

Impacts on Mokelumne River Adult Salmon Fishery From Project's DCC Operations

Testimony Summary

Jose D. Setka

(EBMUD Exhibit 104)

Overview

- Mokelumne River and its salmon fishery
- Impacts of current Delta Cross Channel operations on adult salmon include causing false migration cues and straying when the DCC is open
- Project Alternative would result in more and longer openings of DCC in the fall
- Inadequate analysis of impacts to Mokelumne fishery
- Permit term to minimize Project impacts



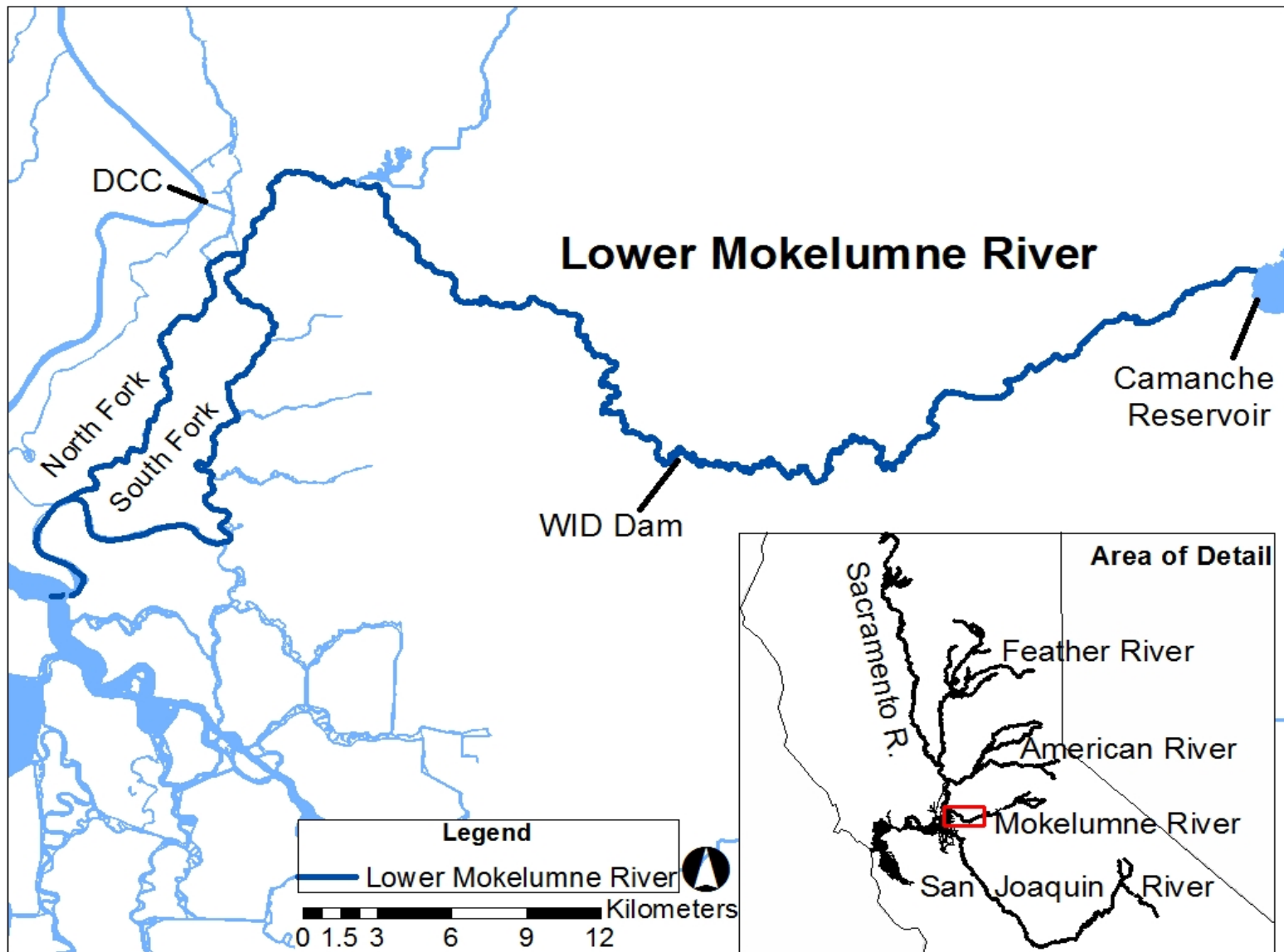


Figure 1. Map of Central Valley, California with detailed location of Lower Mokelumne River.

