Attachment B to Appendix B

Spring-run Chinook Salmon Threats Matrices

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Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Agricultural Diversion Dam(s) in Deer Creek	0.600	0.64	5	**3.19**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Agricultural Diversion Dam(s) in Mill Creek	0.600	0.64	5	**3.19**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Deer Creek	0.700	0.74	4	**2.98**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Mill Creek	0.700	0.74	4	**2.98**	**VH**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Englebright Dam	0.650	0.55	5	**2.73**	**VH**
Feather River	0.13	Adult Immigration and Holding	0.150	Passage Impediments/Barriers	0.400	Fish Barrier/Oroville Dam	0.850	0.66	4	**2.65**	**VH**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Antelope Creek	0.700	0.63	4	**2.50**	**VH**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Butte Creek	0.800	0.83	3	**2.48**	**VH**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Agricultural Diversion Dam(s) in Antelope Creek	0.600	0.49	5	**2.44**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Individual or Terminal Diversions and loss of channel connectivity in Antelope Creek	0.500	0.34	7	**2.39**	**VH**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Iron Canyon, City of Chico Swimming Holes and Associated Dams	0.750	0.47	5	**2.34**	**VH**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Big Chico Creek	0.700	0.53	4	**2.10**	**VH**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Butte Creek Diversion Dams and Weirs	0.600	0.34	6	**2.03**	**VH**
Mill Creek	0.17	Spawning	**0.25**	Water Quality	0.450	Turbidity and Sedimentation in Mill Creek	1.000	1.91	1	**1.91**	**VH**
Mill Creek	0.17	Embryo Incubation	**0.15**	Water Quality	0.665	Turbidity and sedimentation in Mill Creek	1.000	1.70	1.00	**1.70**	**VH**
Deer Creek	0.17	Embryo Incubation	**0.15**	Water Quality	0.665	Turbidity, sedimentation, hazardous spills (HWY 32) in Deer Creek	1.000	1.70	1.00	**1.70**	**VH**
Feather River	0.13	Spawning	0.350	Barrier	0.300	Fish Barrier Dam/Oroville Dam - Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	1.37	1	**1.37**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.525	0.22	6	**1.34**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.525	0.22	6	**1.34**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Middle Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Middle Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Middle Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Middle Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	Deer Creek	0.400	0.26	5	**1.28**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Natural River Morphology	0.150	Yuba River	0.350	0.31	4	**1.25**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Riparian Habitat and Instream Cover	0.150	Yuba River	0.350	0.31	4	**1.25**	**VH**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in Antelope Creek	0.600	0.39	3	**1.17**	**VH**
Yuba River	0.14	Spawning	0.275	Barrier	0.300	Englebright Dam - Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	1.16	1	**1.16**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues in Deer Creek	0.600	0.38	3	**1.15**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues in Mill Creek	0.600	0.38	3	**1.15**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Delta	0.300	0.29	4	**1.14**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Delta	0.300	0.29	4	**1.14**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Floodplain Habitat	0.125	Delta	0.375	0.28	4	**1.12**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the Delta	0.300	0.22	5	**1.12**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Delta	0.300	0.22	5	**1.12**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Delta	0.300	0.22	5	**1.12**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the lower Sacramento River	0.300	0.22	5	**1.12**	**VH**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the lower Sacramento River	0.300	0.22	5	**1.12**	**VH**
Yuba River	0.14	Embryo Incubation	0.15	Flow Conditions	0.525	Flow Fluctuations, Flood Events	1.000	1.10	1.00	**1.10**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Predation	0.150	Predation in the Delta	0.350	0.28	4	**1.10**	**VH**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.575	0.22	5	**1.08**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.300	0.27	4	**1.07**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Delta	0.425	0.36	3	**1.07**	**VH**
Deer Creek	0.17	Spawning	**0.25**	Spawning Habitat Availability	0.250	Habitat Availability	1.000	1.06	1	**1.06**	**VH**
Deer Creek	0.17	Spawning	**0.25**	Water Quality	0.250	Turbidity, Sedimentation, Hazardous Spills (Hwy 32) in Deer Creek	1.000	1.06	1	**1.06**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Lower Sacramento River	0.350	0.25	4	**1.02**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.350	0.25	4	**1.02**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.350	0.25	4	**1.02**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.400	0.34	3	**1.01**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Delta	0.425	0.33	3	**1.00**	**VH**
Big Chico Creek	0.1	Spawning	**0.25**	Spawning Habitat Availability	0.400	Habitat Suitability	1.000	1.00	1	**1.00**	**VH**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Ocean	0.525	0.17	6	**0.99**	**VH**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.500	0.16	6	**0.98**	**VH**
Deer Creek	0.17	Spawning	**0.25**	Physical Habitat Alteration	0.225	Gravel embeddedness and fines	1.000	0.96	1	**0.96**	**VH**
Mill Creek	0.17	Spawning	**0.25**	Physical Habitat Alteration	0.225	Gravel embeddedness and fines	1.000	0.96	1	**0.96**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Predation	0.150	Predation in the lower Sacramento River	0.300	0.24	4	**0.95**	**VH**
Butte Creek	0.15	Spawning	**0.25**	Spawning Habitat Availability	0.250	Habitat Availability/Suitability	1.000	0.94	1	**0.94**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the Yuba River	0.250	0.19	5	**0.93**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the middle Sacramento River	0.250	0.19	5	**0.93**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the middle Sacramento River	0.250	0.19	5	**0.93**	**VH**

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Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Ocean	0.625	0.18	5	**0.91**	**VH**
Feather River	0.13	Spawning	0.350	Hatchery Effects	0.200	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.91	1	**0.91**	**VH**
Feather River	0.13	Spawning	0.350	Physical Habitat Alteration	0.200	Limited Instream Gravel Supply	1.000	0.91	1	**0.91**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Natural River Morphology	0.150	Delta	0.250	0.22	4	**0.89**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.250	0.22	4	**0.89**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban, Hazardous Spills (Hwy 32) in Deer Creek	0.600	0.18	5	**0.89**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Delta	0.300	0.22	4	**0.87**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Antelope Creek	0.300	0.22	4	**0.87**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.300	0.22	4	**0.87**	**VH**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.575	0.14	6	**0.86**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Delta	0.300	0.17	5	**0.85**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the lower Sacramento River	0.300	0.17	5	**0.85**	**VH**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Daguerre Point Dam	0.200	0.17	5	**0.84**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.325	0.27	3	**0.82**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.400	0.27	3	**0.82**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.325	0.27	3	**0.82**	**VH**
Antelope Creek	0.13	Spawning	**0.25**	Spawning Habitat Availability	0.250	Habitat Availability	1.000	0.81	1	**0.81**	**VH**
Antelope Creek	0.13	Spawning	**0.25**	Water Quality	0.250	Turbidity, Sedimentation in Antelope Creek	1.000	0.81	1	**0.81**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Diversion into Central Delta	0.300	0.13	6	**0.80**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Diversion into Central Delta	0.300	0.13	6	**0.80**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Predation	0.125	Predation in the Delta	0.350	0.20	4	**0.80**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Predation	0.150	Predation in Butte Creek	0.250	0.20	4	**0.79**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Individual Diversions in the Yuba River and DPD	0.250	0.11	7	**0.78**	**VH**

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Antelope Creek	0.13	Embryo Incubation	**0.15**	Water Quality	0.400	Turbidity, sedimentation in Antelope Creek	1.000	0.78	1.00	**0.78**	**VH**
Yuba River	0.14	Spawning	0.275	Hatchery Effects	0.200	Redd superimposition, competition for habitat, genetic integrity	1.000	0.77	1	**0.77**	**VH**
Yuba River	0.14	Spawning	0.275	Physical Habitat Alteration	0.200	Limited Instream Gravel Supply	1.000	0.77	1	**0.77**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Lower Sacramento River	0.325	0.26	3	**0.77**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Middle Sacramento River	0.200	0.19	4	**0.76**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Middle Sacramento River	0.200	0.19	4	**0.76**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Delta	0.200	0.19	4	**0.76**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Delta	0.200	0.19	4	**0.76**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.200	0.19	4	**0.76**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.200	0.19	4	**0.76**	**VH**
