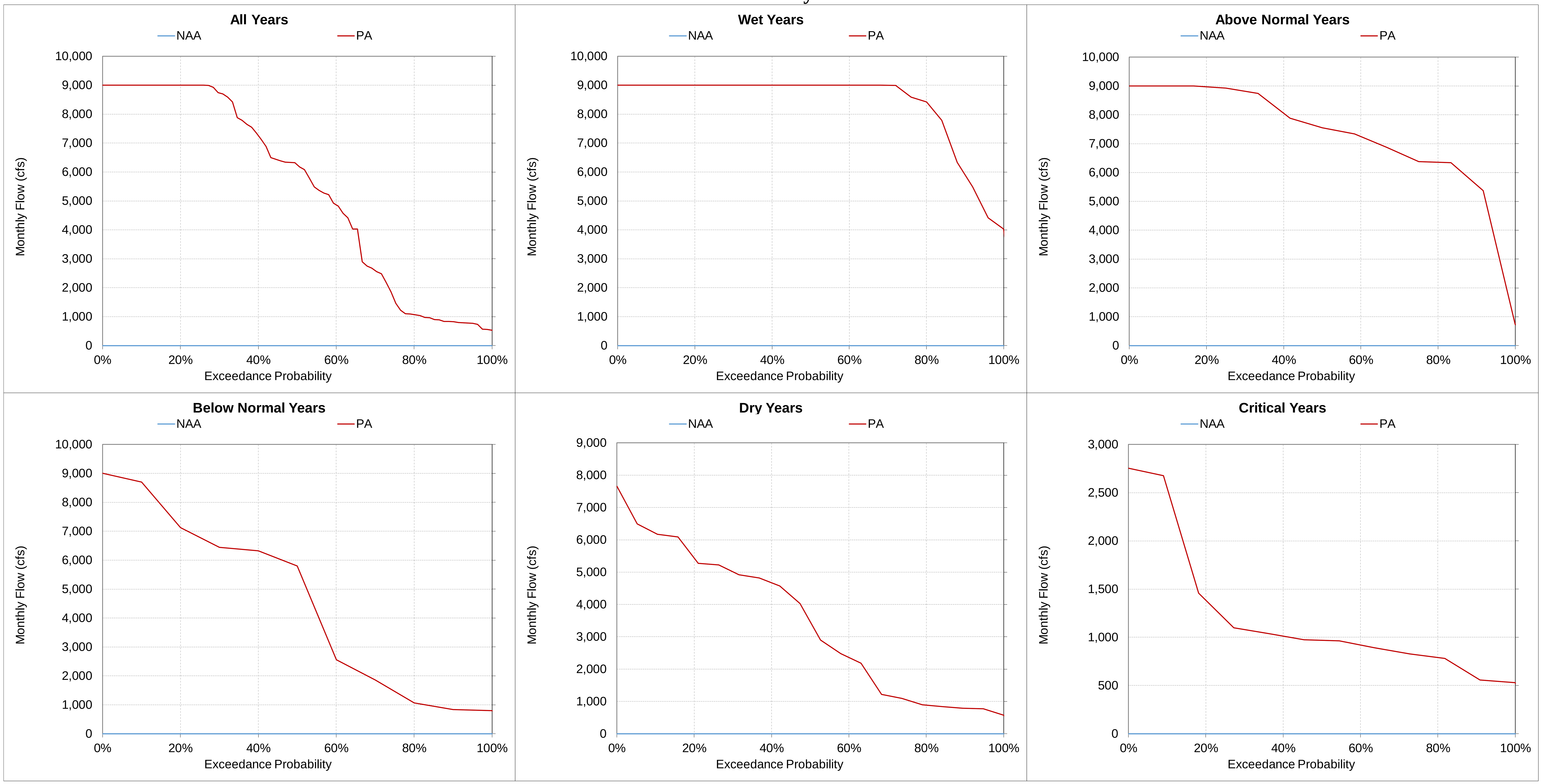
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-11. North Delta Intakes Diversion Flow, Monthly Flow January



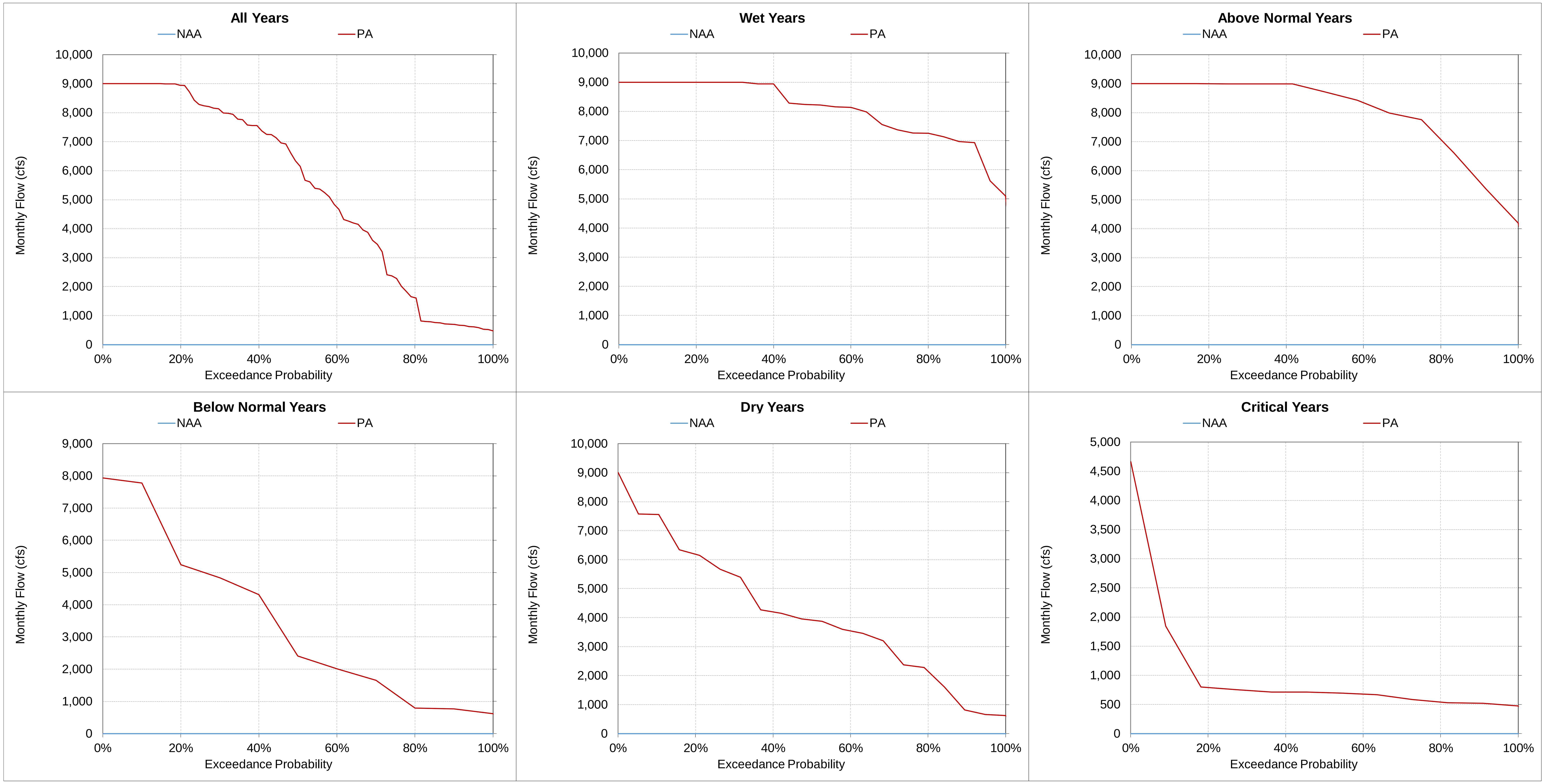
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-12. North Delta Intakes Diversion Flow, Monthly Flow February



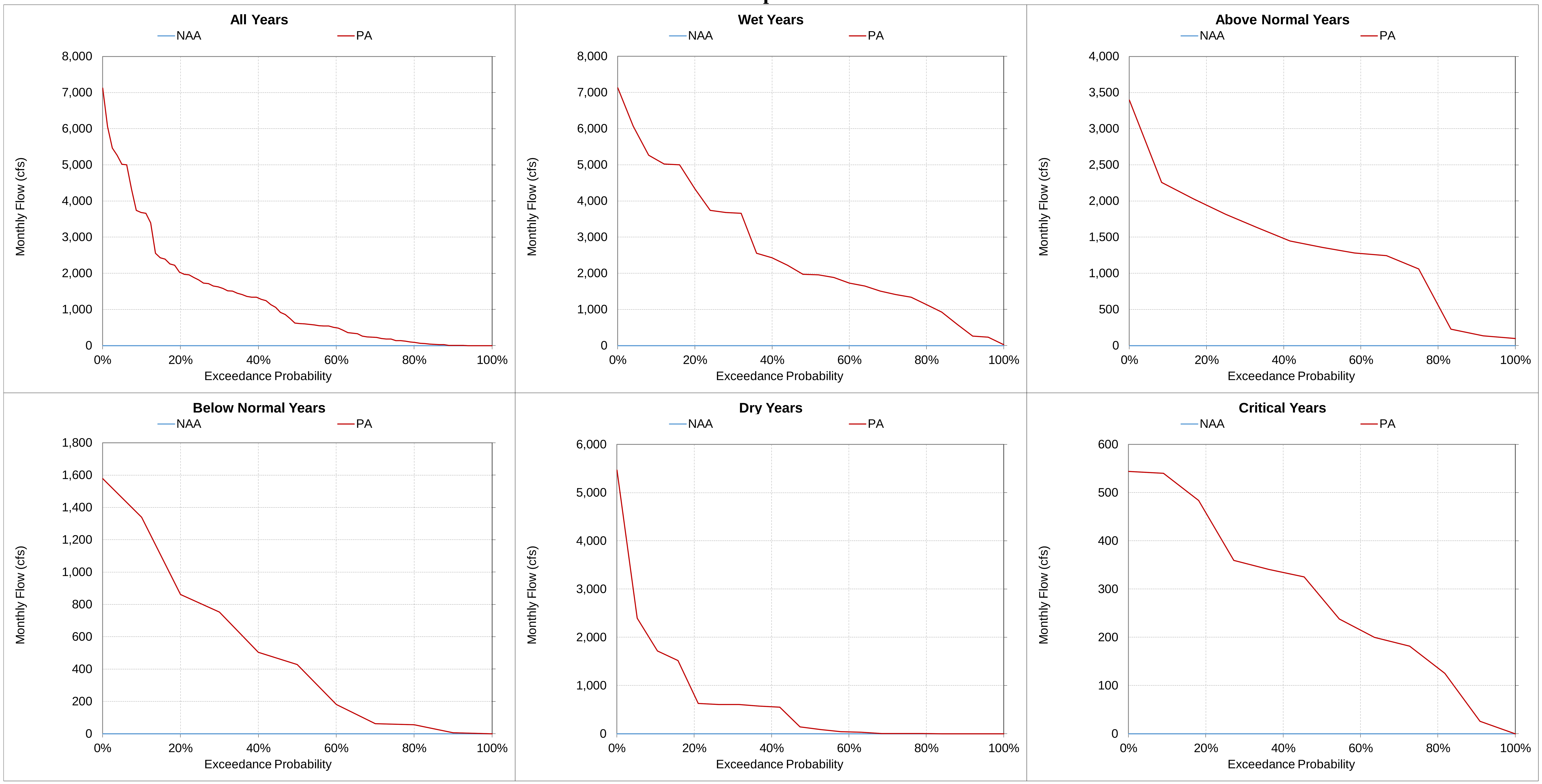
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-13. North Delta Intakes Diversion Flow, Monthly Flow March



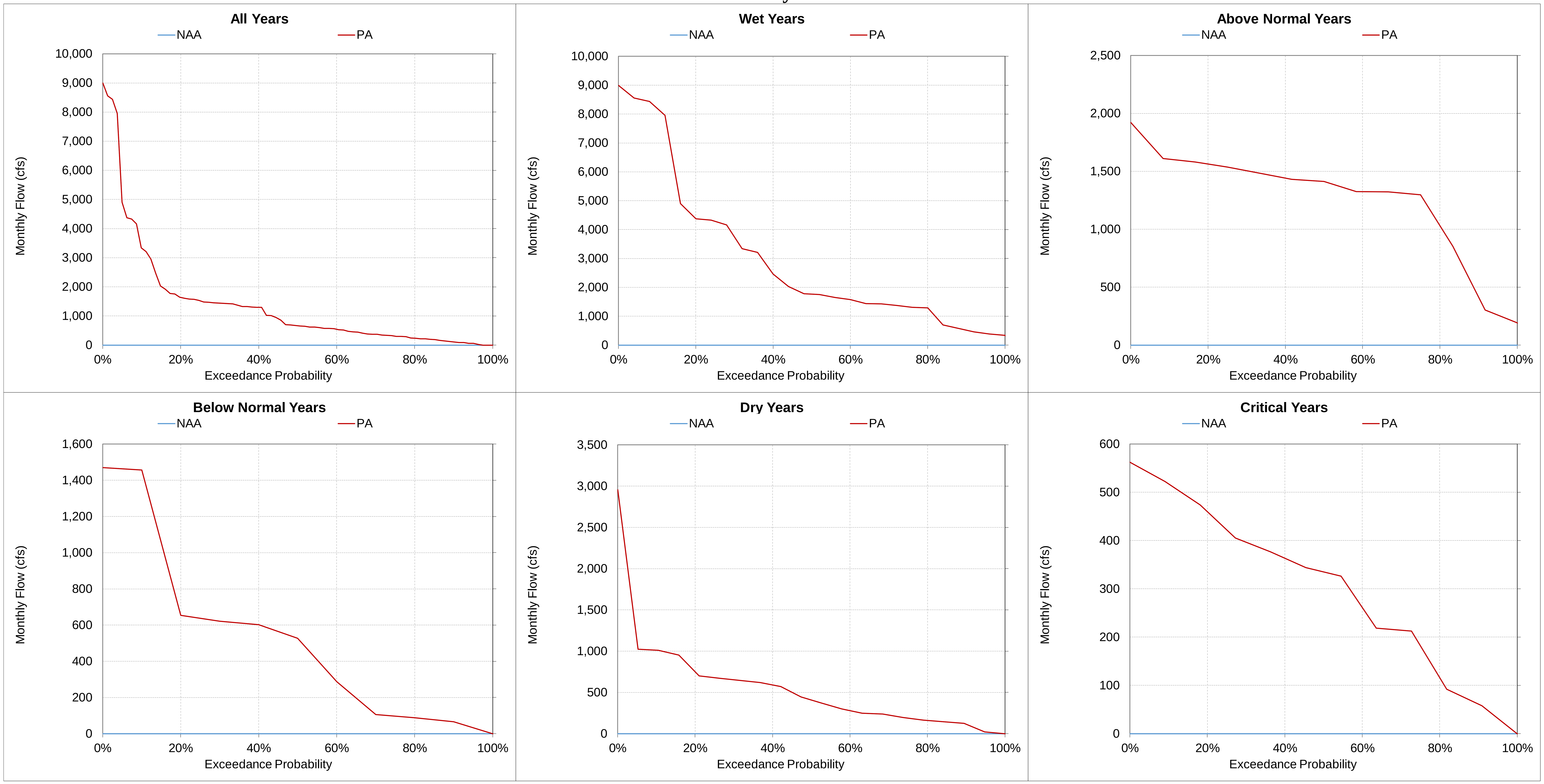
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-14. North Delta Intakes Diversion Flow, Monthly Flow April



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-15. North Delta Intakes Diversion Flow, Monthly Flow May



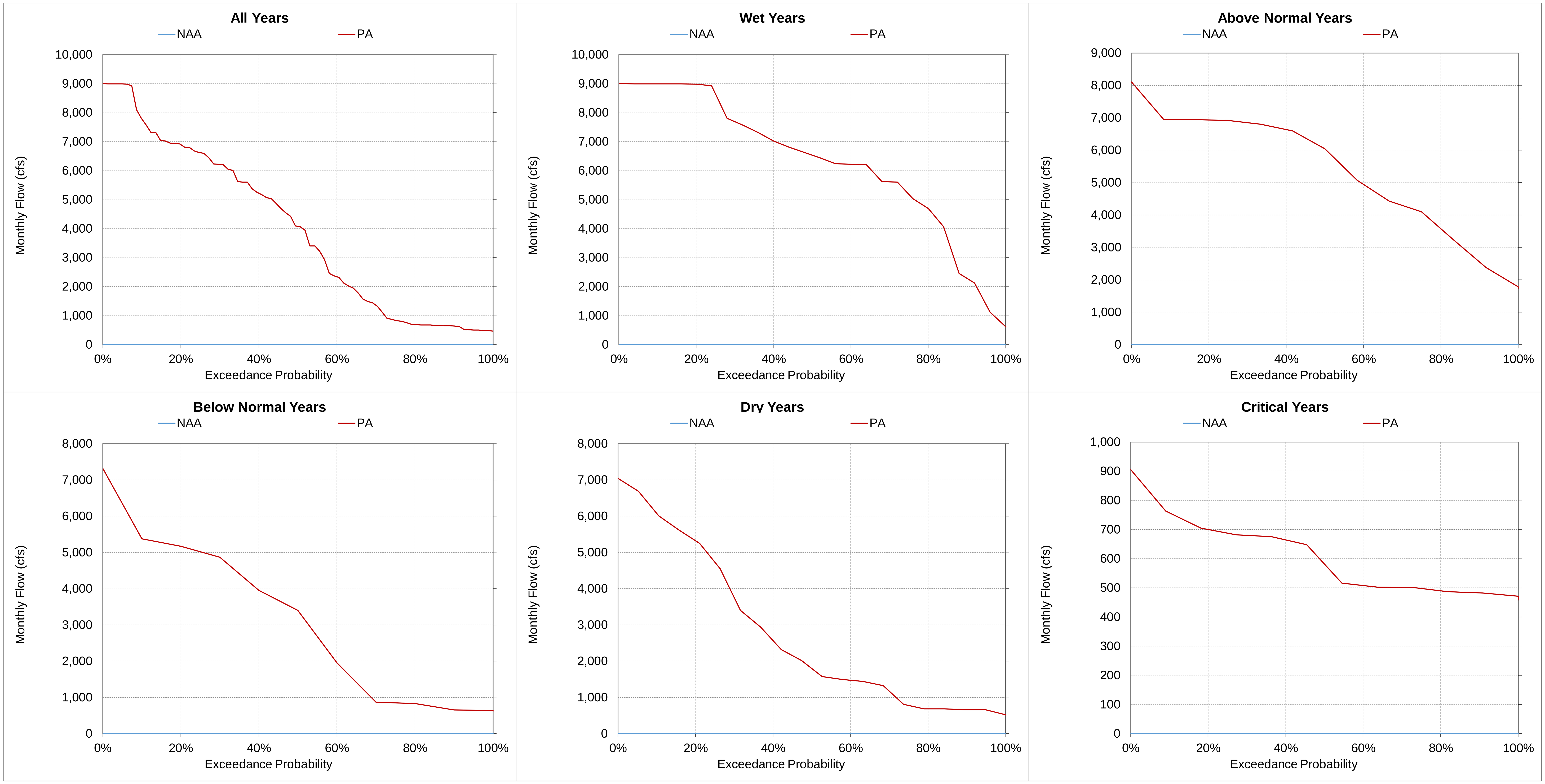
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.

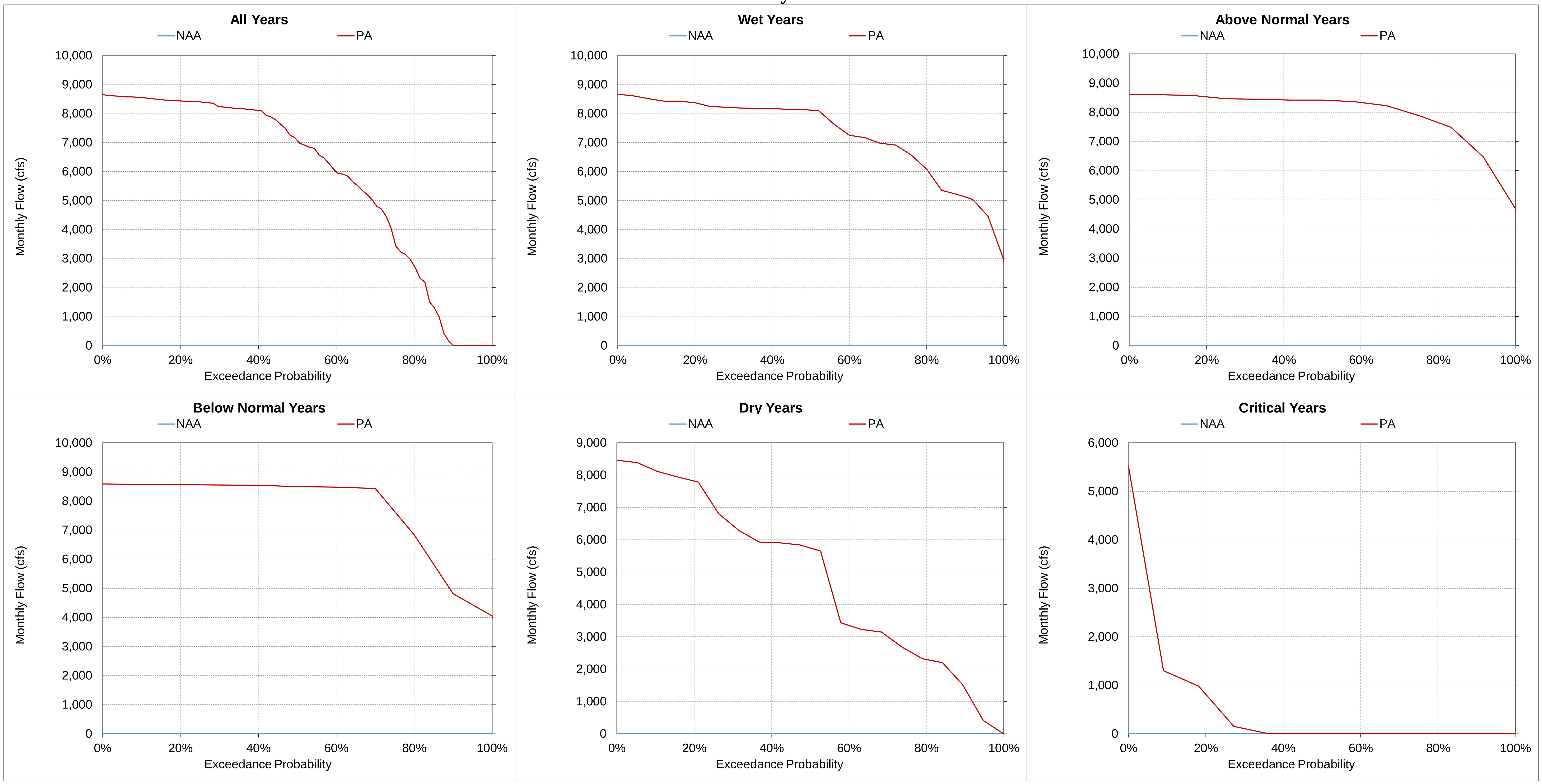
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-16. North Delta Intakes Diversion Flow, Monthly Flow June



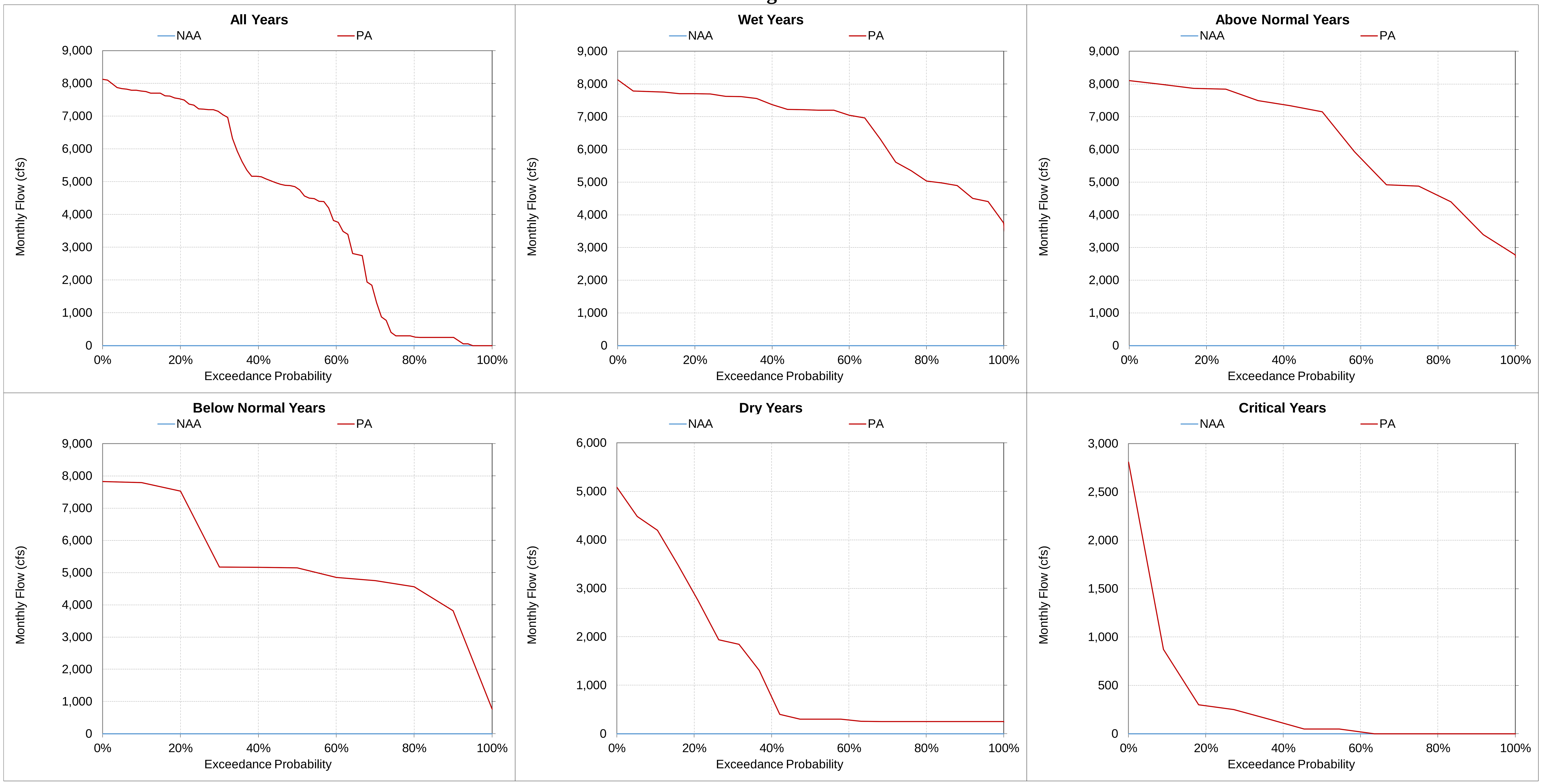
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-17. North Delta Intakes Diversion Flow, Monthly Flow July