Mokelumne Fisheries Program



- Multi-decade effort including partnership with CDFW, USFWS and EBMUD
- Flow and non-flow actions
- Successes include improved salmon population numbers and increased in-river habitat
- Strategies tested during recent drought

Mokelumne Chinook Salmon Returns 1940 - 2016

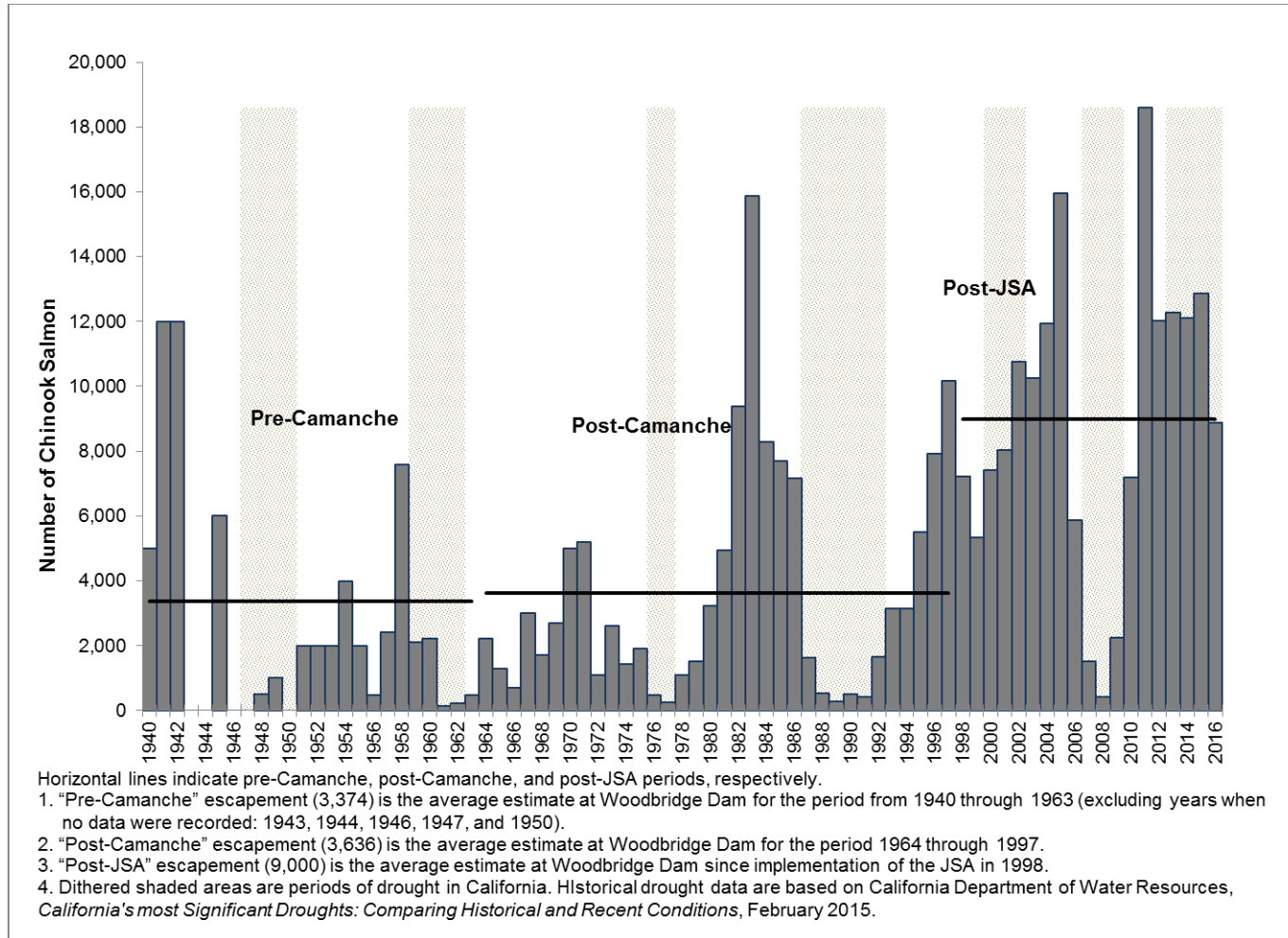


Figure 2. Mokelumne River Fall-run Chinook salmon annual escapement 1940 to 2016 including annual averages for pre-Camanche, post-Camanche and post- Joint Settlement Agreement (JSA) periods.

Key Accomplishments



- CVPIA/AFRP Doubling Goal
 - As of 2015, the Mokelumne had achieved an AFRP standard of 8,976. Target is 9,300
 - This is a higher percentage (96.5%) attainment than nearly all other Central Valley populations
- The Mokelumne is a small river (about 1% of Delta Watershed)
- Yet Mokelumne salmon comprise 15% - 20% of ocean commercial and recreational catches