Butte Creek	0.15	Spawning	**0.25**	Flow Conditions	0.200	Flow Fluctuations	1.000	0.75	1	**0.75**	**VH**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Recreational Impacts (Summer inner tubing)	0.200	Summer inner tubing and swimming in Butte Creek	1.000	0.75	1	**0.75**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the Feather River	0.200	0.15	5	**0.74**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the lower Sacramento River	0.200	0.15	5	**0.74**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Floodplain Habitat	0.125	Lower Sacramento River	0.250	0.19	4	**0.74**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.350	0.18	4	**0.74**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Middle Sacramento River	0.350	0.18	4	**0.74**	**VH**
Antelope Creek	0.13	Spawning	**0.25**	Physical Habitat Alteration	0.225	Gravel embeddedness and fines	1.000	0.73	1	**0.73**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Floodplain Habitat	0.125	Delta	0.425	0.24	3	**0.73**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Natural River Morphology	0.150	Delta	0.350	0.24	3	**0.72**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.350	0.24	3	**0.72**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.200	0.18	4	**0.71**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the middle Sacramento River	0.250	0.14	5	**0.71**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Butte Creek	0.275	0.23	3	**0.69**	**VH**

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Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in Antelope Creek	0.600	0.14	5	**0.68**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Predation	0.125	Predation in the Feather River	0.300	0.17	4	**0.68**	**VH**
Butte Creek	0.15	Embryo Incubation	**0.15**	Flow Conditions	0.300	Flow Fluctuations	1.000	0.68	1.00	**0.68**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.325	0.22	3	**0.67**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.090	DO, Ag, Urban, Heavy Metals in the Delta	0.350	0.17	4	**0.66**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.13	5	**0.64**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Butte Creek	0.250	0.21	3	**0.63**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Delta	0.300	0.16	4	**0.63**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Lower Sacramento River	0.300	0.16	4	**0.63**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Delta	0.300	0.16	4	**0.63**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.300	0.16	4	**0.63**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Individual Diversions in the Delta	0.200	0.09	7	**0.62**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Individual Diversions in the lower Sacramento River	0.200	0.09	7	**0.62**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Tracy and Banks Pumping Plants	0.200	0.09	7	**0.62**	**VH**
Butte Creek	0.15	Embryo Incubation	**0.15**	Water Quality	0.275	Water Quality, Turbidity in Butte Creek	1.000	0.62	1.00	**0.62**	**VH**
Butte Creek	0.15	Embryo Incubation	**0.15**	Water Temperature	0.275	Water Temperature in Butte Creek	1.000	0.62	1.00	**0.62**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Diversion into Central Delta	0.300	0.10	6	**0.61**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Natural River Morphology	0.150	Feather River	0.300	0.20	3	**0.61**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Tracy and Banks Pumping Plants	0.250	0.09	7	**0.61**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Floodplain Habitat	0.125	Yuba River	0.200	0.15	4	**0.60**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Butte Creek	0.250	0.20	3	**0.59**	**VH**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.300	Sedimentation, turbidity, physical disturbance	1.000	0.59	1.00	**0.59**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the Delta	0.200	0.08	7	**0.58**	**VH**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the Delta	0.200	0.08	7	**0.58**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.200	0.08	7	**0.58**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.200	0.08	7	**0.58**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the middle Sacramento River	0.200	0.08	7	**0.58**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the middle Sacramento River	0.200	0.08	7	**0.58**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Jones and Banks Pumping Plants	0.200	0.08	7	**0.58**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Tracy and Banks Pumping Plants	0.200	0.08	7	**0.58**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Middle Sacramento River	0.200	0.15	4	**0.58**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Delta	0.200	0.15	4	**0.58**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Antelope Creek	0.200	0.15	4	**0.58**	**VH**
Yuba River	0.14	Spawning	0.275	Spawning Habitat Availability	0.150	Habitat Suitability	1.000	0.58	1	**0.58**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Deer Creek	0.150	0.14	4	**0.57**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Mill Creek	0.150	0.14	4	**0.57**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Predation	0.125	Predation in the lower Sacramento River	0.250	0.14	4	**0.57**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Riparian Habitat and Instream Cover	0.150	Feather River	0.275	0.19	3	**0.56**	**VH**
Butte Creek	0.15	Spawning	**0.25**	Harvest/Angling Impacts	0.150	Recreational, Poaching, Angler Impacts	1.000	0.56	1	**0.56**	**VH**
Butte Creek	0.15	Spawning	**0.25**	Water Temperature	0.150	Water Temperature in Butte Creek	1.000	0.56	1	**0.56**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Floodplain Habitat	0.125	Lower Sacramento River	0.325	0.18	3	**0.55**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the Delta	0.250	0.09	6	**0.55**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.250	0.09	6	**0.55**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Tracy and Banks Pumping Plants	0.250	0.09	6	**0.55**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Natural River Morphology	0.150	Feather River	0.150	0.13	4	**0.54**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Riparian Habitat and Instream Cover	0.150	Feather River	0.150	0.13	4	**0.54**	**VH**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Temperature	0.075	Delta	0.300	0.13	4	**0.54**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Temperature	0.075	Feather River	0.300	0.13	4	**0.54**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Temperature	0.075	Lower Sacramento River	0.300	0.13	4	**0.54**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Changes in Hydrology	0.200	0.09	6	**0.54**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Changes in Hydrology	0.200	0.09	6	**0.54**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Reverse Flow Conditions	0.200	0.09	6	**0.54**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Reverse Flow Conditions	0.200	0.09	6	**0.54**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.100	0.11	5	**0.53**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.100	0.11	5	**0.53**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.100	0.11	5	**0.53**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.250	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.250	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.250	0.11	5	**0.53**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Delta	0.300	0.11	5	**0.53**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the lower Sacramento River	0.300	0.11	5	**0.53**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Floodplain Habitat	0.125	Feather River	0.175	0.13	4	**0.52**	**H**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.350	0.10	5	**0.52**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.350	0.10	5	**0.52**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Yolo Bypass - Freemont Weir	0.150	0.08	6	**0.51**	**H**
Big Chico Creek	0.1	Spawning	**0.25**	Water Temperature	0.200	Water Temperature in Big Chico Creek	1.000	0.50	1	**0.50**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the Delta	0.200	0.07	7	**0.49**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the lower Sacramento River	0.200	0.07	7	**0.49**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the middle Sacramento River	0.200	0.07	7	**0.49**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	Ag, Urban in the lower Sacramento River	0.150	0.10	5	**0.48**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	Ag, Urban in the middle Sacramento River	0.150	0.10	5	**0.48**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Bay	0.150	0.10	5	**0.48**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Bay	0.150	0.10	5	**0.48**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Delta	0.150	0.10	5	**0.48**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Individual Diversions in the Delta	0.100	0.07	7	**0.48**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Individual Diversions in the lower Sacramento River	0.100	0.07	7	**0.48**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Individual Diversions in the middle Sacramento River	0.100	0.07	7	**0.48**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Tracy and Banks Pumping Plants	0.100	0.07	7	**0.48**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Quality	0.075	DO, Ag, Urban, Heavy Metals in the Delta	0.350	0.12	4	**0.48**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	0.800	0.24	2	**0.48**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	0.800	0.24	2	**0.48**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Lower Sacramento River	0.400	0.12	4	**0.48**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Lower Sacramento River	0.400	0.12	4	**0.48**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.090	Ag, Urban in the lower Sacramento River	0.250	0.12	4	**0.47**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.090	Ag, Urban, Heavy Metals in the Bays	0.250	0.12	4	**0.47**	**H**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Quality	0.125	Ag, Urban in Butte Creek	0.333	0.16	3	**0.47**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Quality	0.125	Ag, Urban in the lower Sacramento River	0.333	0.16	3	**0.47**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Quality	0.125	DO, Ag, Urban, Heavy Metals in the Delta	0.333	0.16	3	**0.47**	**H**
