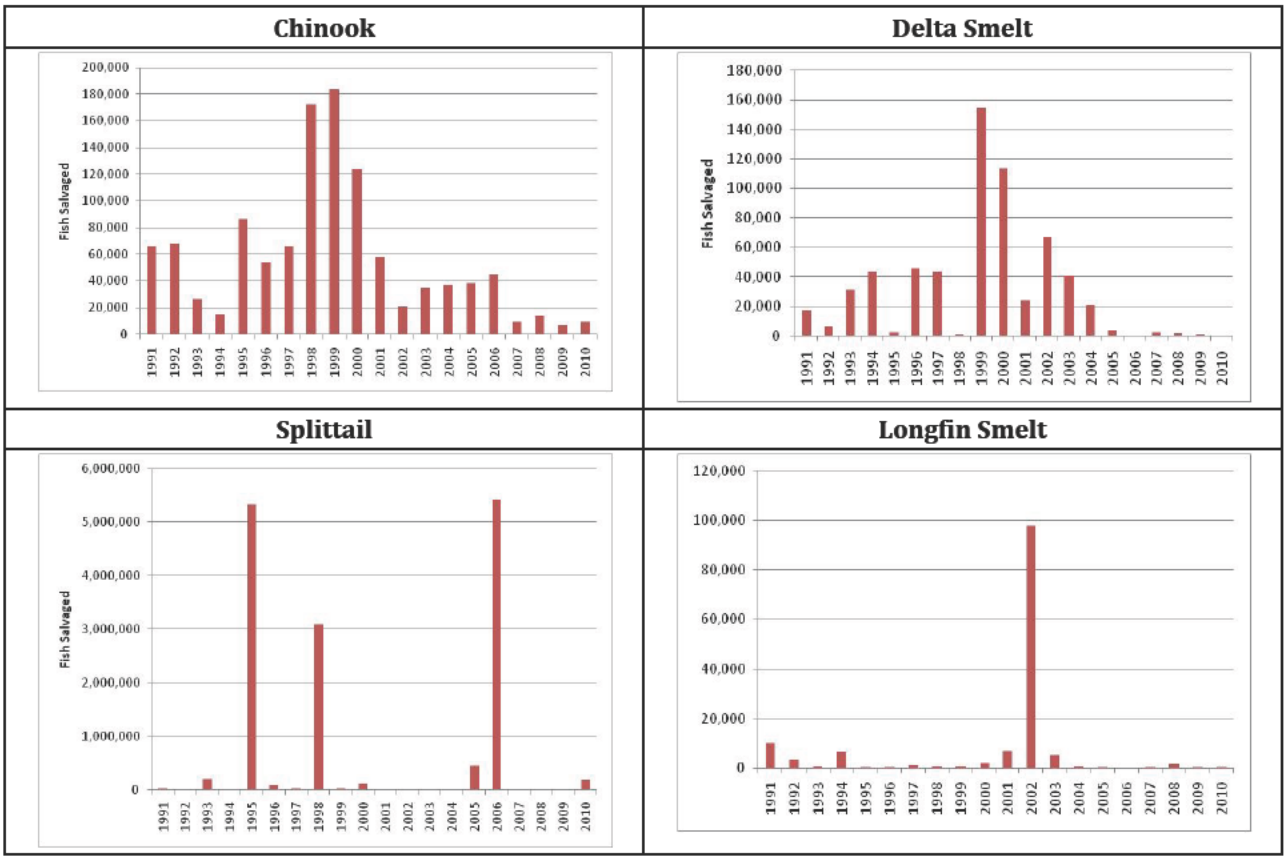
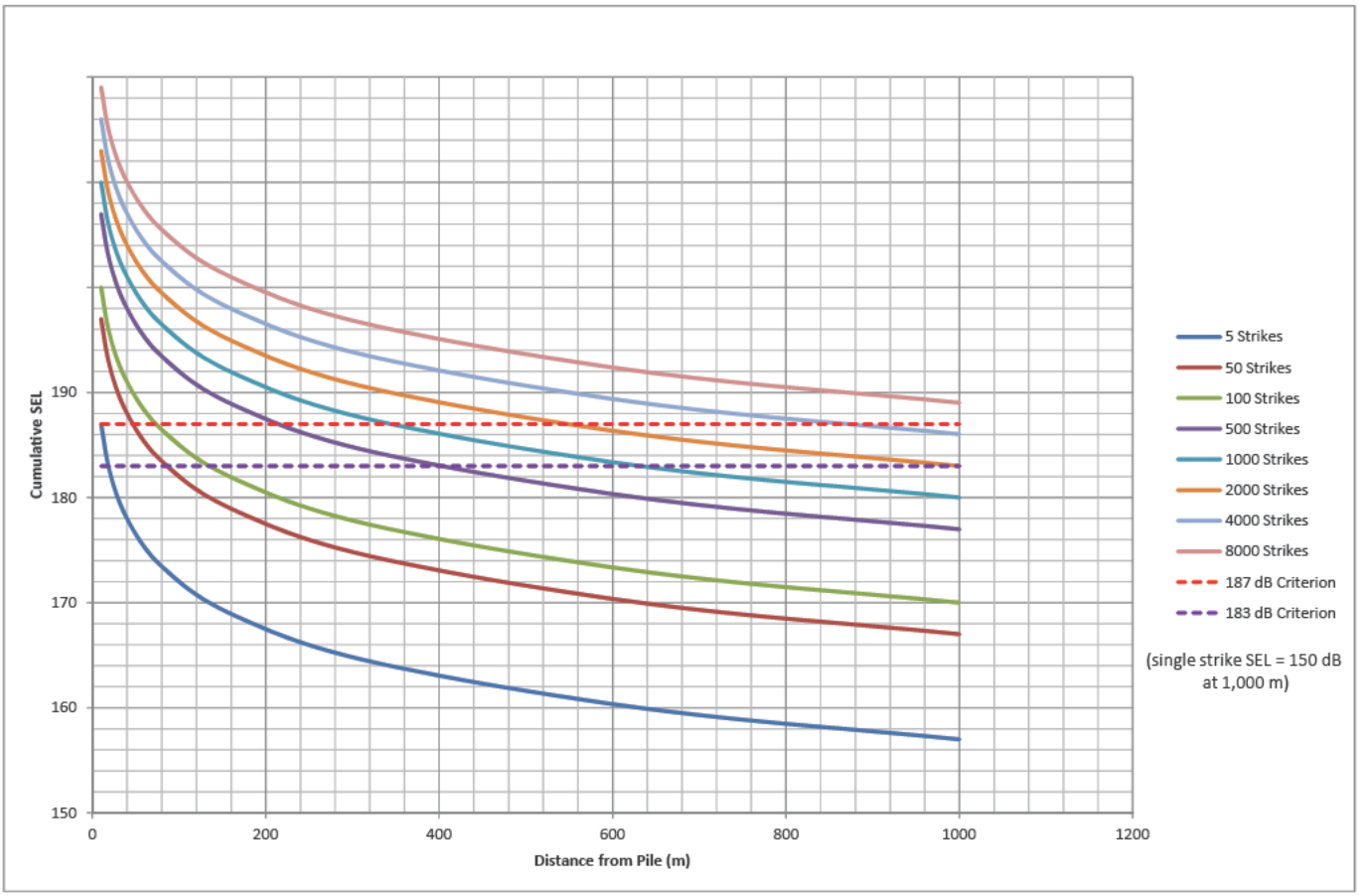


Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1
Combined Number of Fish Salvaged Annually at CVP and SWP South Delta Export Facilities, 1991–2010

Pile	24-inch AZ steel sheet pile							
Peak (dB) at 10 m	205							
Single Strike SEL (dB) at 10 m	180							
Distance (m) to 150 dB SEL	1000							
Attenuation Factor	15							
Number of Strikes Per Day	5	50	100	500	1000	2000	4000	8000
Distance from Pile (m)								
10	187	197	200	207	210	213	216	219
20	182	192	195	202	205	208	212	215
40	178	188	191	198	201	204	207	210
80	173	183	186	193	196	199	202	205
160	169	179	182	189	192	195	198	201
320	164	174	177	184	187	190	193	196
640	160	170	173	180	183	186	189	192
1000	157	167	170	177	180	183	186	189

Source Data: Table I.2-1 (Caltrans 2009). Attenuation of 4.5 dB per doubling of distance assumed.

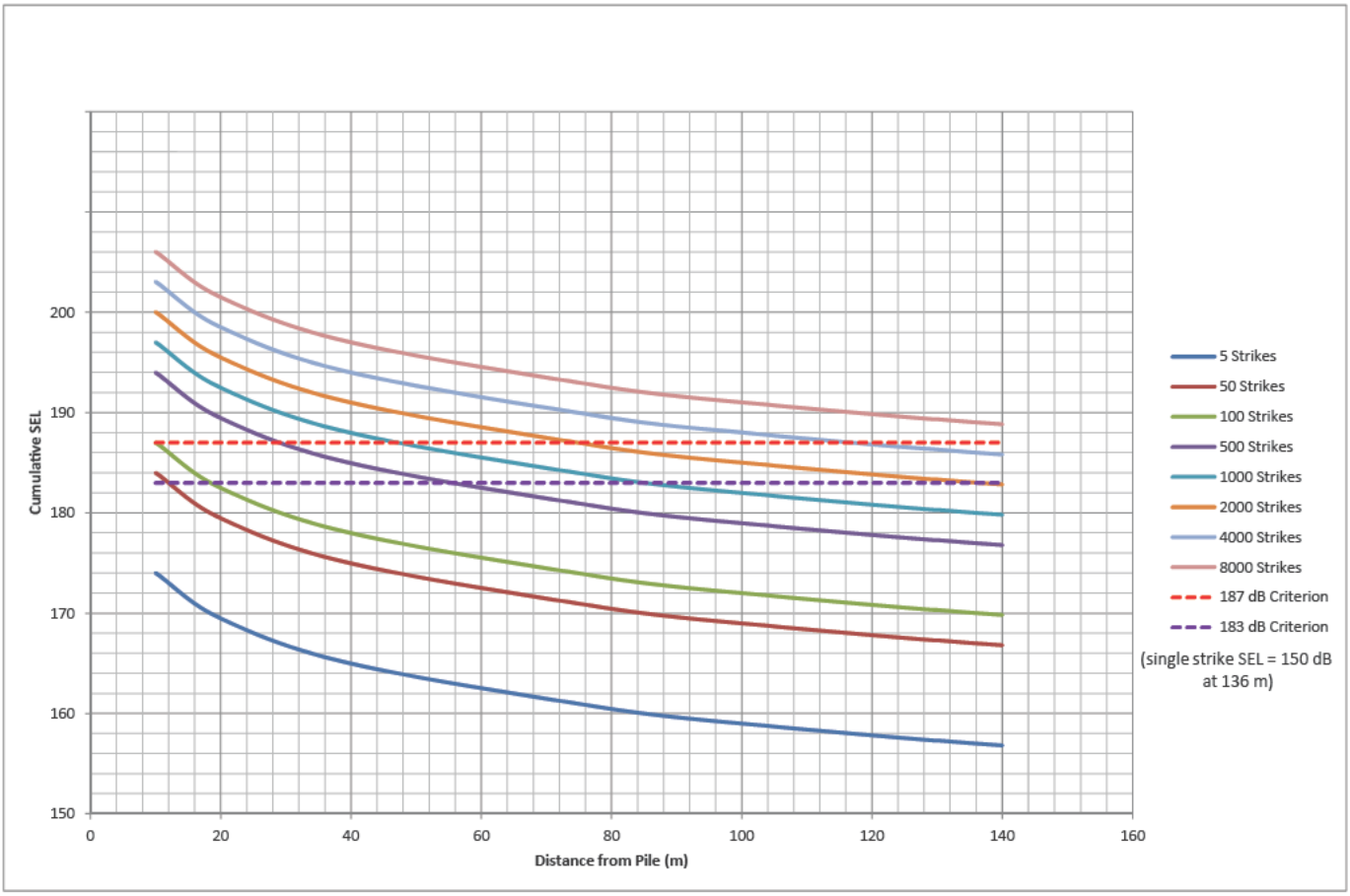


Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-2
Sheet Pile Impact Driving

Pile	24-inch steel pipe pile in dewatered cofferdam	(assumes 10 dB attenuation from dewatered cofferdam)						
Peak (dB) at 10 m	193							
Single Strike SEL	167							
Distance (m) to 150 dB SEL	136							
Attenuation Factor	15							
Number of Strikes Per Day	5	50	100	500	1000	2000	4000	8000
Distance from Pile (m)								
10	174	184	187	194	197	200	203	206
20	169	179	182	189	192	195	199	202
40	165	175	178	185	188	191	194	197
80	160	170	173	180	183	186	189	192
100	159	169	172	179	182	185	188	191
120	158	168	171	178	181	184	187	190
130	157	167	170	177	180	183	186	189
140	157	167	170	177	180	183	186	189

Source Data: Table I.2-1 (Caltrans 2009). Attenuation of 4 5 dB per doubling of distance assumed.

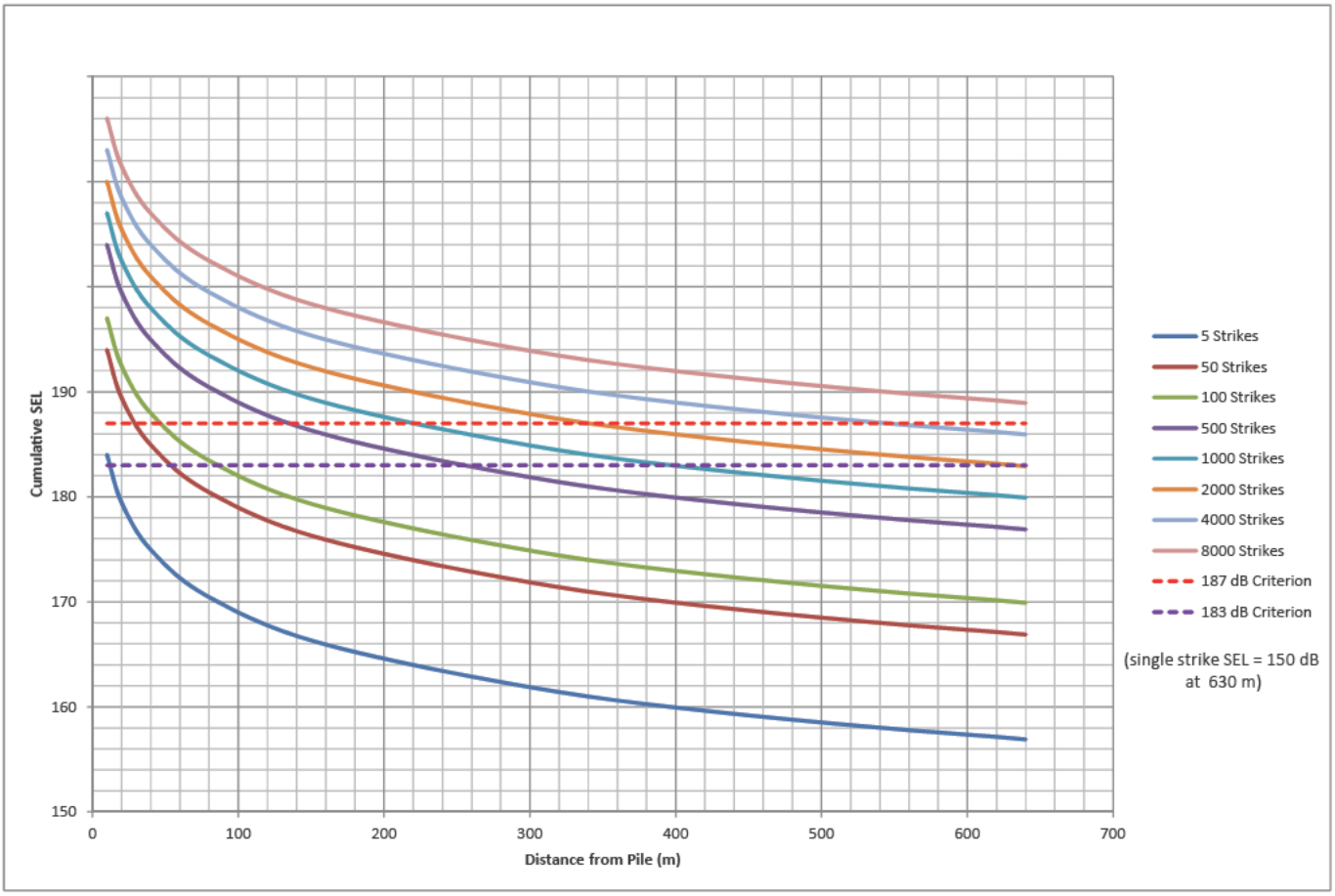


Graphics...BDCP ER/EIS (09-2013) SS

Figure 11-3
24-inch Steel Pipe Pile in Dewatered Cofferdam Impact Driving

Pile	24-inch steel pipe pile							
Peak (dB) at 10 m	203							
Single Strike SEL	177							
Distance (m) to 150 dB SEL	631							
Attenuation Factor	15							
Number of Strikes Per Day	5	50	100	500	1000	2000	4000	8000
Distance from Pile (m)								
10	184	194	197	204	207	210	213	216
20	179	189	192	199	202	205	209	212
40	175	185	188	195	198	201	204	207
80	170	180	183	190	193	196	199	202
160	166	176	179	186	189	192	195	198
320	161	171	174	181	184	187	190	193
480	159	169	172	179	182	185	188	191
640	157	167	170	177	180	183	186	189

Source Data: Table I.2-1 (Caltrans 2009). Attenuation of 4.5 dB per doubling of distance assumed.