Delta Cross Channel Location

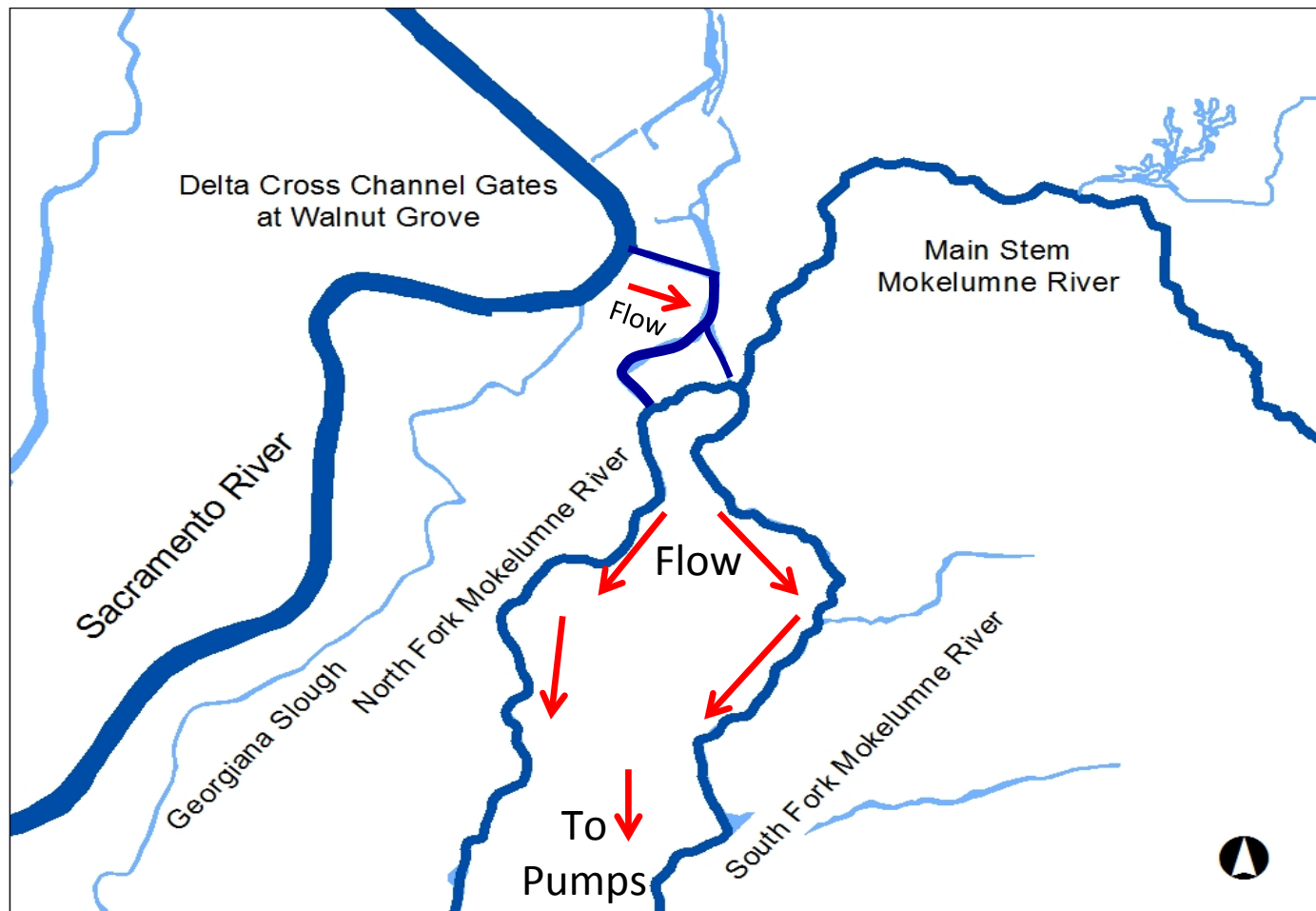


Figure 3. Map of Delta Cross Channel and Mokelumne River vicinity including depiction of outflow directions.

DCC Impacts on Adult Salmon



- DCC opened to convey Sacramento River water to South Delta Pumps
- Flows can exceed 3,500cfs
- Creates false migratory cues for salmonids
- Results in delayed migration and spawning
- Contributes to straying

Straying



- Salmon return to non-natal river
- Due to false or reduced cues
- Reduced spawners in natal river
- Potential impacts to populations in non-natal streams
- Ultimately reduces ability to achieve objectives such as AFRP Doubling Goal

DCC Operations and Mokolumne Salmon



- DCC identified as problem at first Mokolumne River Technical Advisory Committee 1989
- Significant (>90%) Mokolumne salmon strayed in 2008
 - DCC open all Fall until 11/10/08
- CDFW, USFWS, and EBMUD requested fall DCC closures in 2009, 2010, 2011
- In 2011 a 10-day closure occurred in October
 - 2011 stray rate <20%