Feather River	0.13	Spawning	0.350	Spawning Habitat Availability	0.100	Habitat Suitability	1.000	0.46	1	**0.46**	**H**
Feather River	0.13	Spawning	0.350	Water Temperature	0.100	Water Temperature	1.000	0.46	1	**0.46**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in the lower Sacramento River	0.600	0.23	2	**0.45**	**H**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Water Temperature	0.300	Water Temperature in Big Chico Creek	1.000	0.45	1.00	**0.45**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.09	5	**0.45**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.09	5	**0.45**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.09	5	**0.45**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.09	5	**0.45**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in Butte Creek	0.200	0.07	6	**0.44**	**H**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Temperature	0.150	Feather River	0.500	0.15	3	**0.44**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the middle Sacramento River	0.250	0.09	5	**0.44**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Antelope Creek	0.150	0.11	4	**0.44**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Middle Sacramento River	0.150	0.11	4	**0.44**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Middle Sacramento River	0.150	0.11	4	**0.44**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Floodplain Habitat	0.125	Feather River	0.250	0.14	3	**0.43**	**H**
Deer Creek	0.17	Spawning	**0.25**	Harvest/Angling Impacts	0.100	Recreational, Poaching, Angler Impacts	1.000	0.43	1	**0.43**	**H**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Spawning	**0.25**	Harvest/Angling Impacts	0.100	Recreational, Poaching, Angler Impacts	1.000	0.43	1	**0.43**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.09	5	**0.43**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Delta	0.100	0.11	4	**0.43**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Delta	0.100	0.11	4	**0.43**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Lower Sacramento River	0.100	0.11	4	**0.43**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Lower Sacramento River	0.100	0.11	4	**0.43**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Middle Sacramento River	0.100	0.11	4	**0.43**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Middle Sacramento River	0.100	0.11	4	**0.43**	**H**
Deer Creek	0.17	Spawning	**0.25**	Water Temperature	0.100	Water Temperature in Deer Creek	1.000	0.43	1	**0.43**	**H**
Mill Creek	0.17	Spawning	**0.25**	Water Temperature	0.100	Water Temperature in Mill Creek	1.000	0.43	1	**0.43**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Butte Creek	0.225	0.08	5	**0.42**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Big Chico Creek	0.200	0.11	4	**0.42**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Middle Sacramento River	0.200	0.11	4	**0.42**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Big Chico Creek	0.200	0.11	4	**0.42**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Middle Sacramento River	0.200	0.11	4	**0.42**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.200	0.11	4	**0.42**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Changes in Hydrology	0.200	0.07	6	**0.41**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Reverse Flow Conditions	0.200	0.07	6	**0.41**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Temperature	0.075	Feather River	0.400	0.14	3	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.100	0.08	5	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.100	0.08	5	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.100	0.08	5	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.08	5	**0.41**	**H**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Flow Dependent Habitat Availability in the Yuba River	0.225	0.07	6	**0.40**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.375	0.10	4	**0.39**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.200	0.13	3	**0.39**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.13	3	**0.39**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.200	0.13	3	**0.38**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.200	0.13	3	**0.38**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.13	3	**0.38**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.13	3	**0.38**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Deer Creek	0.150	0.06	6	**0.38**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Mill Creek	0.150	0.06	6	**0.38**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Deer Creek	0.100	0.10	4	**0.38**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Mill Creek	0.100	0.10	4	**0.38**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Deer Creek	0.100	0.10	4	**0.38**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Mill Creek	0.100	0.10	4	**0.38**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.08	5	**0.38**	**H**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.08	5	**0.38**	**H**
Butte Creek	0.15	Spawning	**0.25**	Water Quality	0.100	Water Quality, Turbidity in Butte Creek	1.000	0.38	1	**0.38**	**H**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Watershed disturbance	0.250	Sedimentation	1.000	0.38	1.00	**0.38**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Bays	0.100	0.07	5	**0.37**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Bays	0.100	0.07	5	**0.37**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.07	5	**0.37**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.250	0.07	5	**0.37**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.250	0.07	5	**0.37**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.050	Delta	0.350	0.09	4	**0.37**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.050	Lower Sacramento River	0.350	0.09	4	**0.37**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.07	5	**0.37**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	0.800	0.18	2	**0.36**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Lower Sacramento River	0.400	0.09	4	**0.36**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Delta	0.100	0.09	4	**0.36**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Lower Sacramento River	0.100	0.09	4	**0.36**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Middle Sacramento River	0.100	0.09	4	**0.36**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Diversion into Central Delta	0.200	0.06	6	**0.36**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Reverse Flow Conditions	0.200	0.06	6	**0.36**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Invasive Species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, water hyacinth, etc. in the Delta	0.600	0.18	2	**0.36**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Tidal Marsh Habitat	0.050	Delta	0.600	0.18	2	**0.36**	**H**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Middle Sacramento River	0.300	0.09	4	**0.36**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Middle Sacramento River	0.300	0.09	4	**0.36**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.07	5	**0.34**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.07	5	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Individual Diversions in the Delta	0.250	0.06	6	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Individual Diversions in the lower Sacramento River	0.250	0.06	6	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Tracy and Banks Pumping Plants	0.250	0.06	6	**0.34**	**H**
Feather River	0.13	Adult Immigration and Holding	0.150	Flow Conditions	0.125	Low Flows - attraction, migratory cues in the Feather River	0.700	0.17	2	**0.34**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Antelope Creek	0.175	0.06	6	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.375	0.09	4	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Quality	0.075	Ag, Urban in the lower Sacramento River	0.250	0.09	4	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Quality	0.075	Ag, Urban, Heavy Metals in the Bays	0.250	0.09	4	**0.34**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Centerville Head Dam	0.100	0.06	6	**0.34**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Yuba River	0.175	0.06	6	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Flow Conditions	0.200	Flow Fluctuations, Flooding	1.000	0.33	1.00	**0.33**	**H**
Antelope Creek	0.13	Spawning	**0.25**	Harvest/Angling Impacts	0.100	Recreational, Poaching, Angler Impacts	1.000	0.33	1	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Harvest/Angling Impacts	0.200	Redd disturbance	1.000	0.33	1.00	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Short-term Inwater Construction	0.200	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.33	1.00	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.200	0.07	5	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.200	0.07	5	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Antelope Creek	0.200	0.07	5	**0.33**	**H**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Bay	0.200	0.07	5	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.07	5	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Water Quality	0.200	Water Pollution	1.000	0.33	1.00	**0.33**	**H**