Graphics...BDCP ER/EIS (09-2013) SS

Figure 11-4
24-inch Steel Pipe Pile Impact Driving

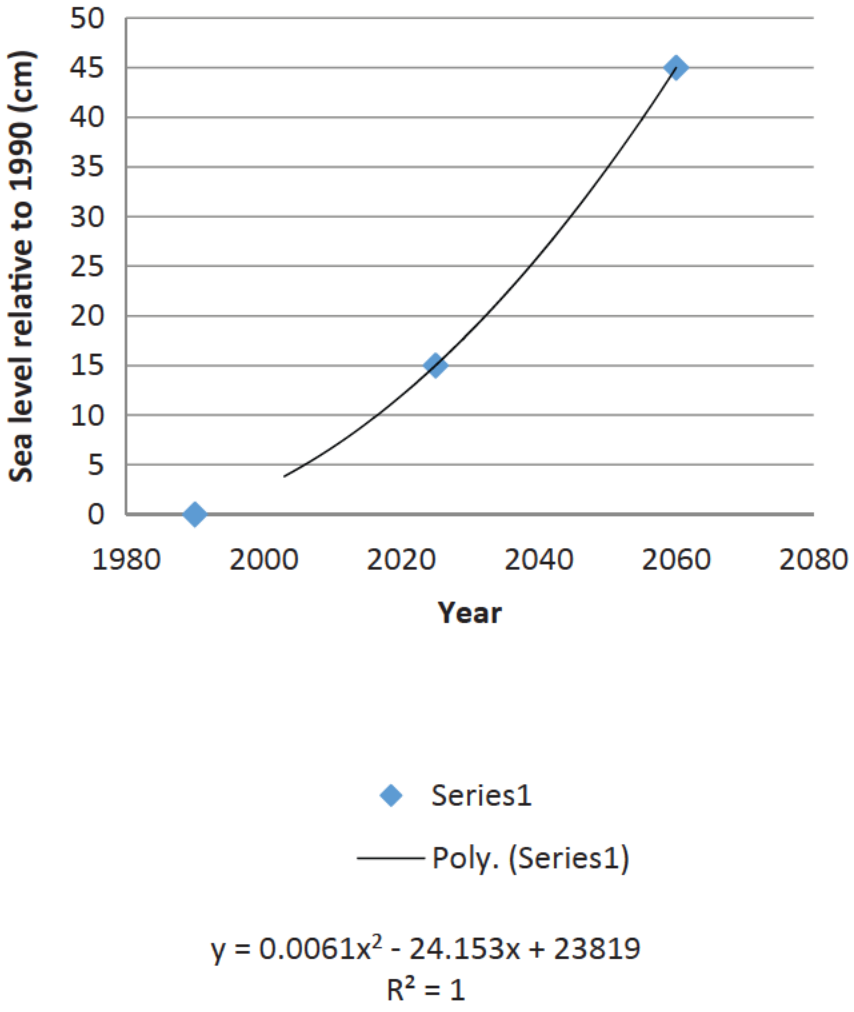
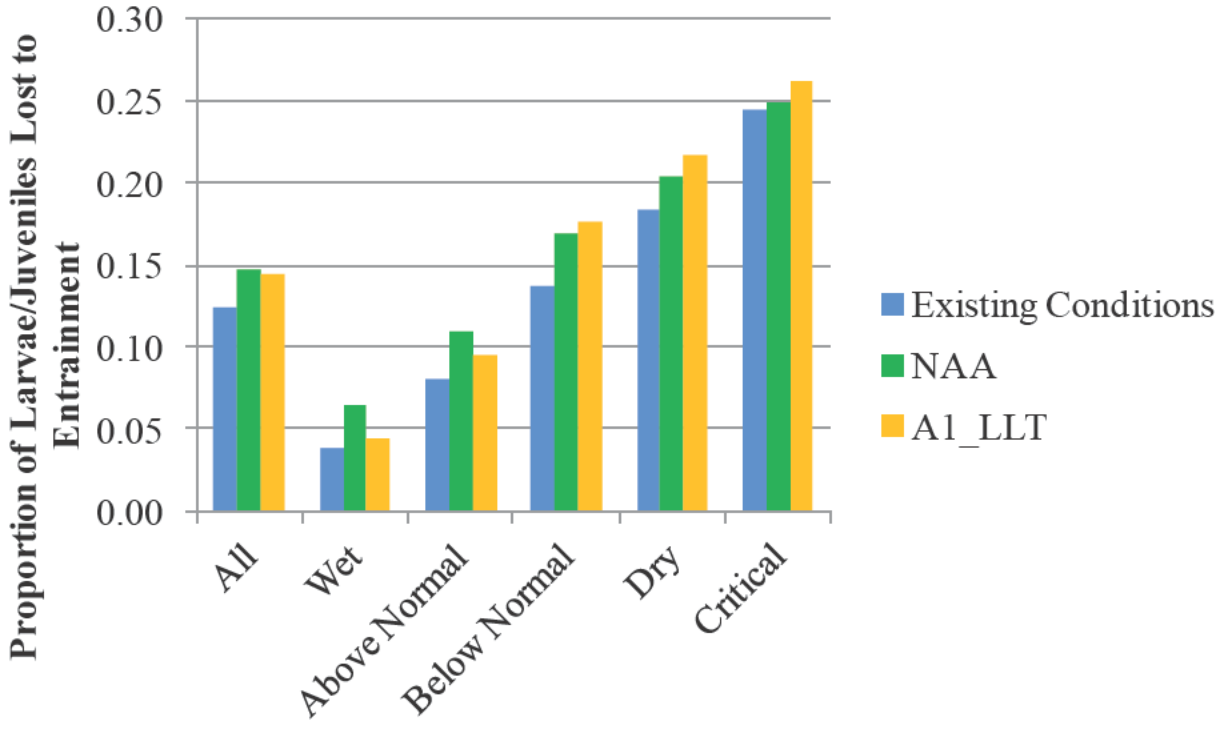
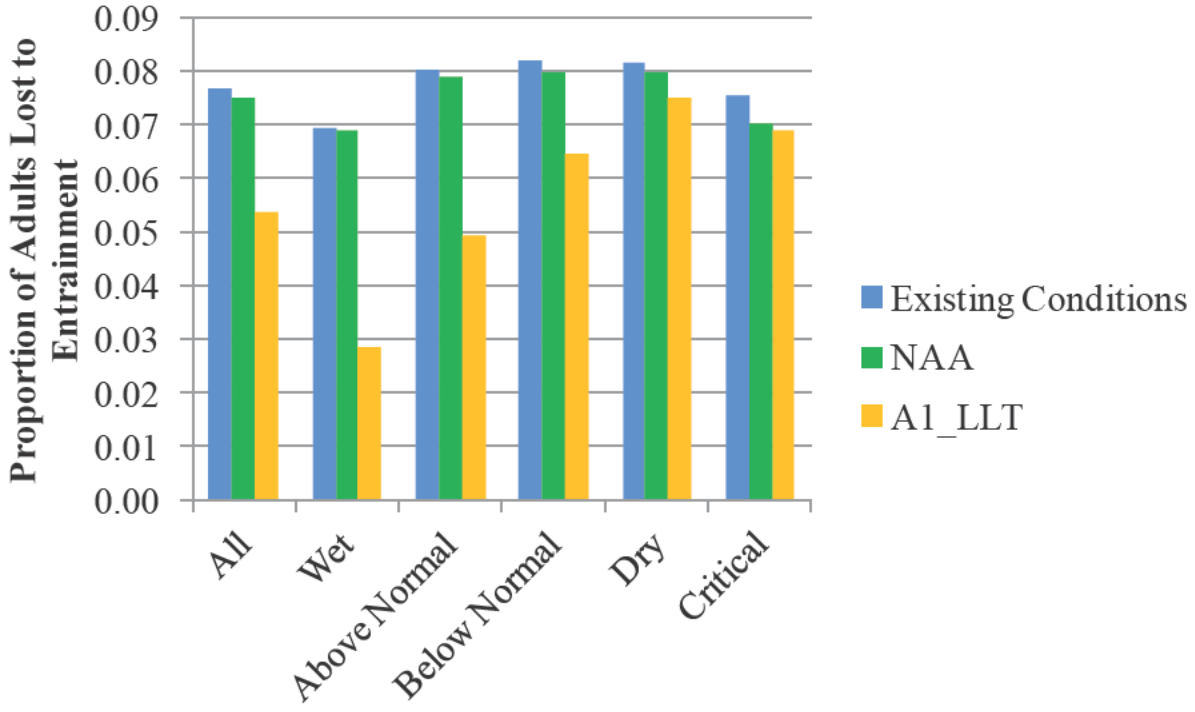


Figure 11-5
Calculated Sea Level Rise Curve for the Plan



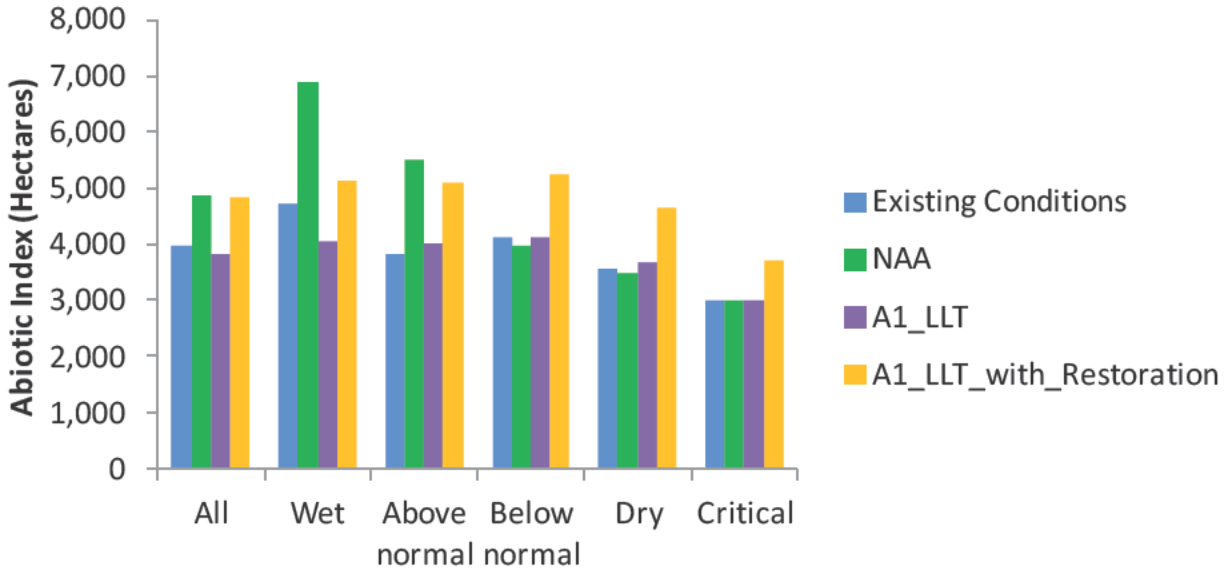
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-1
Average Annual Estimated Proportion of the Larval/Juvenile Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 1A, Based on the Proportional Entrainment Regression



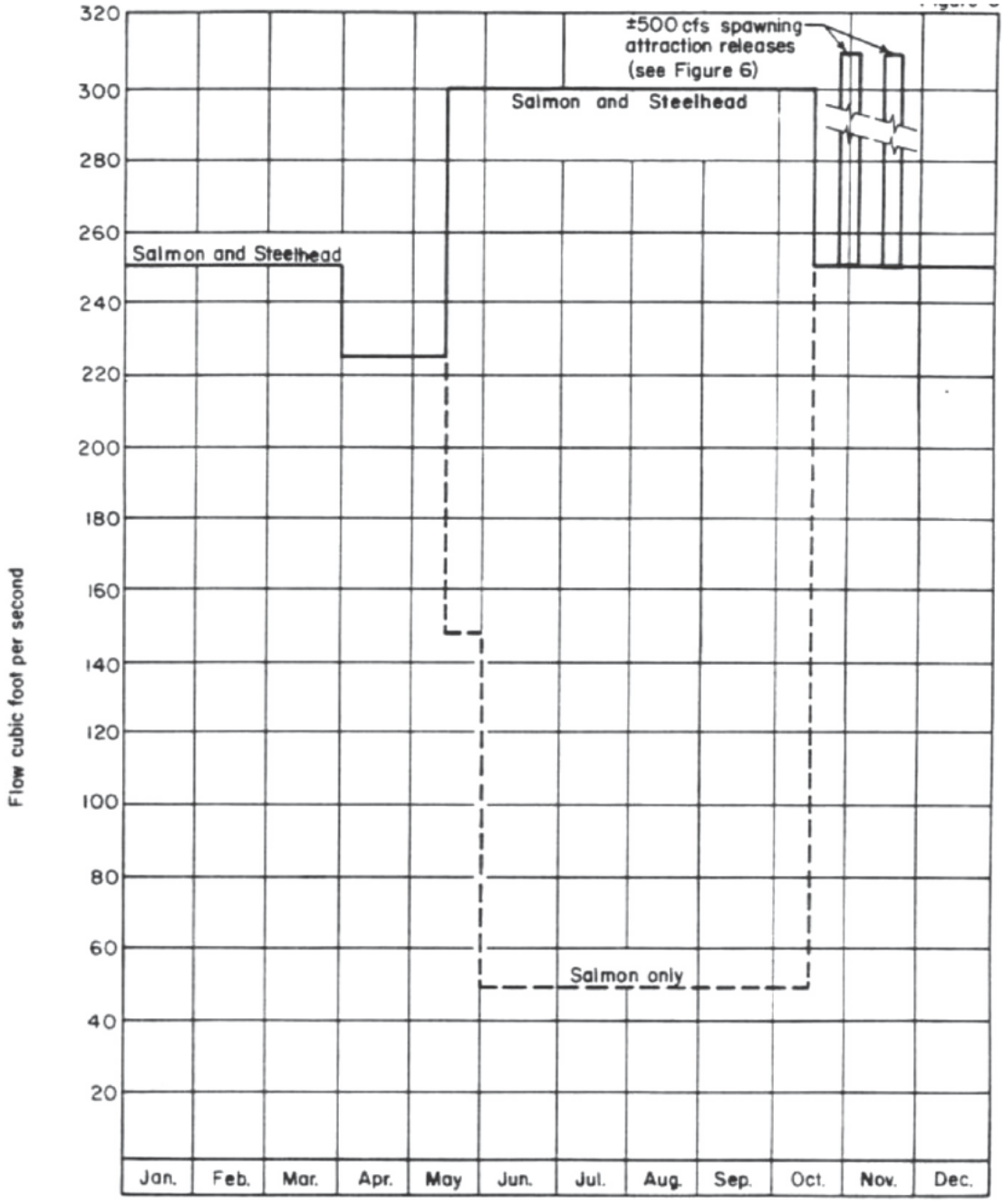
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-2
Average Annual Estimated Proportion of the Adult Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 1A, Based on the Proportional Entrainment Regression (USFWS 2008a, with adjustment from Kimmerer 2011)



Graphics...BDCP EIR/EIS (09-2013) SS

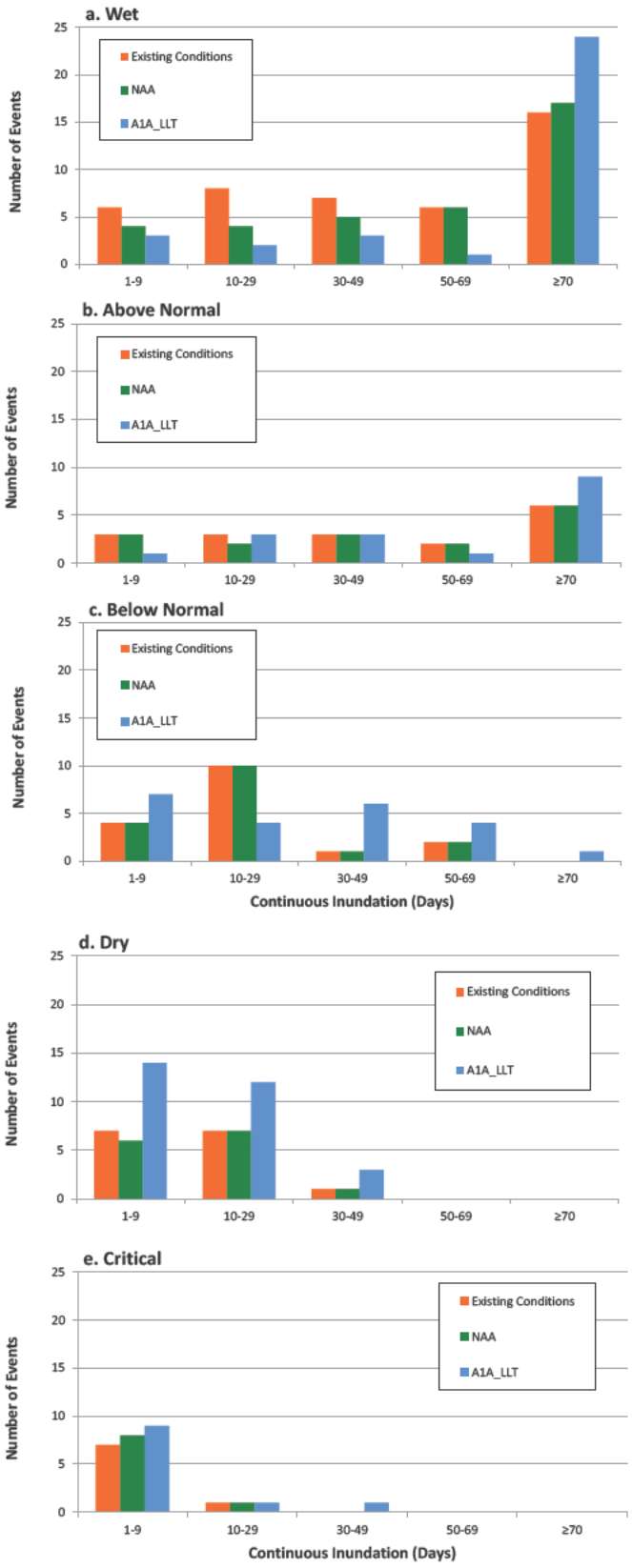
Figure 11-1A-3
Delta Smelt Fall Abiotic Index (hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 1A



Comparative Flow Release Schedule for Optimum Salmon and Steelhead Habitat

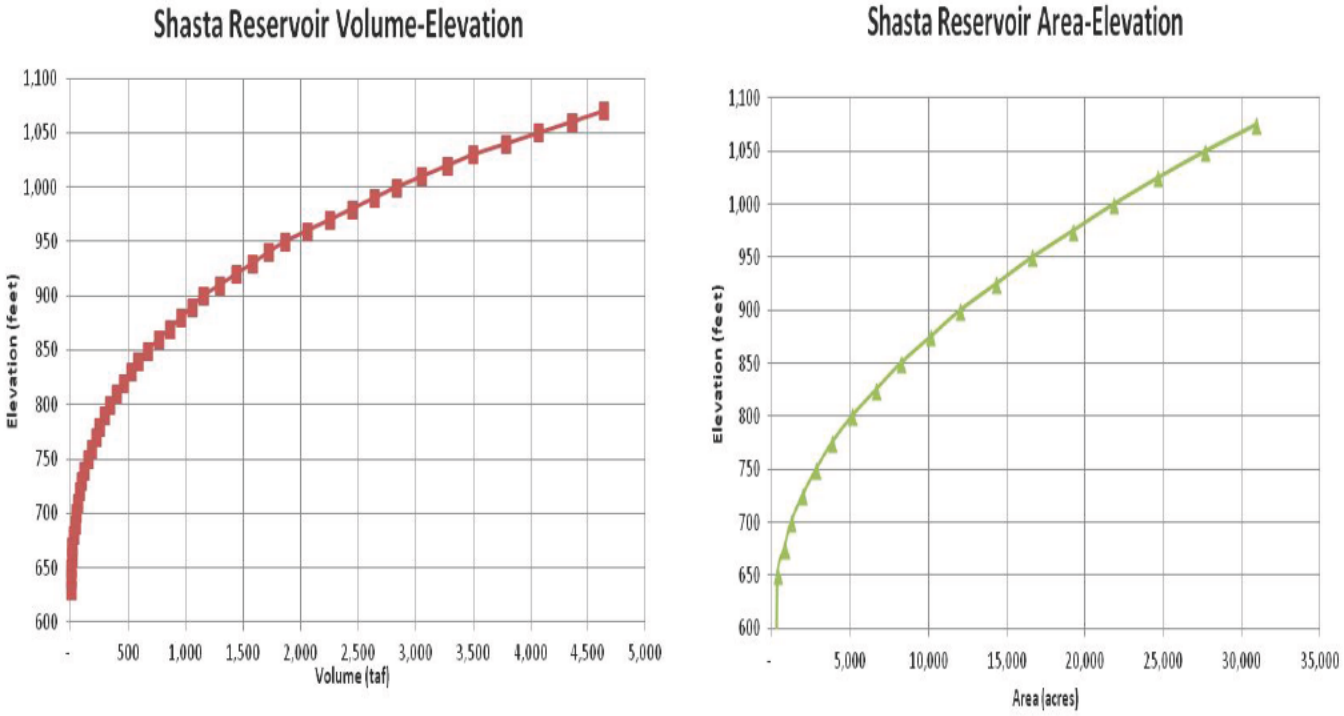
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-4
Clear Creek Flow Recommendations from Denton (1986) Instream Flow Incremental Methodology Study