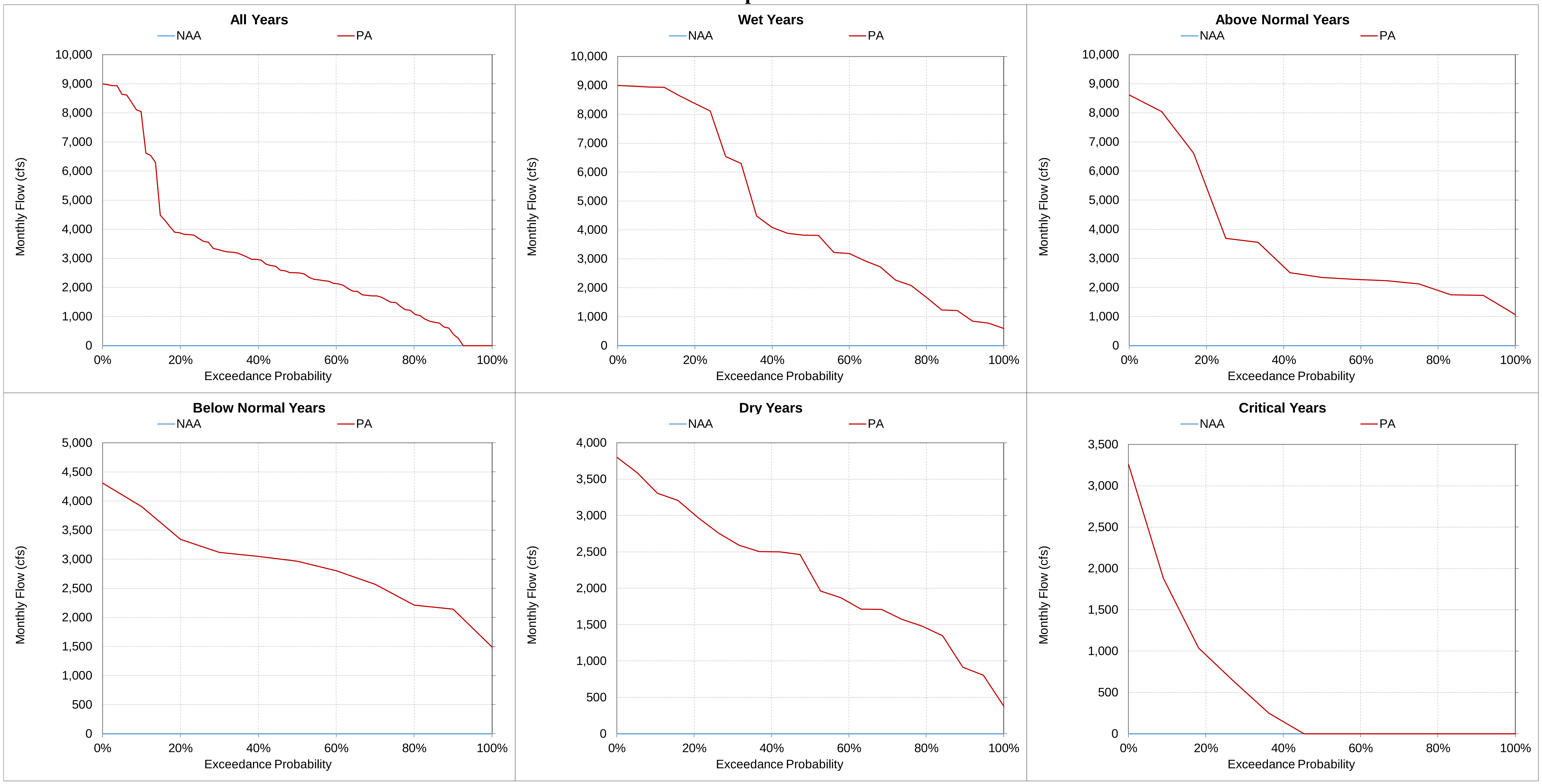
a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-18. North Delta Intakes Diversion Flow, Monthly Flow
August



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5-39-19. North Delta Intakes Diversion Flow, Monthly Flow September



a Exceedance probability is defined as the probability a given value will be exceeded in any one year.
b Based on the 82-year simulation period.
c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030. WYT for a given water year is applied from Feb through Jan consistent with CALSIM II.
d There are 26 wet years, 13 above normal years, 11 below normal years, 20 dry years, and 12 critical years projected for 2030 under Q5 climate scenario.

Figure 5.B.5.40-1 Sacramento River at Rio Vista Monthly Temperature Probability of Exceedance

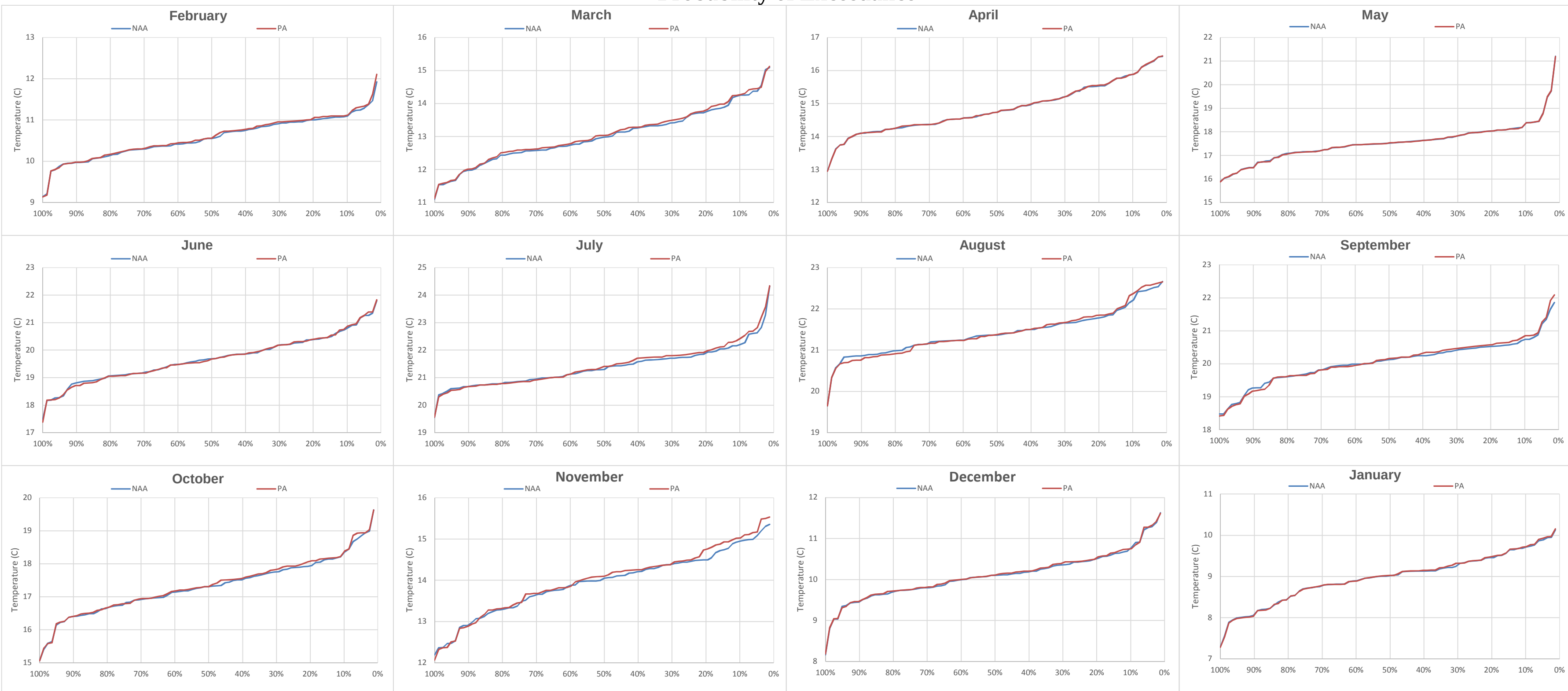


Figure 5.B.5.40-2 Sacramento River at Rio Vista Monthly Temperature

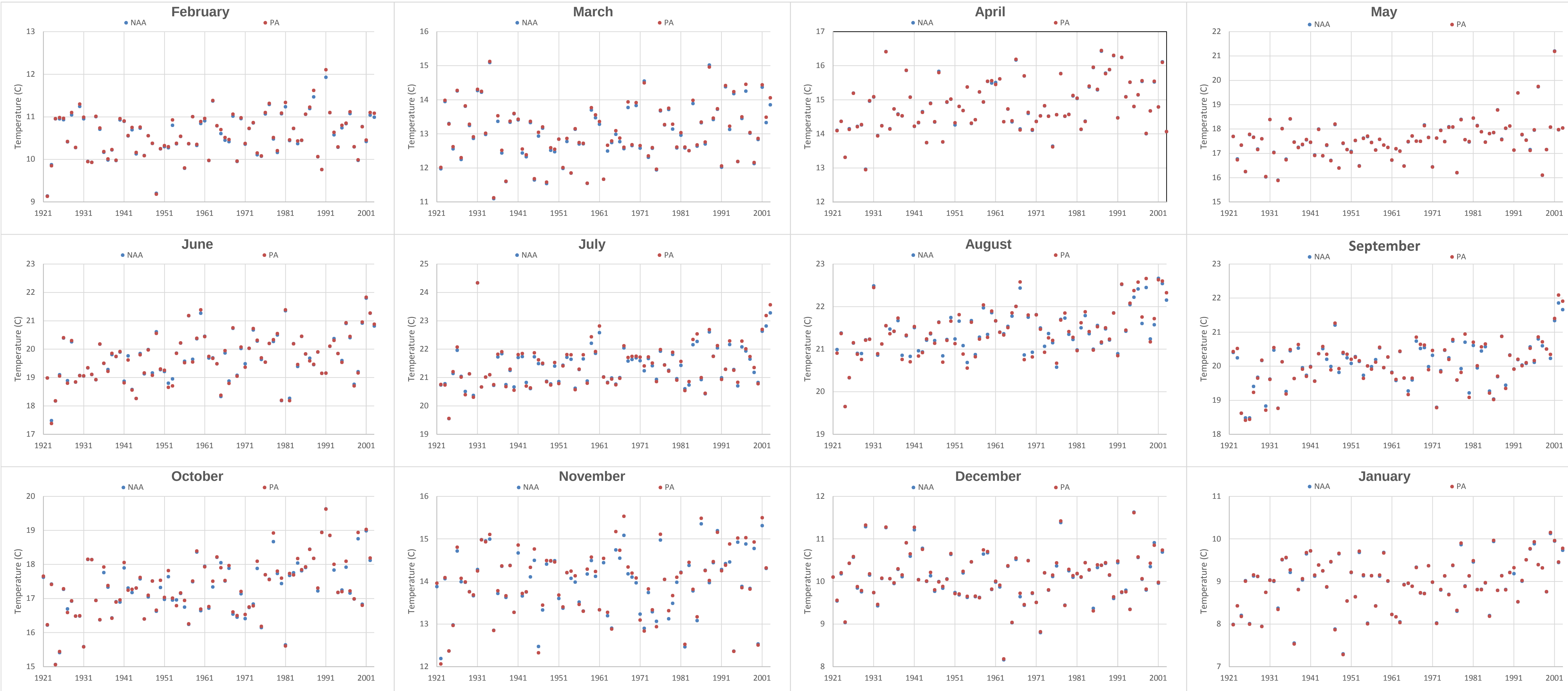


Figure 5.B.5.40-3 Sacramento River at Rio Vista Monthly Temperature February Daily Temperature Ranges

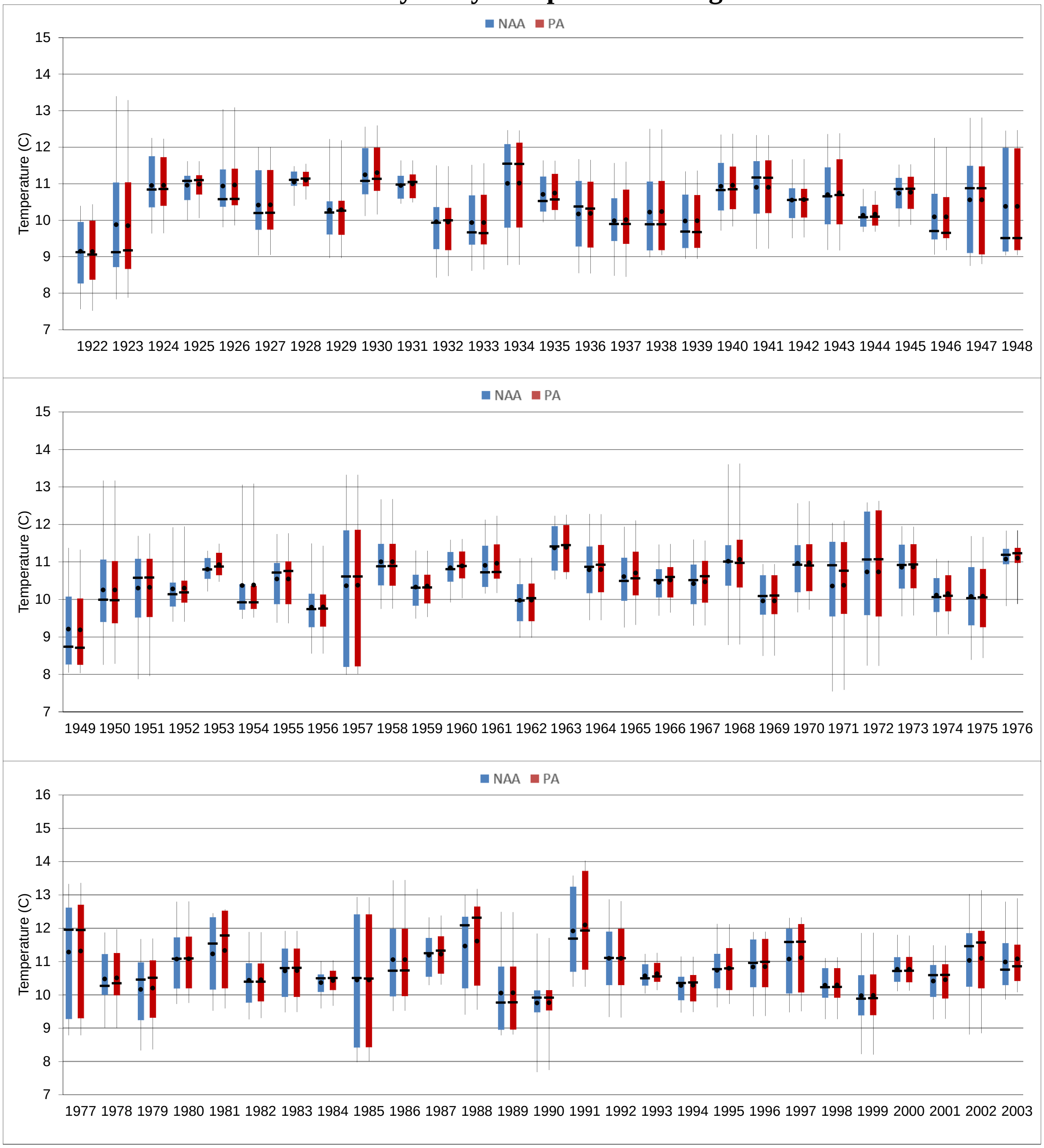


Figure 5.B.5.40-4 Sacramento River at Rio Vista Monthly Temperature
March Daily Temperature Ranges

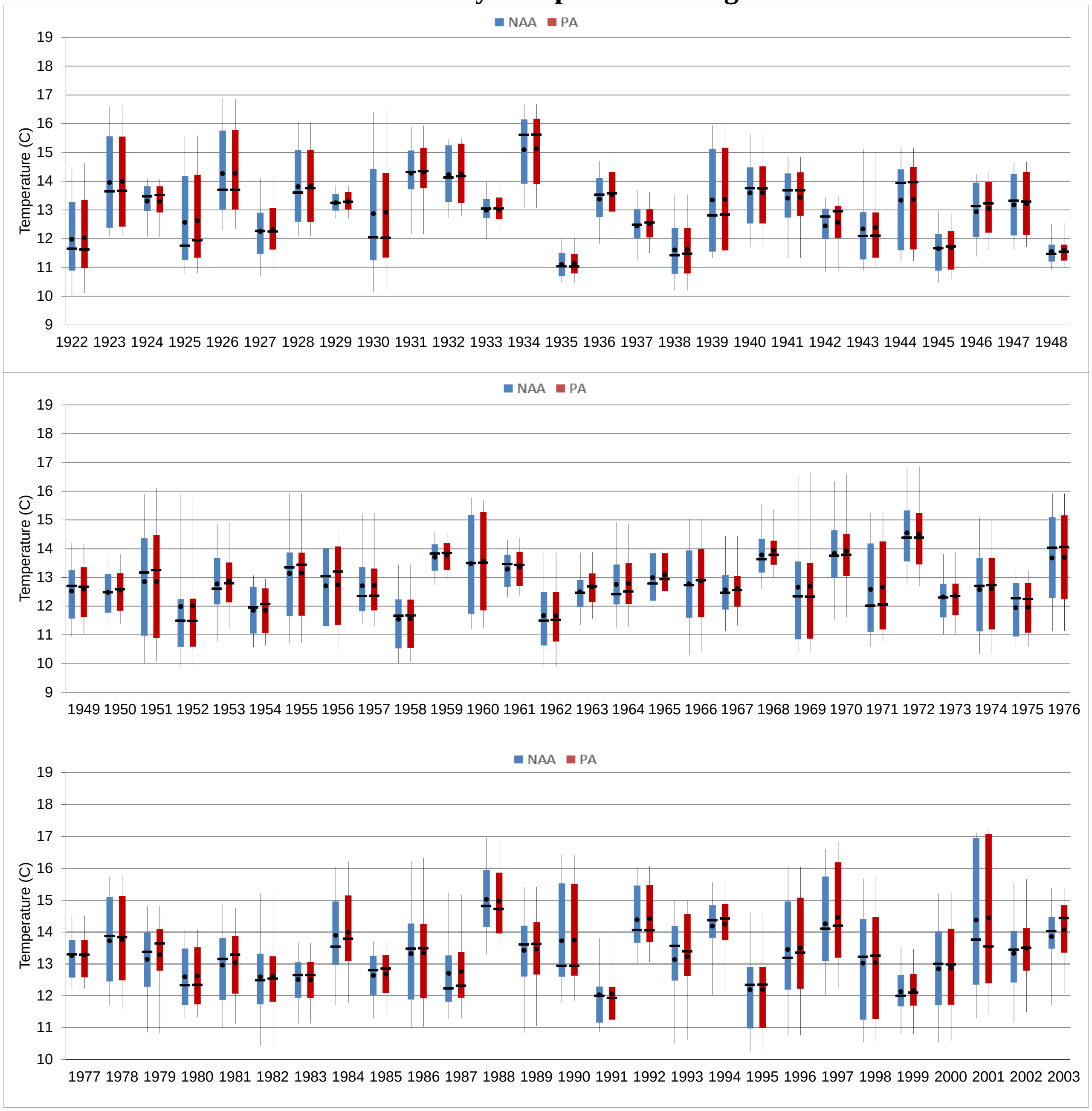


Figure 5.B.5.40-5 Sacramento River at Rio Vista Monthly Temperature April Daily Temperature Ranges

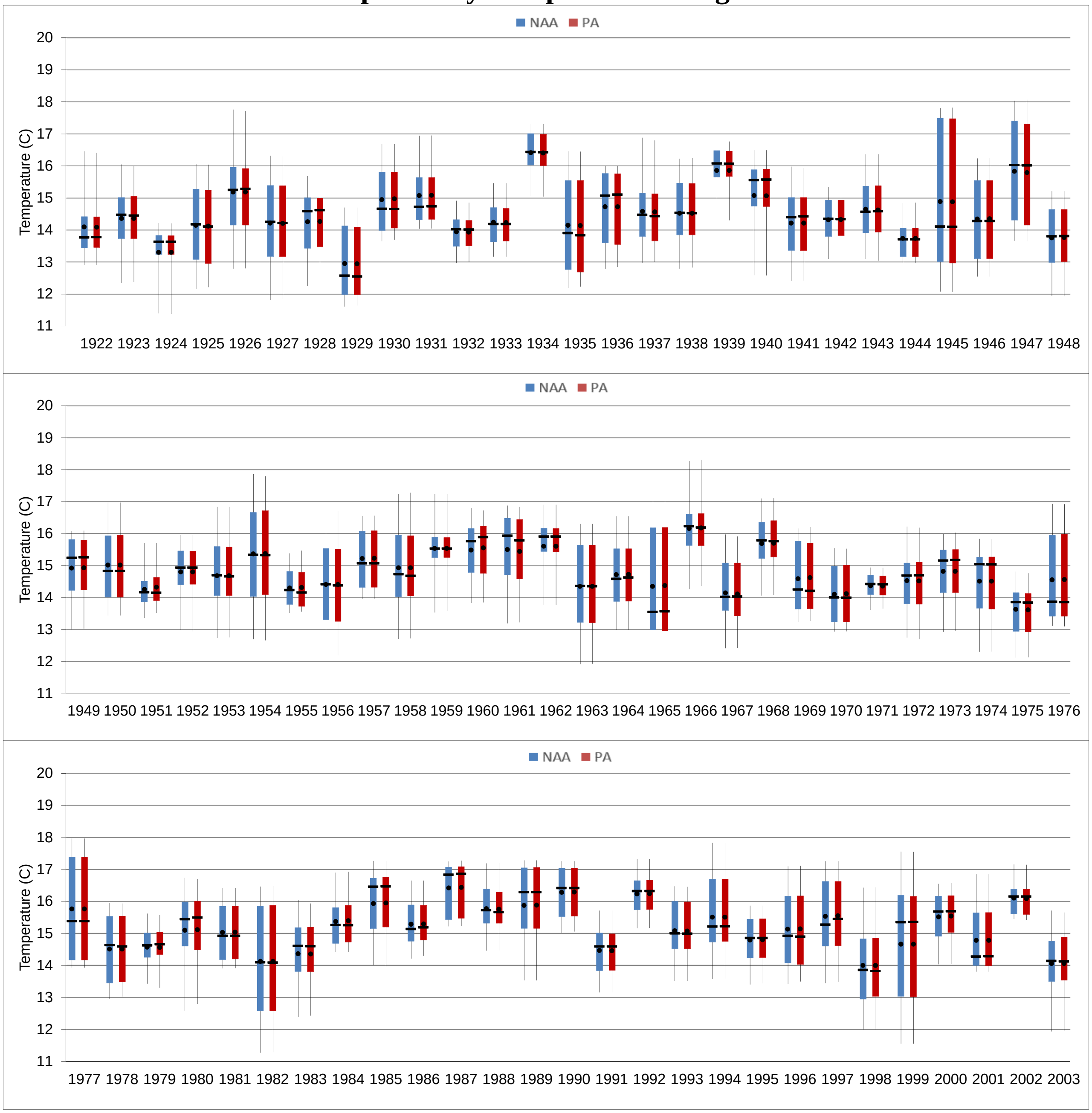


Figure 5.B.5.40-6 Sacramento River at Rio Vista Monthly Temperature May Daily Temperature Ranges