Antelope Creek	0.13	Spawning	**0.25**	Water Temperature	0.100	Water Temperature in Antelope Creek	1.000	0.33	1	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Water Temperature	0.200	Water Temperature in the Feather River	1.000	0.33	1.00	**0.33**	**H**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Water Temperature	0.165	Water Temperature in Antelope Creek	1.000	0.32	1.00	**0.32**	**H**
Deer Creek	0.17	Embryo Incubation	**0.15**	Flow Conditions	0.125	Flow Fluctuations	1.000	0.32	1.00	**0.32**	**H**
Mill Creek	0.17	Embryo Incubation	**0.15**	Flow Conditions	0.125	Flow Fluctuations	1.000	0.32	1.00	**0.32**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.06	5	**0.32**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.06	5	**0.32**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.050	Delta	0.600	0.16	2	**0.32**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Predation	0.150	Predation in the Bays	0.100	0.08	4	**0.32**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.08	4	**0.32**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Temperature	0.125	Feather River	0.300	0.08	4	**0.32**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Temperature	0.125	Lower Sacramento River	0.300	0.08	4	**0.32**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.16	2	**0.32**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Delta	0.600	0.16	2	**0.32**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.06	5	**0.31**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Individual Diversions in the Feather River	0.100	0.04	7	**0.31**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Delta	0.100	0.10	3	**0.31**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Lower Sacramento River	0.100	0.10	3	**0.31**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Temperature	0.075	Delta	0.300	0.10	3	**0.31**	**H**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Temperature	0.075	Lower Sacramento River	0.300	0.10	3	**0.31**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.06	5	**0.30**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.400	0.10	3	**0.30**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in the middle Sacramento River	0.400	0.10	3	**0.30**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.300	0.08	4	**0.30**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.300	0.08	4	**0.30**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.300	0.08	4	**0.30**	**M**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Flow Conditions	0.200	Flow Fluctuations	1.000	0.30	1.00	**0.30**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Butte Creek	0.400	0.15	2	**0.30**	**M**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Water Quality	0.200	Water Quality in Big Chico Creek	1.000	0.30	1.00	**0.30**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Delta	0.100	0.08	4	**0.30**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Lower Sacramento River	0.100	0.08	4	**0.30**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Middle Sacramento River	0.100	0.08	4	**0.30**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in Mill Creek	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.200	0.06	5	**0.30**	**M**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.06	5	**0.30**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.225	0.06	5	**0.30**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.225	0.06	5	**0.30**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Feather River	0.200	0.06	5	**0.29**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in Deer Creek	0.100	0.04	7	**0.29**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in Mill Creek	0.100	0.04	7	**0.29**	**M**
Yuba River	0.14	Spawning	0.275	Flow Conditions	0.075	Flow Fluctuations	1.000	0.29	1	**0.29**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Temperature	0.125	Delta	0.275	0.07	4	**0.29**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Bays	0.100	0.06	5	**0.28**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues in the Yuba River	0.450	0.09	3	**0.28**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.090	Ag, Urban in Butte Creek	0.150	0.07	4	**0.28**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Individual Diversions in the Feather River	0.200	0.05	6	**0.27**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Invasive Species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.14	2	**0.27**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Tidal Marsh Habitat	0.050	Delta	0.600	0.14	2	**0.27**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.07	4	**0.27**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Middle Sacramento River	0.300	0.07	4	**0.27**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Changes in Delta Hydrology	0.150	0.04	6	**0.27**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in Deer Creek	0.100	0.04	6	**0.27**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in Mill Creek	0.100	0.04	6	**0.27**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.04	6	**0.27**	**M**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.04	6	**0.27**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.04	6	**0.27**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.04	6	**0.27**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Delta	0.300	0.05	5	**0.27**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Delta	0.300	0.05	5	**0.27**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Lower Sacramento River	0.300	0.05	5	**0.27**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Lower Sacramento River	0.300	0.05	5	**0.27**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.05	5	**0.27**	**M**
Yuba River	0.14	Embryo Incubation	0.15	Harvest/Angling Impacts	0.125	Redd disturbance	1.000	0.26	1.00	**0.26**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.05	5	**0.26**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.05	5	**0.26**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.05	5	**0.26**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Yuba River	0.200	0.05	5	**0.26**	**M**
Yuba River	0.14	Embryo Incubation	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.26	1.00	**0.26**	**M**
Yuba River	0.14	Embryo Incubation	0.15	Water Quality	0.125	Water Pollution above Daguerre Point Dam	1.000	0.26	1.00	**0.26**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Feather River	0.350	0.05	5	**0.26**	**M**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Diversion into Central Delta	0.225	0.05	5	**0.26**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Flow Dependent Habitat Availability in the Feather River	0.225	0.05	5	**0.26**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Reverse Flow Conditions	0.225	0.05	5	**0.26**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.100	0.04	6	**0.26**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.100	0.04	6	**0.26**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.100	0.04	6	**0.26**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.100	0.04	6	**0.26**	**M**
Deer Creek	0.17	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.26	1.00	**0.26**	**M**
Mill Creek	0.17	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.26	1.00	**0.26**	**M**
Deer Creek	0.17	Embryo Incubation	**0.15**	Water Temperature	0.100	Water Temperature in Deer Creek	1.000	0.26	1.00	**0.26**	**M**
Mill Creek	0.17	Embryo Incubation	**0.15**	Water Temperature	0.100	Water Temperature in Mill Creek	1.000	0.26	1.00	**0.26**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues in the Feather River	0.400	0.08	3	**0.25**	**M**
Big Chico Creek	0.1	Spawning	**0.25**	Barrier	0.100	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	0.25	1	**0.25**	**M**
Big Chico Creek	0.1	Spawning	**0.25**	Flow Conditions	0.100	Flow Fluctuations	1.000	0.25	1	**0.25**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.05	5	**0.25**	**M**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.05	5	**0.24**	**M**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Flow Conditions	0.125	Flow Fluctuations	1.000	0.24	1.00	**0.24**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Contra Costa Power Plant	0.050	0.03	7	**0.24**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Pittsburg Power Plant	0.050	0.03	7	**0.24**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Invasive Species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.12	2	**0.24**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Tidal Marsh Habitat	0.050	Bays	0.400	0.12	2	**0.24**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Deer Creek	0.200	0.06	4	**0.24**	**M**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Mill Creek	0.200	0.06	4	**0.24**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.05	5	**0.23**	**M**
Feather River	0.13	Spawning	0.350	Flow Conditions	0.050	Flow Fluctuations	1.000	0.23	1	**0.23**	**M**
Feather River	0.13	Spawning	0.350	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.23	1	**0.23**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Passage Impediments/Barriers	0.025	Fish Barrier/Oroville Dam	1.000	0.11	2	**0.23**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Predation	0.125	Predation in the Bays	0.100	0.06	4	**0.23**	**M**
Butte Creek	0.15	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.100	Redd disturbance	1.000	0.23	1.00	**0.23**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Flow Dependent Habitat Availability in the lower Sacramento River	0.125	0.04	6	**0.22**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Feather River	0.150	0.04	5	**0.22**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Yuba River	0.150	0.04	5	**0.22**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Temperature	0.150	Delta	0.250	0.07	3	**0.22**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Temperature	0.150	Lower Sacramento River	0.250	0.07	3	**0.22**	**M**