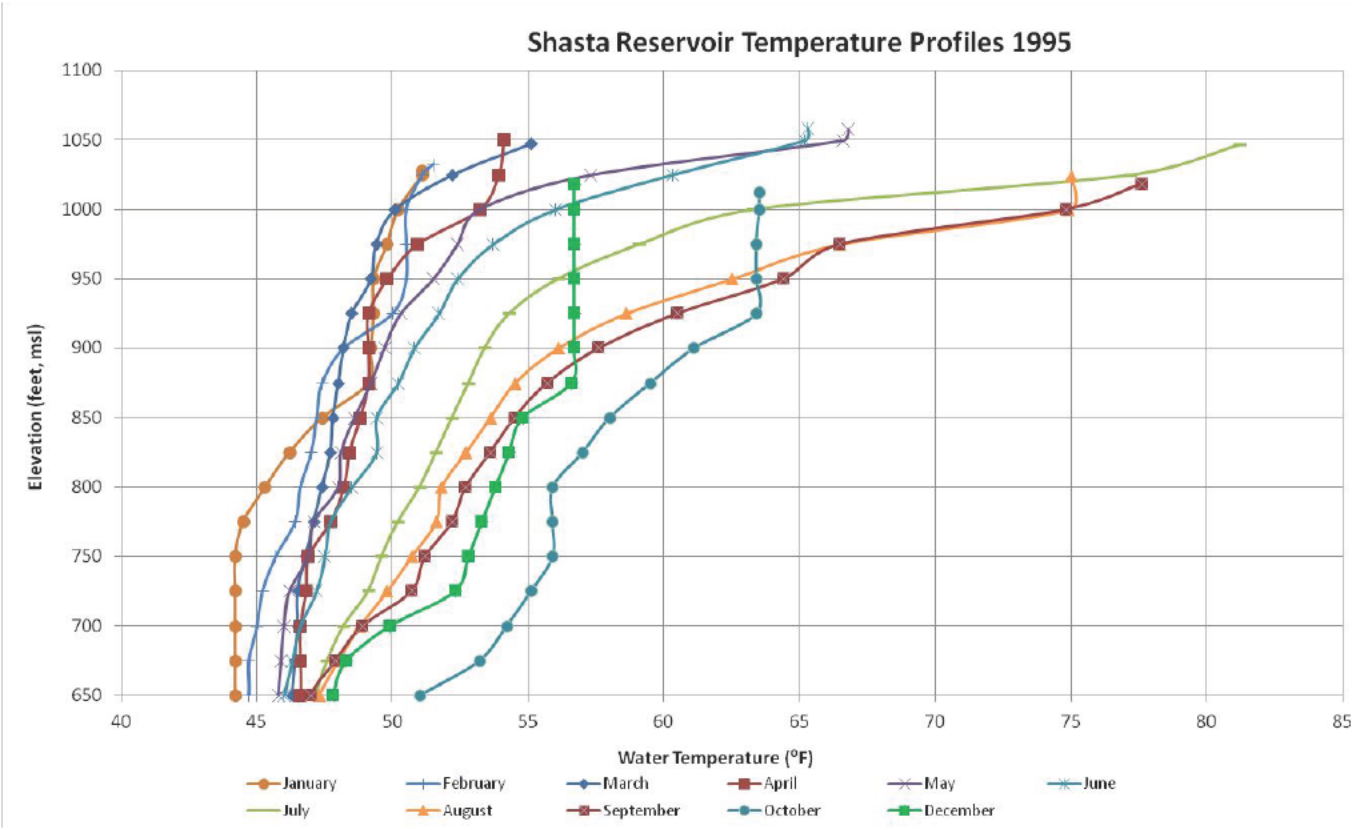
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-5
Frequencies of Inundation Events (for 82-Year Simulations) of Different Durations on the Yolo Bypass under Different Scenarios and Water Year Types under Alternative 1A, February through June, from 15 2-D and Daily CALSIM II Modeling Runs



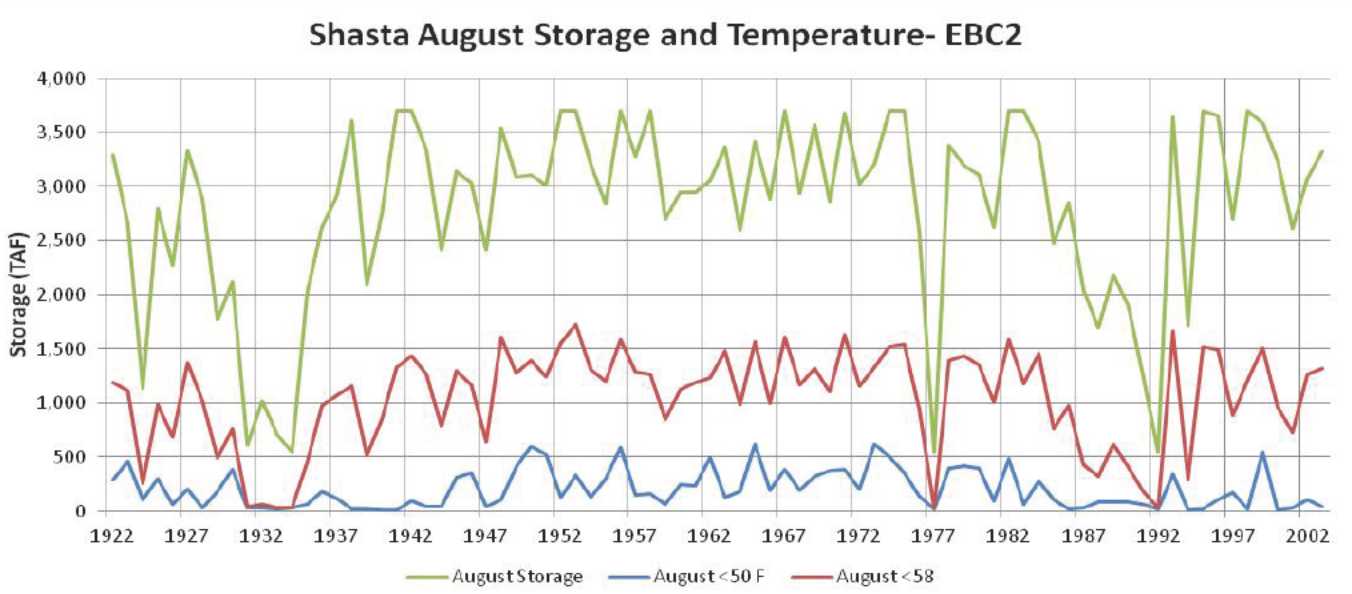
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-6
a) Shasta Reservoir Storage Volume (TAF) as a Function of Elevation (feet);
b) Shasta Reservoir Surface Area (acres) as a Function of Elevation (feet)



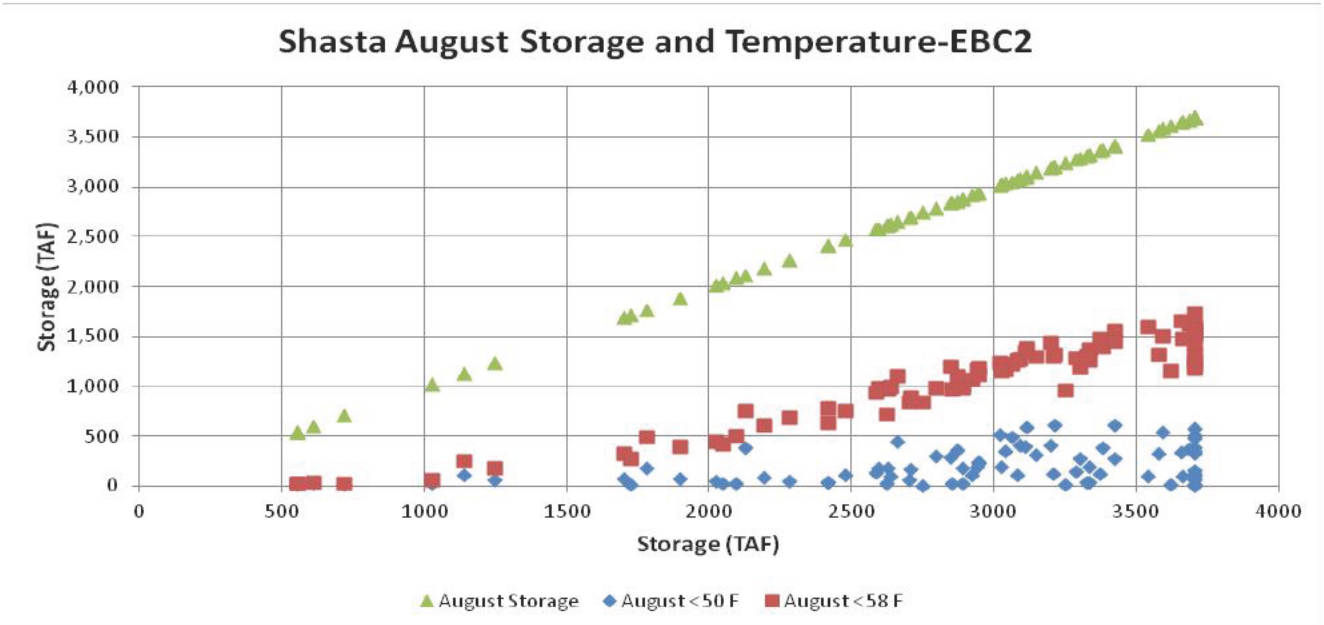
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-7
Measured Monthly Water Temperature Profiles in Shasta Reservoir during 1995



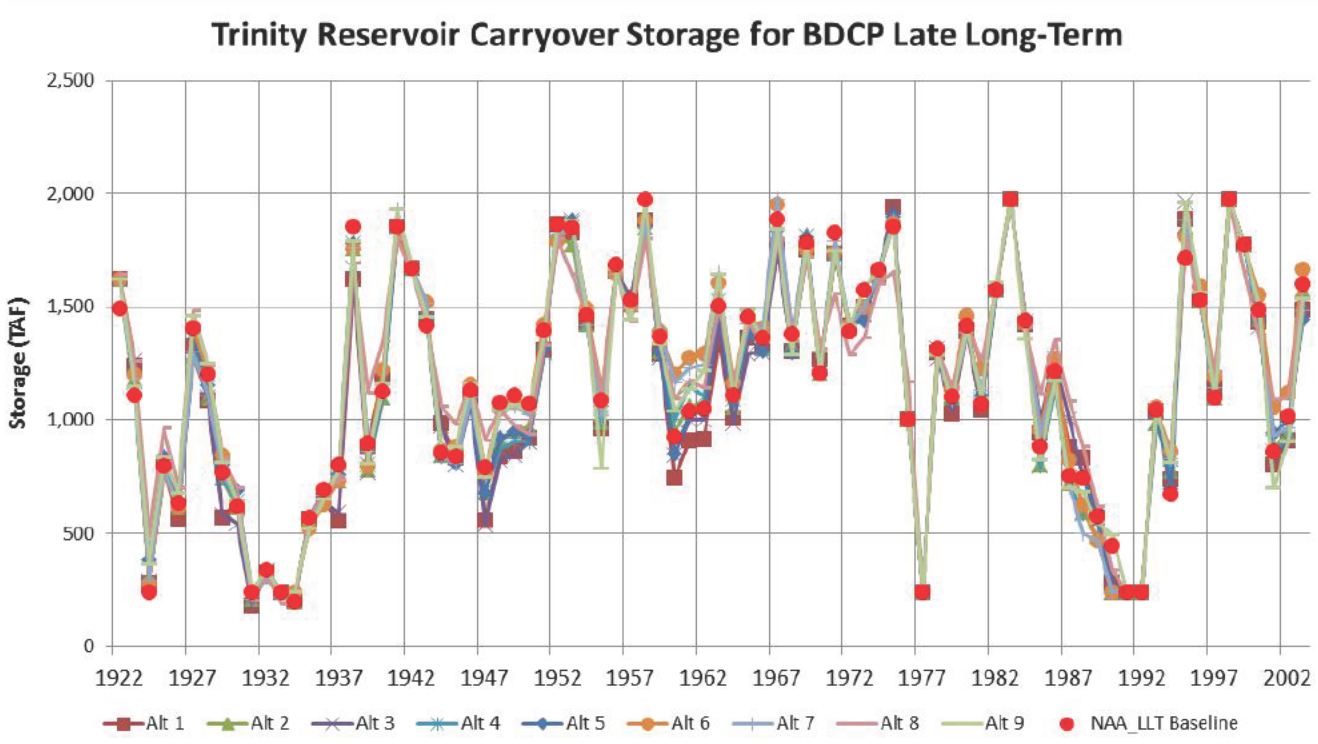
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-8
Simulated Shasta Reservoir August Storage and Coldwater Habitat Volumes (<50 °F and <58 °F) for the No Action Baseline for Water Years 1922–2003 (Source: CALSIM and SRWQM results)



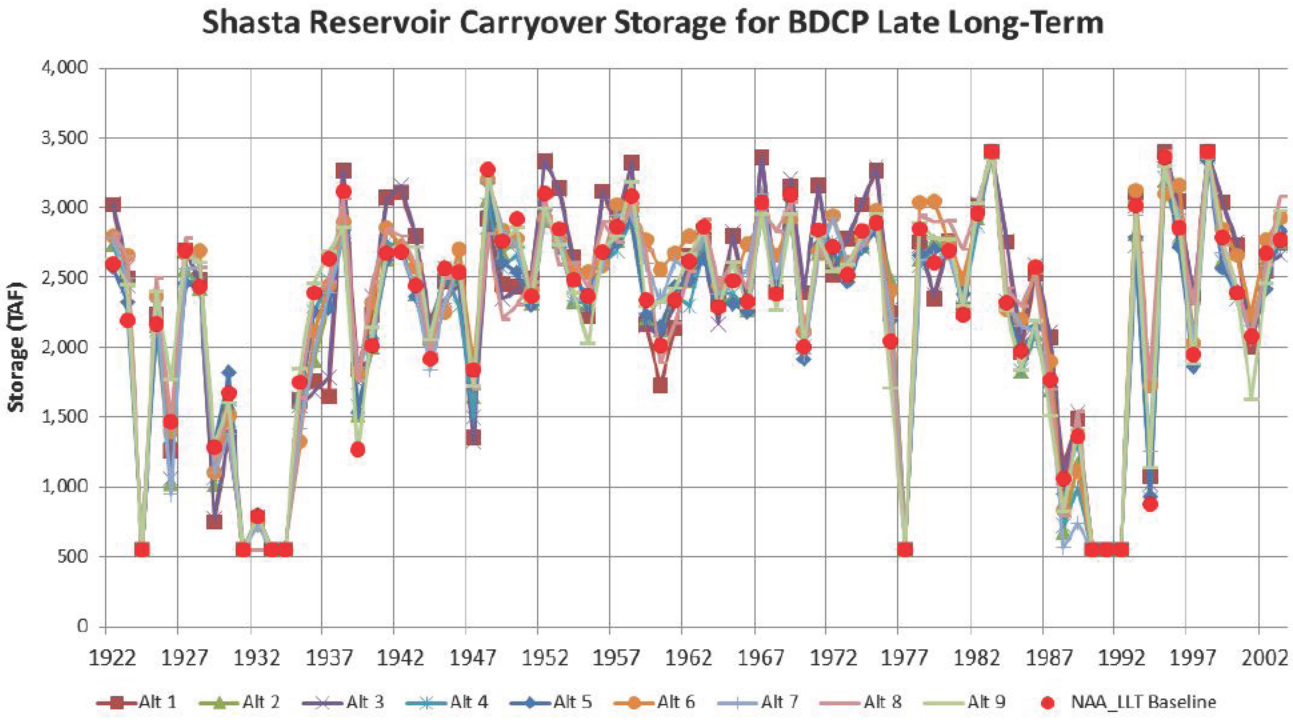
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-9
Simulated Relationship between Shasta Storage and Coldwater Habitat Volume (TAF) for 1922–2003



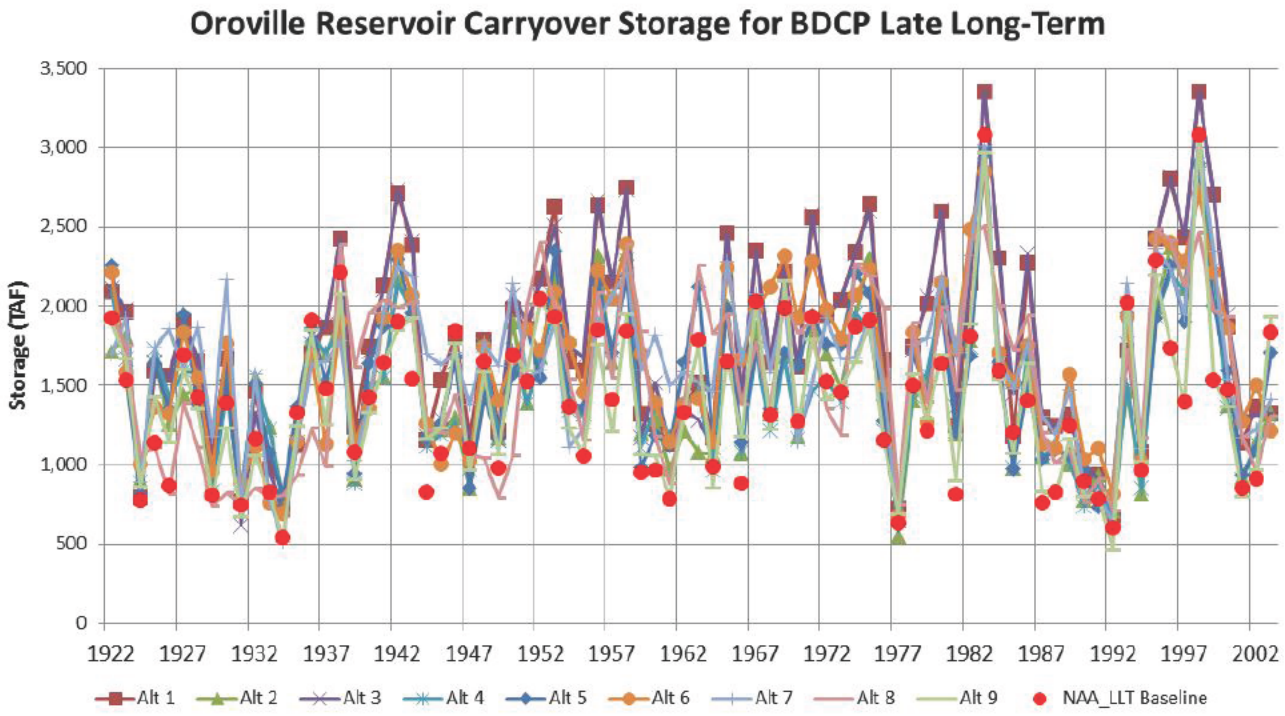
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-10
Comparison of CALSIM-Simulated Trinity Reservoir Carryover Storage Sequence for the Nine BDCP Alternatives and No Action Baseline for the Late Long-Term for 1922–2003