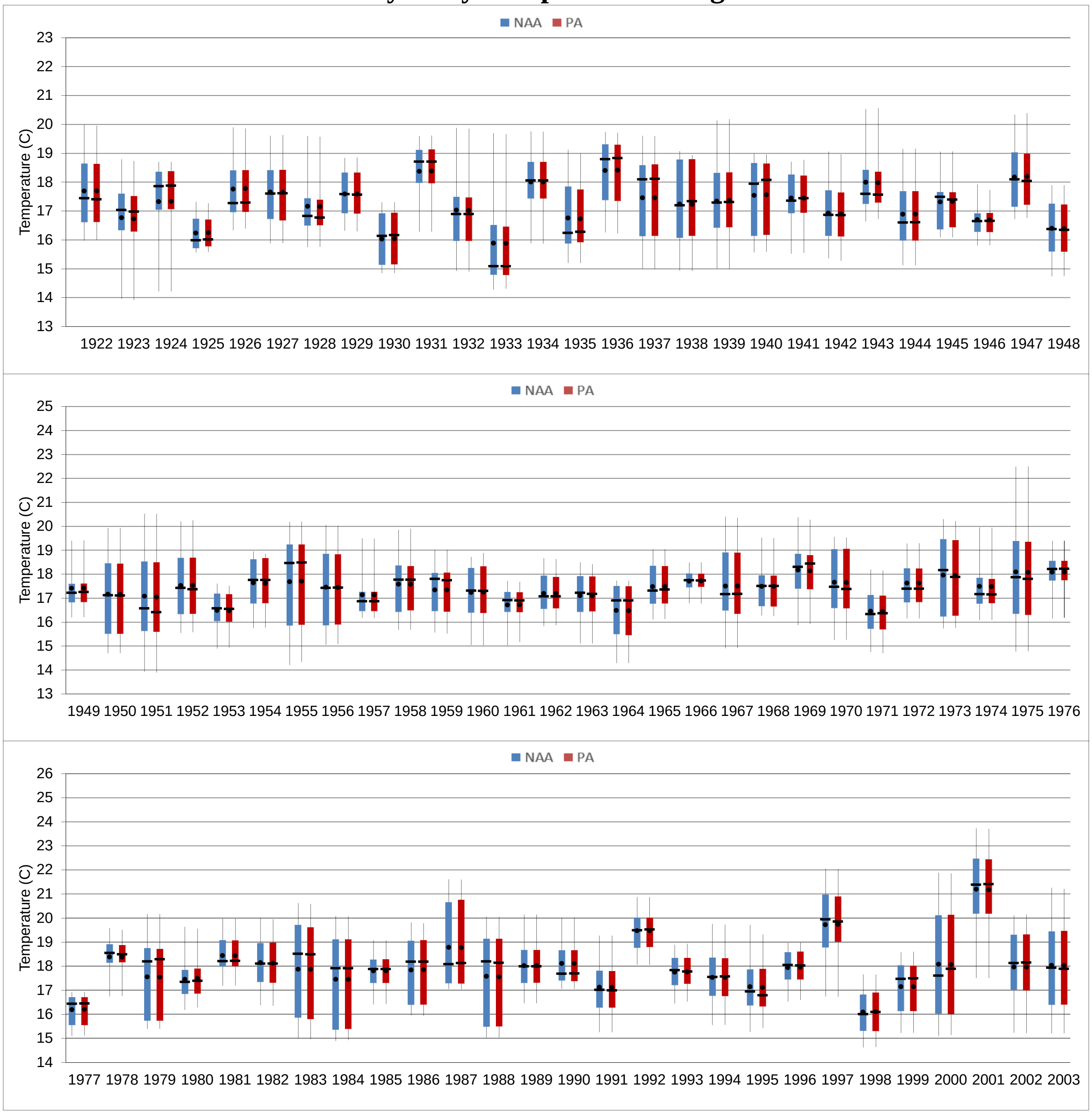


Figure 5.B.5.40-7 Sacramento River at Rio Vista Monthly Temperature
June Daily Temperature Ranges

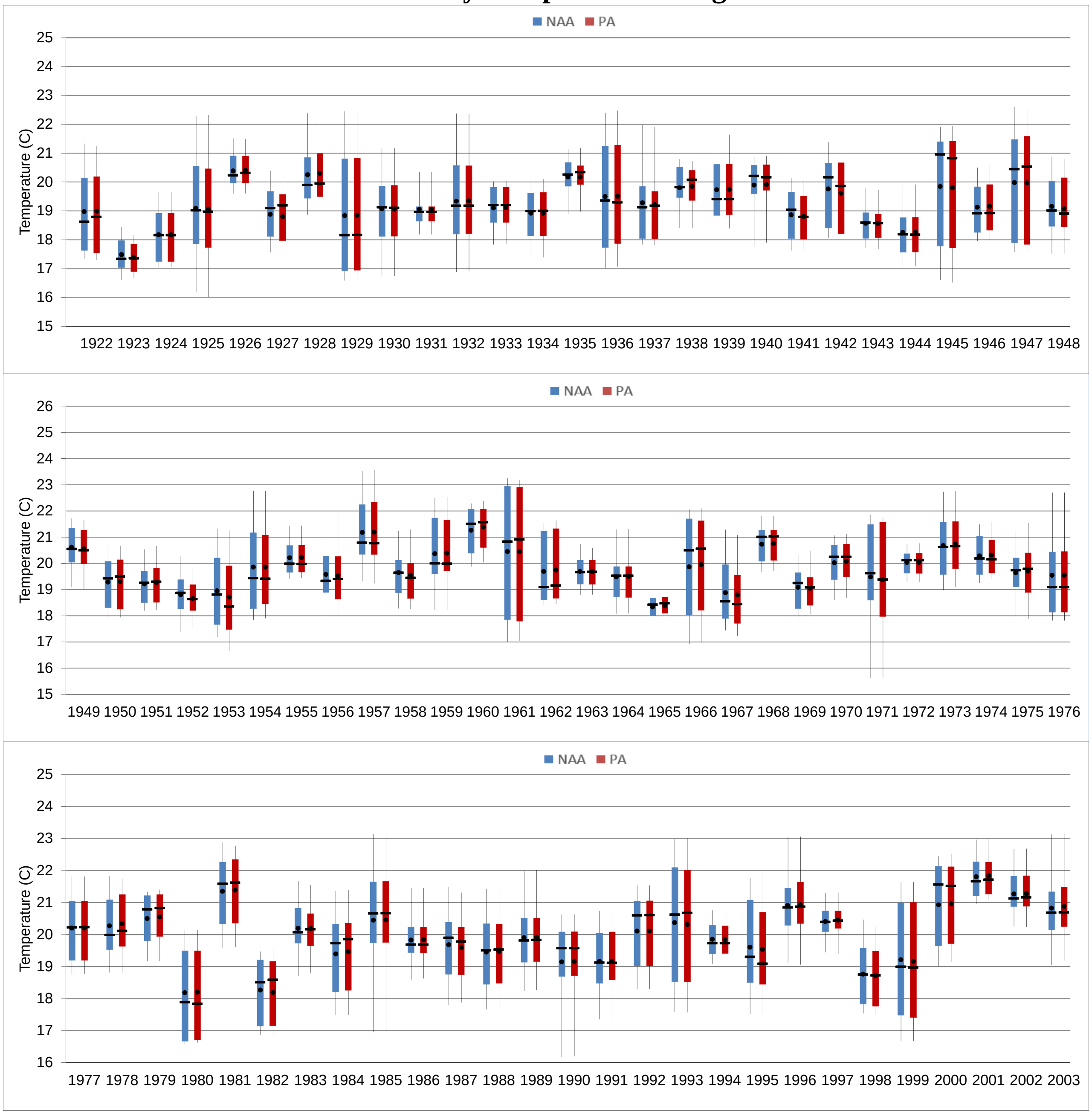


Figure 5.B.5.40-8 Sacramento River at Rio Vista Monthly Temperature
July Daily Temperature Ranges

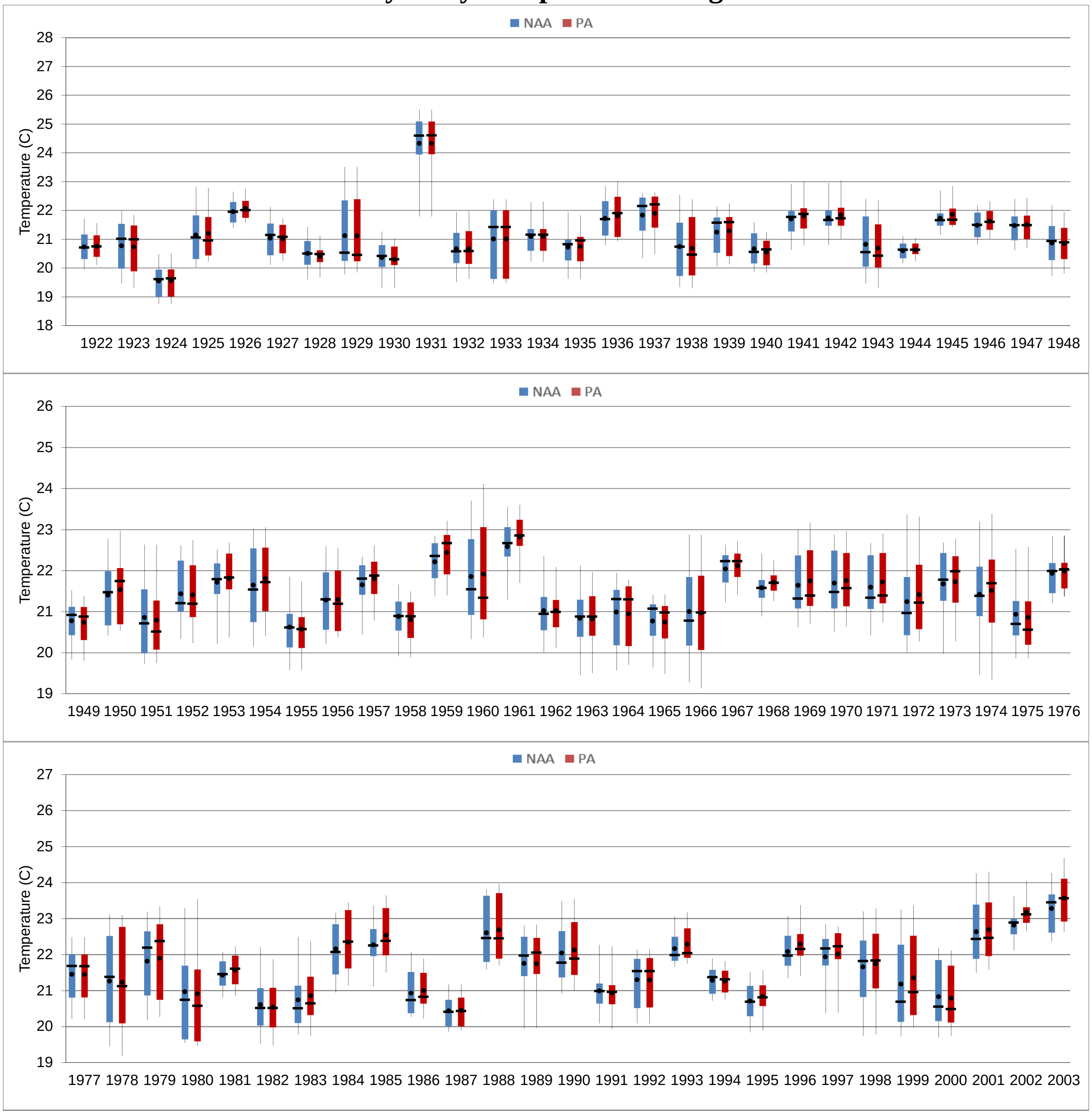


Figure 5.B.5.40-9 Sacramento River at Rio Vista Monthly Temperature
August Daily Temperature Ranges

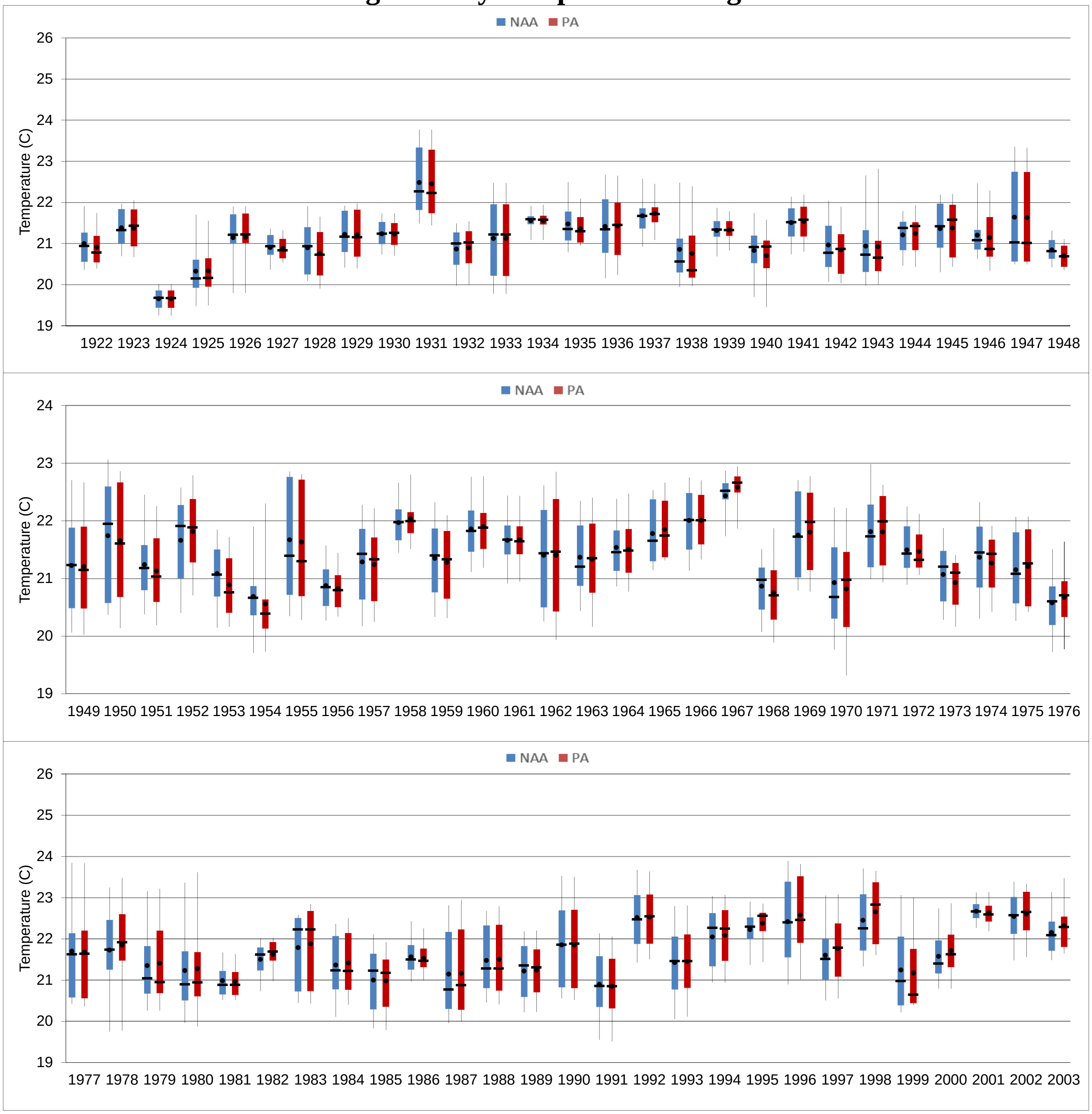


Figure 5.B.5.40-10 Sacramento River at Rio Vista Monthly Temperature
September Daily Temperature Ranges

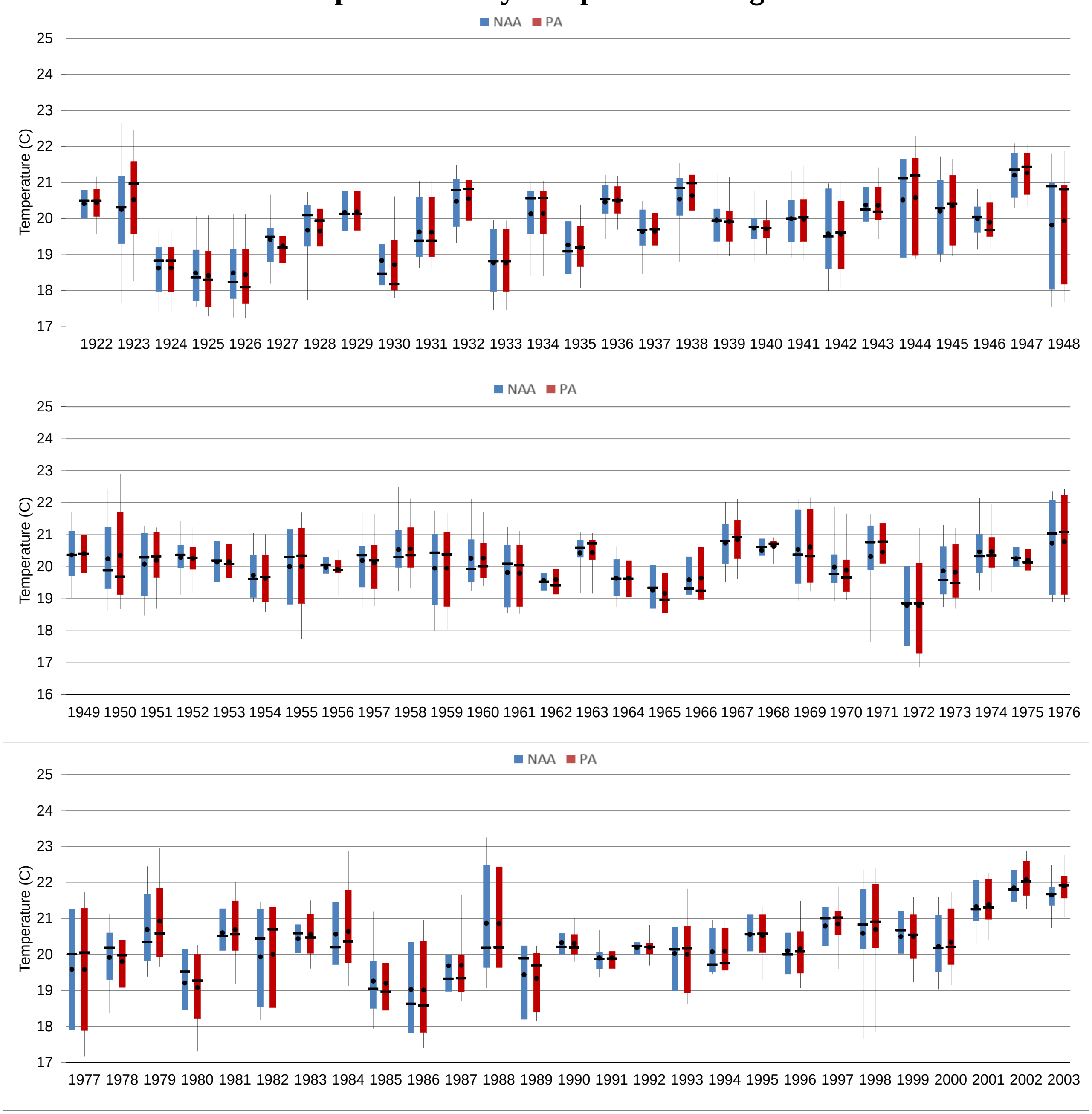


Figure 5.B.5.40-11 Sacramento River at Rio Vista Monthly Temperature October Daily Temperature Ranges

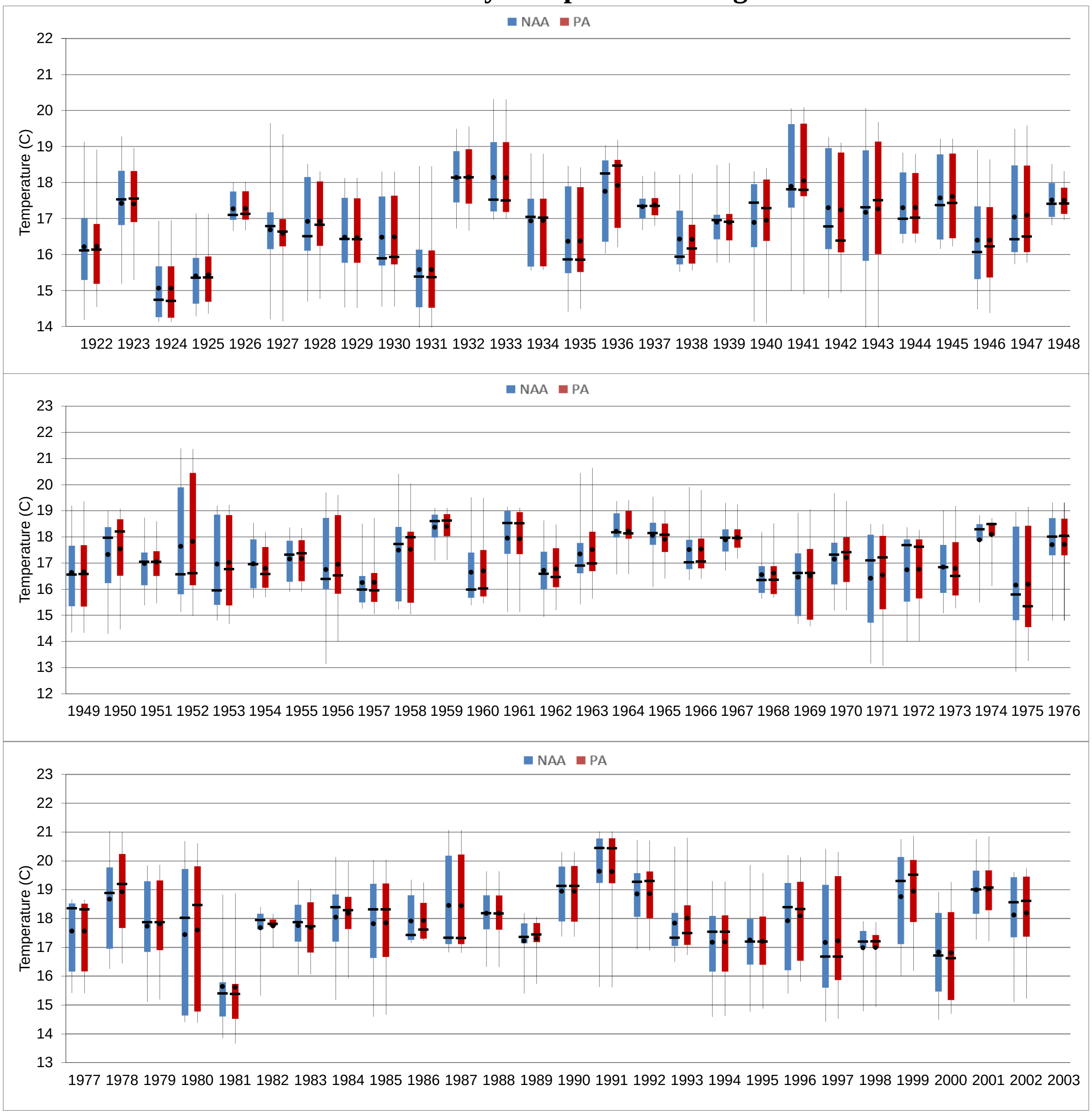


Figure 5.B.5.40-12 Sacramento River at Rio Vista Monthly Temperature November Daily Temperature Ranges

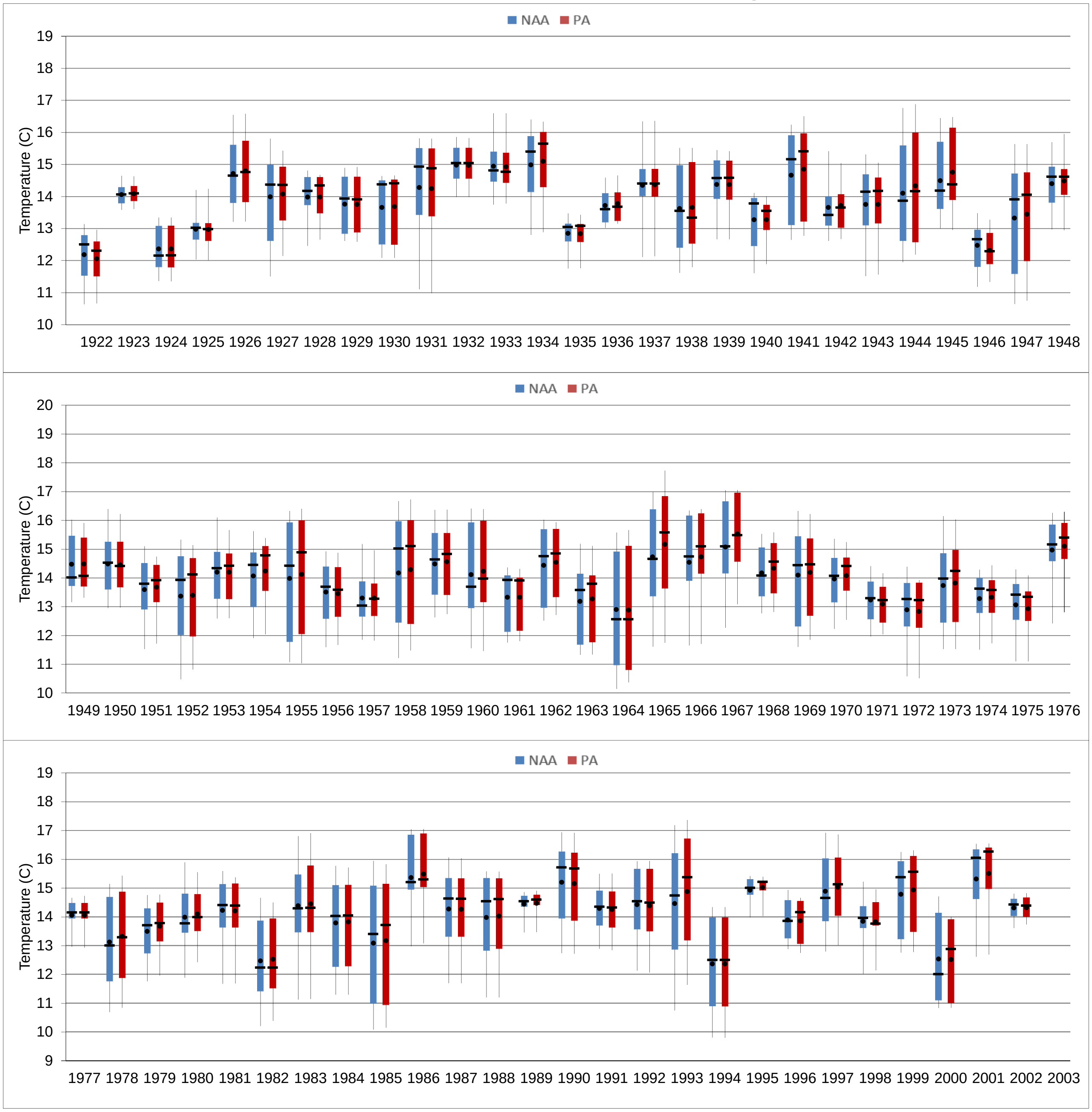


Figure 5.B.5.40-13 Sacramento River at Rio Vista Monthly Temperature December Daily Temperature Ranges