Deer Creek	0.17	Spawning	**0.25**	Flow Conditions	0.050	Flow Fluctuations	1.000	0.21	1	**0.21**	**M**
Mill Creek	0.17	Spawning	**0.25**	Flow Conditions	0.050	Flow Fluctuations	1.000	0.21	1	**0.21**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in Mill Creek	0.100	0.04	5	**0.21**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.04	5	**0.21**	**M**
Mill Creek	0.17	Spawning	**0.25**	Spawning Habitat Availability	0.050	Habitat Suitability	1.000	0.21	1	**0.21**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Mill Creek	0.100	0.04	5	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Sacramento Deep Water Ship Channel	0.050	0.04	5	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Suisun Marsh Salinity Control Structure	0.050	0.04	5	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Yolo Bypass - Freemont Weir	0.050	0.04	5	**0.21**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.050	Bays	0.400	0.11	2	**0.21**	**M**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Butte Creek	0.200	0.05	4	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Quality	0.100	Ag, Urban in the Feather River	0.250	0.05	4	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.250	0.05	4	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.250	0.05	4	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Quality	0.100	Yuba River	0.250	0.05	4	**0.21**	**M**
Yuba River	0.14	Embryo Incubation	0.15	Water Temperature	0.100	Water Temperature above Daguerre Point Dam	1.000	0.21	1.00	**0.21**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.11	2	**0.21**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Big Chico Creek	0.100	0.05	4	**0.21**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Bays	0.400	0.11	2	**0.21**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.275	0.05	4	**0.21**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.275	0.05	4	**0.21**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in Antelope Creek	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Delta	0.300	0.04	5	**0.20**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Lower Sacramento River	0.300	0.04	5	**0.20**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Quality	0.075	Ag, Urban in the Feather River	0.150	0.05	4	**0.20**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Changes in Delta Hydrology	0.175	0.04	5	**0.20**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Feather River	0.150	0.04	5	**0.20**	**M**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.100	0.03	6	**0.20**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Quality	0.100	Ag, Urban in the Feather River	0.333	0.06	3	**0.19**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.333	0.06	3	**0.19**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.333	0.06	3	**0.19**	**M**
Yuba River	0.14	Spawning	0.275	Water Temperature	0.050	Water Temperature in the Yuba River	1.000	0.19	1	**0.19**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.03	6	**0.19**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.03	6	**0.19**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Delta	0.100	0.03	6	**0.19**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Lower Sacramento River	0.100	0.03	6	**0.19**	**M**
Butte Creek	0.15	Spawning	**0.25**	Barrier	0.050	Centerville Head Dam - Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	0.19	1	**0.19**	**M**
Butte Creek	0.15	Spawning	**0.25**	Hatchery Effects	0.050	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.19	1	**0.19**	**M**
Butte Creek	0.15	Spawning	**0.25**	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	1.000	0.19	1	**0.19**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.250	0.05	4	**0.19**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.250	0.04	5	**0.19**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Yuba River	0.250	0.04	5	**0.19**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in Deer Creek	0.050	0.04	5	**0.19**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in Mill Creek	0.050	0.04	5	**0.19**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the Bay	0.050	0.04	5	**0.19**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.050	Butte Creek	0.175	0.05	4	**0.18**	**M**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.04	5	**0.18**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Invasive Species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.09	2	**0.18**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Tidal Marsh Habitat	0.050	Bays	0.400	0.09	2	**0.18**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Feather River	0.200	0.05	4	**0.18**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Antelope Creek	0.200	0.05	4	**0.18**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Flow Dependent Habitat Availability in the Feather River	0.100	0.03	6	**0.18**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Passage Impediments/Barriers	0.025	Daguerre Point Dam	0.600	0.09	2	**0.18**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Temperature	0.075	Yuba River	0.100	0.04	4	**0.18**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	1.000	0.18	1	**0.18**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in Big Chico Creek	0.100	0.04	5	**0.18**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.04	5	**0.18**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Big Chico Creek	0.500	0.04	4	**0.18**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Flow Dependent Habitat Availability in the lower Sacramento River	0.150	0.03	5	**0.17**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Hatchery Effects (Competition and Predation)	0.025	Feather River	0.375	0.04	4	**0.17**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Sacramento Deep Water Ship Channel	0.050	0.03	6	**0.17**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Suisun Marsh Salinity Control Structure	0.050	0.03	6	**0.17**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Sutter Bypass - Tisdale Weir	0.050	0.03	6	**0.17**	**M**
Antelope Creek	0.13	Spawning	**0.25**	Flow Conditions	0.050	Flow Fluctuations	1.000	0.16	1	**0.16**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.275	0.04	4	**0.16**	**M**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Feather River	0.13	Adult Immigration and Holding	0.150	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.275	0.04	4	**0.16**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.03	5	**0.16**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Butte Creek	0.400	0.05	3	**0.16**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Diversion into Central Delta	0.300	0.03	6	**0.16**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.050	0.03	5	**0.16**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.050	0.03	5	**0.16**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.050	0.03	5	**0.16**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Passage Impediments/Barriers	0.400	Sacramento Deep Water Ship Channel	0.050	0.04	4	**0.16**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Passage Impediments/Barriers	0.400	Suisun Marsh Salinity Control Structure	0.050	0.04	4	**0.16**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Passage Impediments/Barriers	0.400	Yolo Bypass - Freemont Weir	0.050	0.04	4	**0.16**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Big Chico Creek	0.200	0.05	3	**0.15**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Big Chico Creek	0.100	0.03	6	**0.15**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.100	0.03	6	**0.15**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.100	0.03	6	**0.15**	**L**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Butte Creek	0.200	0.04	4	**0.15**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Deer Creek	0.100	0.03	5	**0.15**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Mill Creek	0.100	0.03	5	**0.15**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.03	5	**0.15**	**L**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.03	5	**0.15**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.03	5	**0.15**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.100	0.03	5	**0.15**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.100	0.03	5	**0.15**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	Ag, Urban in the Feather River	0.100	0.03	5	**0.15**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.100	0.03	5	**0.15**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.100	0.03	5	**0.15**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.325	0.04	4	**0.15**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Diversion into Central Delta	0.225	0.03	5	**0.15**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in Butte Creek	0.225	0.03	5	**0.15**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Reverse Flow Conditions	0.225	0.03	5	**0.15**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Flow Conditions	0.125	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.300	0.07	2	**0.15**	**L**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.02	6	**0.15**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.250	0.04	4	**0.15**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Contra Costa Power Plant	0.050	0.02	7	**0.15**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Contra Costa Power Plant	0.050	0.02	7	**0.15**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Pittsburg Power Plant	0.050	0.02	7	**0.15**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Pittsburg Power Plant	0.050	0.02	7	**0.15**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in Antelope Creek	0.050	0.03	5	**0.14**	**L**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.03	5	**0.14**	**L**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.075	0.03	5	**0.14**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Middle Sacramento River	0.150	0.03	5	**0.13**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Middle Sacramento River	0.150	0.03	5	**0.13**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.050	Bays	0.125	0.03	4	**0.13**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Delta	0.300	0.03	5	**0.13**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.300	0.03	5	**0.13**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.125	0.03	4	**0.13**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Temperature	0.125	Yuba River	0.125	0.03	4	**0.13**	**L**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.02	6	**0.13**	**L**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.02	6	**0.13**	**L**