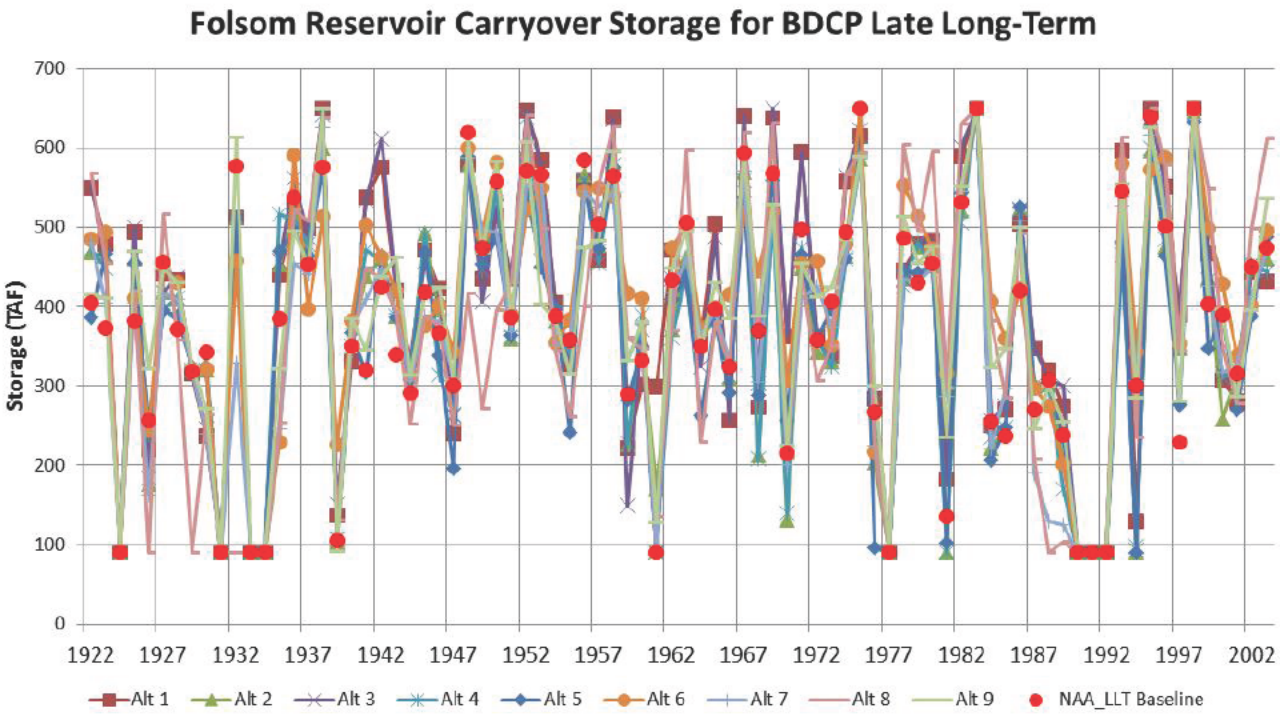
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-11
Comparison of CALSIM-Simulated Shasta Reservoir Carryover Storage Sequence for the Nine BDCP Alternatives and No Action Baseline for the Late Long-Term for 1922–2003



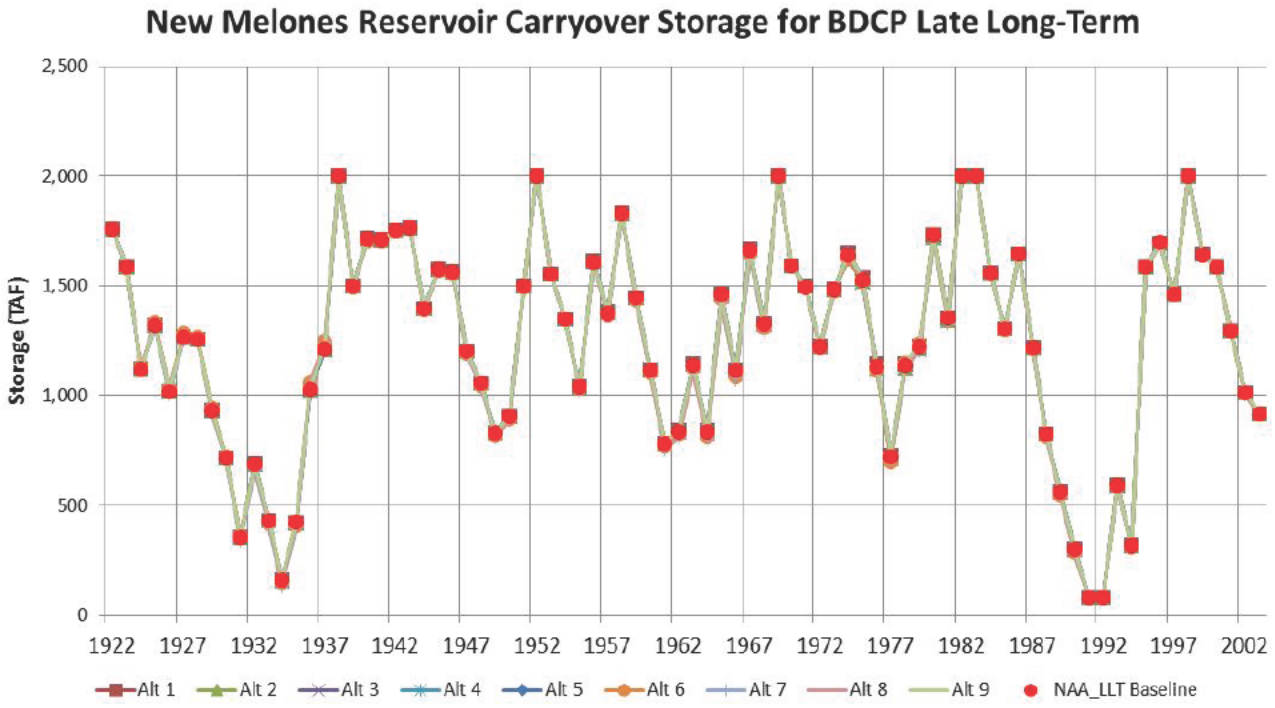
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-12
Comparison of CALSIM-Simulated Oroville Reservoir Carryover Storage Sequence for the Nine BDCP Alternatives and No Action Baseline for the Late Long-Term for 1922–2003



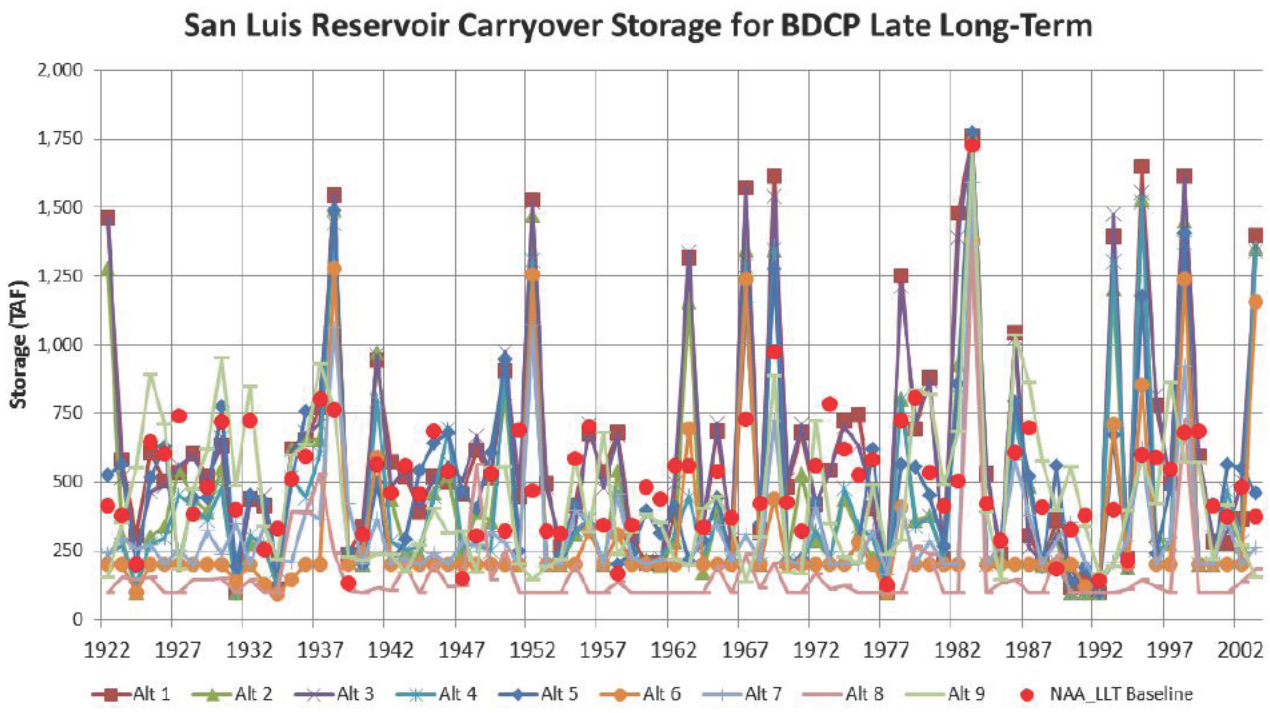
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-13
Comparison of CALSIM-Simulated Folsom Reservoir Carryover Storage Sequence for the Nine BDCP Alternatives and No Action Baseline for the Late Long-Term for 1922–2003



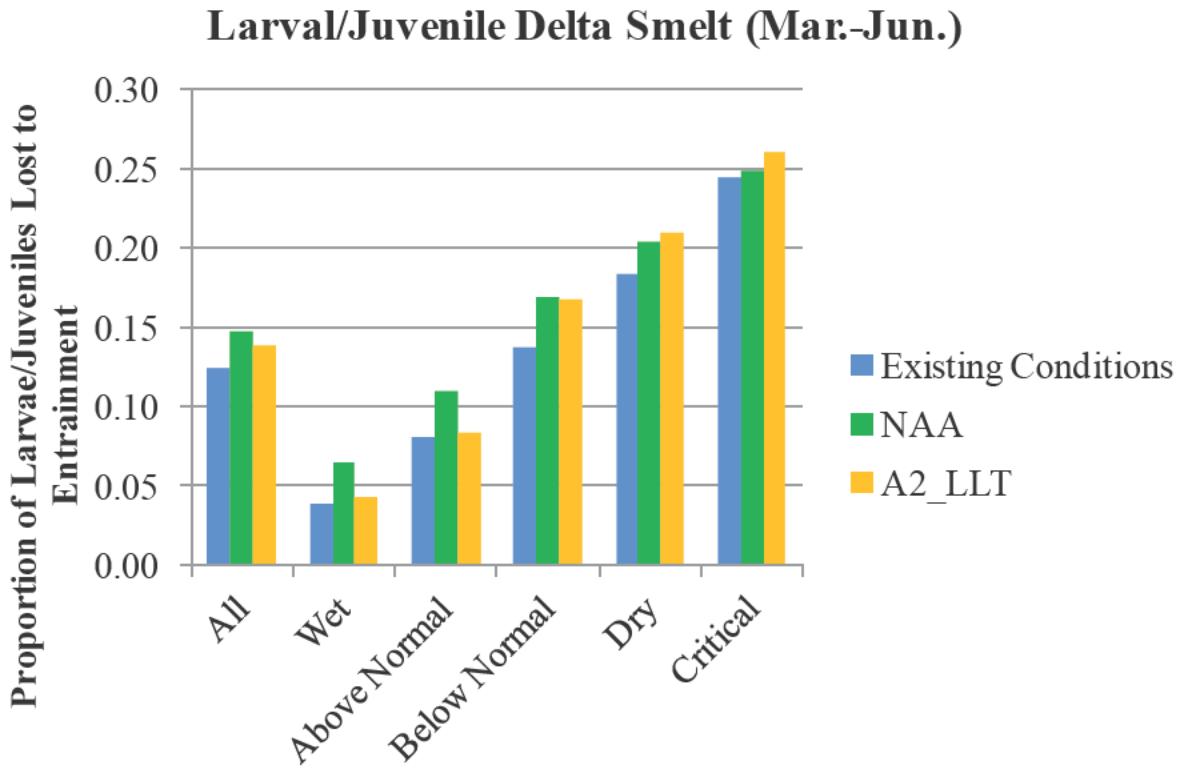
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-14
Comparison of CALSIM-Simulated New Melones Reservoir Carryover Storage Sequence for the Nine BDCP Alternatives and No Action Baseline for the Late Long-Term for 1922–2003



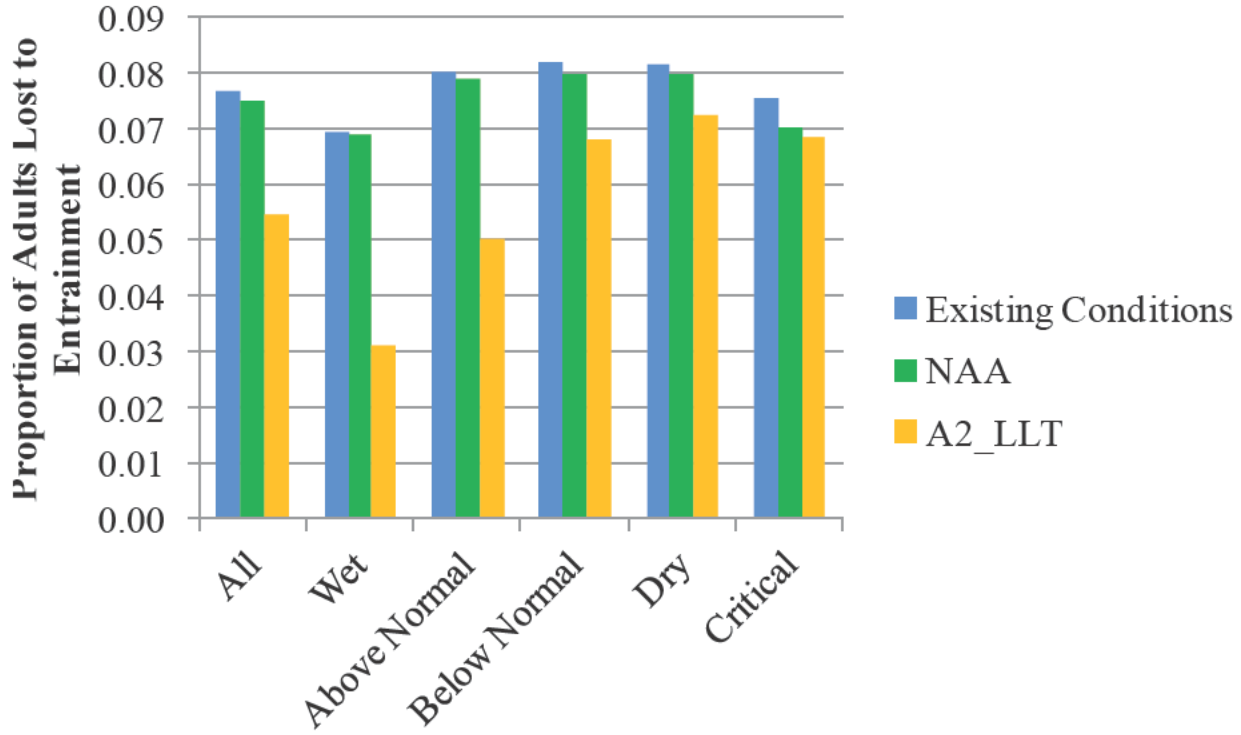
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-1A-15
Comparison of CALSIM-Simulated San Luis Reservoir Carryover Storage Sequence for the Nine BDCP Alternatives and No Action Baseline for the Late Long-Term for 1922–2003



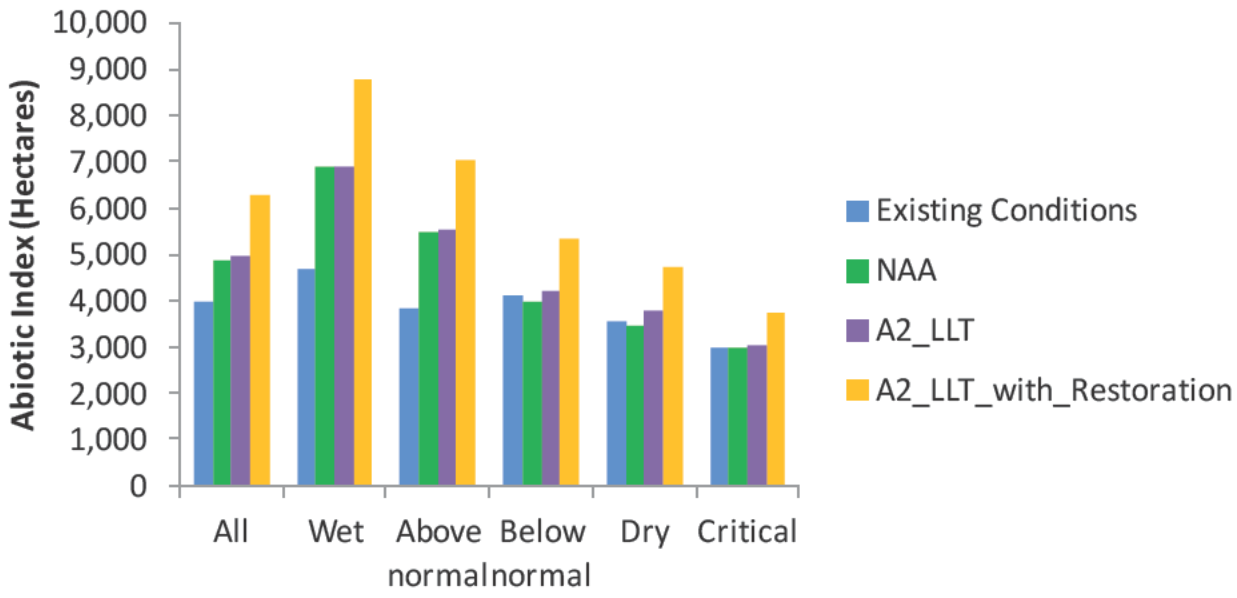
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-2A-1
Average Annual Estimated Proportion of the Larval/Juvenile Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 2A, Based on the Proportional Entrainment Regression