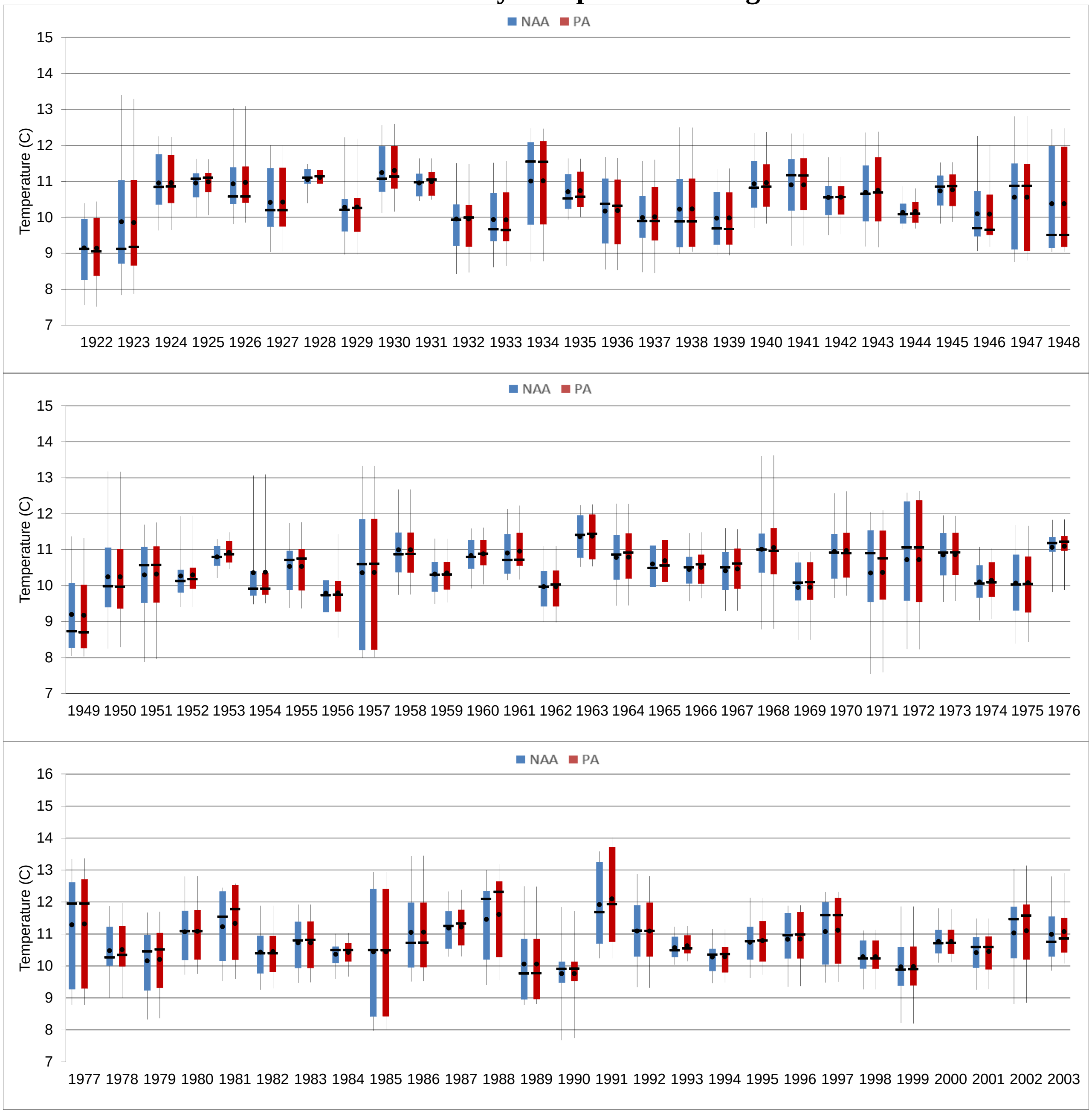
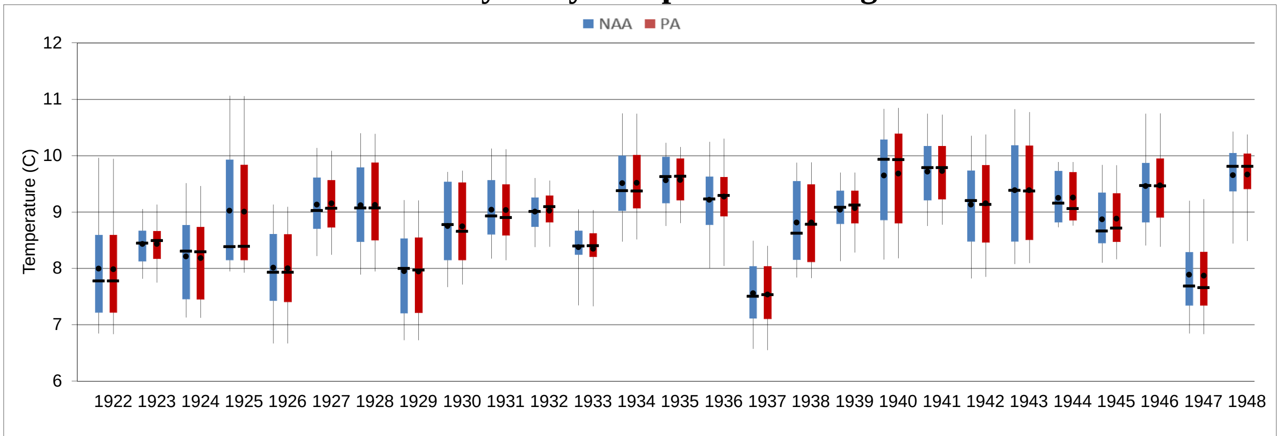
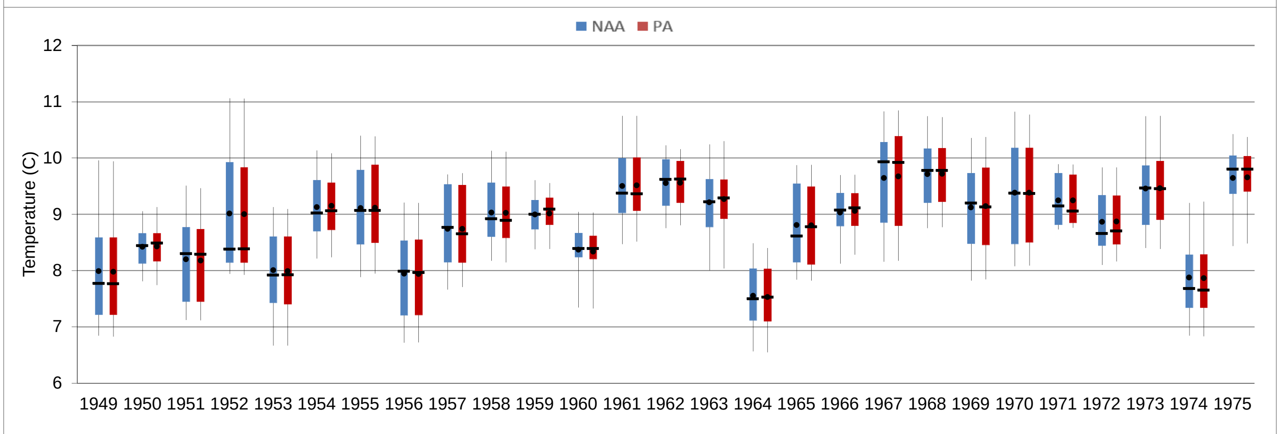


Figure 5.B.5.40-14 Sacramento River at Rio Vista Monthly Temperature January Daily Temperature Ranges





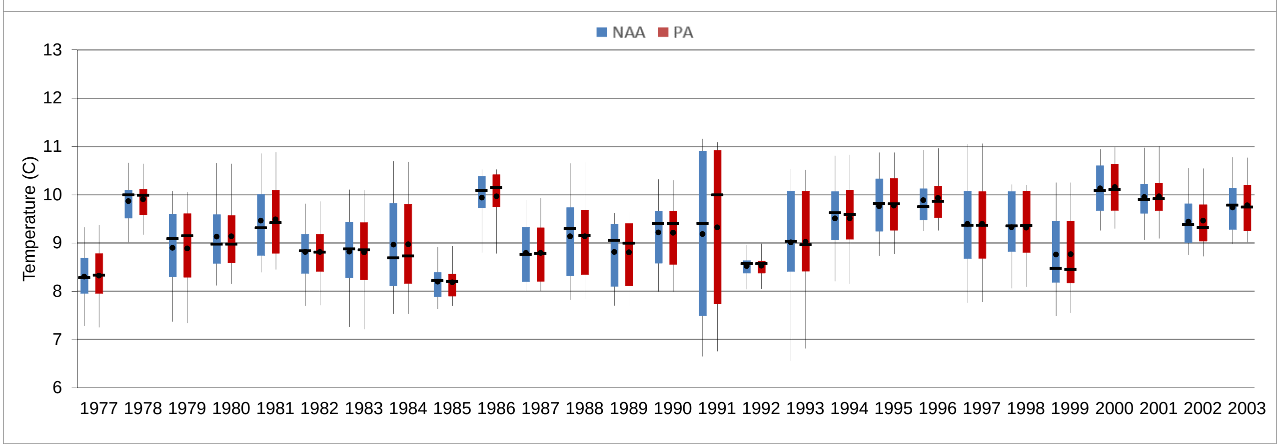


Figure 5.B.5.41-1 San Joaquin River at Prisoner's Point Monthly Temperature Probability of Exceedance

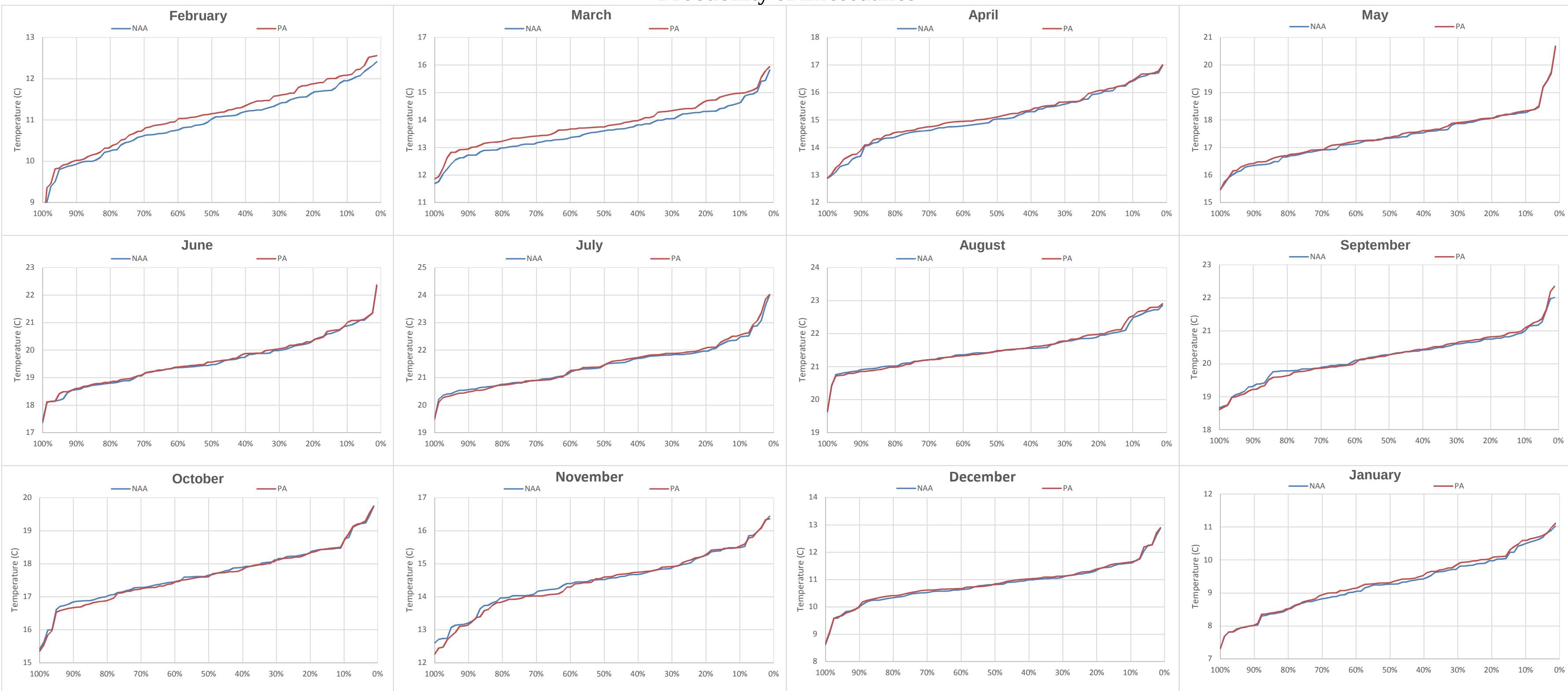


Figure 5.B.5.41-2 San Joaquin River at Prisoner's Point Monthly Temperature

Figure 5.B.5.41-3 San Joaquin River at Prisoner's Point Monthly Temperature February Daily Temperature Ranges

Figure 5.B.5.41-4 San Joaquin River at Prisoner's Point Monthly Temperature March Daily Temperature Ranges

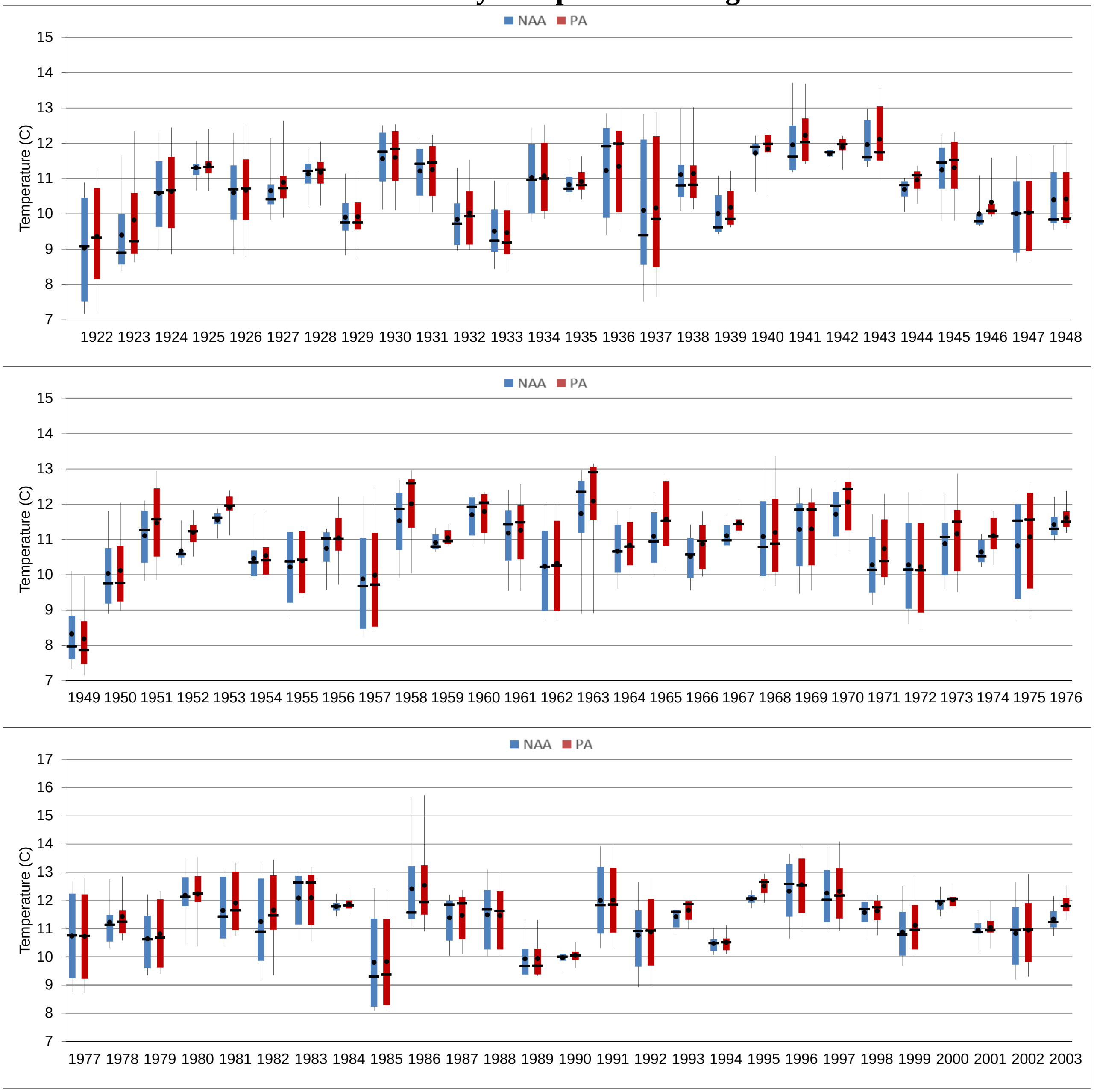


Figure 5.B.5.41-5 San Joaquin River at Prisoner's Point Monthly Temperature April Daily Temperature Ranges

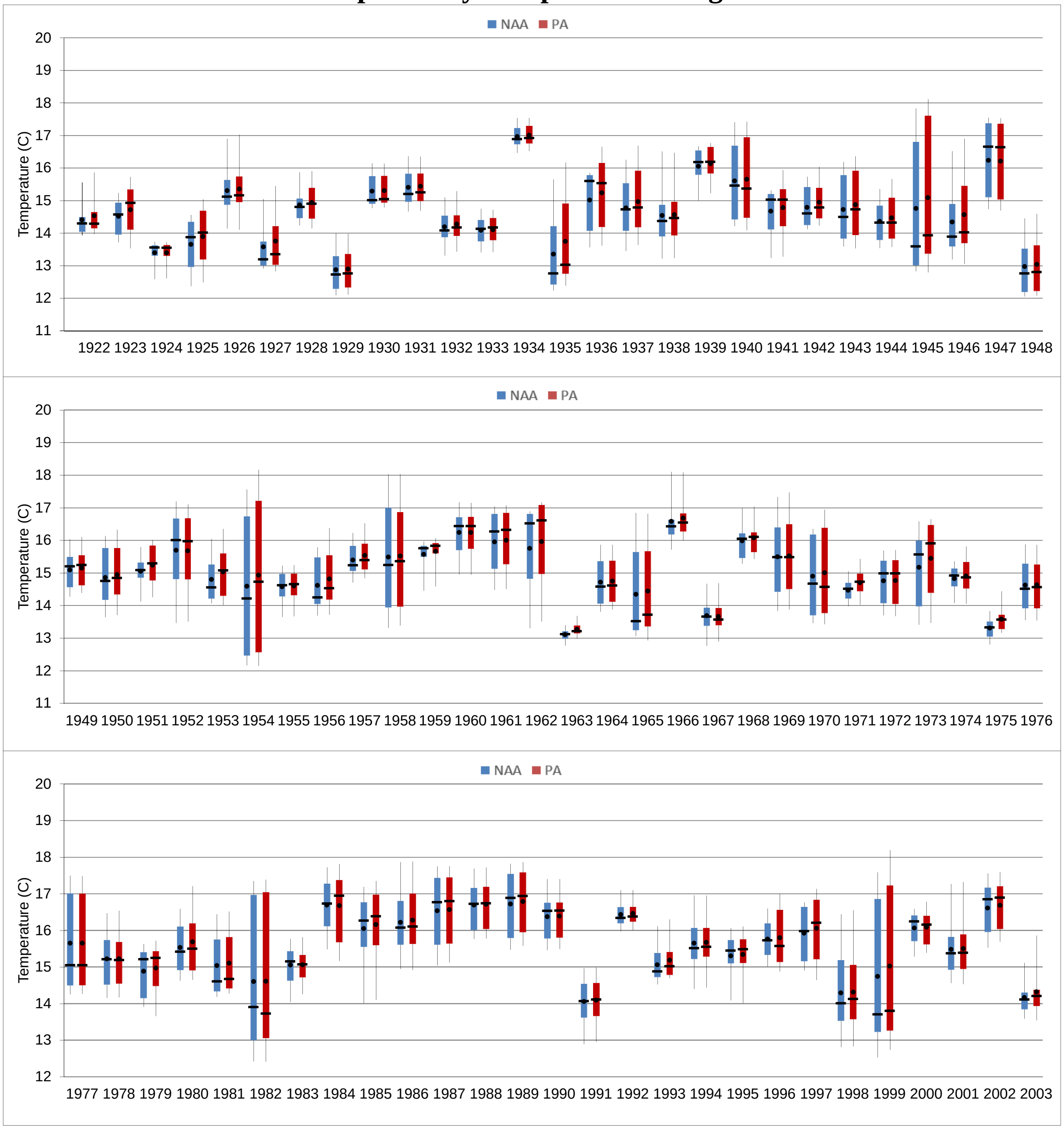


Figure 5.B.5.41-6 San Joaquin River at Prisoner's Point Monthly Temperature May Daily Temperature Ranges

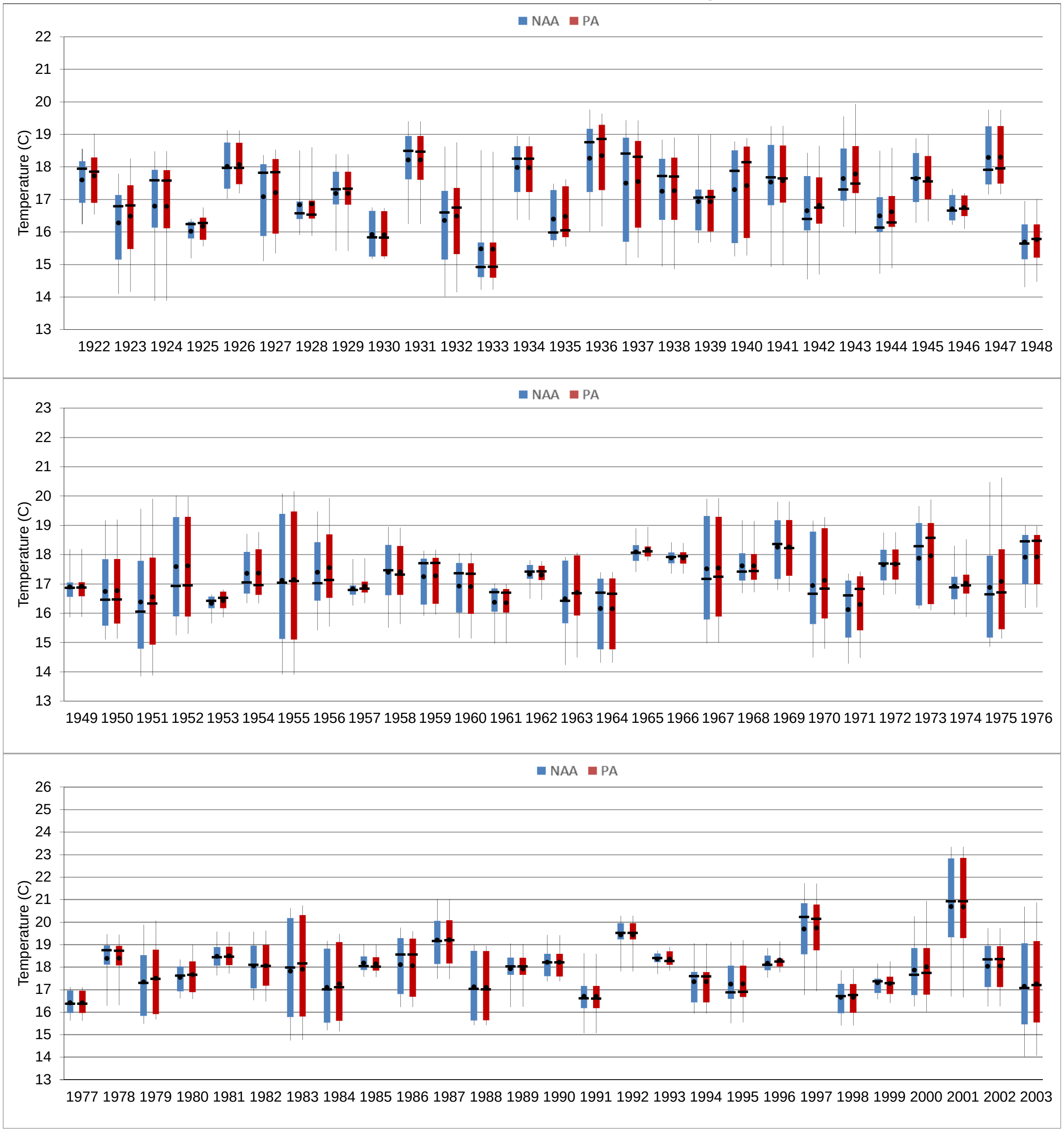


Figure 5.B.5.41-7 San Joaquin River at Prisoner's Point Monthly Temperature June Daily Temperature Ranges