Big Chico Creek	0.1	Spawning	**0.25**	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.13	1	**0.13**	**L**
Big Chico Creek	0.1	Spawning	**0.25**	Hatchery Effects	0.050	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.13	1	**0.13**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in Big Chico Creek	0.100	0.03	5	**0.13**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.100	0.03	5	**0.13**	**L**
Big Chico Creek	0.1	Spawning	**0.25**	Water Quality	0.050	Water Quality in Big Chico Creek	1.000	0.13	1	**0.13**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Contra Costa Power Plant	0.050	0.02	7	**0.12**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in Big Chico Creek	0.050	0.02	7	**0.12**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Pittsburg Power Plant	0.050	0.02	7	**0.12**	**L**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in Antelope Creek	0.100	0.02	5	**0.12**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Dam(s)	0.200	0.06	2	**0.12**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Dam(s)	0.200	0.06	2	**0.12**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Passage Impediments/Barriers	0.025	Englebright Dam	0.400	0.06	2	**0.12**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Delta	0.100	0.03	4	**0.12**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Delta	0.100	0.03	4	**0.12**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Delta	0.300	0.04	3	**0.12**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Lower Sacramento River	0.300	0.04	3	**0.12**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Feather River	0.200	0.03	4	**0.12**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Changes in Delta Hydrology	0.175	0.02	5	**0.11**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Antelope Creek	0.100	0.02	5	**0.11**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.02	5	**0.11**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.100	0.02	5	**0.11**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.100	0.02	5	**0.11**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.100	0.02	5	**0.11**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.100	0.02	5	**0.11**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.125	0.03	4	**0.11**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.02	6	**0.11**	**L**
Butte Creek	0.15	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.11	1.00	**0.11**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Lower Sacramento River	0.075	0.02	5	**0.11**	**L**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

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Deer Creek	0.17	Spawning	**0.25**	Hatchery Effects	0.025	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.11	1	**0.11**	**L**
Mill Creek	0.17	Spawning	**0.25**	Hatchery Effects	0.025	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.11	1	**0.11**	**L**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Deer Creek	0.100	0.02	5	**0.11**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Changes in Hydrology	0.200	0.02	6	**0.11**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Reverse Flow Conditions	0.200	0.02	6	**0.11**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Middle Sacramento River	0.150	0.02	5	**0.10**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in Big Chico Creek	0.100	0.03	4	**0.10**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the lower Sacramento River	0.150	0.02	5	**0.10**	**L**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.02	6	**0.10**	**L**
Yuba River	0.14	Spawning	0.275	Harvest/Angling Impacts	0.025	Recreational, Poaching, Angler Impacts	1.000	0.10	1	**0.10**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.150	0.03	3	**0.09**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Bays	0.050	0.02	6	**0.09**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Feather River	0.050	0.02	6	**0.09**	**L**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.02	5	**0.09**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Dam(s)	0.200	0.05	2	**0.09**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Delta	0.100	0.02	4	**0.09**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Bays	0.100	0.02	5	**0.09**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Bays	0.100	0.02	5	**0.09**	**L**

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Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Deer Creek	0.100	0.02	5	**0.09**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Mill Creek	0.100	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Bays	0.050	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Big Chico Creek	0.100	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the lower Sacramento River	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the middle Sacramento River	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in Big Chico Creek	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban, Heavy Metals in the Bays	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.02	5	**0.09**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.010	Agricultural, Wildlife and Terminal Diversions	0.800	0.04	2	**0.08**	**L**
Antelope Creek	0.13	Spawning	**0.25**	Hatchery Effects	0.025	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.08	1	**0.08**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Hatchery Effects (Competition and Predation)	0.025	Delta	0.175	0.02	4	**0.08**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Contra Costa Power Plant	0.025	0.01	7	**0.08**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Pittsburg Power Plant	0.025	0.01	7	**0.08**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.01	6	**0.08**	**L**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.050	Redd disturbance	1.000	0.08	1.00	**0.08**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Delta	0.100	0.01	5	**0.07**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	Yuba River	0.050	0.01	5	**0.07**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Bays	0.050	0.01	5	**0.07**	**L**

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Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Delta	0.050	0.01	5	**0.07**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.04	2	**0.07**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.04	2	**0.07**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Delta	0.600	0.04	2	**0.07**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Delta	0.600	0.04	2	**0.07**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Lower Sacramento River	0.200	0.02	4	**0.07**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Middle Sacramento River	0.200	0.02	4	**0.07**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Antelope Creek	0.100	0.01	5	**0.07**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Bays	0.100	0.01	5	**0.07**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Middle Sacramento River	0.150	0.01	5	**0.07**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.03	2	**0.06**	**L**
Big Chico Creek	0.1	Spawning	**0.25**	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	0.500	0.06	1	**0.06**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Hatchery Effects (Competition and Predation)	0.025	Bays	0.125	0.01	4	**0.06**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Contra Costa Power Plant	0.025	0.01	6	**0.06**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Pittsburg Power Plant	0.025	0.01	6	**0.06**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.03	2	**0.05**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Delta	0.600	0.03	2	**0.05**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in Big Chico Creek	0.100	0.01	6	**0.05**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.01	6	**0.05**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.01	6	**0.05**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.02	2	**0.05**	**L**

Northern Sierra Nevada Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.02	2	**0.05**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Bays	0.400	0.02	2	**0.05**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Bays	0.400	0.02	2	**0.05**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Bays	0.100	0.01	5	**0.04**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Big Chico Creek	0.100	0.01	5	**0.04**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.02	2	**0.04**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Bays	0.050	0.01	5	**0.04**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.02	2	**0.04**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Bays	0.400	0.02	2	**0.04**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Delta	0.100	0.01	4	**0.04**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Contra Costa Power Plant	0.025	0.01	6	**0.03**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Pittsburg Power Plant	0.025	0.01	6	**0.03**	**L**