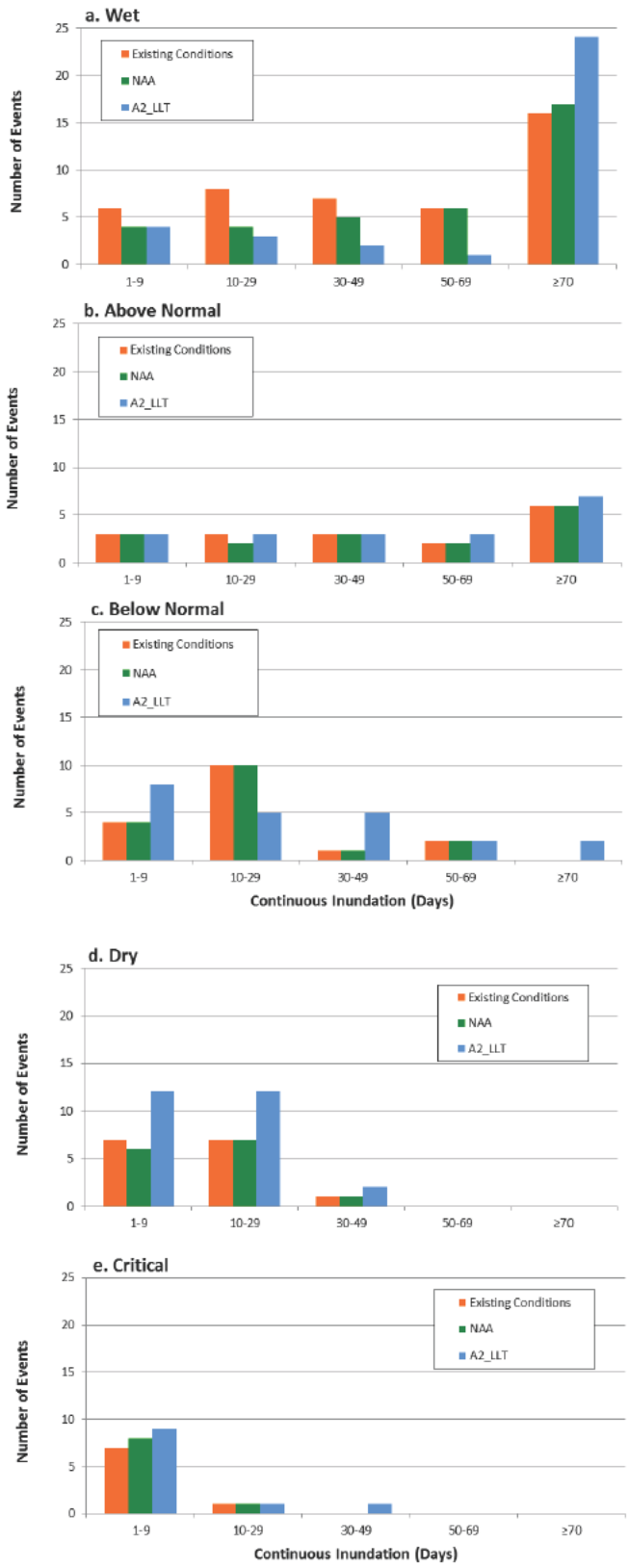
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-2A-2
Average Annual Estimated Proportion of the Adult Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 2A, Based on the Proportional Entrainment Regression (USFWS 2008a, with adjustment from Kimmerer 2011)



Graphics...BDCP EIR/EIS (09-2013) SS

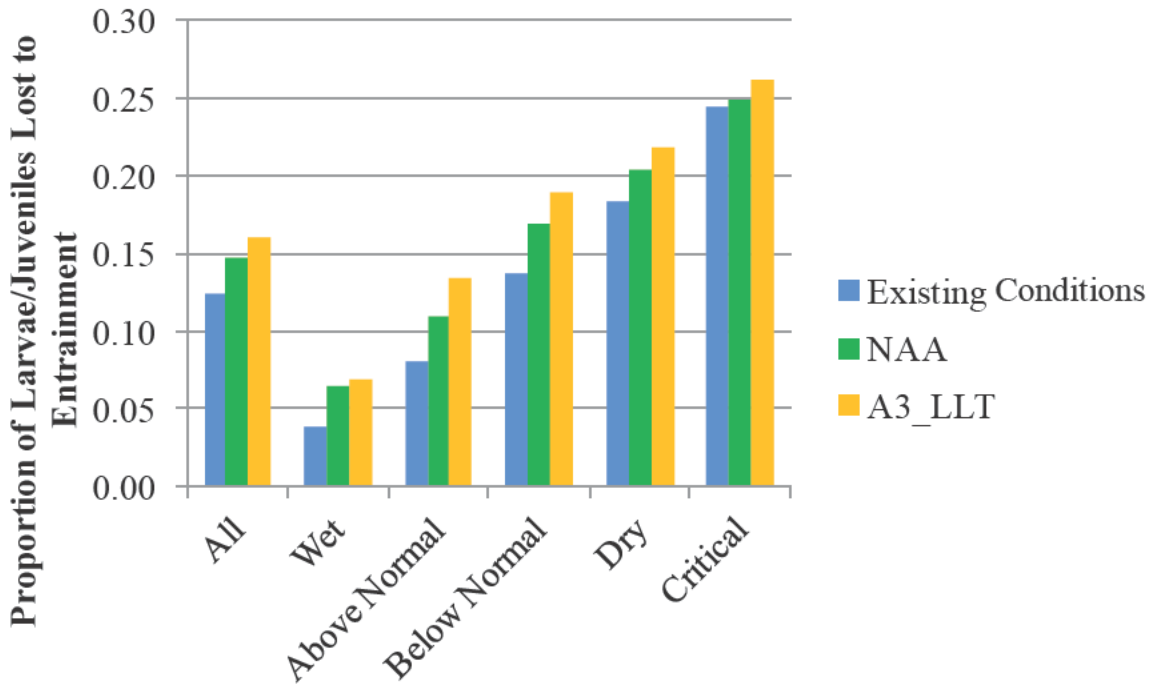
Figure 11-2A-3
Delta Smelt Fall Abiotic Index (hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 2A



Graphics...BDCP EIR/EIS (09-2013) SS

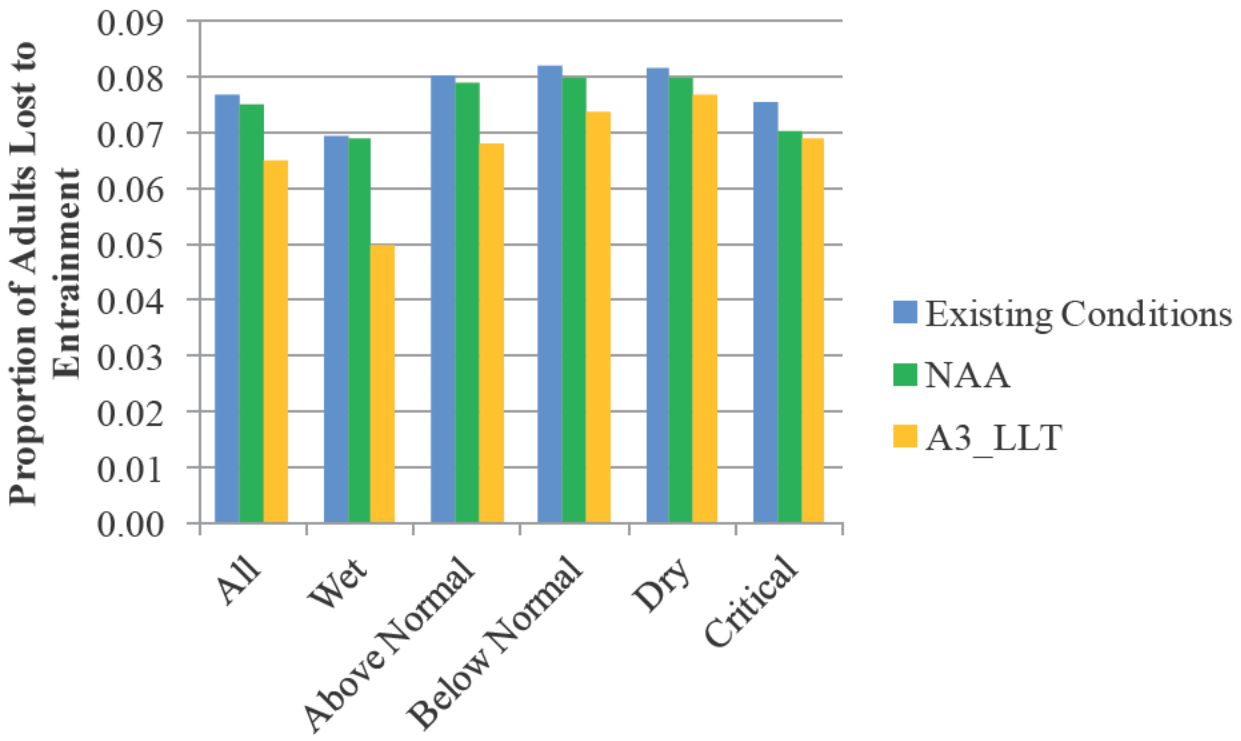
Figure 11-2A-4

Frequencies of Inundation Events (for 82-Year Simulations) of Different Durations on the Yolo Bypass under Different Scenarios and Water Year Types under Alternative 2A, February through June, from 15 2-D and Daily CALSIM II Modeling Runs



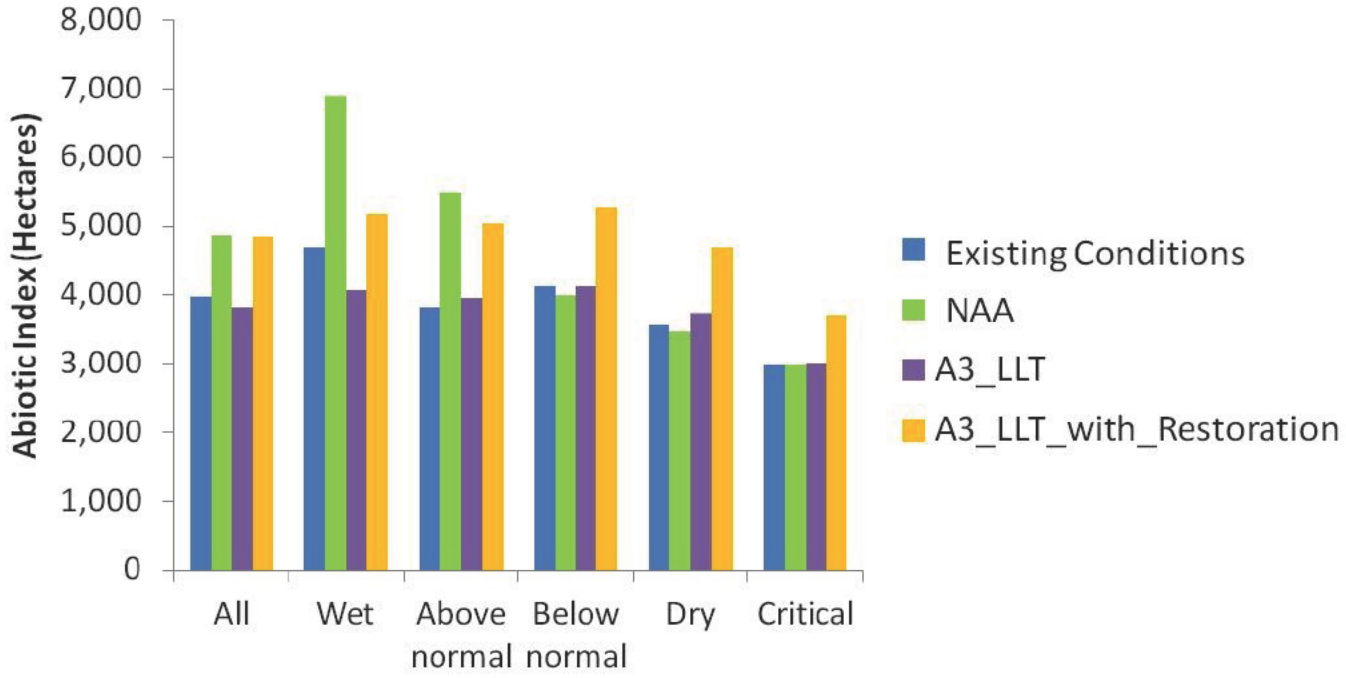
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-3-1
Average Annual Estimated Proportion of the Larval/Juvenile Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 3, Based on the Proportional Entrainment Regression



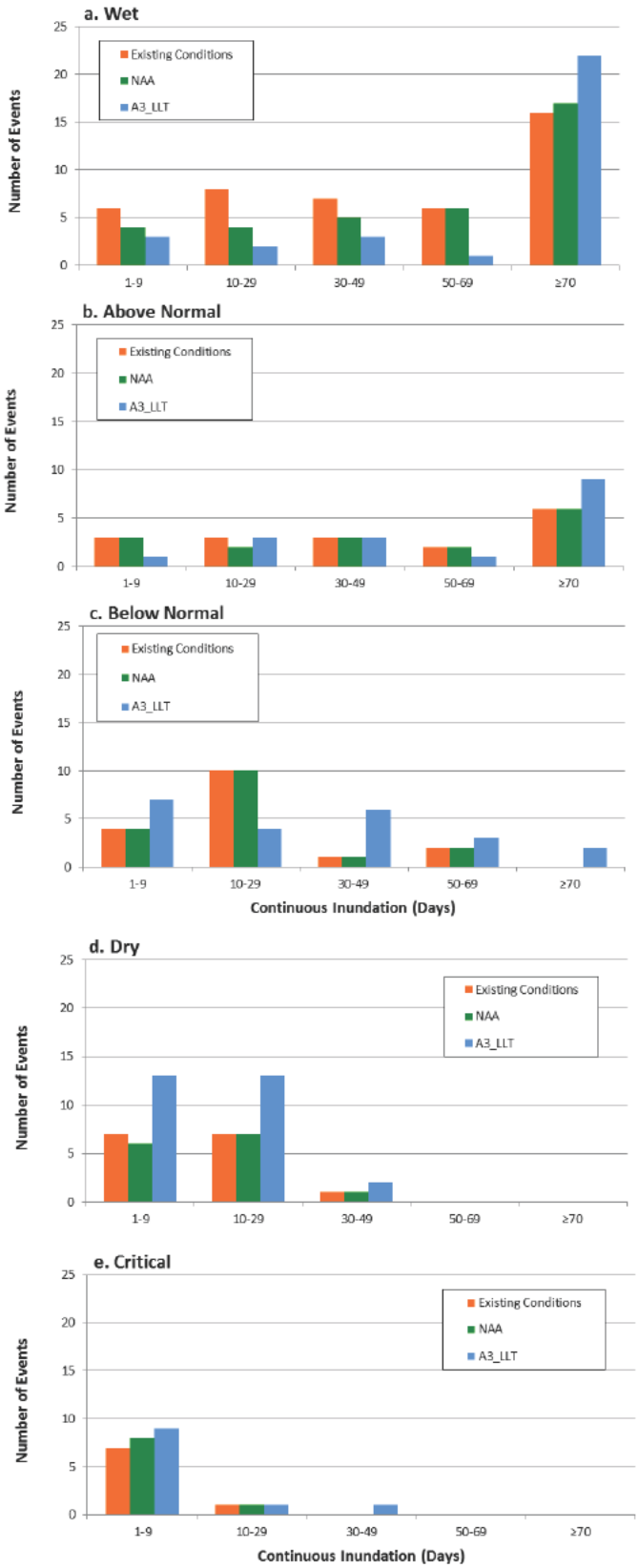
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-3-2
Average Annual Estimated Proportion of the Adult Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 3, Based on the Proportional Entrainment Regression (USFWS 2008a, with adjustment from Kimmerer 2011)



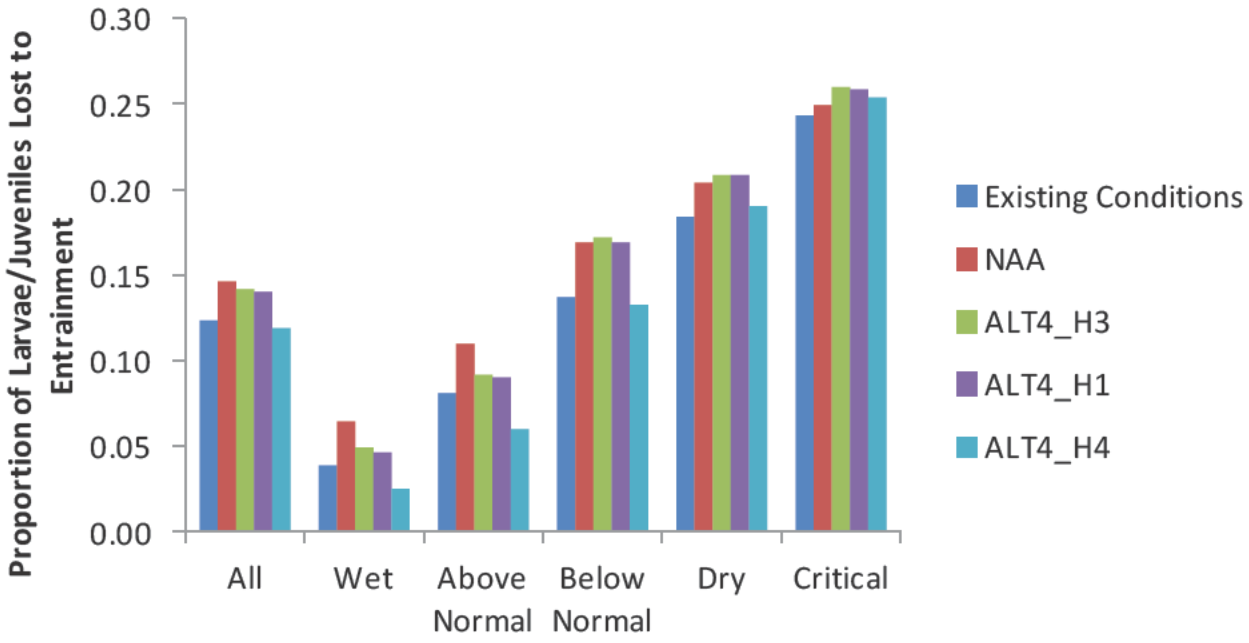
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-3-3
Delta Smelt Fall Abiotic Index (hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 3