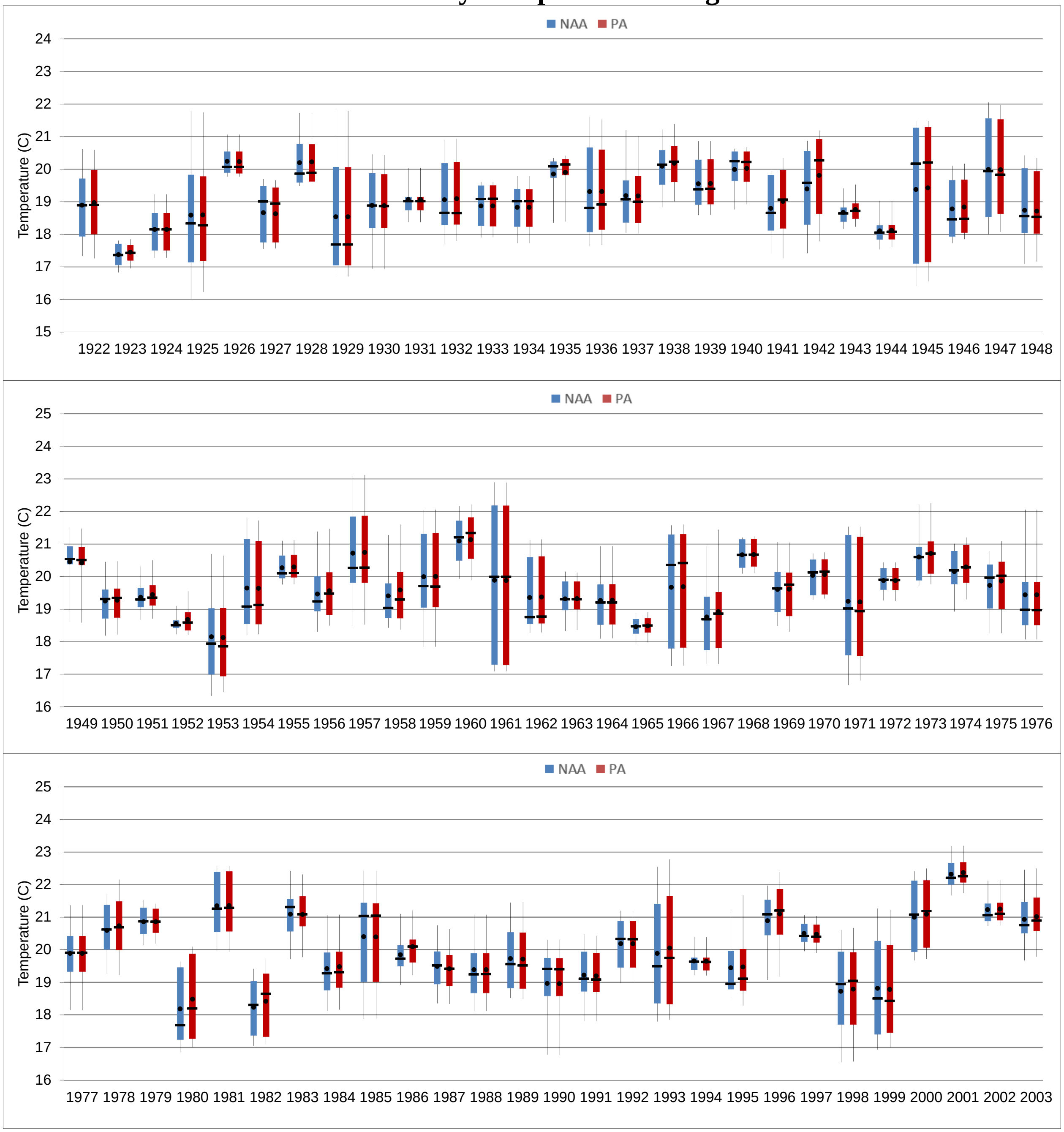


Figure 5.B.5.41-8 San Joaquin River at Prisoner's Point Monthly Temperature
July Daily Temperature Ranges

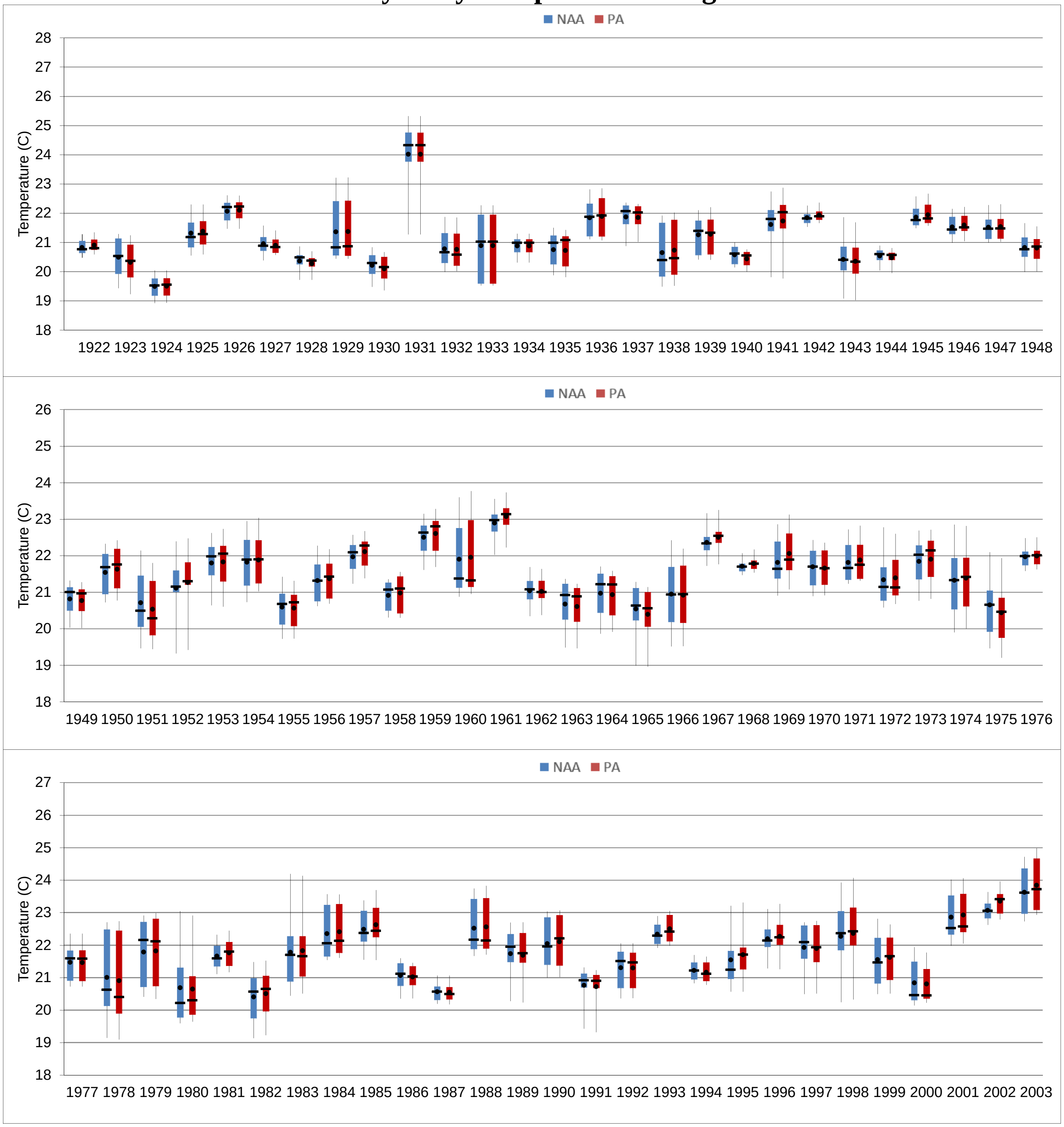


Figure 5.B.5.41-9 San Joaquin River at Prisoner's Point Monthly Temperature
August Daily Temperature Ranges

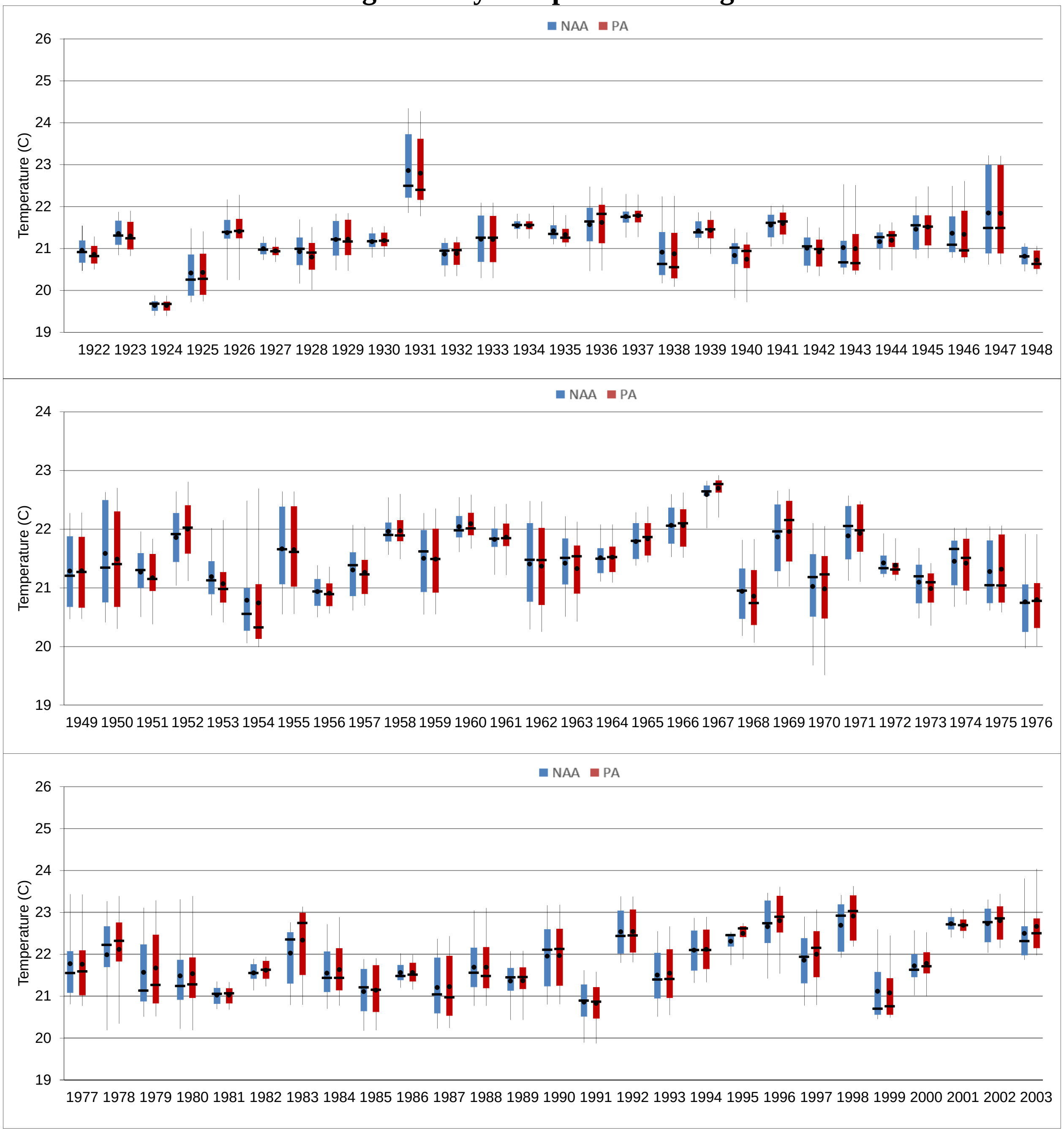


Figure 5.B.5.41-10 San Joaquin River at Prisoner's Point Monthly Temperature September Daily Temperature Ranges

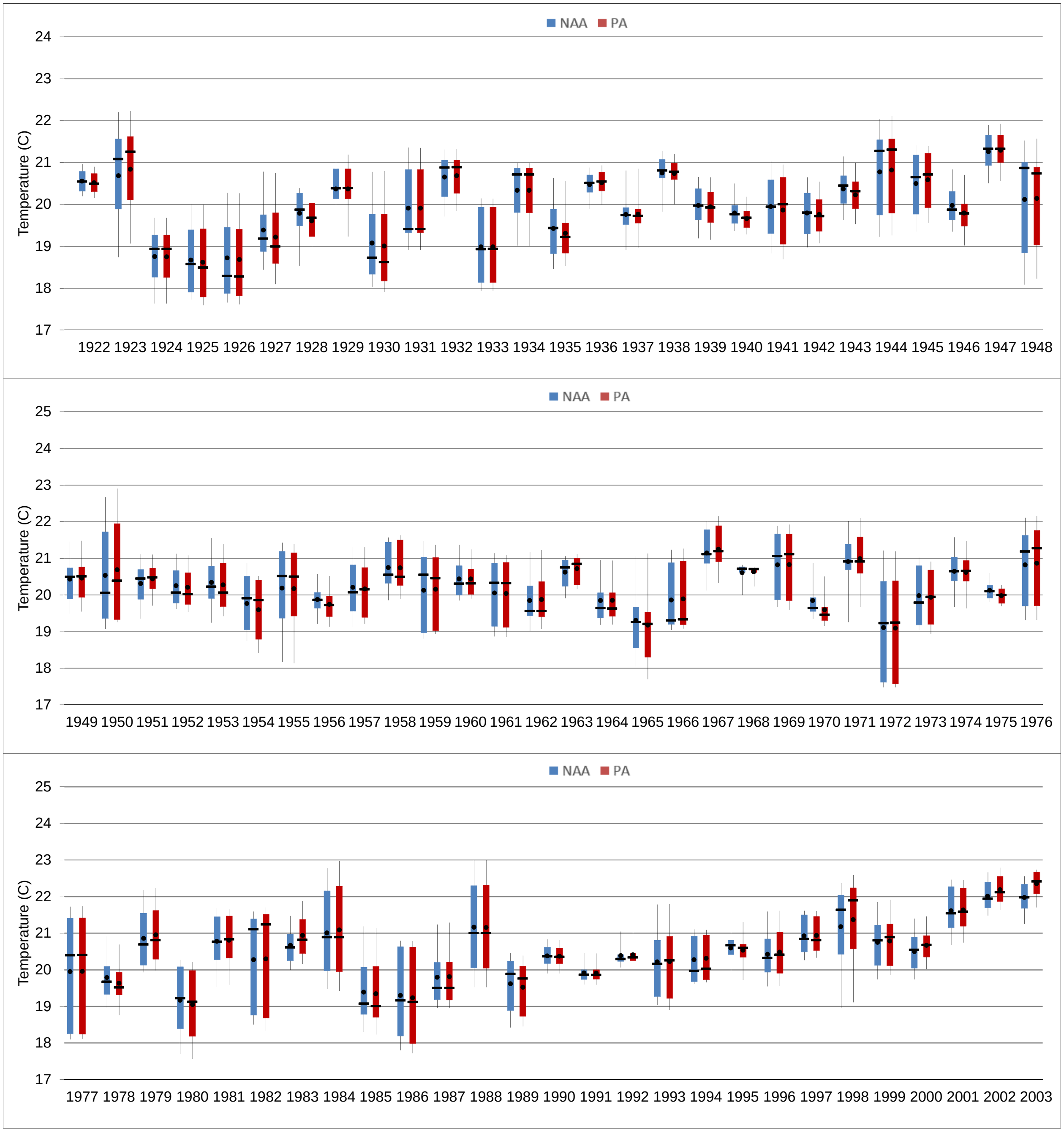


Figure 5.B.5.41-11 San Joaquin River at Prisoner's Point Monthly Temperature October Daily Temperature Ranges

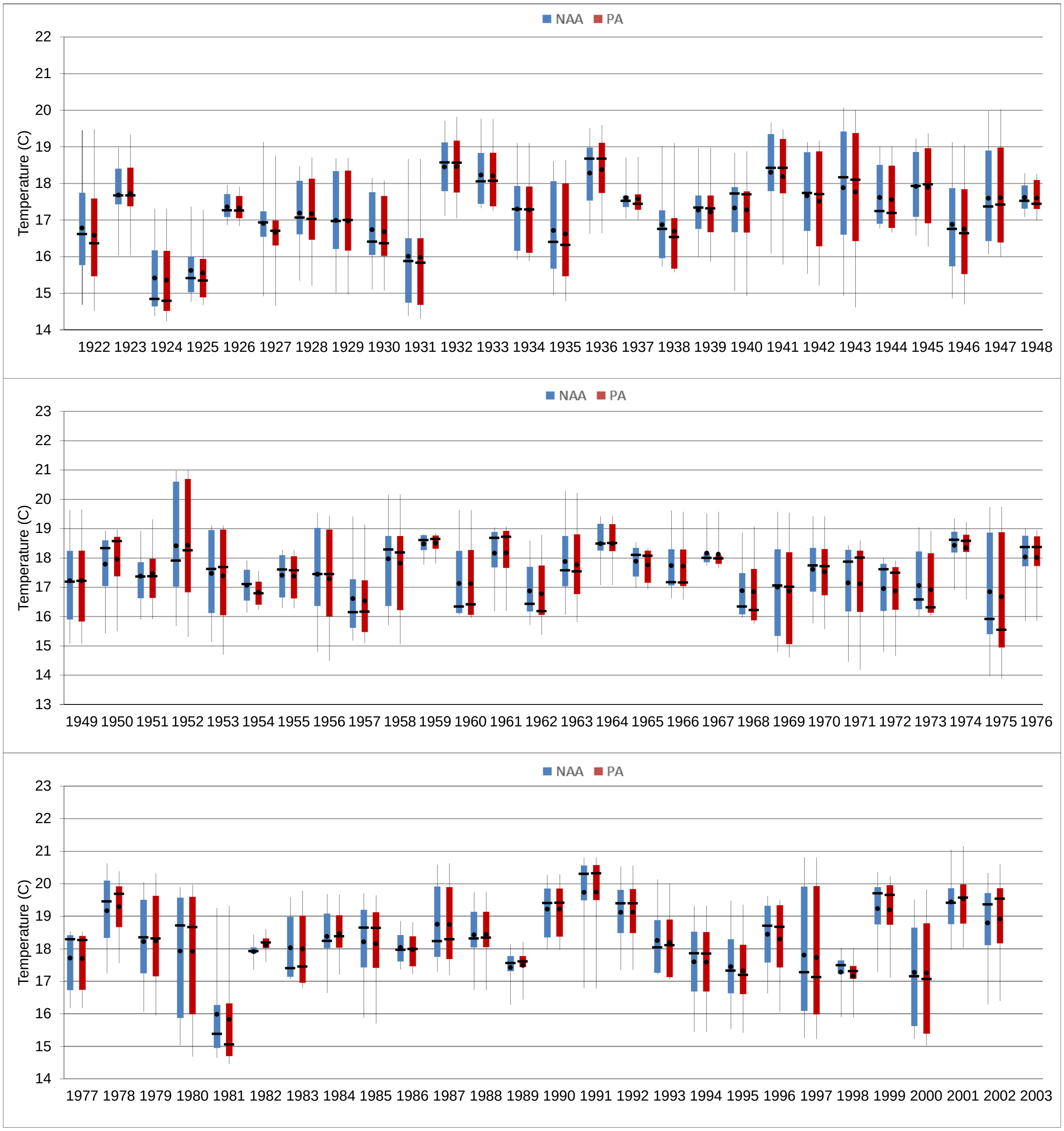


Figure 5.B.5.41-12 San Joaquin River at Prisoner's Point Monthly Temperature November Daily Temperature Ranges

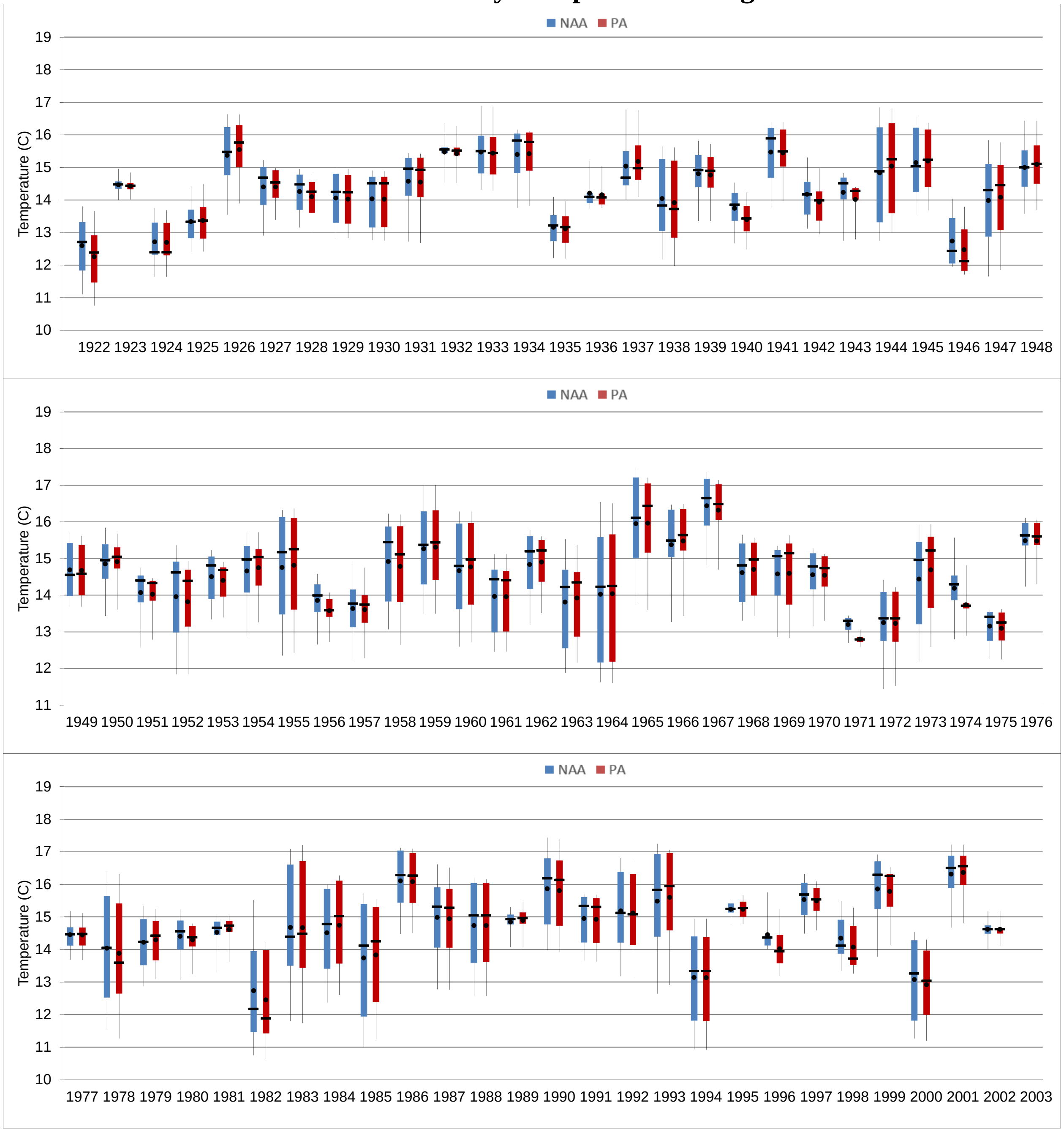


Figure 5.B.5.41-13 San Joaquin River at Prisoner's Point Monthly Temperature December Daily Temperature Ranges

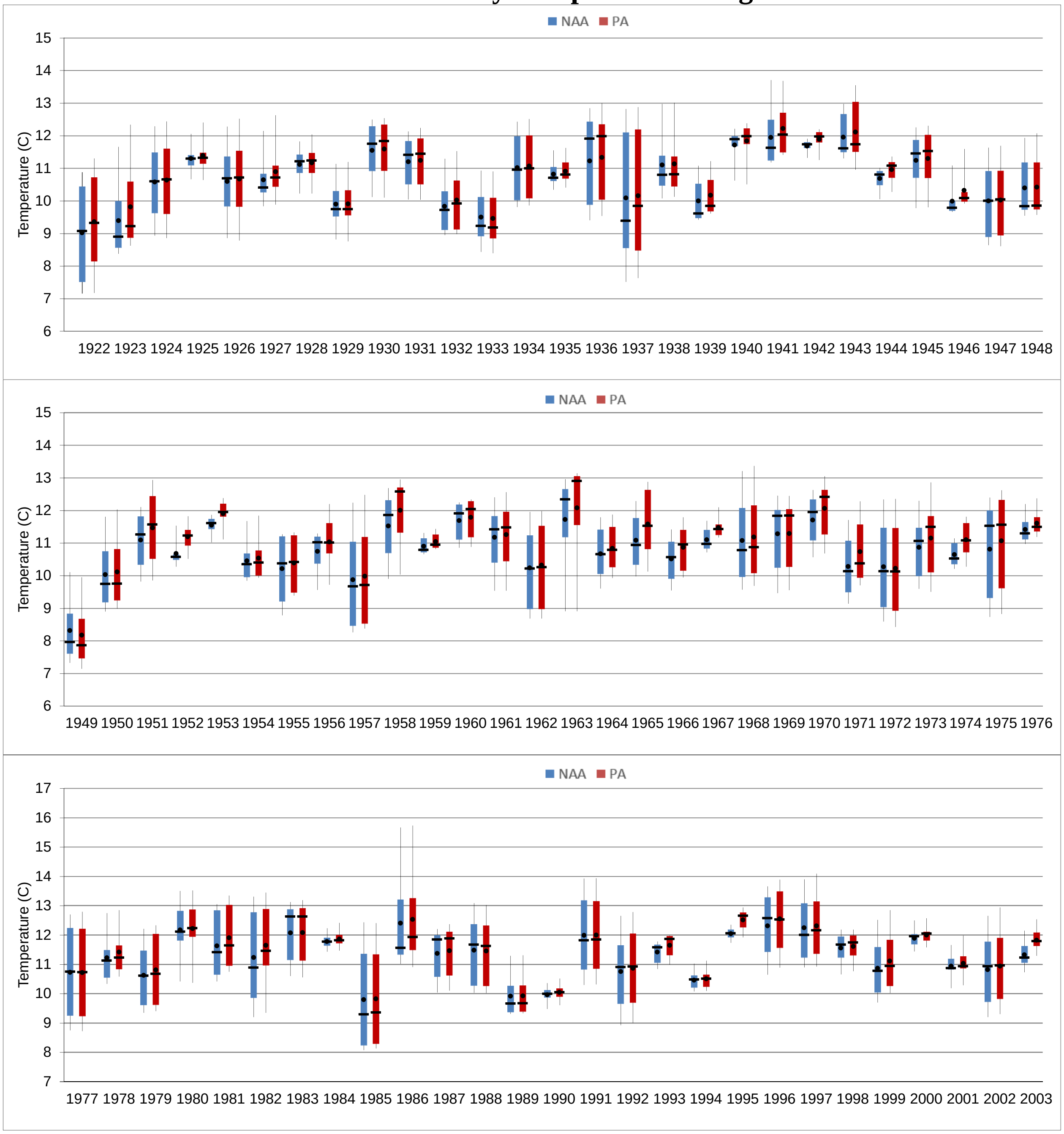


Figure 5.B.5.41-14 San Joaquin River at Prisoner's Point Monthly Temperature January Daily Temperature Ranges