Deer Creek	0.17	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.010	Redd disturbance	1.000	0.03	1.00	**0.03**	**L**
Mill Creek	0.17	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.010	Redd disturbance	1.000	0.03	1.00	**0.03**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.010	Tributary Barriers	0.200	0.01	2	**0.02**	**L**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.010	Redd disturbance	1.000	0.02	1.00	**0.02**	**L**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	North Fork Dams	0.325	1.62	7	**11.35**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	South Fork Dams	0.325	1.62	7	**11.35**	**VH**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Keswick Dam	0.525	1.35	7	**9.48**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Battle Creek	0.550	1.37	5	**6.86**	**VH**
Sacramento River	0.43	Spawning	0.3	Barrier/Genetics	0.450	Keswick/Shasta Dam	1.000	5.81	1	**5.81**	**VH**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Red Bluff Diversion Dam	0.300	0.77	7	**5.42**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Red Bluff Diversion Dam	0.150	0.75	7	**5.24**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Battle Creek	0.350	0.87	6	**5.24**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Flow Conditions	0.200	Low Flows - attraction, migratory cues in Battle Creek	0.400	1.14	4	**4.56**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the Delta	0.300	0.75	6	**4.49**	**VH**
Battle Creek	0.57	Spawning	0.25	Flow Conditions	0.300	Low instream flows per FERC license	1.000	4.28	1	**4.28**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in Battle Creek	0.250	0.50	8	**3.99**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Natural Morphologic Function	0.160	Loss of Natural Morphologic Function in the lower Sacramento River	0.350	0.96	4	**3.85**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Delta	0.350	0.70	5	**3.49**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Delta	0.350	0.70	5	**3.49**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Delta	0.350	0.70	5	**3.49**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Floodplain Habitat	0.160	Loss of Floodplain Habitat in the Delta	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Floodplain Habitat	0.160	Loss of Floodplain Habitat in the lower Sacramento River	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Natural Morphologic Function	0.160	Loss of Natural Morphologic Function in the Delta	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Riparian Habitat and Instream Cover	0.160	Loss of Riparian Habitat and Instream Cover in the Delta	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Riparian Habitat and Instream Cover	0.160	Loss of Riparian Habitat and Instream Cover in the lower Sacramento River	0.300	0.83	4	**3.30**	**VH**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Predation in the Delta	0.250	0.65	5	**3.23**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Predation in the lower Sacramento River	0.250	0.65	5	**3.23**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Tracy and Banks Pumping Plants	0.200	0.40	8	**3.19**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the upper Sacramento River	0.400	0.62	5	**3.10**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Upper Sacramento River	0.200	0.50	6	**2.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the lower Sacramento River	0.200	0.50	6	**2.99**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Non-site specific and structure (GCID, RBDD) related in the middle Sacramento River	0.225	0.58	5	**2.90**	**VH**
Battle Creek	0.57	Spawning	0.25	Barriers	0.200	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	2.85	1	**2.85**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Flow Conditions	0.200	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.250	0.71	4	**2.85**	**VH**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Ocean	0.725	0.47	6	**2.81**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Flow Dependent Habitat Availability in Battle Creek	0.400	0.40	7	**2.79**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Ag, Urban in the lower Sacramento River	0.300	0.45	6	**2.69**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	DO, Ag, Urban, Heavy Metals in the Delta	0.300	0.45	6	**2.69**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.375	0.53	5	**2.67**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Lower Sacramento River	0.350	0.52	5	**2.62**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the middle Sacramento River	0.175	0.44	6	**2.62**	**VH**
Sacramento River	0.43	Spawning	0.3	Physical Habitat Alteration	0.200	Limited Instream Gravel Supply in upper Sacramento River	1.000	2.58	1	**2.58**	**VH**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Spawning	0.25	Hatchery Effects	0.175	Redd superimposition, competition for habitat, Genetic Integrity	1.000	2.49	1	**2.49**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Ocean	0.500	0.36	7	**2.49**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in the Delta	0.150	0.30	8	**2.39**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in the lower Sacramento River	0.150	0.30	8	**2.39**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in the middle Sacramento River	0.150	0.30	8	**2.39**	**VH**
Battle Creek	0.57	Embryo Incubation	**0.15**	Flow Conditions	0.275	Flow Fluctuations	1.000	2.35	1.00	**2.35**	**VH**
Battle Creek	0.57	Embryo Incubation	**0.15**	Water Temperature	0.275	Water Temperature in Battle Creek	1.000	2.35	1.00	**2.35**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the middle Sacramento River	0.300	0.46	5	**2.32**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.57	4	**2.28**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Non-site specific and structure (ACID) related in the upper Sacramento River	0.175	0.45	5	**2.26**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Lower Sacramento River	0.150	0.37	6	**2.24**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Middle Sacramento River	0.150	0.37	6	**2.24**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Delta	0.300	0.45	5	**2.24**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Floodplain Habitat	0.160	Loss of Floodplain Habitat in the middle Sacramento River	0.200	0.55	4	**2.20**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Floodplain Habitat	0.160	Loss of Floodplain Habitat in the upper Sacramento River	0.200	0.55	4	**2.20**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Natural Morphologic Function	0.160	Loss of Natural Morphologic Function in the upper Sacramento River	0.200	0.55	4	**2.20**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Riparian Habitat and Instream Cover	0.160	Loss of Riparian Habitat and Instream Cover in the middle Sacramento River	0.200	0.55	4	**2.20**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Riparian Habitat and Instream Cover	0.160	Loss of Riparian Habitat and Instream Cover in the upper Sacramento River	0.200	0.55	4	**2.20**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in Battle Creek	0.200	0.36	6	**2.14**	**H**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.36	6	**2.14**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.36	6	**2.14**	**H**
Battle Creek	0.57	Spawning	0.25	Spawning Habitat Availability	0.150	Habitat Suitability	1.000	2.14	1	**2.14**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Middle Sacramento River	0.200	0.40	5	**2.00**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Middle Sacramento River	0.200	0.40	5	**2.00**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.275	0.39	5	**1.96**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in Battle Creek	0.125	0.31	6	**1.87**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.30	6	**1.80**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Sacramento Deep Water Ship Channel	0.050	0.25	7	**1.75**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Suisun Marsh Salinity Control Structure	0.050	0.25	7	**1.75**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Sutter Bypass - Tisdale Weir	0.050	0.25	7	**1.75**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Yolo Bypass - Freemont Weir	0.050	0.25	7	**1.75**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the upper Sacramento River	0.150	0.43	4	**1.71**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Individual Diversions in the Delta	0.200	0.24	7	**1.69**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.200	0.24	7	**1.69**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Individual Diversions in the middle Sacramento River	0.200	0.24	7	**1.69**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Tracy and Banks Pumping Plants	0.200	0.24	7	**1.69**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Natural Morphologic Function	0.160	Loss of Natural Morphologic Function in the middle Sacramento River	0.150	0.41	4	**1.65**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.150	0.27	6	**1.60**	**H**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.27	6	**1.60**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Lower Sacramento River	0.125	0.31	5	**1.56**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Middle Sacramento River	0.125	0.31	5	**1.56**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Middle Sacramento River	0.150	0.30	5	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Battle Creek	0.200	0.30	5	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Delta	0.100	0.25	6	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the Bays	0.100	0.25	6	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the upper Sacramento River	0.100	0.25	6	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.25	6	**1.50**	**H**