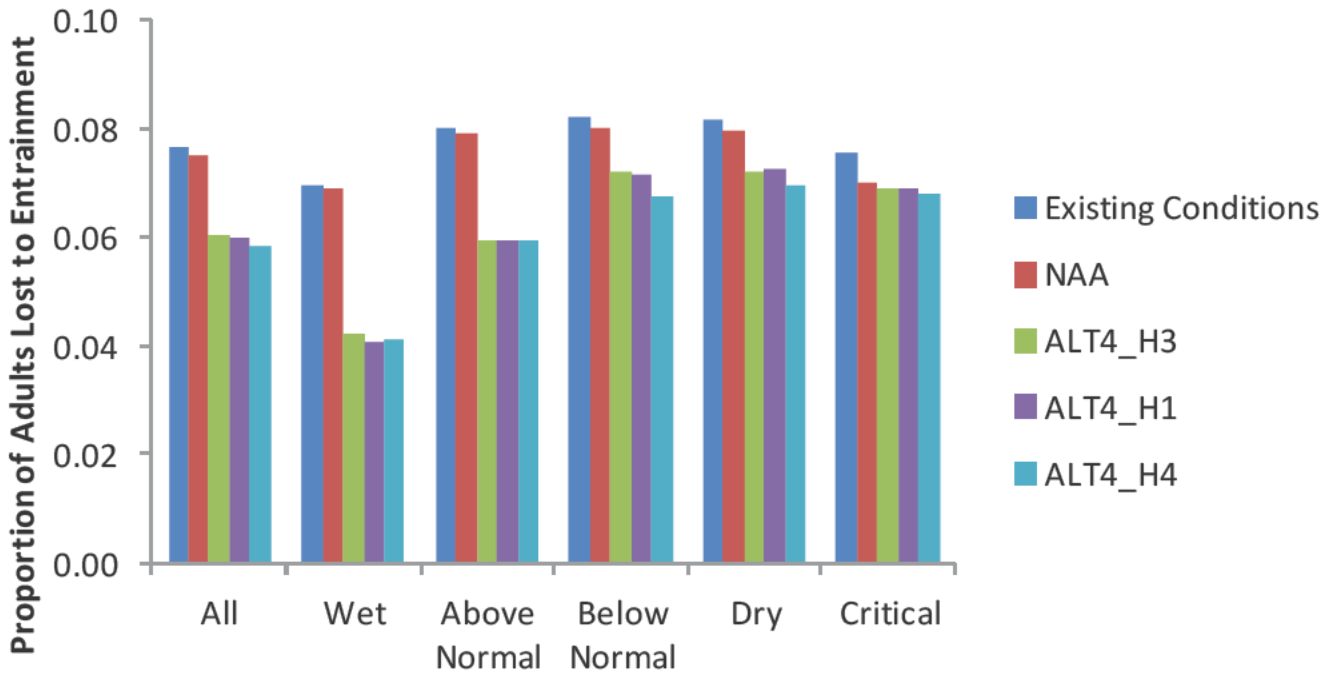
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-3-4
Frequencies of Inundation Events (for 82-Year Simulations) of Different Durations on the Yolo Bypass under Different Scenarios and Water Year Types under Alternative 3, February through June, from 15 2-D and Daily CALSIM II Modeling Runs



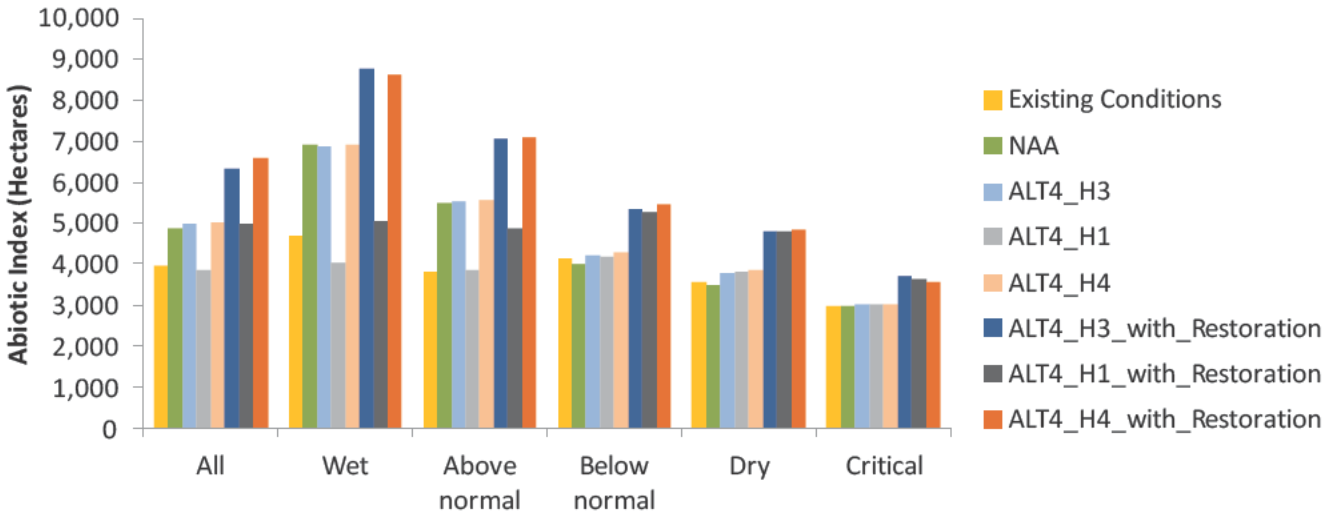
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-4-1
Average Annual Estimated Proportion of the Larval/Juvenile Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 4 (Scenarios H3, H1, and H4), Based on the Proportional Entrainment Regression



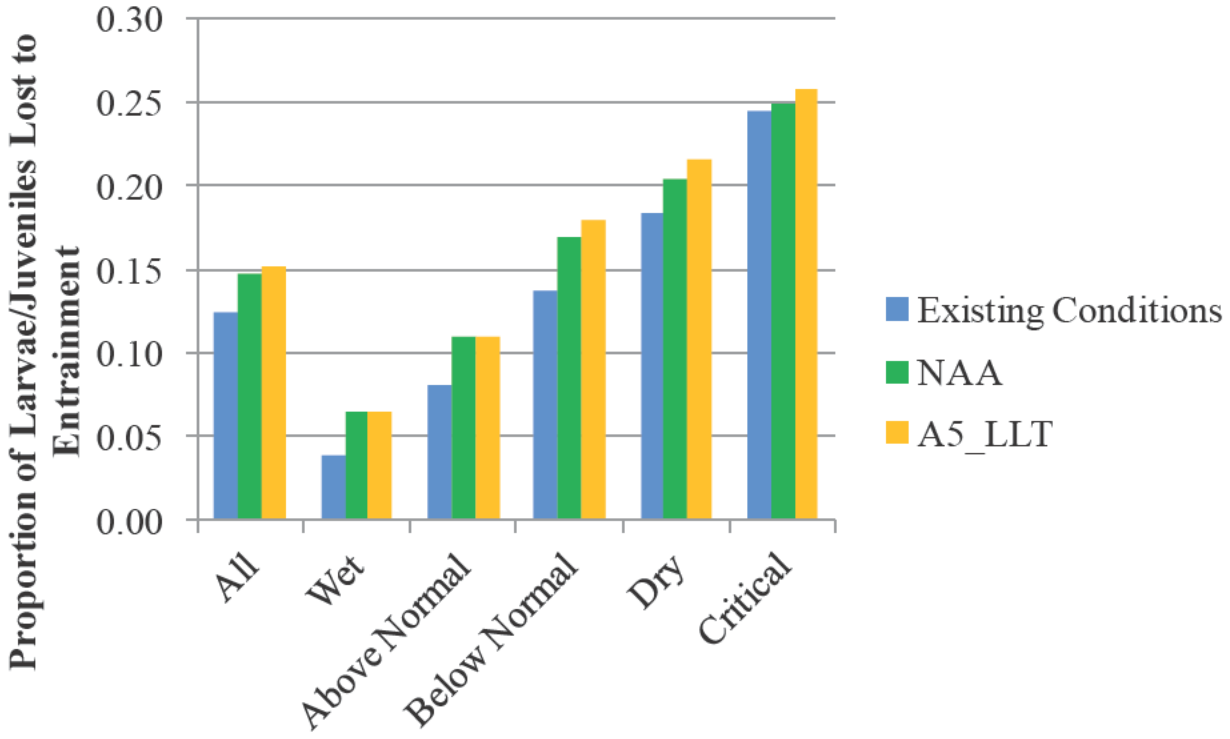
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-4-2
Average Annual Estimated Proportion of the Adult Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 4 (Scenarios H3, H1, and H4), Based on the Proportional Entrainment Regression



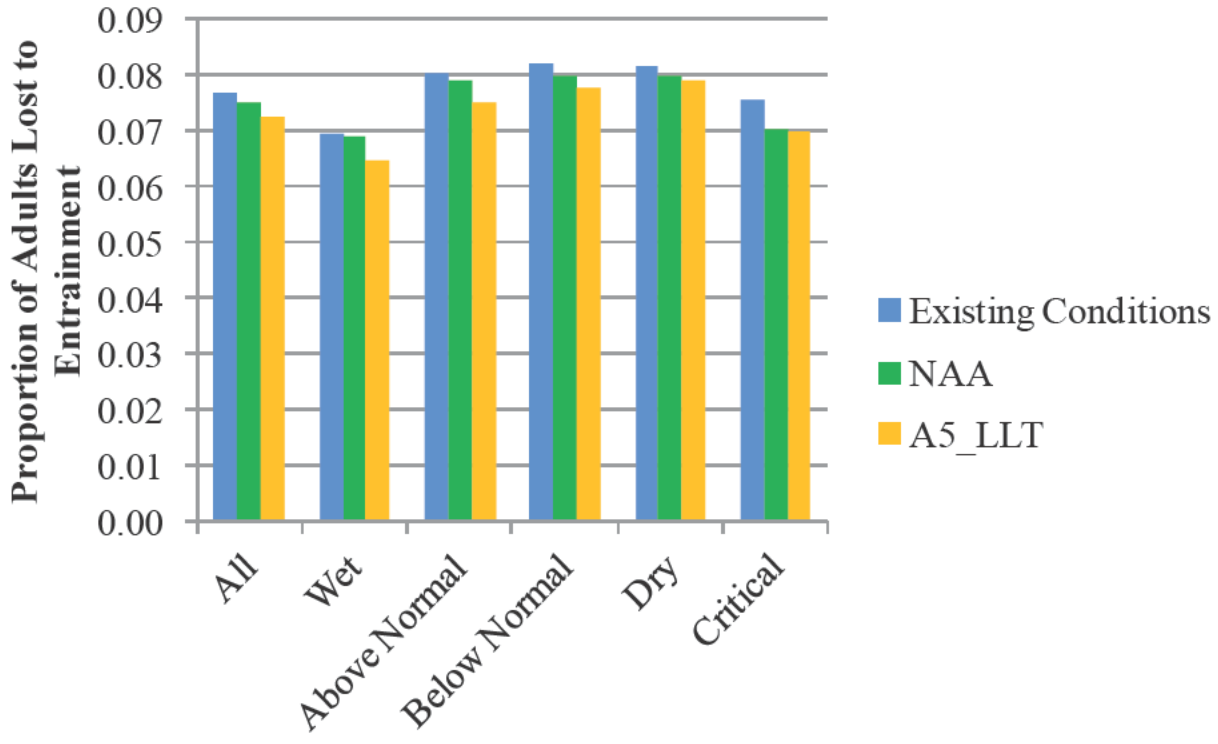
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-4-3
Delta Smelt Fall Abiotic Index (hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 4 (Scenarios H1, H3, and H4)



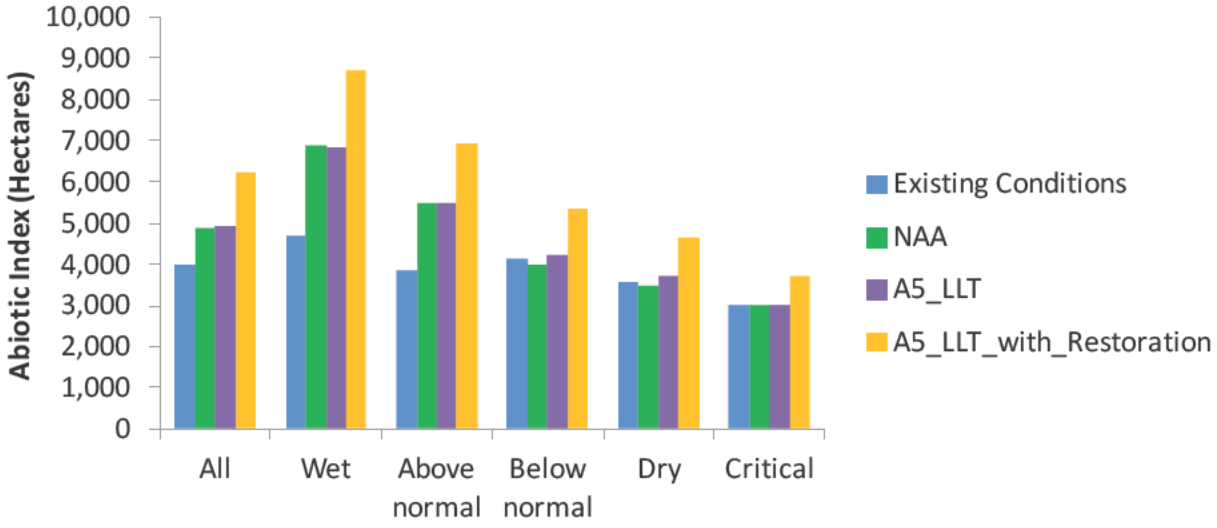
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-5-1
Average Annual Estimated Proportion of the Larval/Juvenile Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 5, Based on the Proportional Entrainment Regression



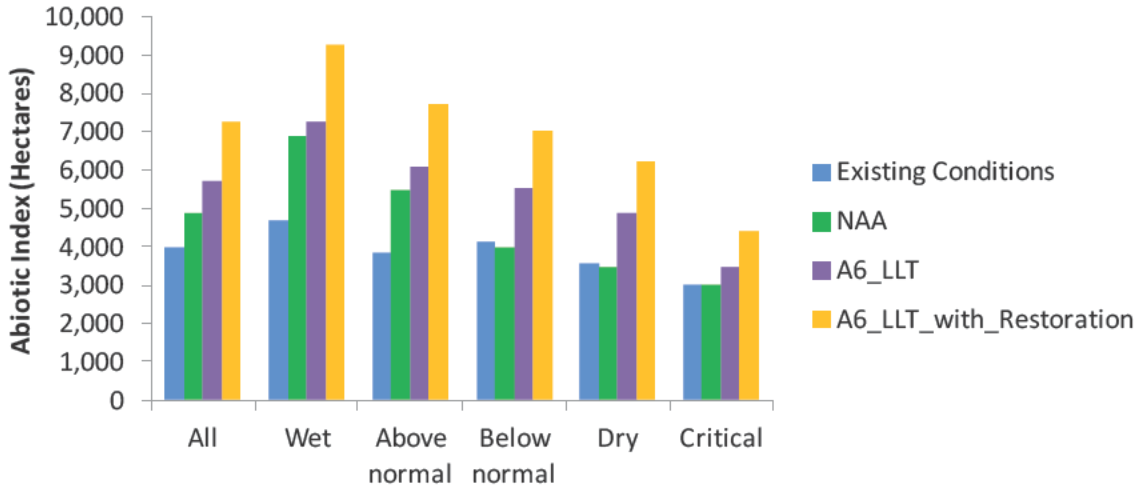
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-5-2
Average Annual Estimated Proportion of the Adult Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 5, Based on the Proportional Entrainment Regression



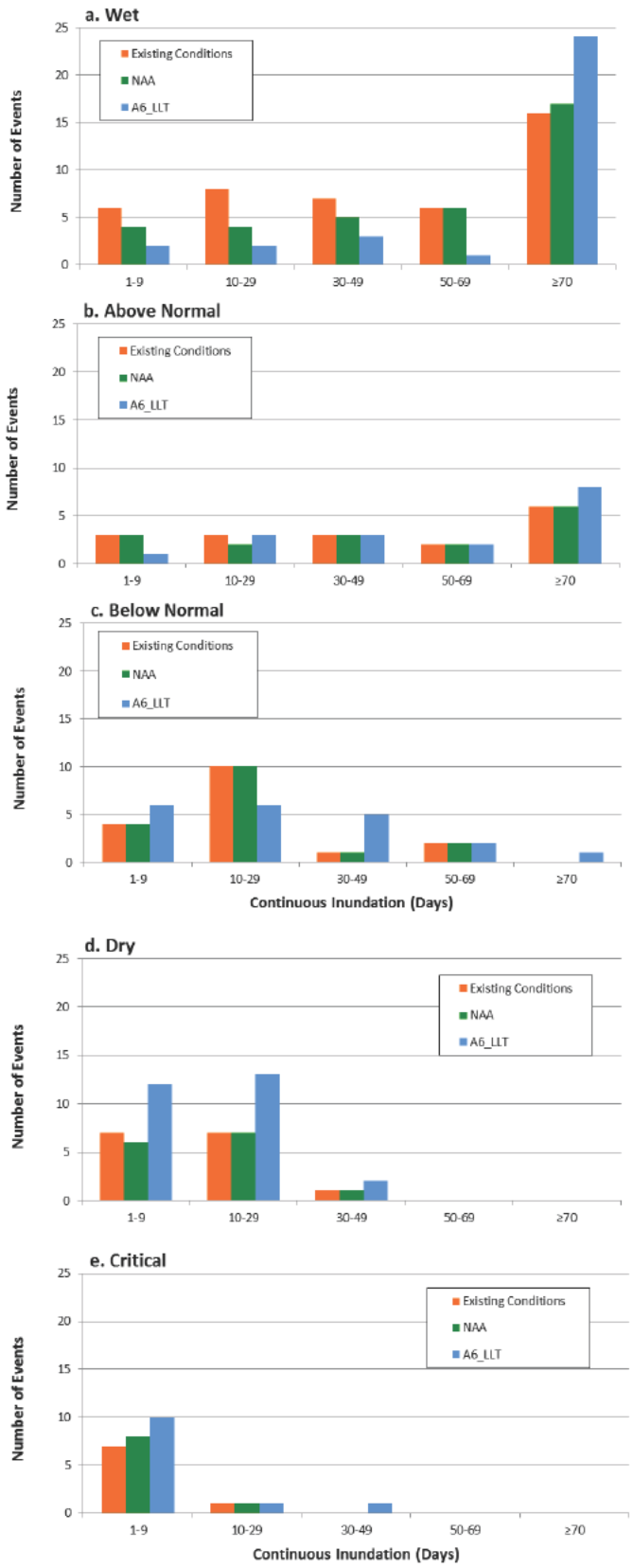
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-5-3
Delta Smelt Fall Abiotic Index (hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 5