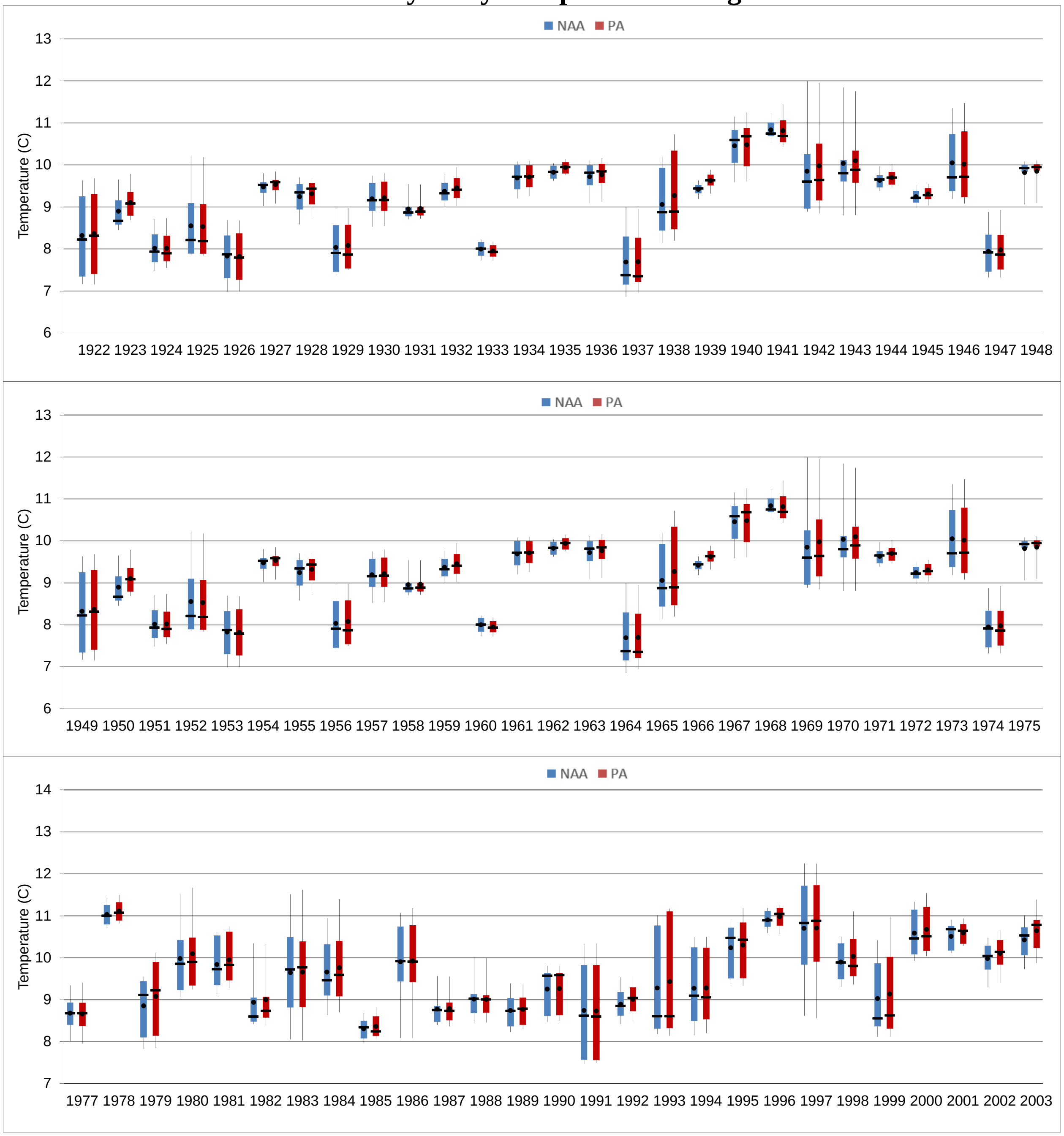


Figure 5.B.5.42-1 San Joaquin River at Brandt Bridge Monthly Temperature Probability of Exceedance

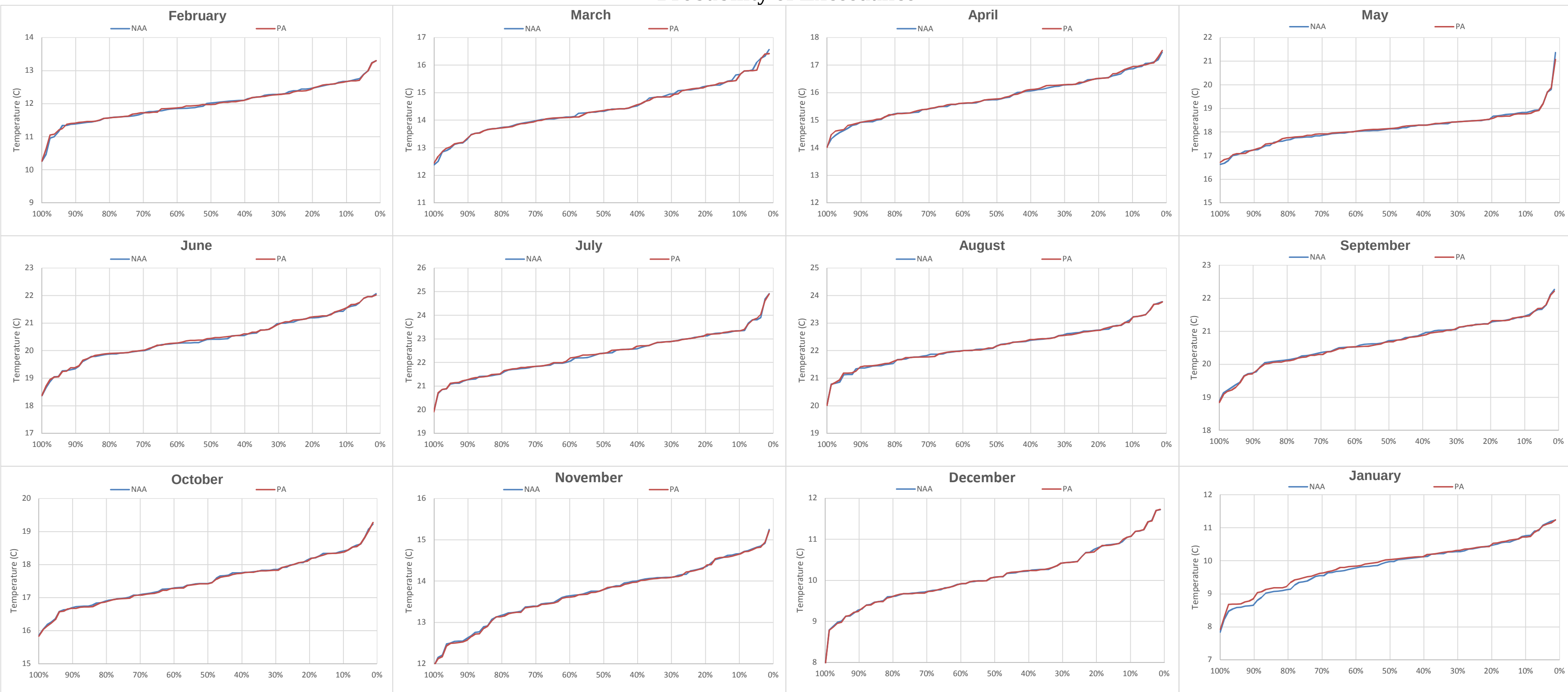


Figure 5.B.5.42-2 San Joaquin River at Brandt Bridge Monthly Temperature

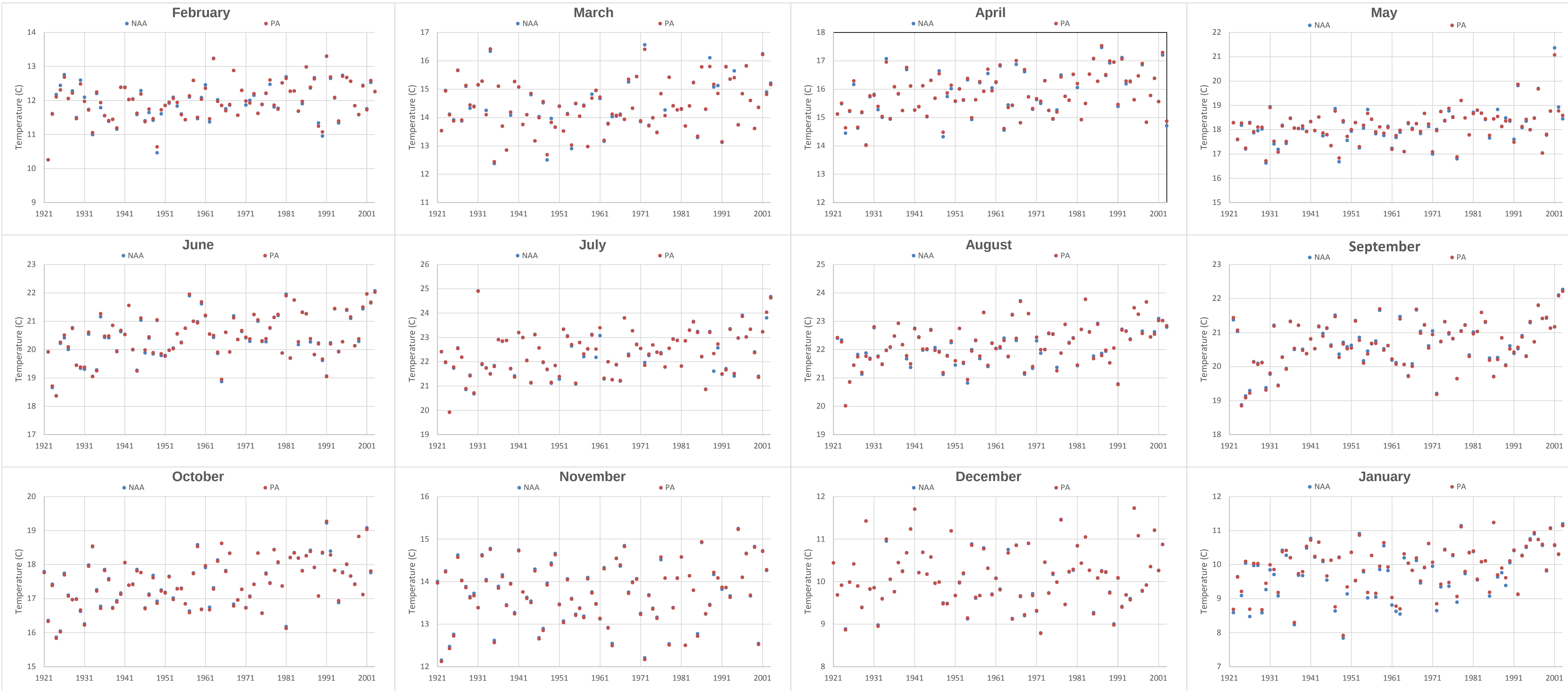


Figure 5.B.5.42-3 San Joaquin River at Brandt Bridge Monthly Temperature February Daily Temperature Ranges

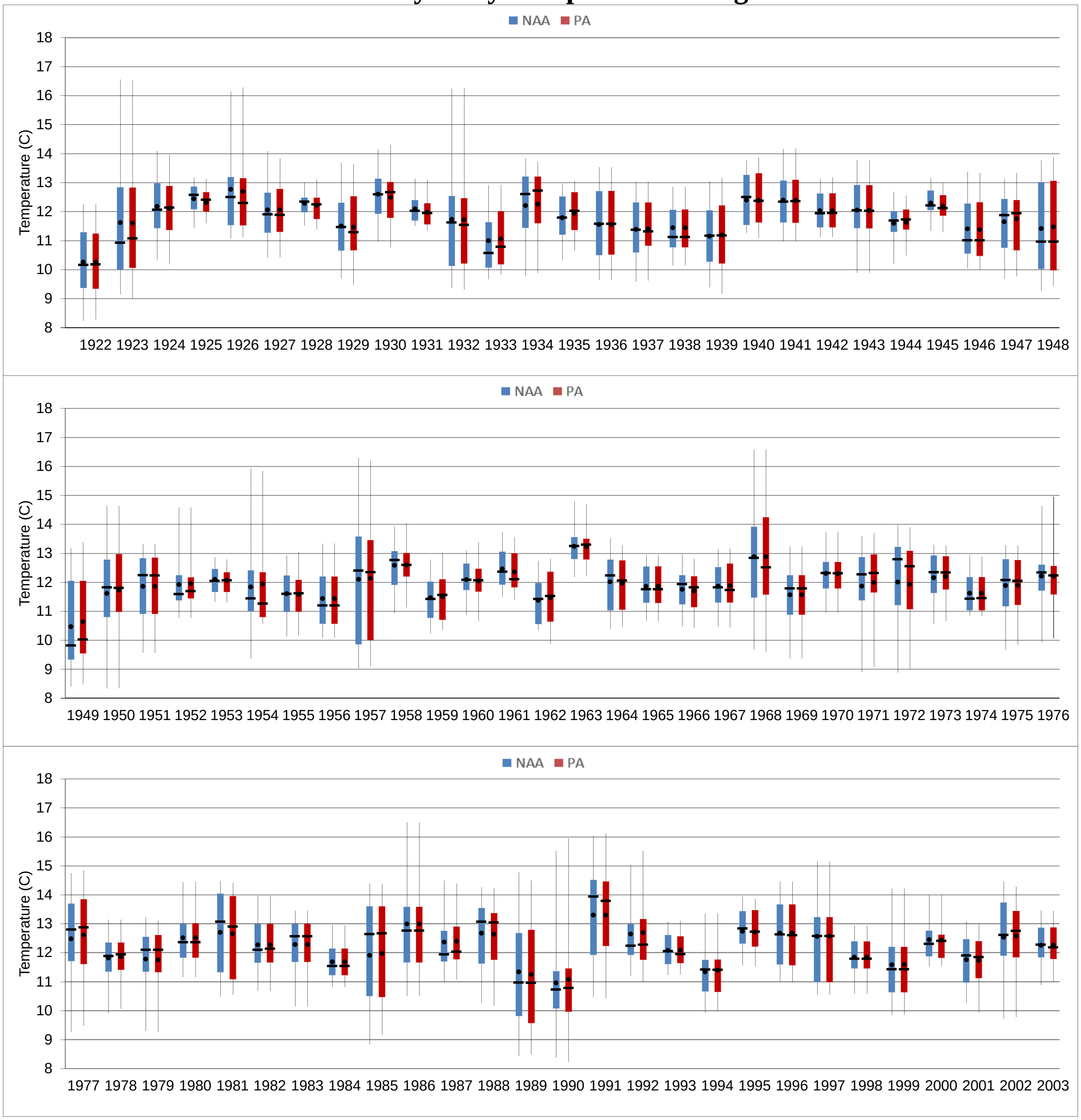


Figure 5.B.5.42-4 San Joaquin River at Brandt Bridge Monthly Temperature March Daily Temperature Ranges

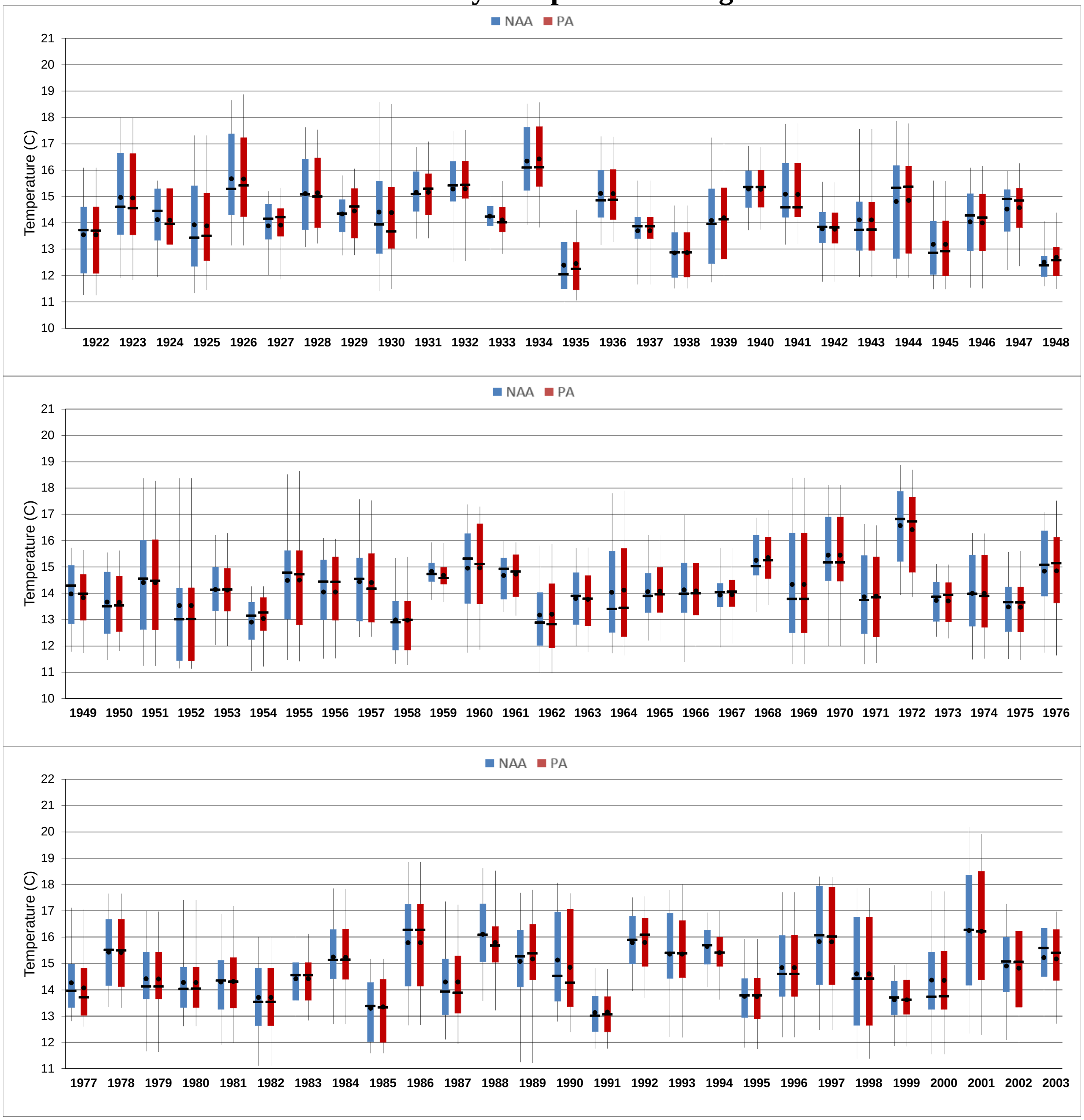


Figure 5.B.5.42-5 San Joaquin River at Brandt Bridge Monthly Temperature April Daily Temperature Ranges

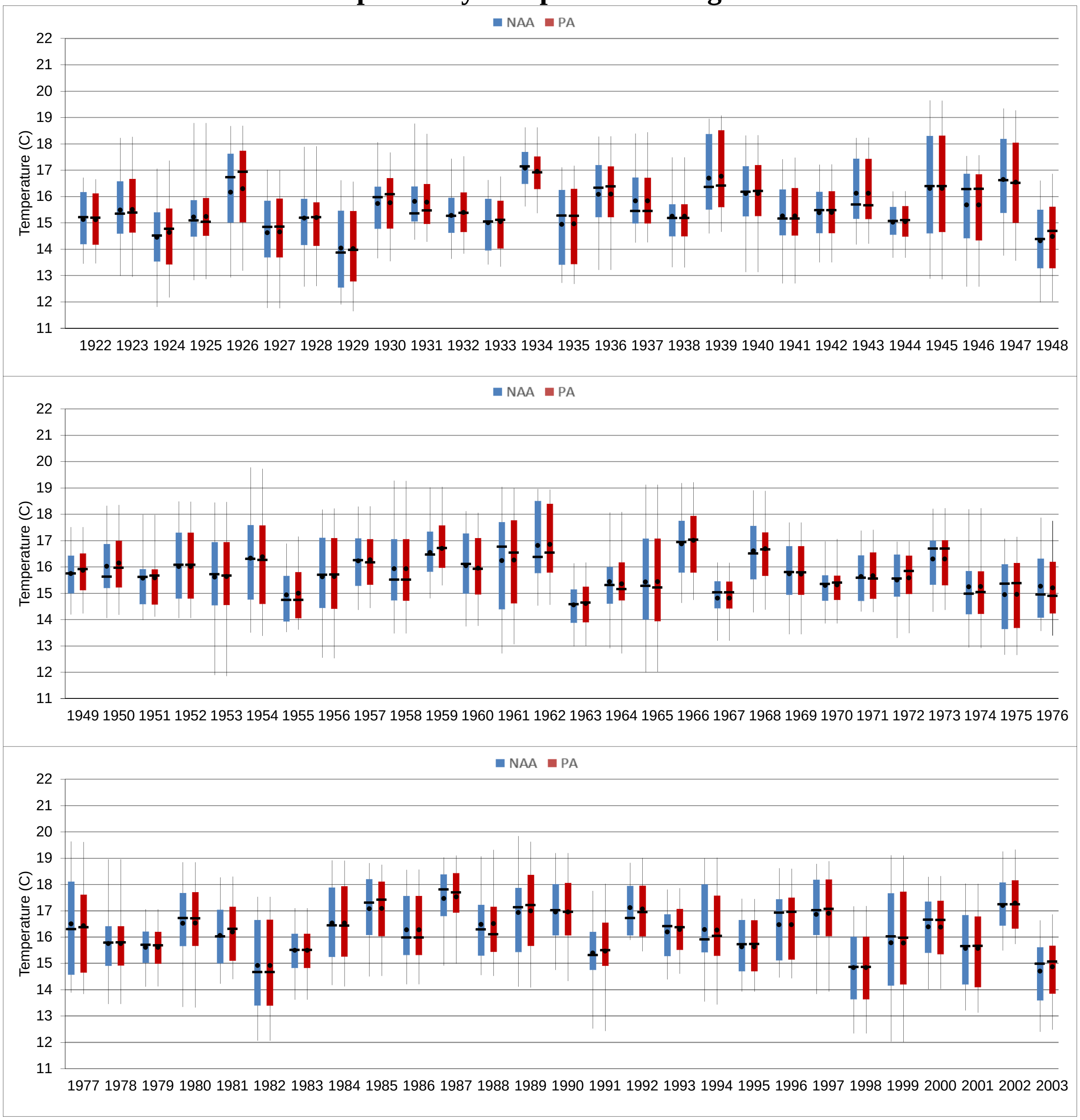


Figure 5.B.5.42-6 San Joaquin River at Brandt Bridge Monthly Temperature May Daily Temperature Ranges

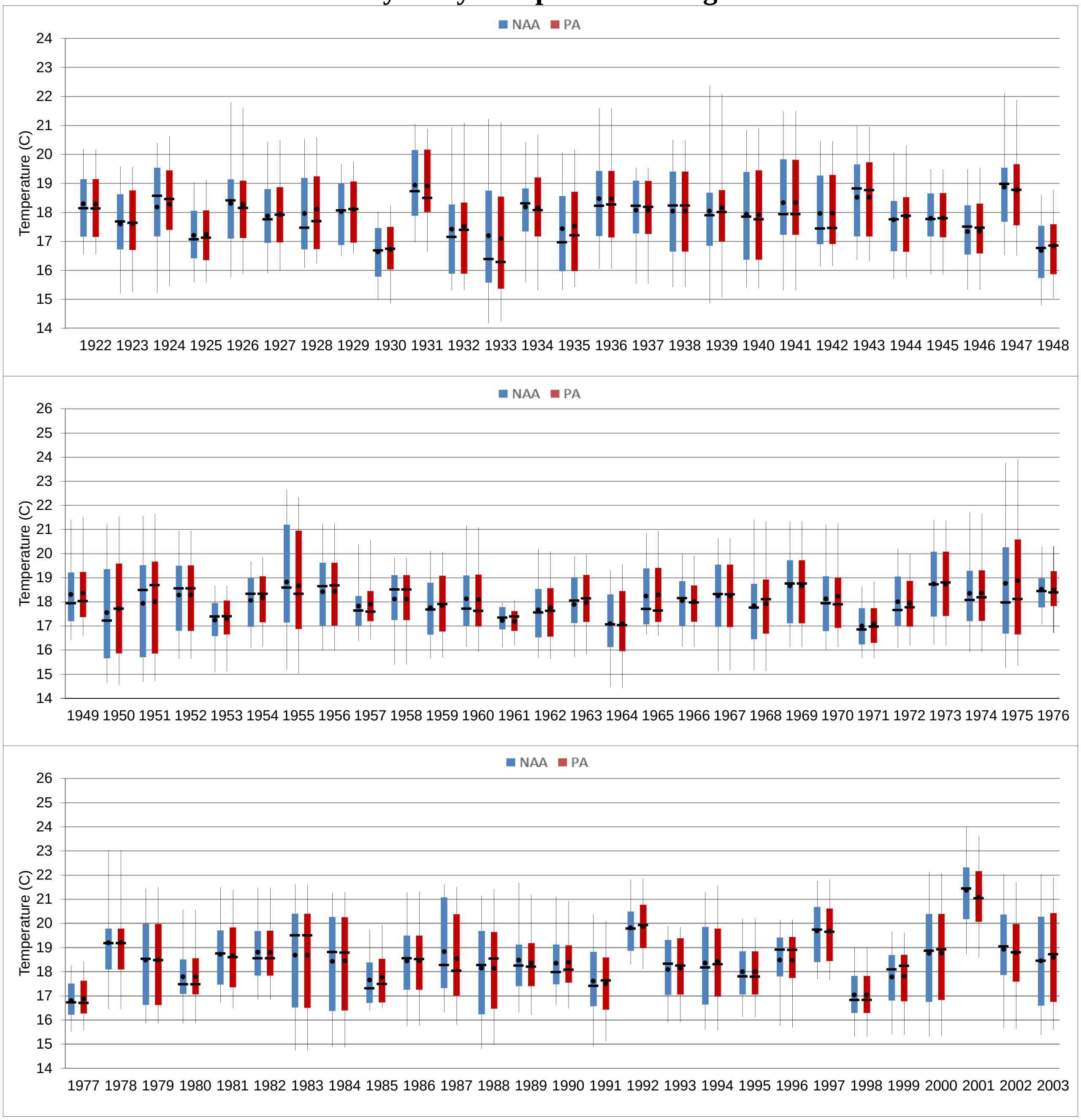


Figure 5.B.5.42-7 San Joaquin River at Brandt Bridge Monthly Temperature June Daily Temperature Ranges