Mokelumne Salmon Stray Rates 2008 and 2011

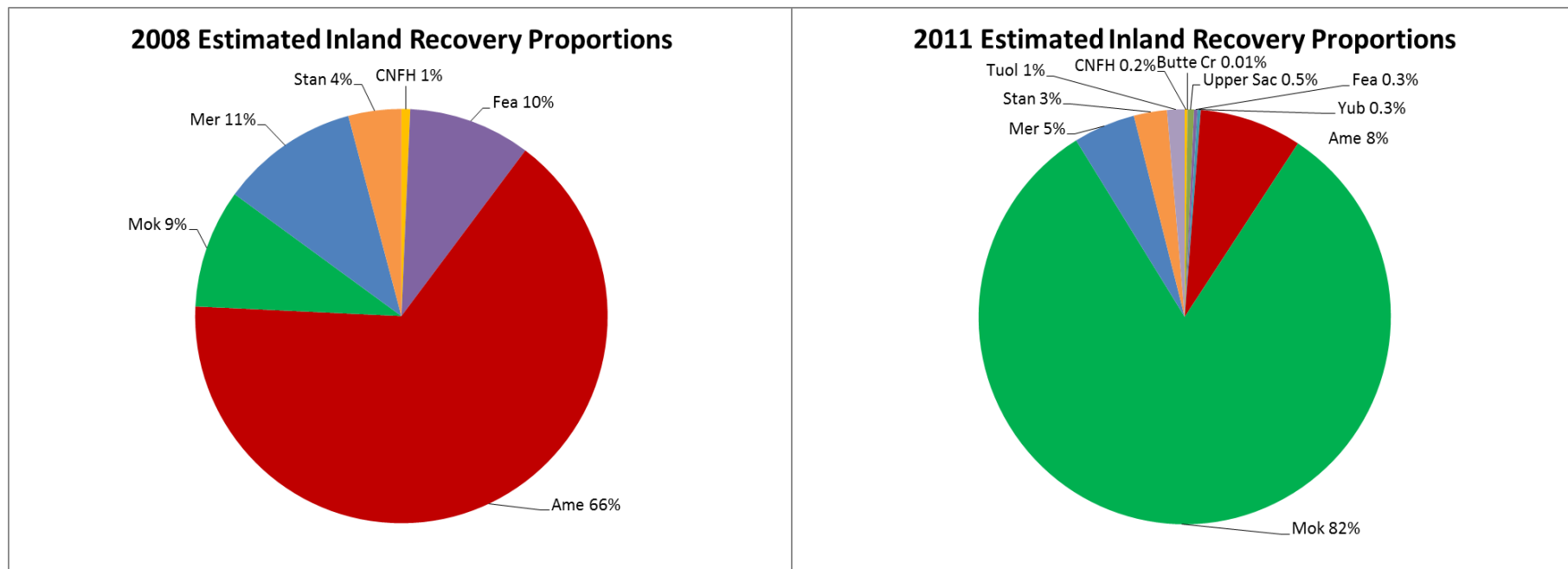


Figure 4. Estimated inland recovery proportions of Mokelumne River origin Chinook salmon 2008 and 2011. (Prepared from Regional Mark Processing Center data 2017)

Efforts to Reduce DCC Salmon Impacts



- 2010 BDCP Working Draft recommends 15 days of DCC closures in the months of October and November
- 2012 CDFW comments to SWRCB on NOP for Bay-Delta Plan recommend evaluating DCC closures during all or portion of October
- In 2012 USBR develops DCC closure study plan
- 2017 CDFW requests fall DCC closure to improve migratory cues for Coleman Hatchery salmon

Project Impacts



- Lack of operating plan for project
- Analysis of impacts to Mokelumne River fishery is not adequate
- Documents indicate changes in operation of DCC under the Project
 - DCC opened for longer duration in November
 - DCC opened for more total days in October and November

DCC Opened for Longer Duration Under Project



- According to the Petitioners' 2016 Biological Assessment:
 - Without the Project (NAA) the most common duration for November DCC openings is 3 days
 - With Project (PA) the most common duration for November DCC openings increases to 20 days

