Modeled annual loss at export facilities

Species	Yeartype (Sacramento "40-30-30" Index under ELT Q5 hydrology)	Predicted loss under PA	Predicted loss under COS	Difference in predicted loss (PA-COS)	% change
Spring-run	Wet	270,759	125,972	144,788	115
	Above Normal	199,562	75,124	124,438	166
	Below Normal	43,781	20,859	22,922	110
	Dry	88,278	48,347	39,931	83
	Critical	42,325	23,917	18,408	77
Steelhead	Wet	29,858	24,319	5,539	23
	Above Normal	52,971	45,799	7,172	16
	Below Normal	39,414	32,831	6,583	20
	Dry	44,334	34,267	10,067	29
	Critical	25,617	18,481	7,136	39

Modeled monthly loss at export facilities

CV spring-run Chinook salmon

Month	Predicted loss under PA	Predicted loss under COS	PA-COS	% change
October	45	31	14	48
November	0	0	0	--
December	0	0	0	--
January	0	0	0	--
February	919	879	39	4
March	25,787	27,504	-1,717	-6
April	168,313	64,198	104,115	162
May	74,038	31,710	42,328	133
June	1,657	1,650	7	0
July	0	0	0	--
August	0	0	0	--
September	0	0	0	--

CCV steelhead

Month	Predicted loss under PA	Predicted loss under COS	PA-COS	% change
October	260	175	85	48
November	60	52	8	17
December	147	167	-21	-12
January	5,927	5,558	369	7
February	6,992	6,696	296	4
March	6,731	7,197	-466	-6
April	5,586	2,108	3,478	165
May	3,109	1,326	1,783	134
June	982	975	7	1
July	36	37	0	-1
August	12	12	0	-1
September	17	17	0	2

Caveats for modeled loss at export facilities

- Modeling uses length-at-date (LAD) criteria, so much of projected spring-run loss may represent loss of unmarked hatchery fall-run. However, the pattern – approximate doubling of spring-run loss -- is still expected, since LAD used for both COS and PA results.
- Steelhead doesn't show as dramatic a change in the annual numbers because most steelhead loss occurs Jan-March, but the approximate doubling is still observed for steelhead in April and May
- San Joaquin basin-origin steelhead migrate almost entirely in April and May, so most of the Southern Sierra Nevada Diversity Group is expected to experience an approximate doubling in loss at the export facilities.

Integration and Synthesis: Spring-run

Step	Apply the Available Evidence to Determine if…	True/False	Action
A	The proposed action is not likely to produce stressors that have direct or indirect adverse effects on the environment	True	End
		False	Go to B
B	Listed individuals are not likely to be exposed to one or more of those stressors or one or more of the direct or indirect consequences of the proposed action	True	NLAA
		False	Go to C
C	Listed individuals are not likely to respond upon being exposed to one or more of the stressors produced by the proposed action	True	NLAA
		False	Go to D
D	Any responses are not likely to constitute "take" or reduce the fitness of the individuals that have been exposed	True	NLAA
		False	Go to E
E	Any reductions in individual fitness are not likely to reduce the viability of the populations those individuals represent	True	NLJ
		False	Go to F
F	Any reductions in the viability of the exposed populations are not likely to reduce the viability of the species	True	NLJ
		False	LJ

Key Findings

- 2 out of 3 wild populations at high risk, declining trend
- DCC Gates open more frequently (Dec-Jan), increasing entrainment into South Delta
- Modeled Old and Middle River flows (OMR flows) will be approximately 3,500 to 4,000 cfs more negative during April and May in wetter water year types with the elimination of the I:E ratio.
- OMR flows are modeled to not be positive at any time (monthly average/ exceedance plots).
- PA components are expected to appreciably reduce the abundance and diversity VSP parameters for spring-run populations (and habitat quality).

Water Yeartype	Predicted loss under PA	Predicted loss under COS	PA-COS	% change
Wet	270,759	125,972	144,788	115
Above Normal	199,562	75,124	124,438	166
Below Normal	43,781	20,859	22,922	110
Dry	88,278	48,347	39,931	83
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Integration and Synthesis: Steelhead

Step	Apply the Available Evidence to Determine if…	True/False	Action
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		False	Go to F
F	Any reductions in the viability of the exposed populations are not likely to reduce the viability of the species	True	NLJ
		False	LJ

Key Findings

- DPS at moderate risk of extinction
- DCC Gates open more frequently (Dec-Jan), increasing entrainment into South Delta
- Modeled Old and Middle River flows (OMR flows) will be approximately 3,500 to 4,000 cfs more negative during April and May in wetter water year types with the elimination of the I:E ratio.
- OMR flows are modeled to not be positive at any time (monthly average/ exceedance plots).
- OMR flows and steelhead density triggers are not protective of the Southern Sierra Diversity Group
- PA components are expected to appreciably reduce the abundance VSP parameter for steelhead populations of the Sacramento River and San Joaquin River basin

Integration and Synthesis: Steelhead

Step	Apply the Available Evidence to Determine if…	True/False	Action
A	The proposed action is not likely to produce stressors that have direct or indirect adverse effects on the environment	True	End
		False	Go to B
B	Listed individuals are not likely to be exposed to one or more of those stressors or one or more of the direct or indirect consequences of the proposed action	True	NLAA
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Key Findings

Water Yeartype	Predicted loss under PA	Predicted loss under COS	PA-COS	% change
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