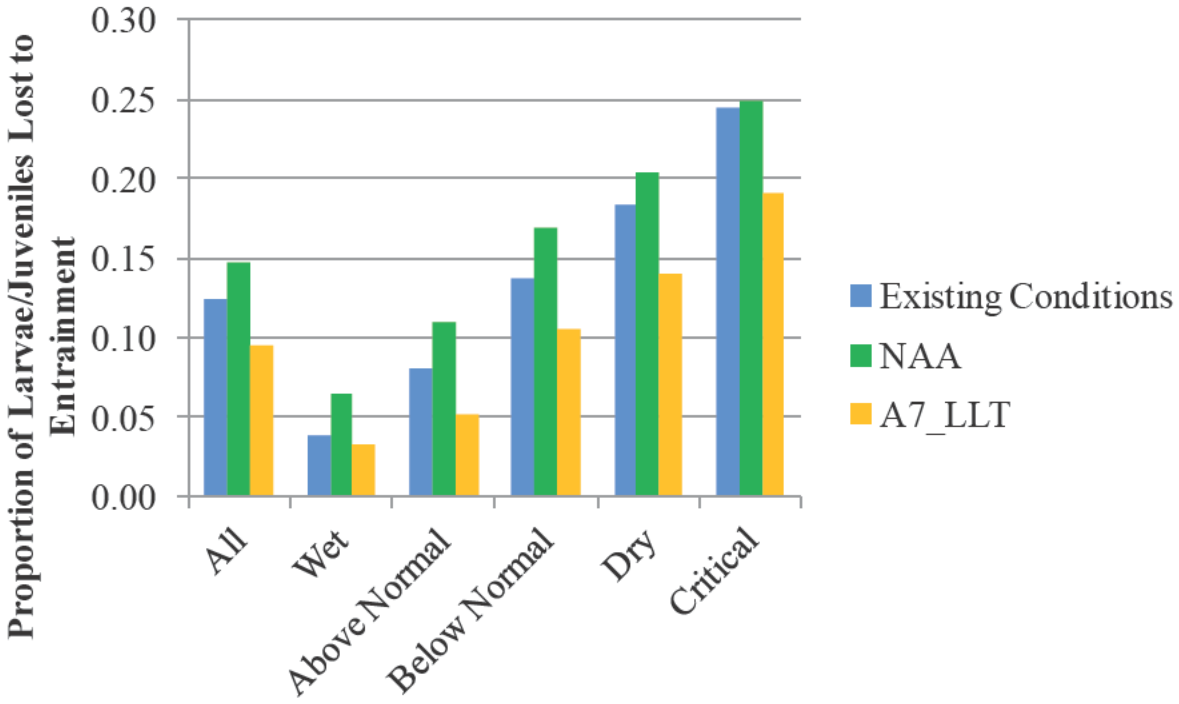
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-6A-1
Delta Smelt Fall Abiotic Index (hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 6A



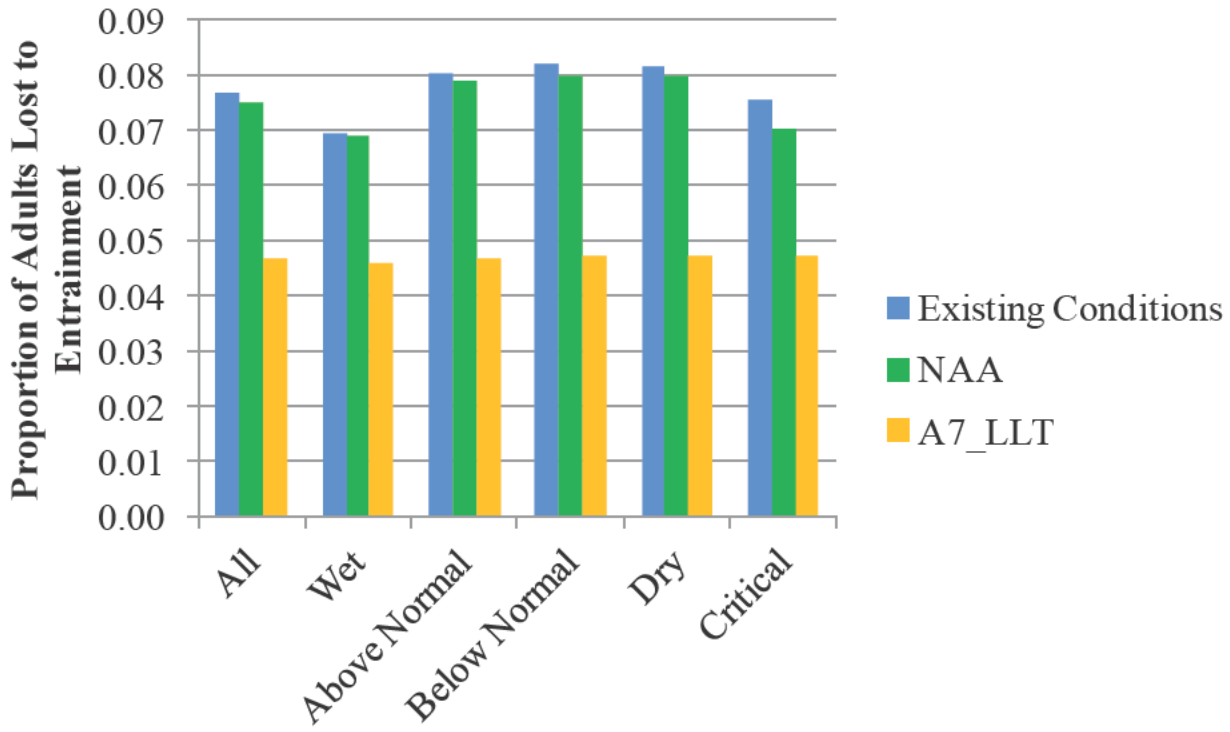
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-6A-2
Frequencies of Inundation Events (for 82-Year Simulations) of Different Durations on the Yolo Bypass under Different Scenarios and Water Year Types under Alternative 6A, February through June, from 15 2-D and Daily CALSIM II Modeling Runs



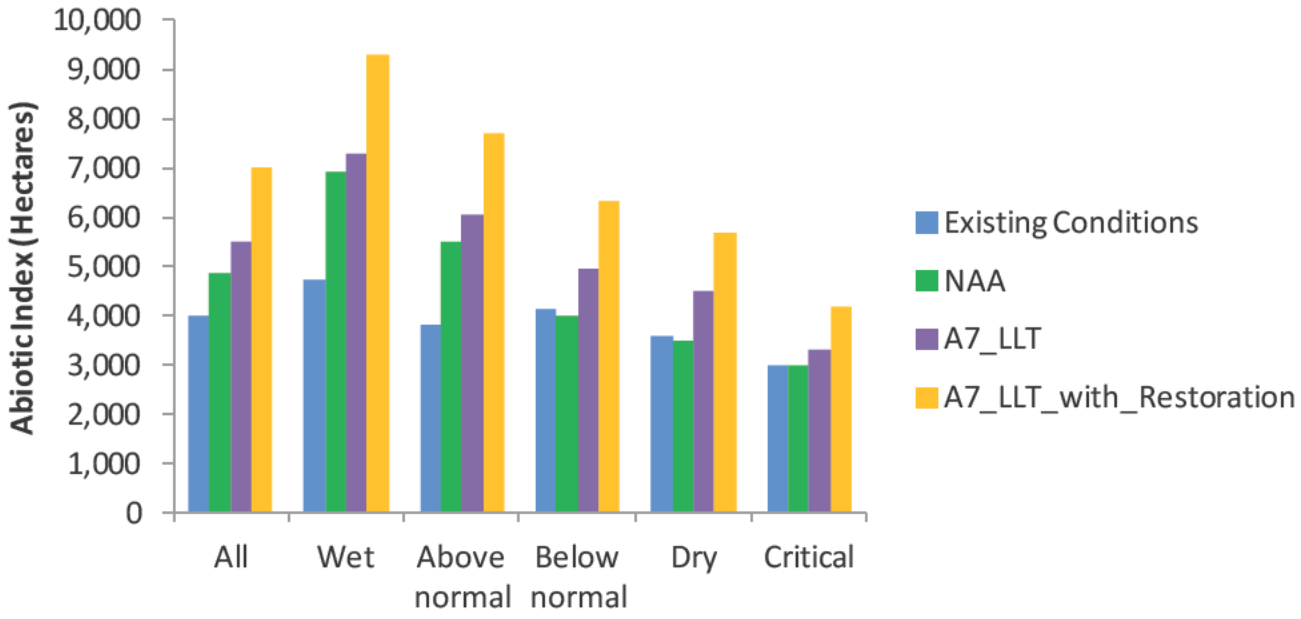
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-7-1
Average Annual Estimated Proportion of the Larval/Juvenile Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 7, Based on the Proportional Entrainment Regression



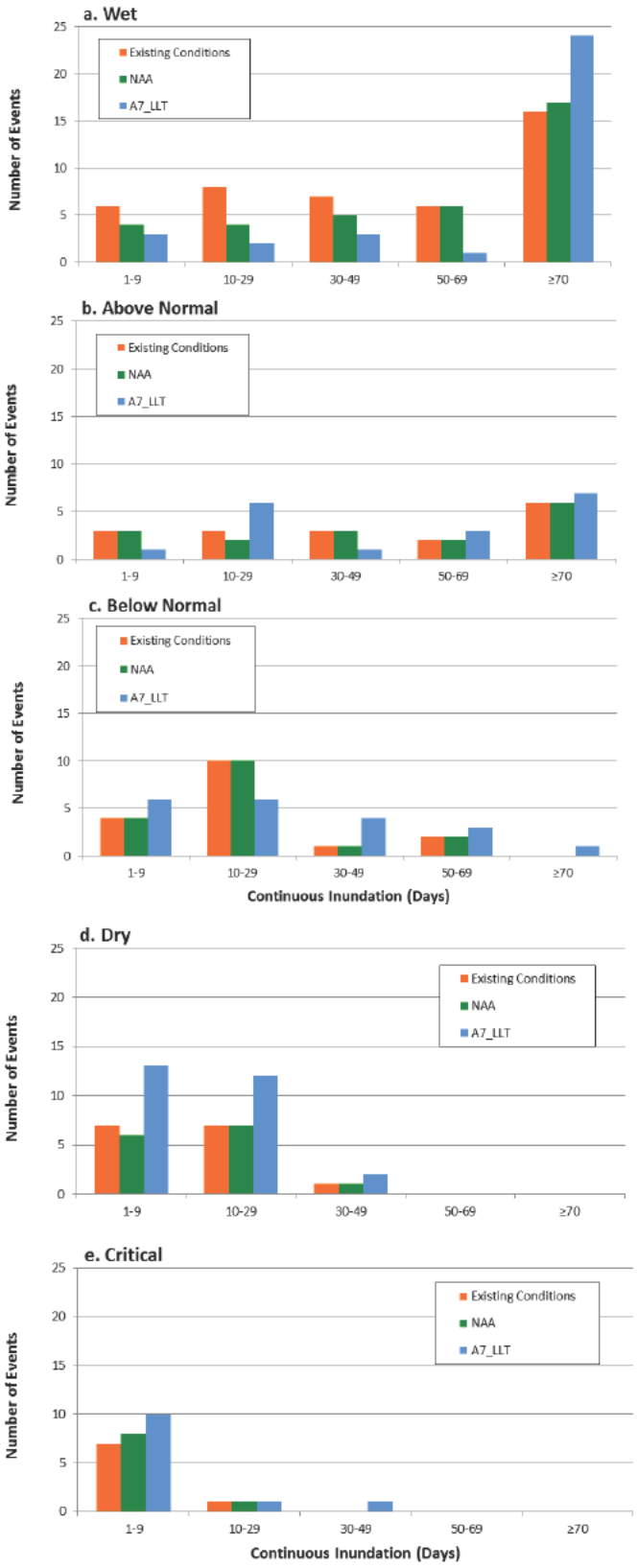
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-7-2
Average Annual Estimated Proportion of the Adult Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 7, Based on the Proportional Entrainment Regression



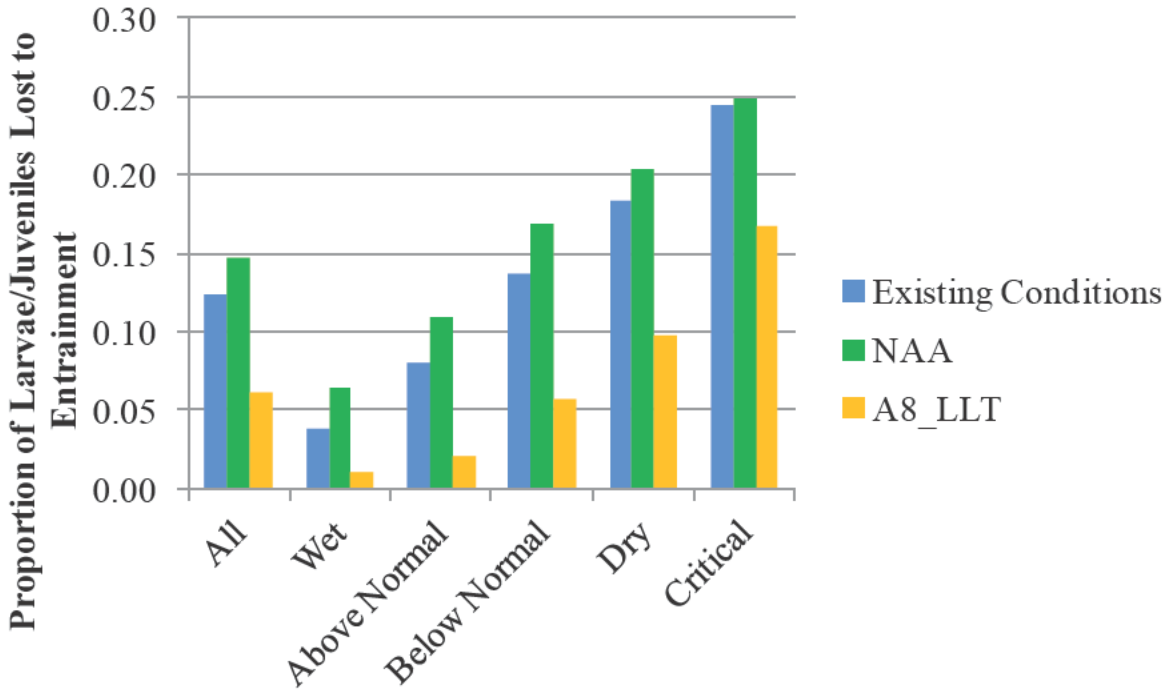
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-7-3
Delta Smelt Fall Abiotic Index (Hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 7



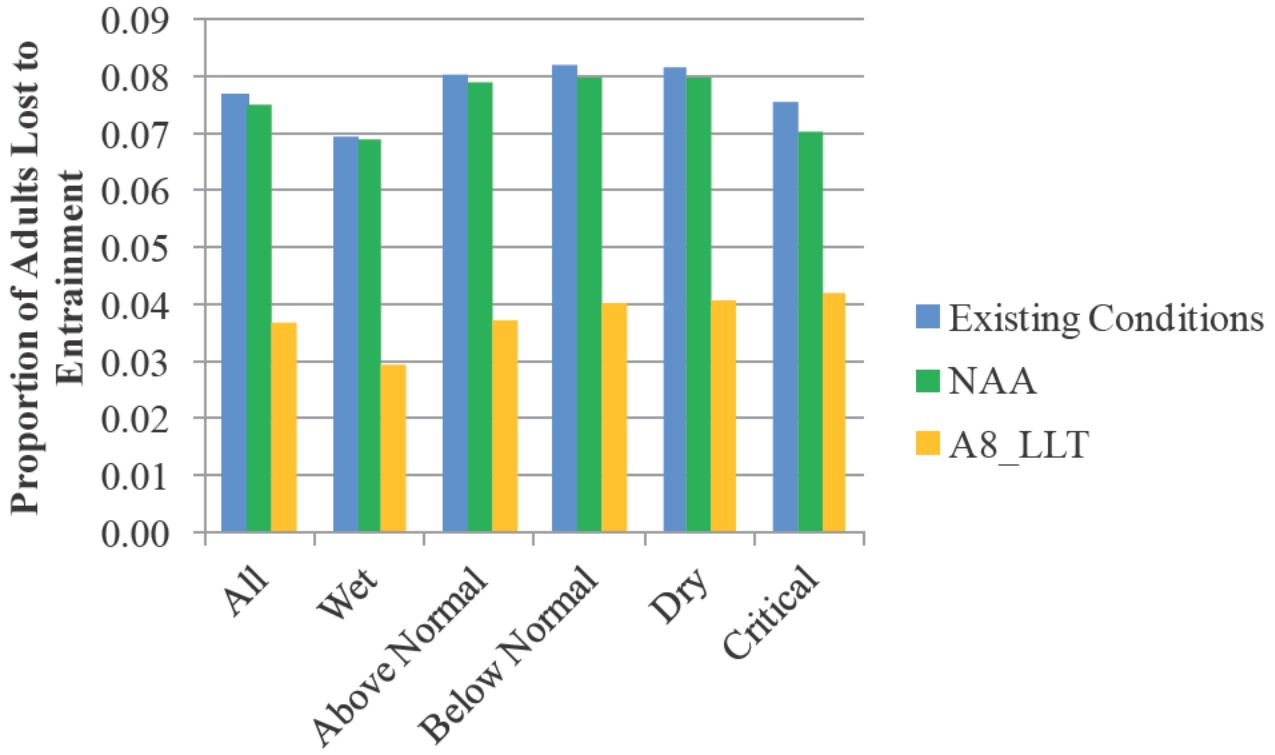
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-7-4
Frequencies of Inundation Events (for 82-Year Simulations) of Different Durations on the Yolo Bypass under Different Scenarios and Water Year Types under Alternative 7, February through June, from 15 2-D and Daily CALSIM II Modeling Runs



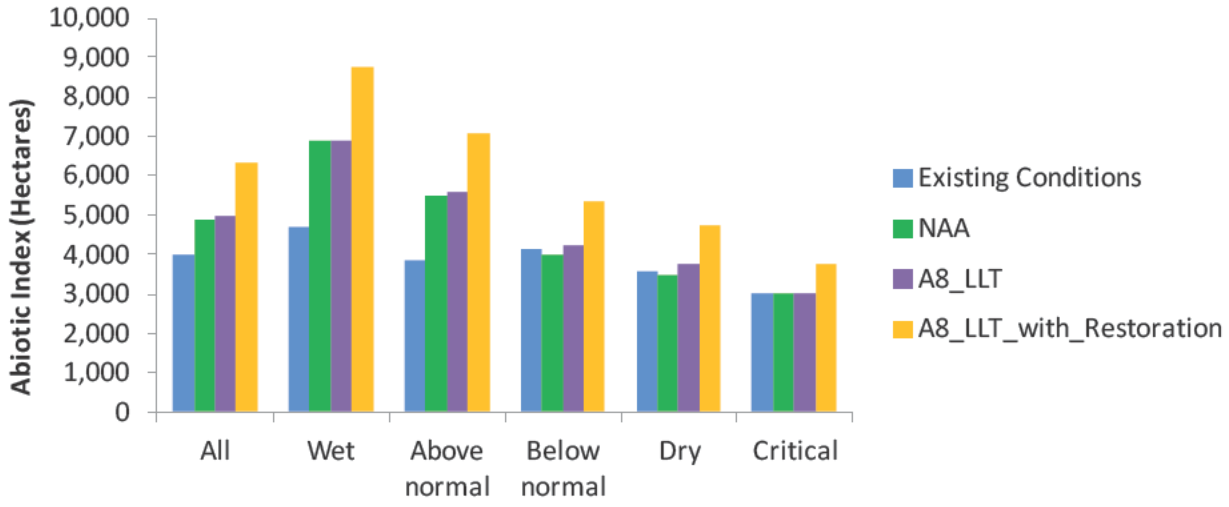
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-8-1
Average Annual Estimated Proportion of the Larval/Juvenile Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 8, Based on the Proportional Entrainment Regression