November Increase in DCC Opening Duration

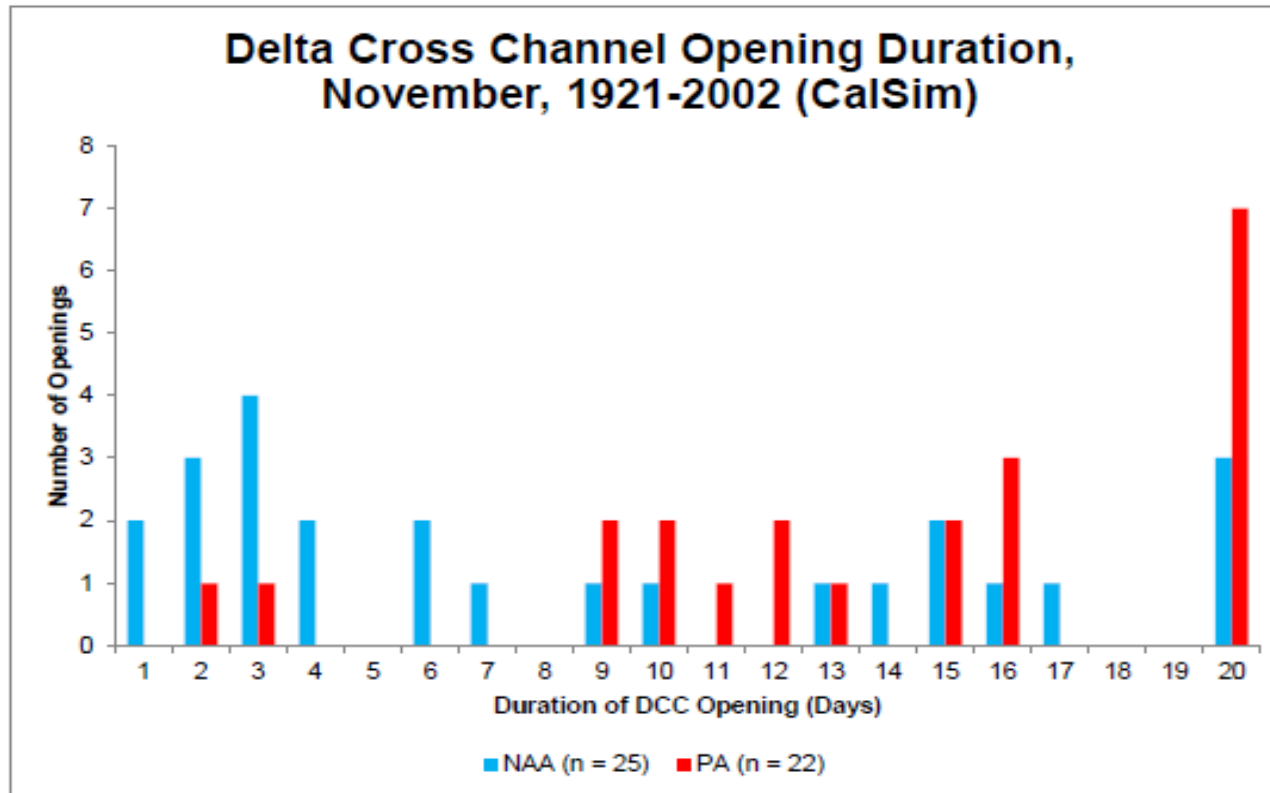


Figure 5.4-7. Duration of Delta Cross Channel Openings that Began in November, from CalSim Modeling of 1921-2002.

Figure 5. Difference in number and duration of Delta Cross Channel openings between NAA and PA from California Water Fix Biological Assessment July 2016. (Page 5-122)

Project Increases Number of DCC Openings



- Biological Assessment models potential gate openings
- Average increase in number of days open in October and November
- Increases potential for false cues, delays, and straying

Table 2. Excerpt from California Water Fix Biological Assessment depicting increased probability of gates being opened in October and November. (Appendix 5A CalSim II Modeling and Results)

Table 5.A.6-31. Delta Cross Channel, Average Number of Days Gates Open

•Exceedance probability is defined as the probability a given value will be exceeded in any one year.
 •Based on the 82-year simulation period.

Statistic	October				November			
	NAA	PA	Diff.	Perc. Diff.	NAA	PA	Diff.	Perc. Diff.
Probability of Exceedance ^a								
10%	31	31	0	0%	20	20	0	0%
20%	31	31	0	0%	20	20	0	0%
30%	31	31	0	0%	17	20	3	20%
40%	31	31	0	0%	14	16	2	18%
50%	29	31	2	7%	10	15	6	58%
60%	27	30	3	11%	4	11	7	185%
70%	24	28	4	17%	2	9	7	350%
80%	18	26	8	43%	0	3	3	-
90%	13	18	5	36%	0	0	0	-
Long Term Full Simulation Period ^b	25	27	2	8%	10	12	3	26%

Inadequate Analysis of Mokolumne Fishery Impacts



- EBMUD commented on both draft and final EIR/EIS
- Highlighted many concerns including lack of clear operating criteria related to DCC
- Pointed to issue of straying due to false cues
- Provided data regarding DCC and straying
- Use of DSM2-QUAL does not meet standards to identify Mokolumne impacts

Considerations for Imposing Potential Terms and Conditions



- Clear impact due to current DCC operations
- Additional impacts due to increased DCC openings under Project
- Recommendation for increased closures of DCC have been made in numerous forums by multiple agencies (most recently by CDFW in 2017)
- 2010 BDCP Draft called for 15 day closures of DCC in October and November

Requested Term and Condition



- The DCC closure plan (daily or based on tidal cycles) shall be modified to include the following closure periods during the months of October and November: The DCC shall be closed for 15 days per month during the months of October and November, with said closures to be coordinated, to the extent feasible, with October-November pulse flows from the Lower Mokolumne River.