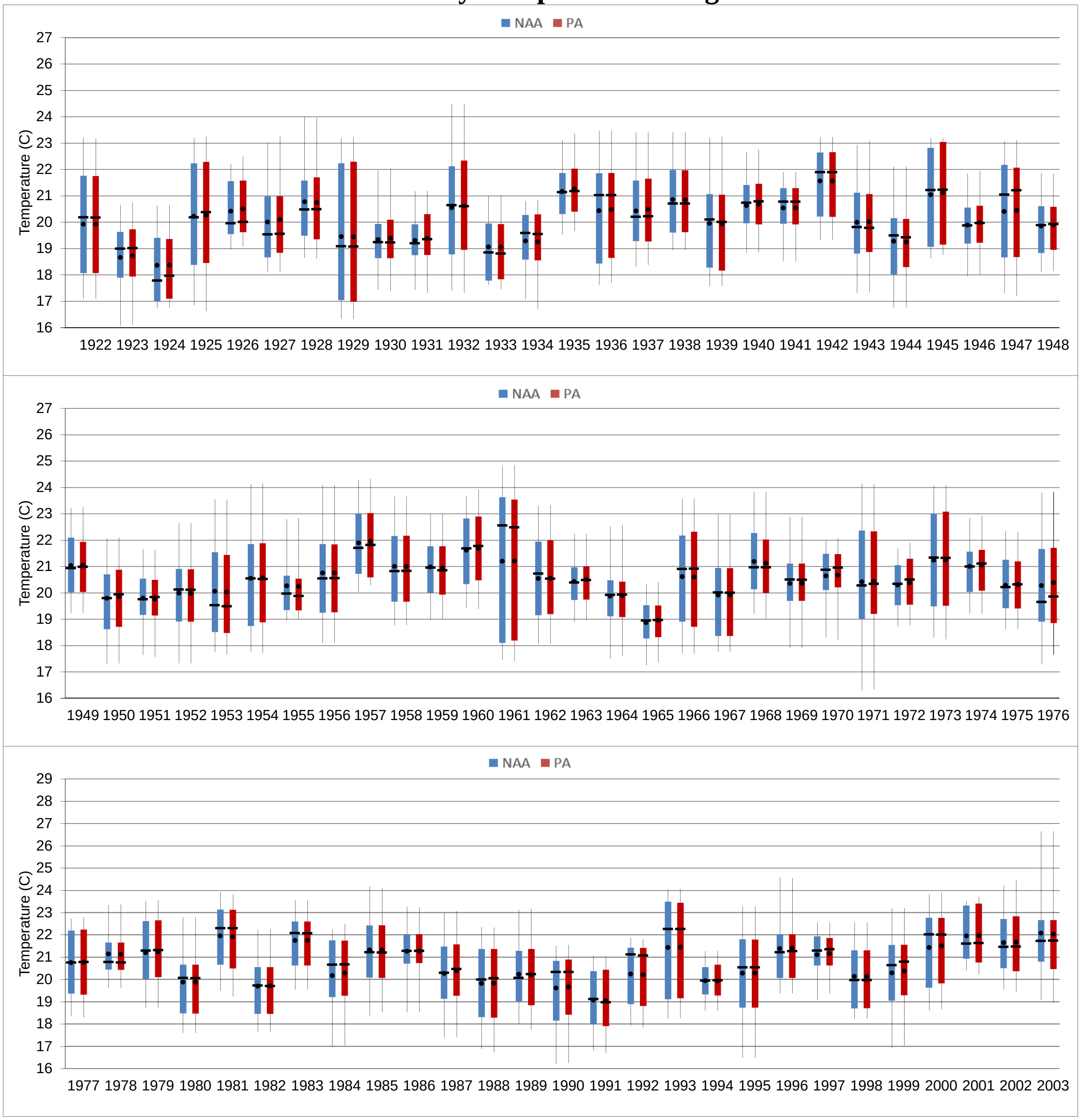


Figure 5.B.5.42-8 San Joaquin River at Brandt Bridge Monthly Temperature
July Daily Temperature Ranges

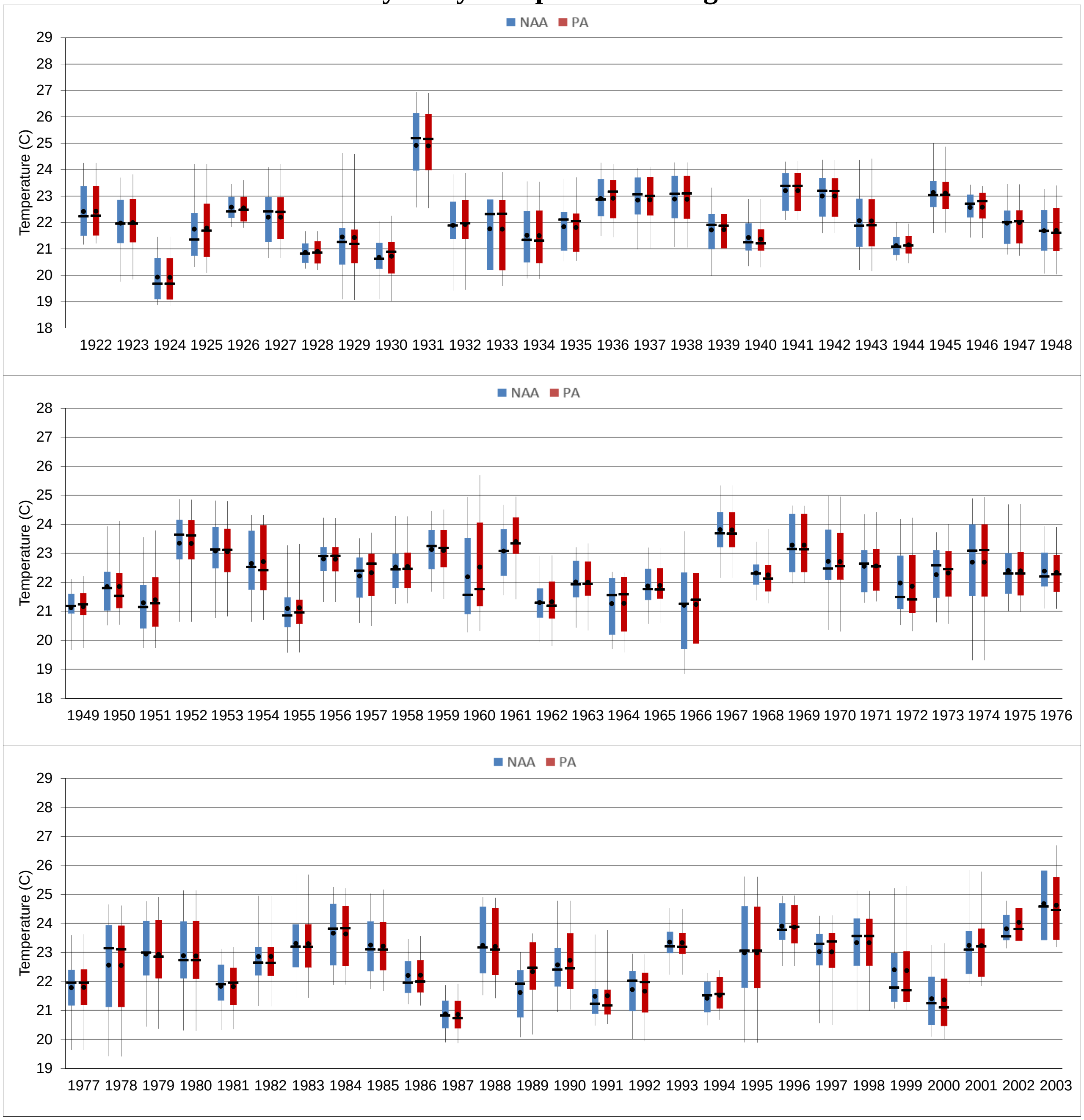


Figure 5.B.5.42-9 San Joaquin River at Brandt Bridge Monthly Temperature August Daily Temperature Ranges

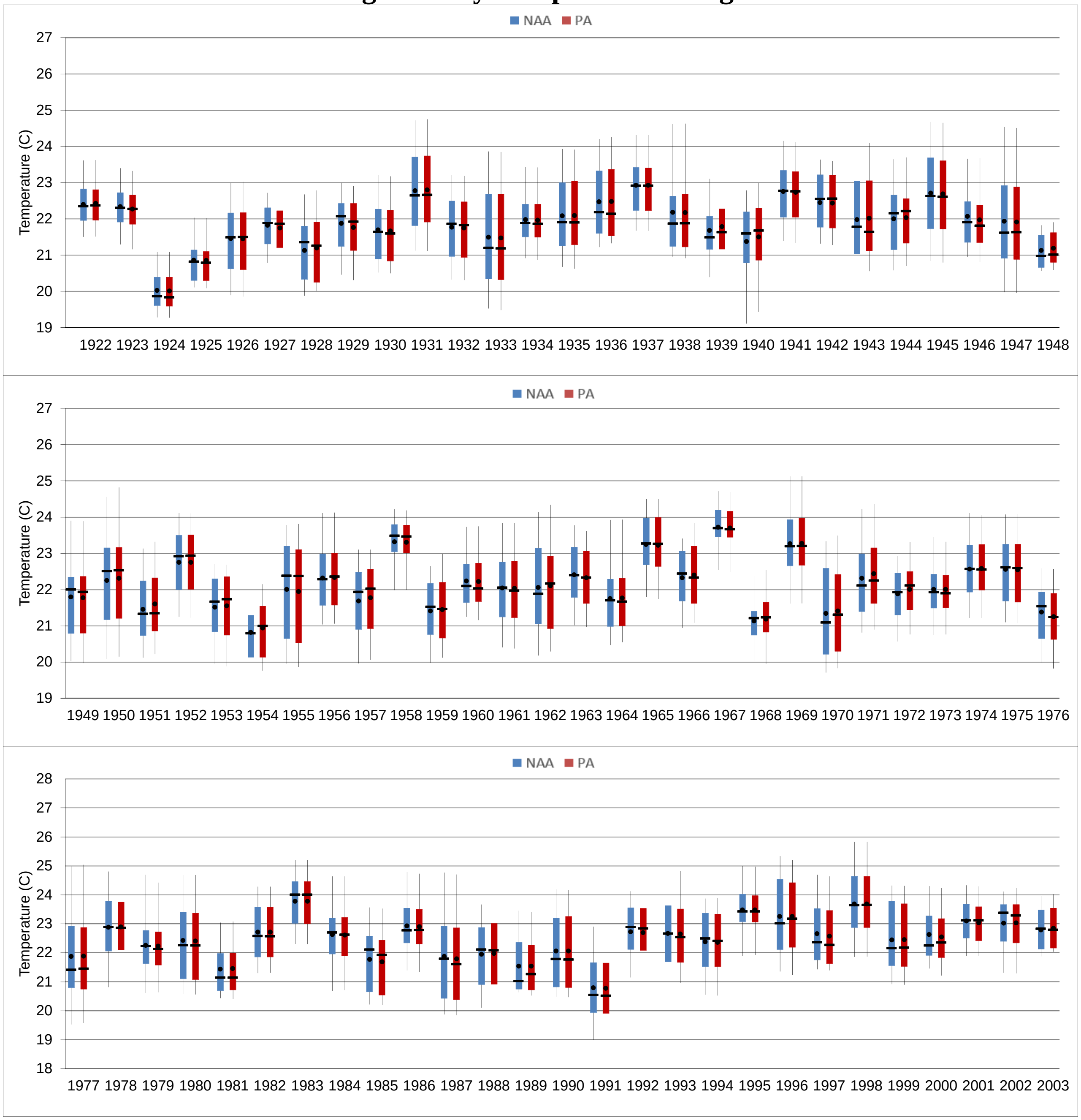


Figure 5.B.5.42-10 San Joaquin River at Brandt Bridge Monthly Temperature September Daily Temperature Ranges

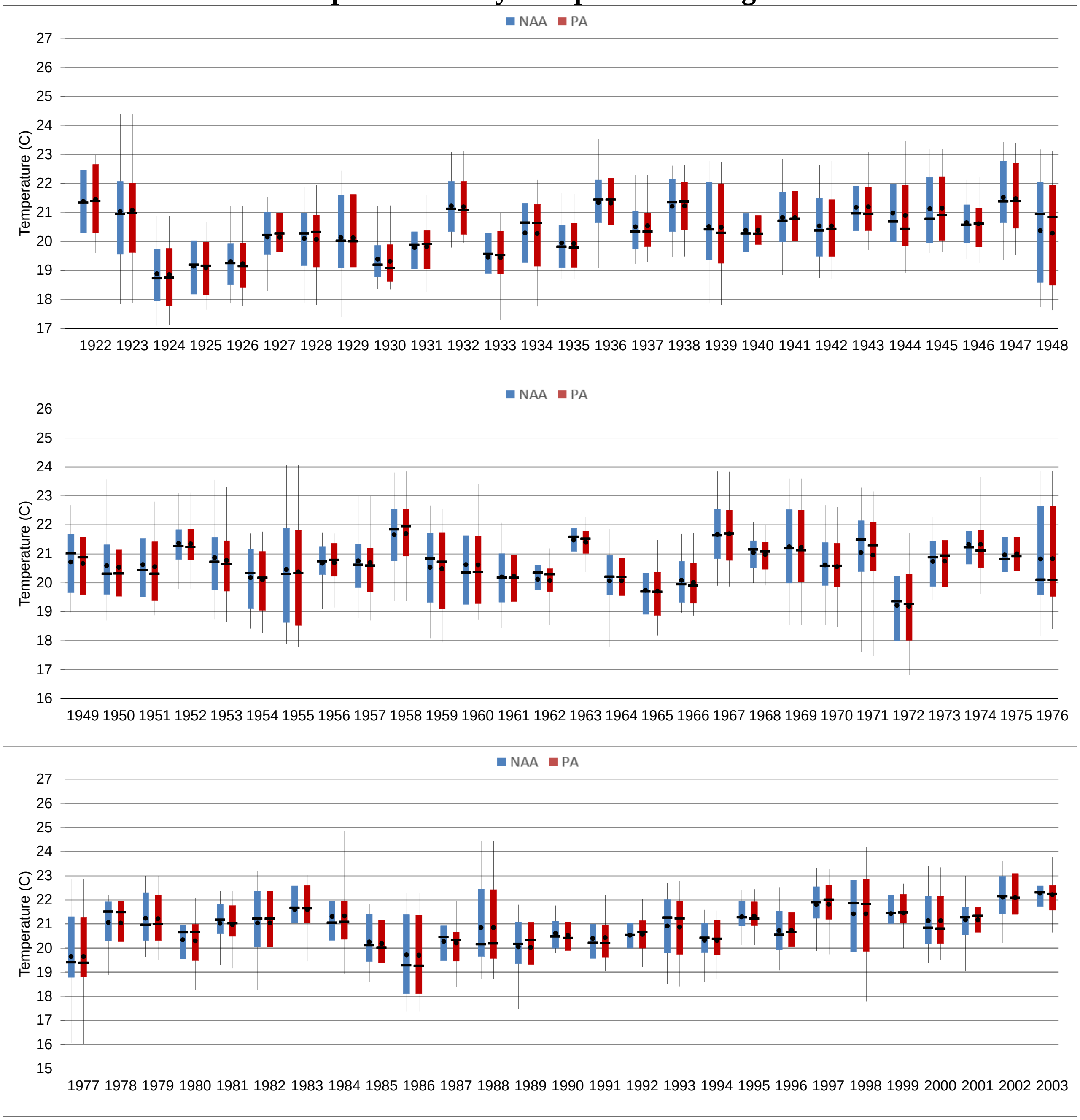


Figure 5.B.5.42-11 San Joaquin River at Brandt Bridge Monthly Temperature
October Daily Temperature Ranges

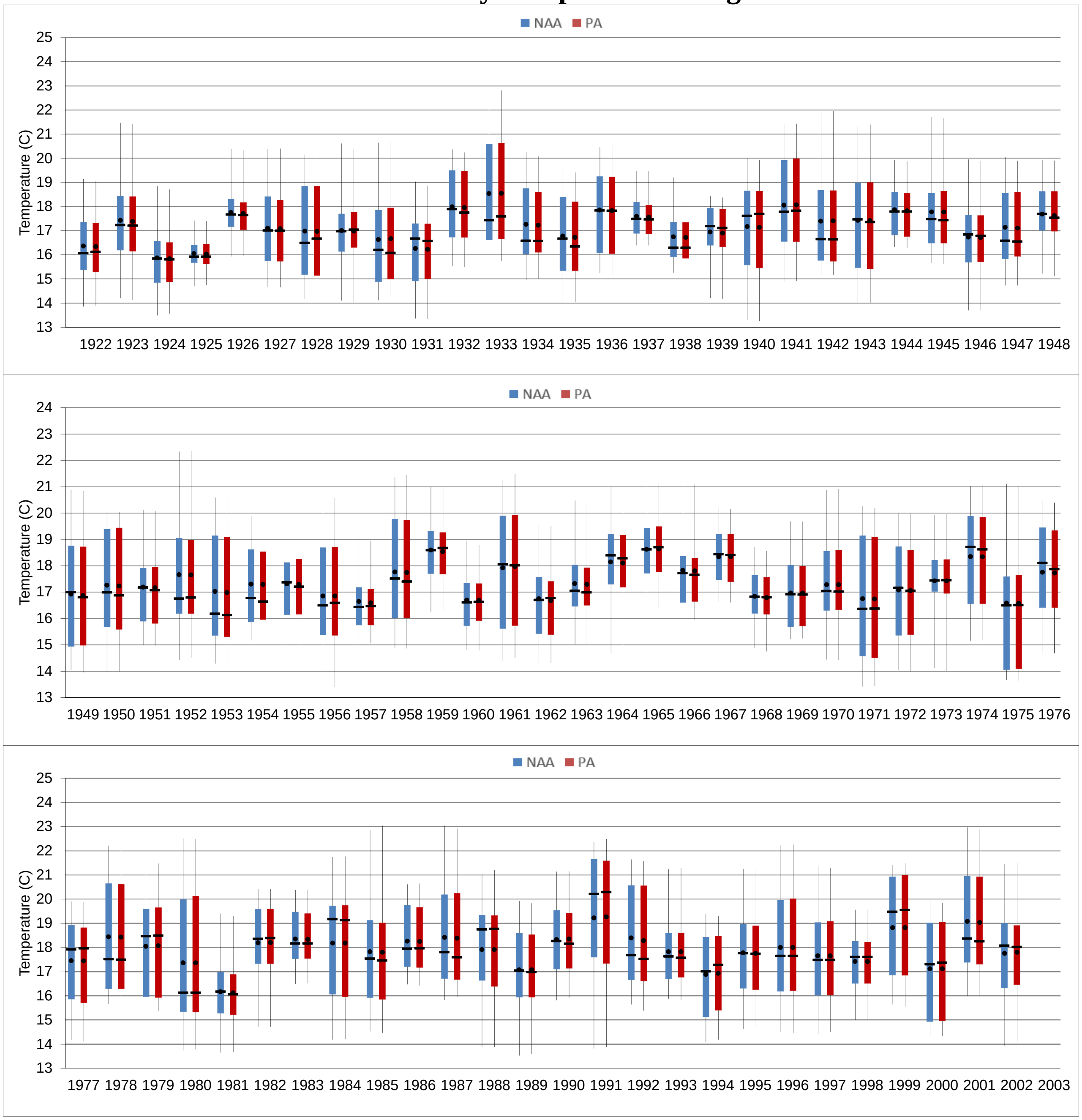


Figure 5.B.5.42-12 San Joaquin River at Brandt Bridge Monthly Temperature November Daily Temperature Ranges

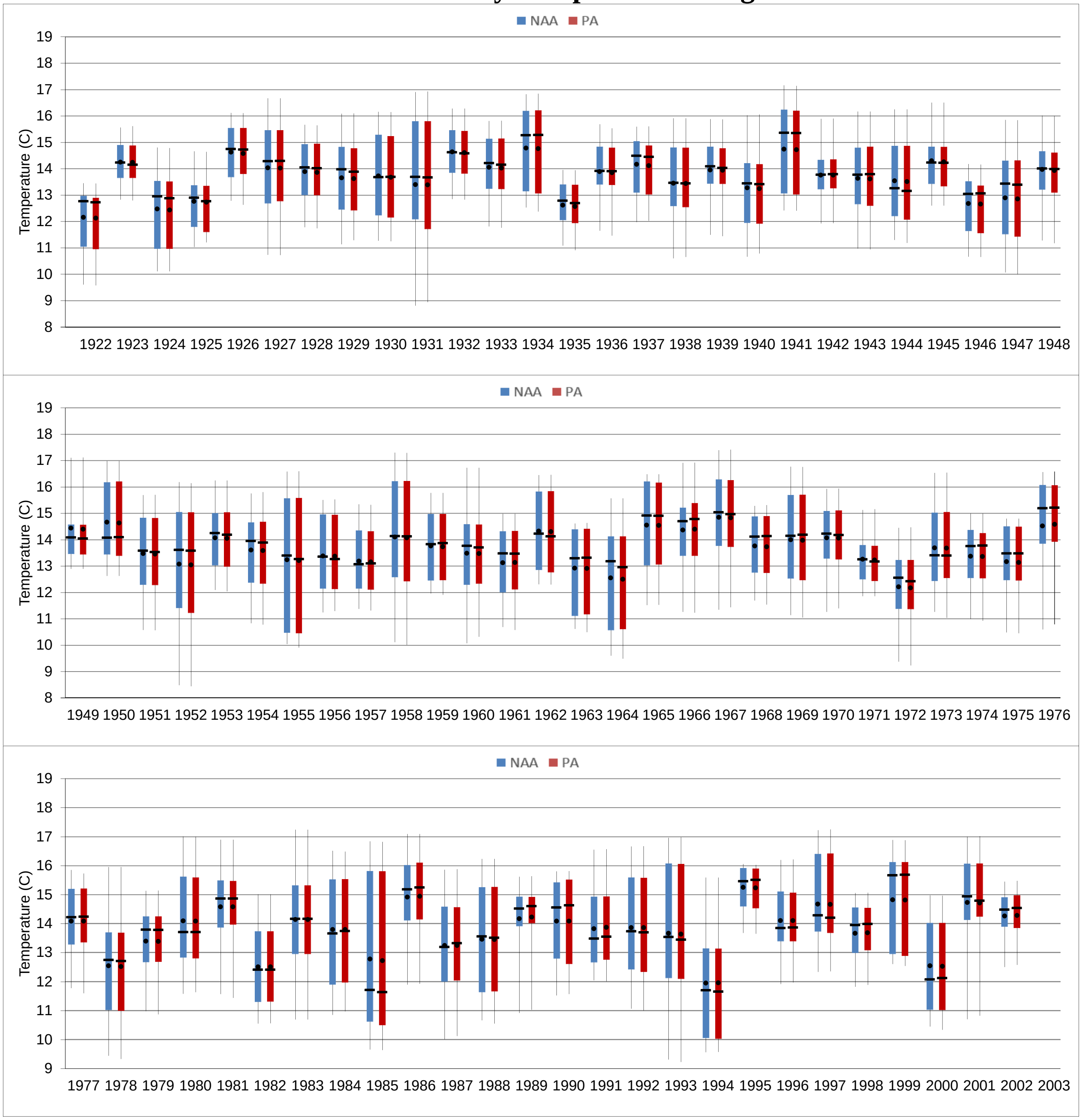


Figure 5.B.5.42-13 San Joaquin River at Brandt Bridge Monthly Temperature December Daily Temperature Ranges