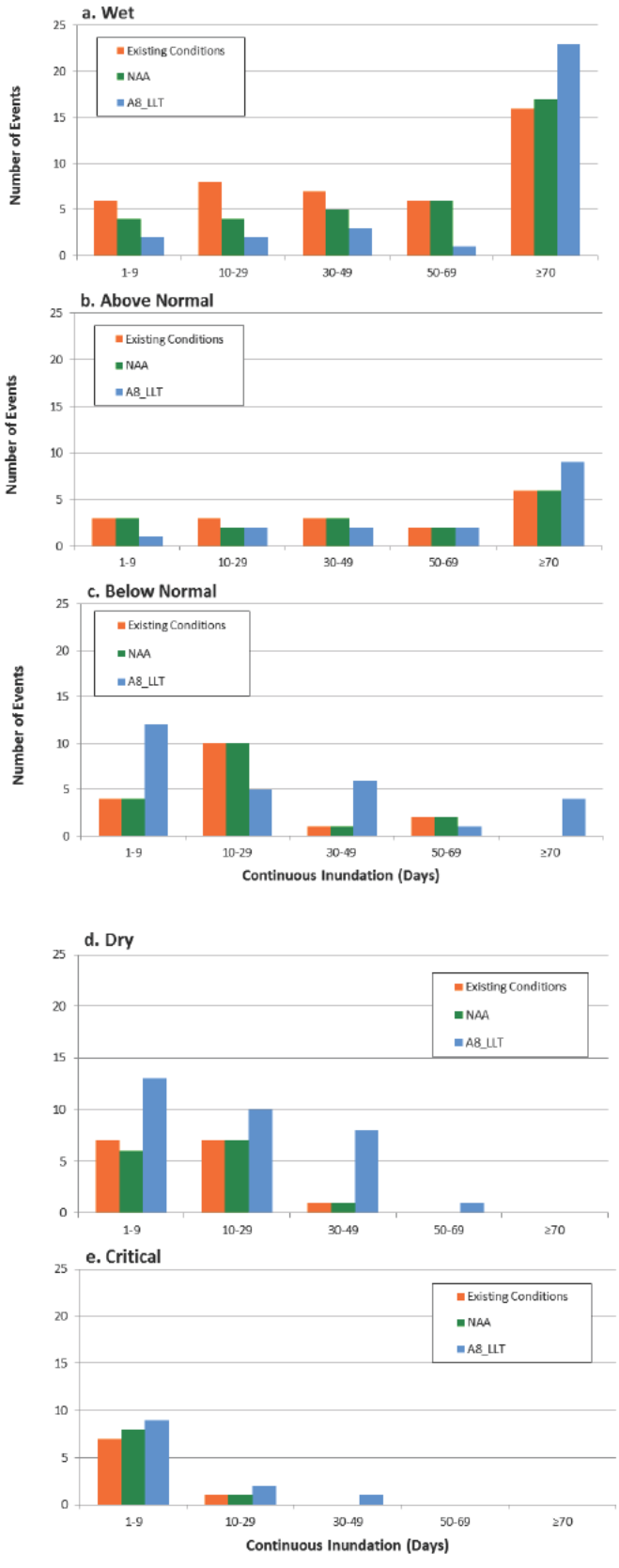
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-8-2
Average Annual Estimated Proportion of the Adult Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 8, Based on the Proportional Entrainment Regression



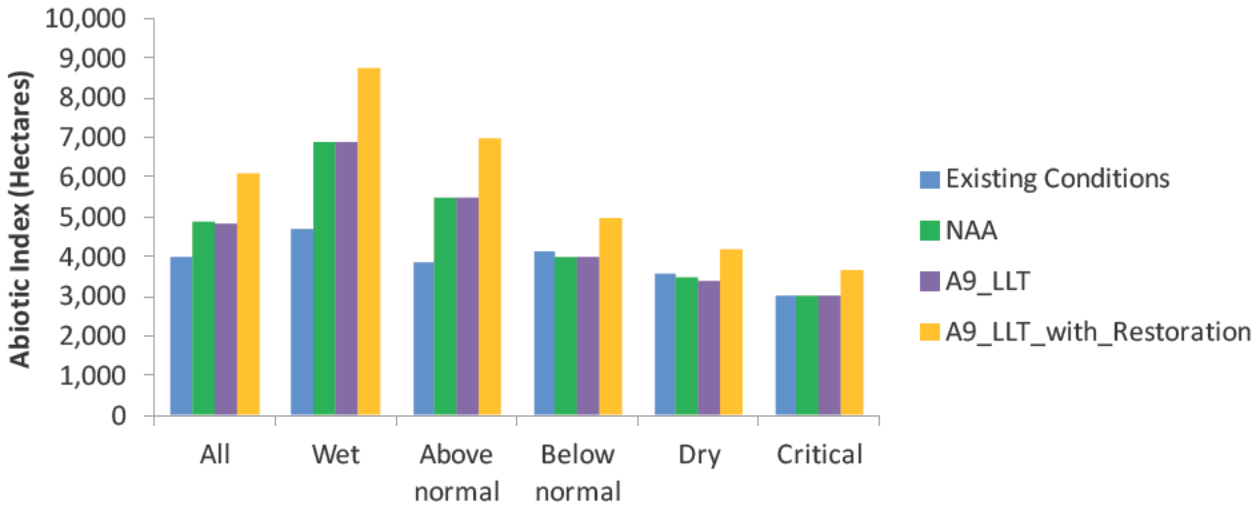
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-8-3
Delta Smelt Fall Abiotic Index (hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 8



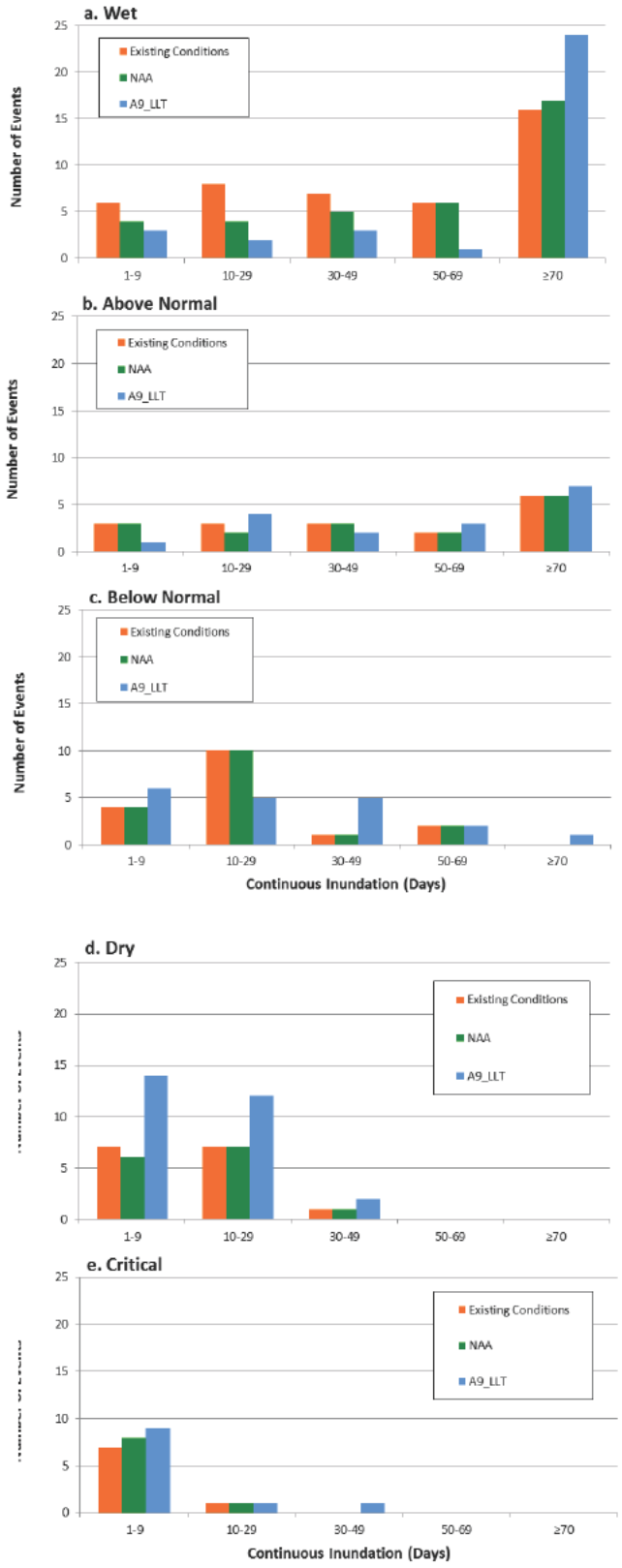
Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-8-4
Frequencies of Inundation Events (for 82-Year Simulations) of Different Durations on the Yolo Bypass under Different Scenarios and Water Year Types under Alternative 8, February through June, from 15 2-D and Daily CALSIM II Modeling Runs



Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-9-1
Delta Smelt Fall Abiotic Index (hectares), Averaged by Water Year Type, with and without Restoration (100% occupancy assumed) under Alternative 9



Graphics...BDCP EIR/EIS (09-2013) SS

Figure 11-9-2
Frequencies of Inundation Events (for 82-Year Simulations) of Different Durations on the Yolo Bypass under Different Scenarios and Water Year Types under Alternative 9, February through June, from 15 2-D and Daily CALSIM II Modeling Runs

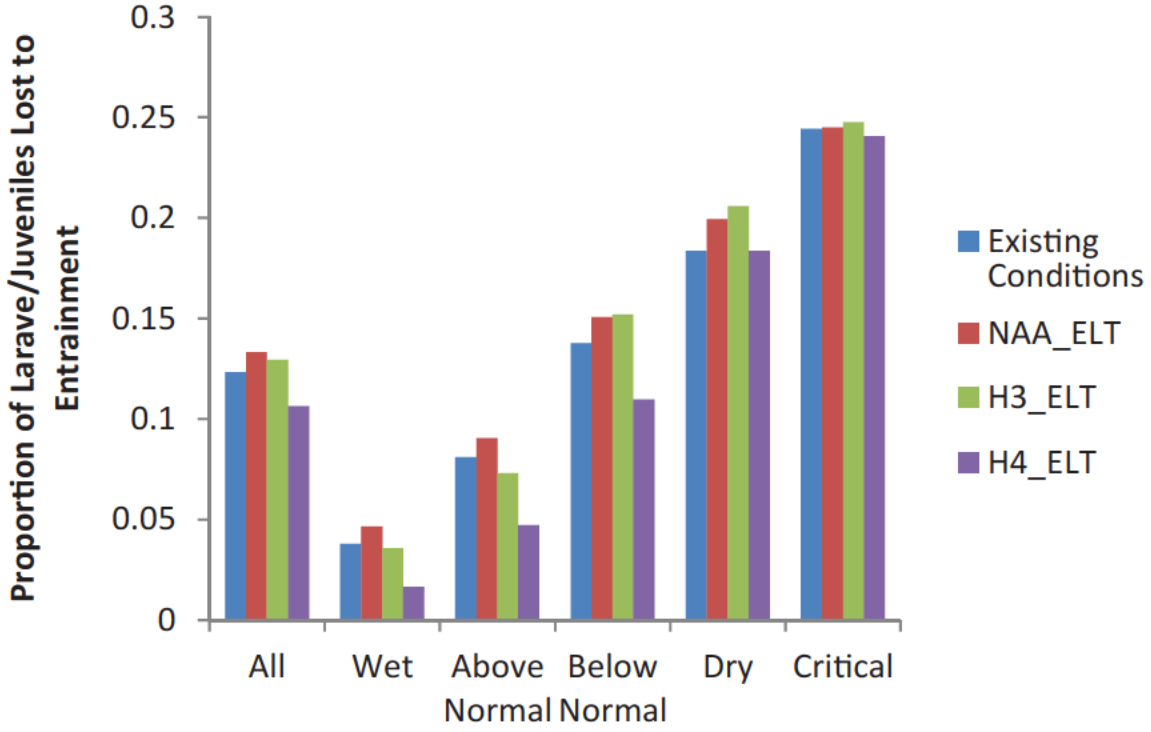


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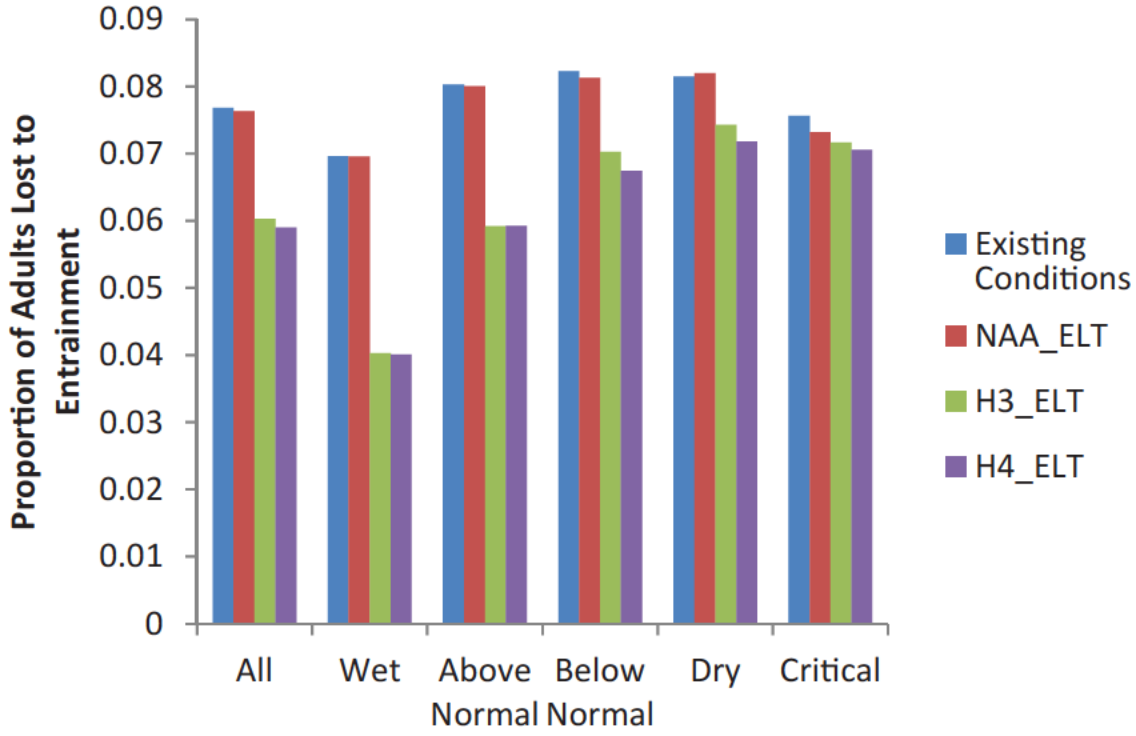
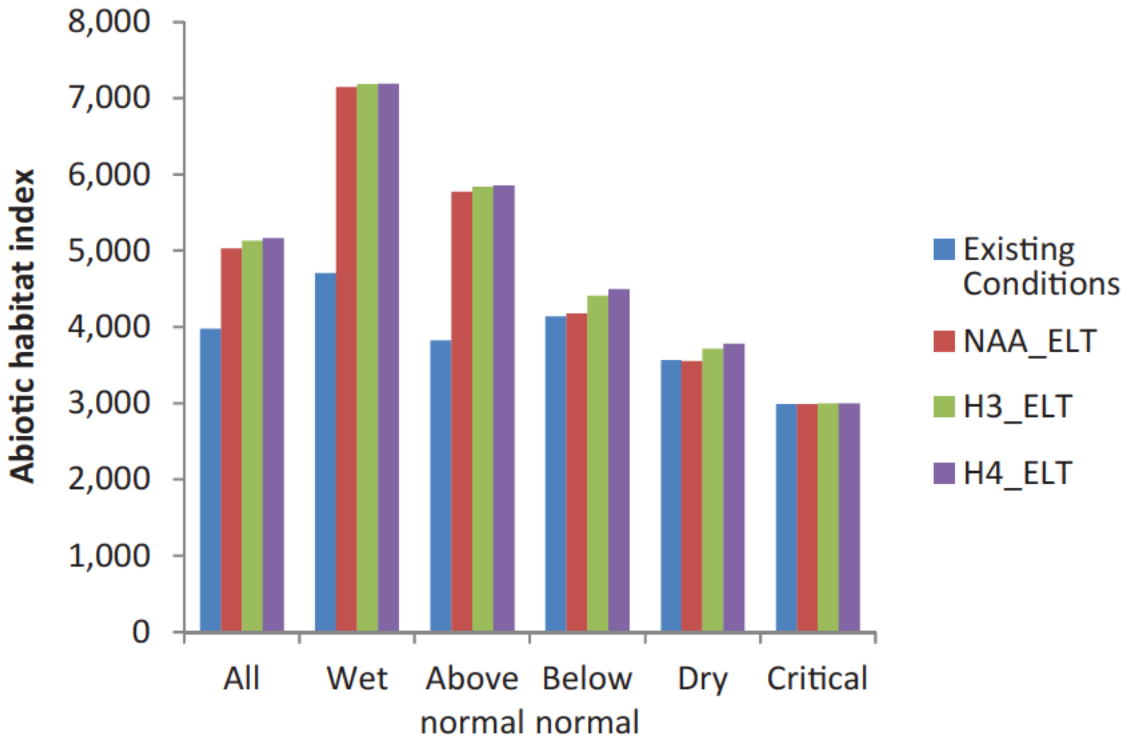
Figure 11-4A-1
Average Annual Estimated Proportion of the Larval/Juvenile Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 4A (Scenarios H3_ELT and H4_ELT), Based on the Proportional Entrainment Regression



BDCP EIR/EIS (6-14-2016) tm

Figure 11-4A-2
Average Annual Estimated Proportion of the Adult Delta Smelt Population Lost to Entrainment at the SWP/CVP South Delta Facilities for Alternative 4A (Scenarios H3_ELT and H4_ELT), Based on the Proportional Entrainment Regression



BDCP EIR/EIS (6-14-2016) tm

Figure 11-4A-3
Delta Smelt Fall Abiotic Habitat Index, Averaged By Water Year Type, without Restoration under Alternative 4A (Scenarios H3_ELT and H4_ELT)