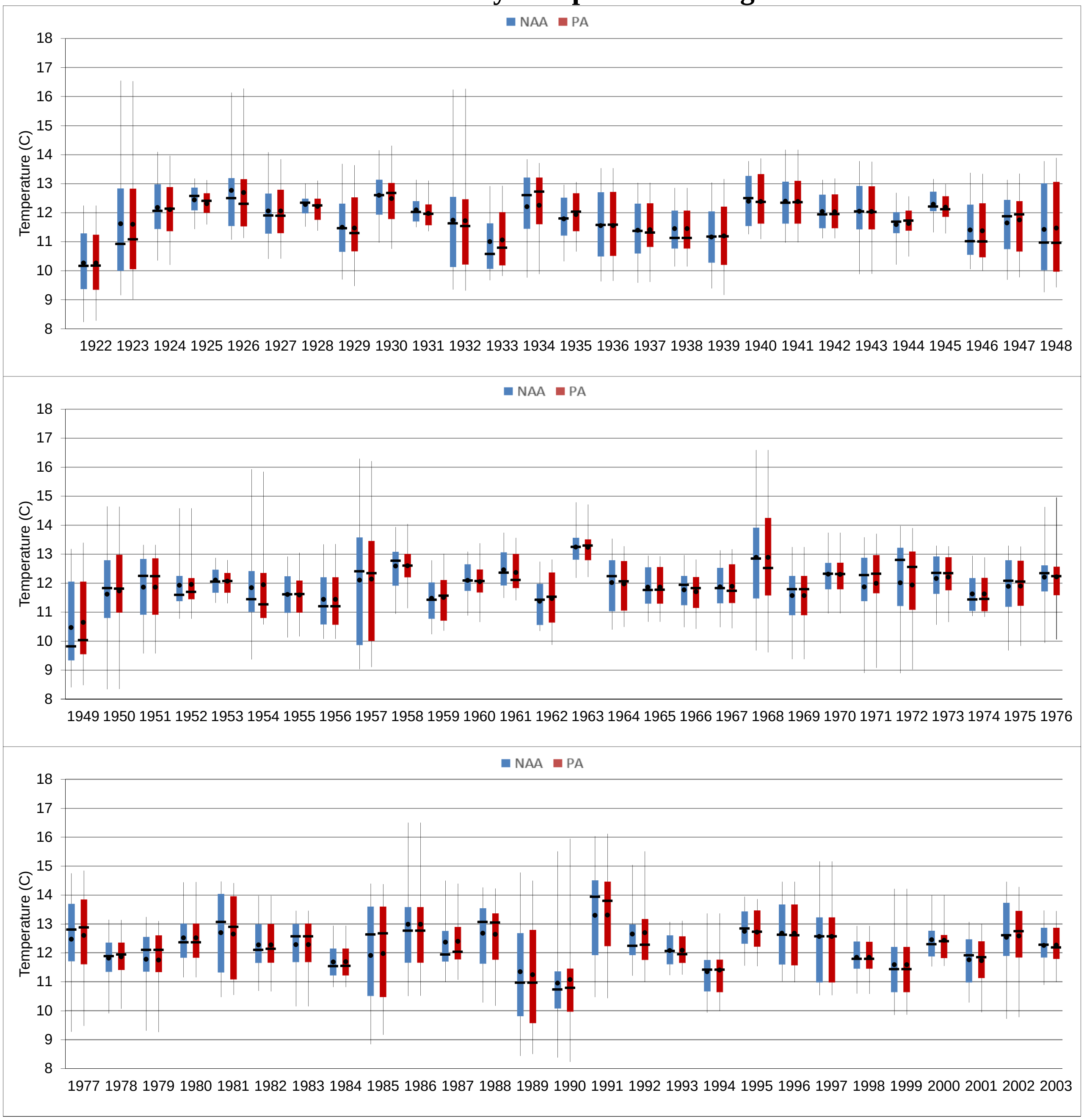


Figure 5.B.5.42-14 San Joaquin River at Brandt Bridge Monthly Temperature January Daily Temperature Ranges

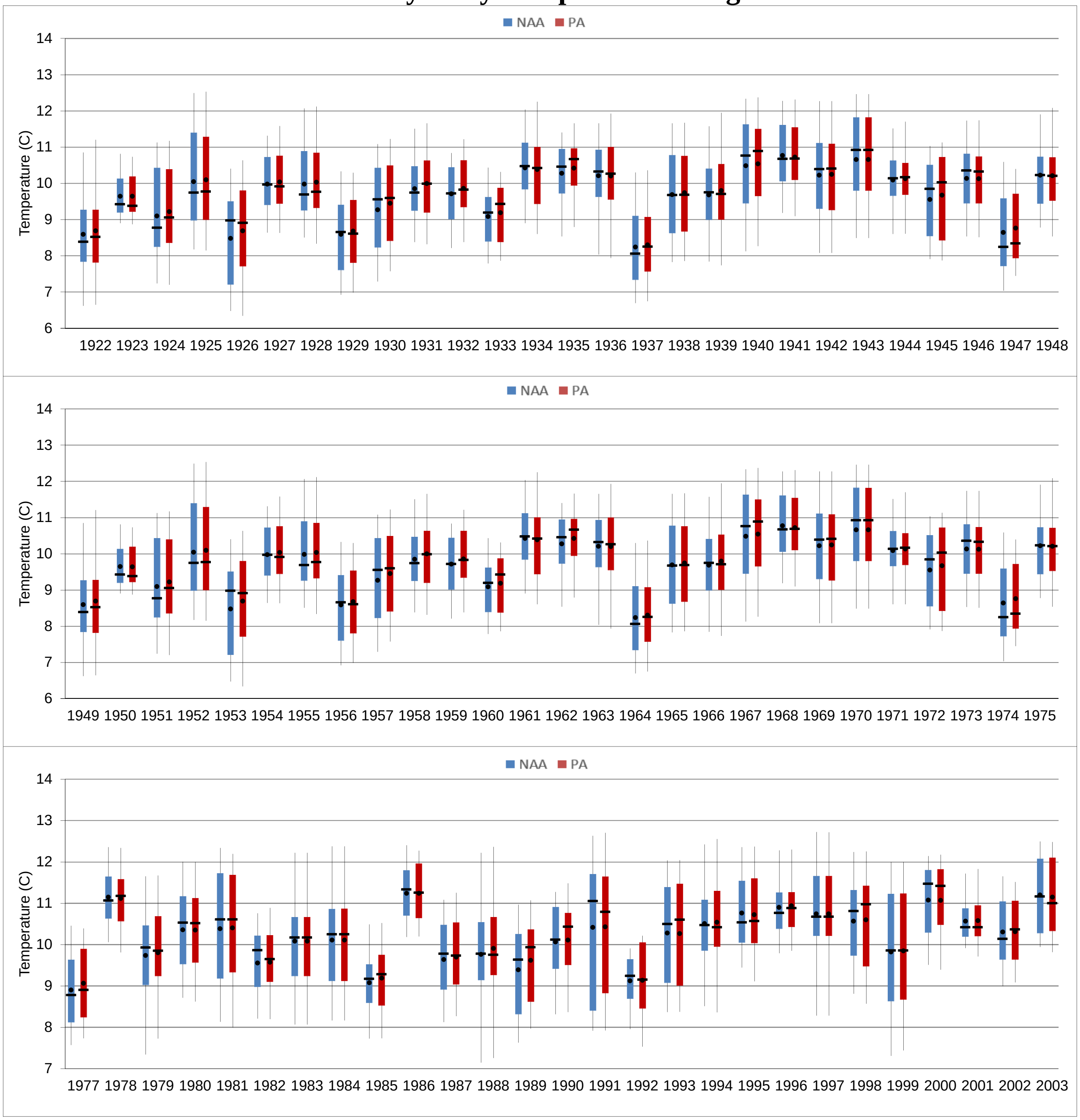


Figure 5.B.5.43-1 Stockton Deep Water Ship Channel Monthly Temperature Probability of Exceedance

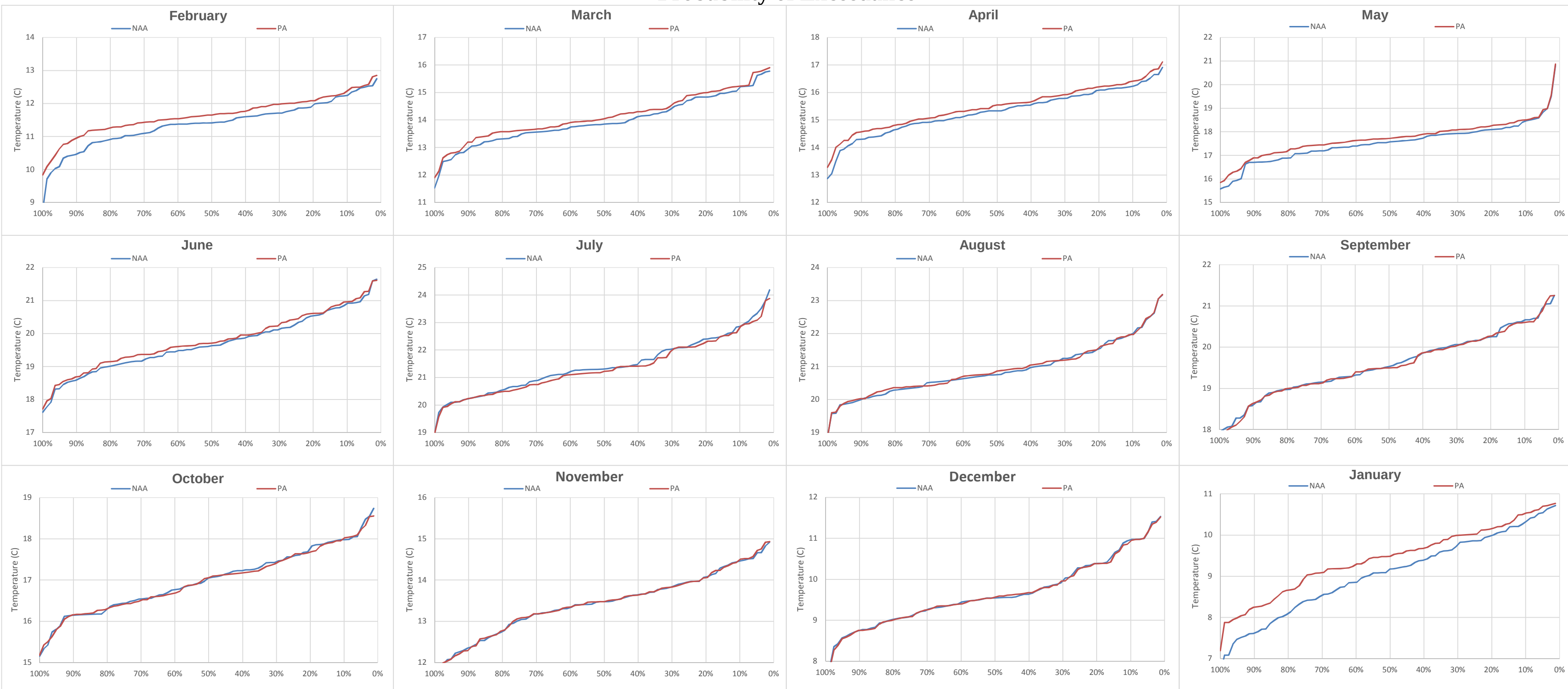


Figure 5.B.5.43-2 Stockton Deep Water Ship Channel Monthly Temperature

Figure 5.B.5.43-3 Stockton Deep Water Ship Channel Monthly Temperature February Daily Temperature Ranges

Figure 5.B.5.43-4 Stockton Deep Water Ship Channel Monthly Temperature March Daily Temperature Ranges

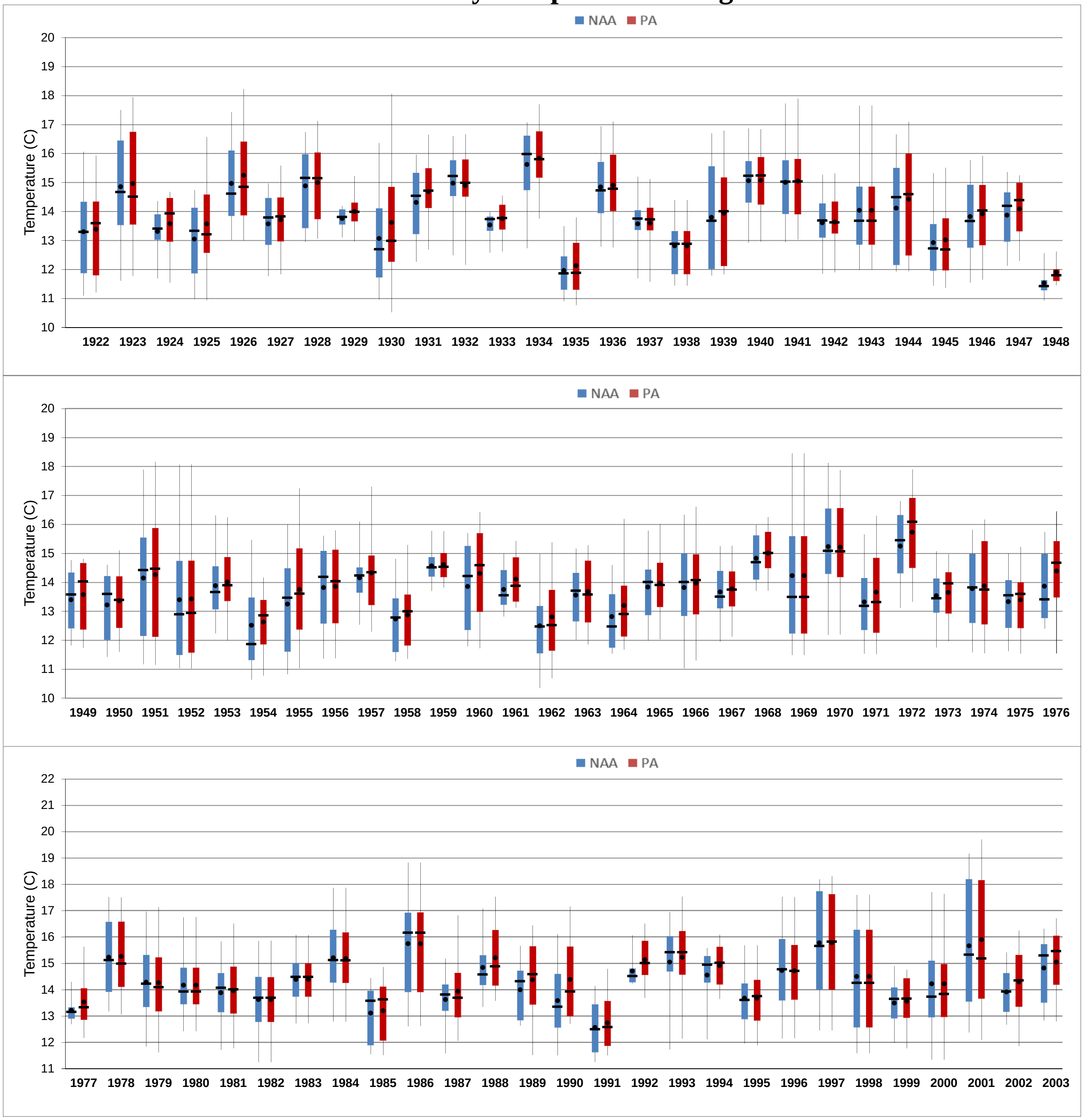


Figure 5.B.5.43-5 Stockton Deep Water Ship Channel Monthly Temperature April Daily Temperature Ranges

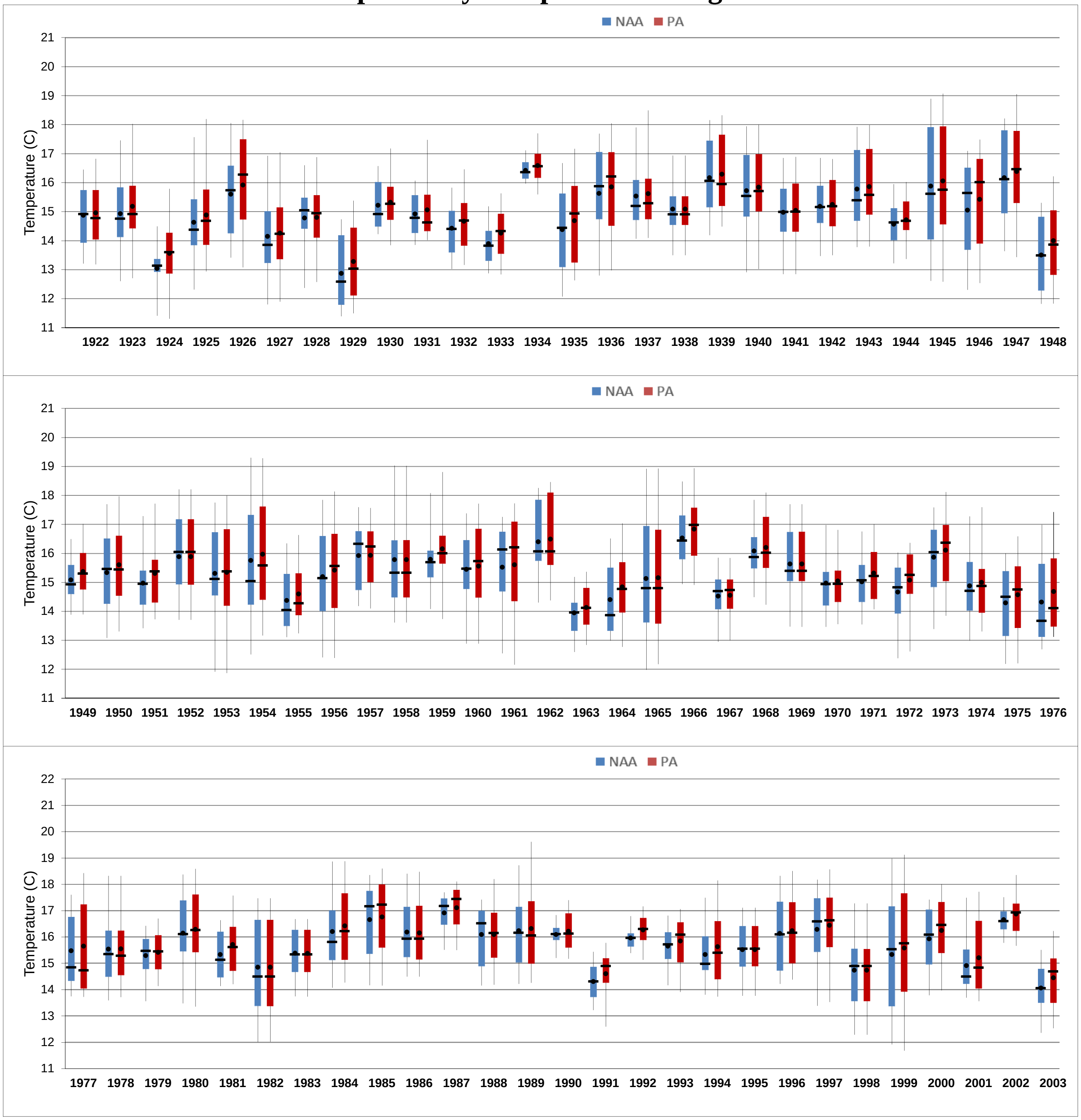


Figure 5.B.5.43-6 Stockton Deep Water Ship Channel Monthly Temperature May Daily Temperature Ranges

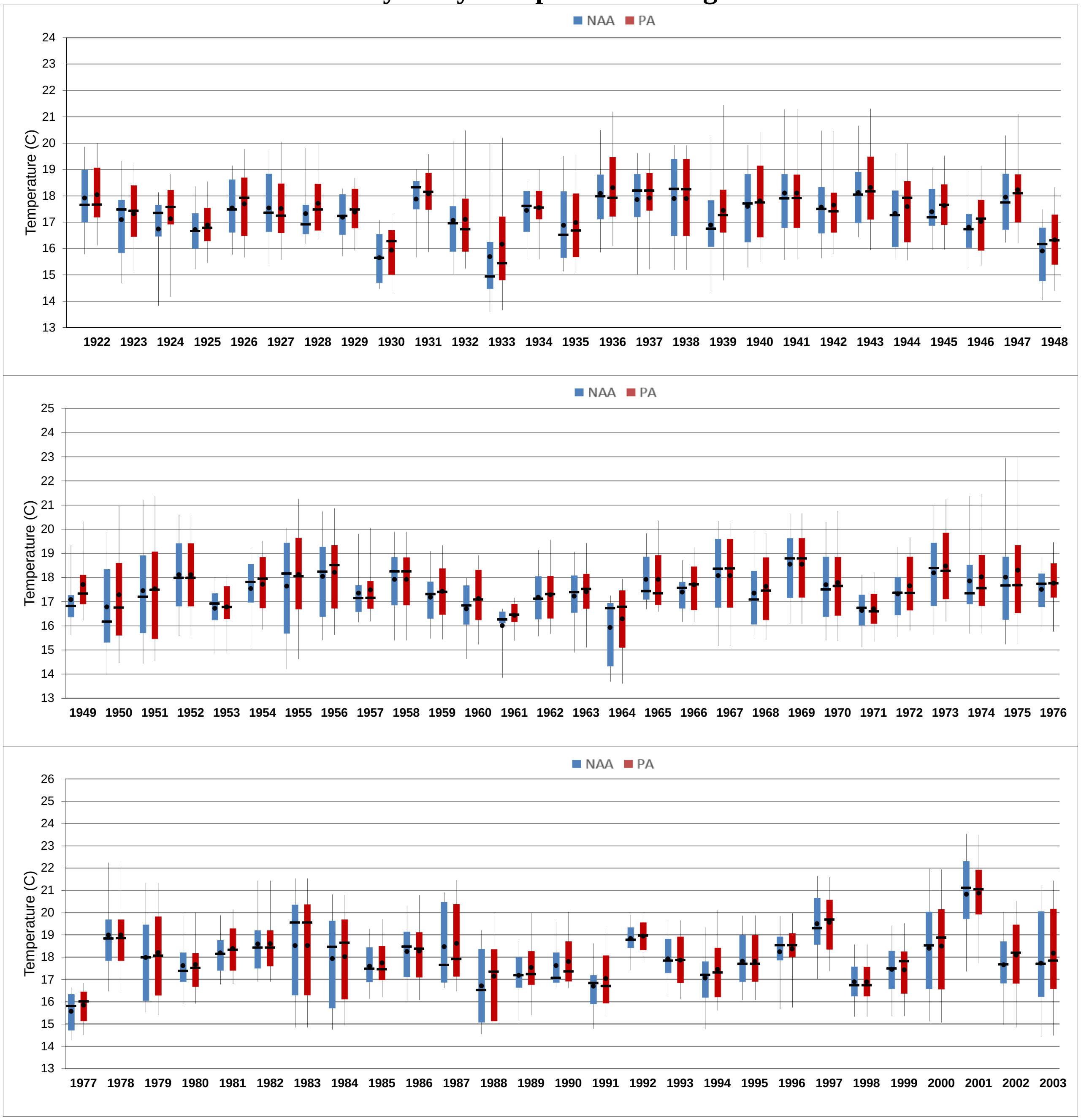


Figure 5.B.5.43-7 Stockton Deep Water Ship Channel Monthly Temperature June Daily Temperature Ranges

Figure 5.B.5.43-8 Stockton Deep Water Ship Channel Monthly Temperature July Daily Temperature Ranges

Figure 5.B.5.43-9 Stockton Deep Water Ship Channel Monthly Temperature August Daily Temperature Ranges

Figure 5.B.5.43-10 Stockton Deep Water Ship Channel Monthly Temperature September Daily Temperature Ranges

Figure 5.B.5.43-11 Stockton Deep Water Ship Channel Monthly Temperature October Daily Temperature Ranges

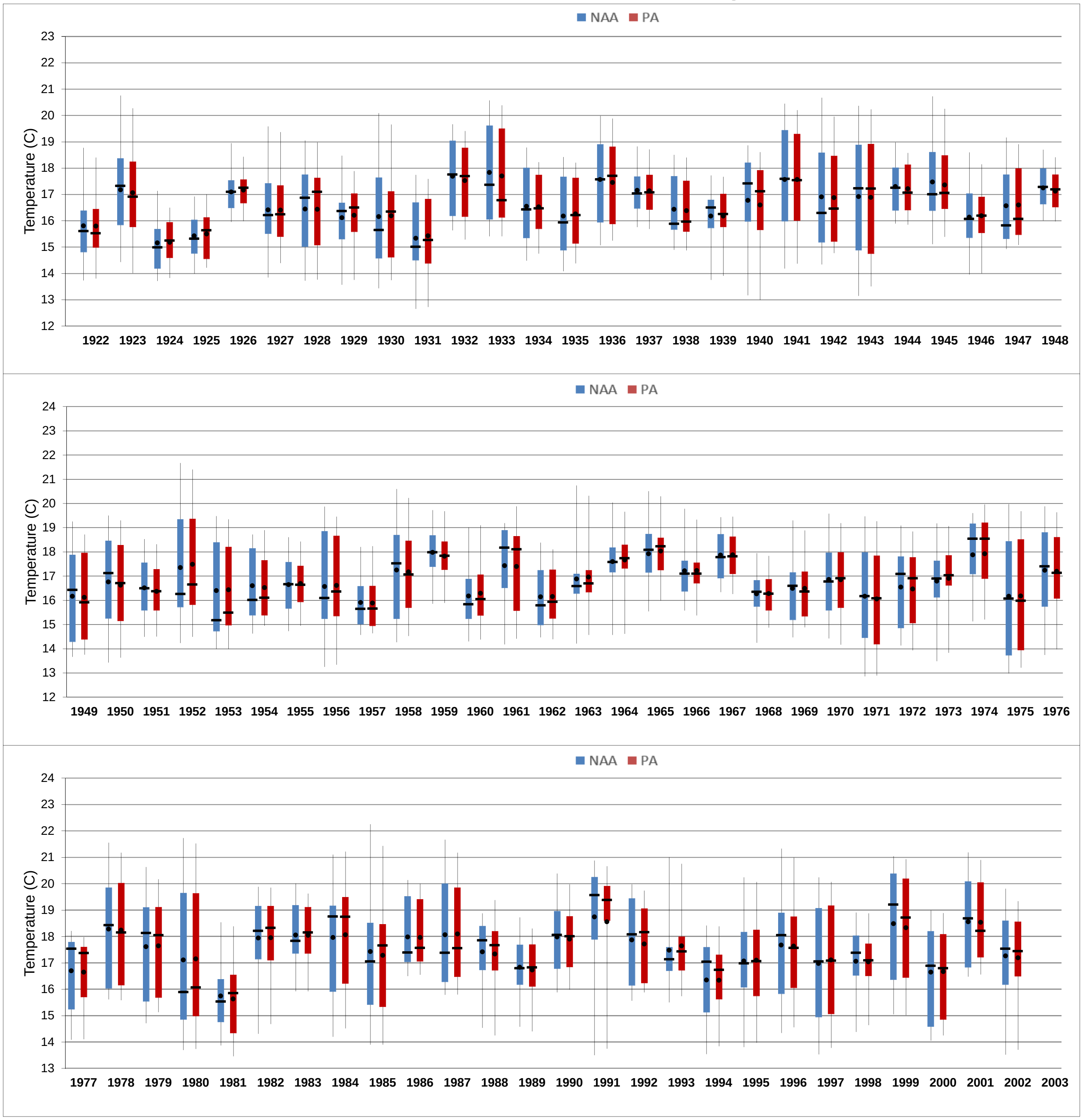


Figure 5.B.5.43-12 Stockton Deep Water Ship Channel Monthly Temperature November Daily Temperature Ranges

Figure 5.B.5.43-13 Stockton Deep Water Ship Channel Monthly Temperature December Daily Temperature Ranges

Figure 5.B.5.43-14 Stockton Deep Water Ship Channel Monthly Temperature January Daily Temperature Ranges