Sacramento River	0.43	Embryo Incubation	0.15	Flow Conditions	0.225	Flow Fluctuations in upper Sacramento River	1.000	1.45	1	**1.45**	**H**
Sacramento River	0.43	Embryo Incubation	0.15	Water Quality	0.225	Water Pollution in upper Sacramento River	1.000	1.45	1	**1.45**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Diversion into Central Delta	0.200	0.20	7	**1.40**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Temperature	0.050	Delta	0.400	0.34	4	**1.38**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Ag, Urban, Heavy Metals in the Bays	0.150	0.22	6	**1.35**	**H**
Sacramento River	0.43	Spawning	0.3	Flow Conditions	0.100	Flow Fluctuations in upper Sacramento River	1.000	1.29	1	**1.29**	**H**
Sacramento River	0.43	Spawning	0.3	Harvest/Angling Impacts	0.100	Upper Sacramento River	1.000	1.29	1	**1.29**	**H**
Sacramento River	0.43	Embryo Incubation	0.15	Water Temperature	0.200	Water Temperature in upper Sacramento River	1.000	1.29	1	**1.29**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Predation in the Bay	0.100	0.26	5	**1.29**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.300	0.26	5	**1.29**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.300	0.26	5	**1.29**	**H**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	Urban, Heavy Metals in the upper Sacramento River	0.300	0.26	5	**1.29**	**H**
Battle Creek	0.57	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.150	Redd disturbance	1.000	1.28	1.00	**1.28**	**H**
Battle Creek	0.57	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	1.28	1.00	**1.28**	**H**
Battle Creek	0.57	Embryo Incubation	**0.15**	Water Quality	0.150	Water Quality in Battle Creek	1.000	1.28	1.00	**1.28**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Delta	0.100	0.25	5	**1.25**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Upper Sacramento River	0.100	0.25	5	**1.25**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.175	0.25	5	**1.25**	**H**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.250	0.24	5	**1.21**	**H**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.24	5	**1.21**	**H**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.250	0.24	5	**1.21**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Passage Impediments/Barriers	0.050	North Fork Dams	0.400	0.40	3	**1.20**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Passage Impediments/Barriers	0.050	South Fork Dams	0.400	0.40	3	**1.20**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.275	0.24	5	**1.18**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.275	0.24	5	**1.18**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.275	0.24	5	**1.18**	**M**
Sacramento River	0.43	Embryo Incubation	0.15	Harvest/Angling Impacts	0.175	Redd disturbance in upper Sacramento River	1.000	1.13	1.00	**1.13**	**M**
Sacramento River	0.43	Embryo Incubation	0.15	Short-term Inwater Construction	0.175	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	1.13	1	**1.13**	**M**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.100	0.18	6	**1.07**	**M**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	Urban, Heavy Metals in the upper Sacramento River	0.150	0.21	5	**1.07**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Temperature	0.050	Lower Sacramento River	0.300	0.26	4	**1.03**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Upper Sacramento River	0.100	0.20	5	**1.00**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Upper Sacramento River	0.100	0.20	5	**1.00**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Battle Creek	0.100	0.20	5	**1.00**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Upper Sacramento River	0.100	0.20	5	**1.00**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Temperature	0.125	Lower Sacramento River	0.400	0.32	3	**0.97**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Temperature	0.125	Middle Sacramento River	0.400	0.32	3	**0.97**	**M**
Sacramento River	0.43	Spawning	0.3	Spawning Habitat Availability	0.075	Habitat Suitability in in upper Sacramento River	1.000	0.97	1	**0.97**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Quality	0.125	DO, Ag, Urban, Heavy Metals in the Delta	0.300	0.24	4	**0.97**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Changes in Delta Hydrology	0.300	0.15	6	**0.93**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Reverse Flow Conditions in the Delta	0.300	0.15	6	**0.93**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Yolo Bypass-Freemont Weir	0.050	0.13	7	**0.90**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.15	6	**0.90**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.150	0.15	6	**0.90**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Urban, Heavy Metals in the upper Sacramento River	0.100	0.15	6	**0.90**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Ag, Urban in the middle Sacramento River	0.100	0.15	6	**0.90**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Individual Diversions in the upper Sacramento River	0.100	0.12	7	**0.84**	**M**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in the upper Sacramento River	0.050	0.10	8	**0.80**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the Bays	0.100	0.15	5	**0.77**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the Delta	0.100	0.15	5	**0.77**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the lower Sacramento River	0.100	0.15	5	**0.77**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Diversion into Central Delta	0.250	0.13	6	**0.77**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Middle Sacramento River	0.100	0.15	5	**0.75**	**M**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Battle Creek	0.150	0.11	7	**0.75**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Bays	0.050	0.12	6	**0.75**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.15	5	**0.73**	**M**
Battle Creek	0.57	Spawning	0.25	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.71	1	**0.71**	**M**
Battle Creek	0.57	Spawning	0.25	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	1.000	0.71	1	**0.71**	**M**
Battle Creek	0.57	Spawning	0.25	Water Temperature	0.050	Water Temperature in Battle Creek	1.000	0.71	1	**0.71**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Changes in Hydrology	0.100	0.10	7	**0.70**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.10	7	**0.70**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Invasive Species/Food Web Disruption	0.025	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.700	0.35	2	**0.70**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Temperature	0.050	Middle Sacramento River	0.200	0.17	4	**0.69**	**M**
Sacramento River	0.43	Spawning	0.3	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in upper Sacramento River	1.000	0.65	1	**0.65**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Quality	0.125	Ag, Urban in the lower Sacramento River	0.200	0.16	4	**0.65**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Quality	0.125	Ag, Urban in the middle Sacramento River	0.200	0.16	4	**0.65**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Quality	0.125	Urban, Heavy Metals in the upper Sacramento River	0.200	0.16	4	**0.65**	**M**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.333	0.21	3	**0.64**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Middle Sacramento River	0.333	0.21	3	**0.64**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Upper Sacramento River	0.333	0.21	3	**0.64**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Sacramento Deep Water Ship Channel	0.035	0.09	7	**0.63**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Suisun Marsh Salinity Control Structure	0.035	0.09	7	**0.63**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Sutter Bypass - Tisdale Weir	0.035	0.09	7	**0.63**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Tidal Marsh Habitat	0.025	Delta	0.600	0.30	2	**0.60**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Passage Impediments/Barriers	0.050	Tributary Barriers	0.200	0.20	3	**0.60**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.10	6	**0.60**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Flow Dependent Habitat Availability in the middle Sacramento River	0.075	0.07	7	**0.52**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Flow Dependent Habitat Availability in the upper Sacramento River	0.075	0.07	7	**0.52**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Upper Sacramento River	0.100	0.07	7	**0.50**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Battle Creek	0.050	0.10	5	**0.50**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Battle Creek	0.050	0.10	5	**0.50**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.10	5	**0.48**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Ag, Urban in Battle Creek	0.050	0.07	6	**0.45**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.09	5	**0.43**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Contra Costa Power Plant	0.050	0.06	7	**0.42**	**L**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Pittsburg Power Plant	0.050	0.06	7	**0.42**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Contra Costa Power Plant	0.025	0.05	8	**0.40**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Pittsburg Power Plant	0.025	0.05	8	**0.40**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Tidal Marsh Habitat	0.025	Bays	0.400	0.20	2	**0.40**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Upper Sacramento River	0.100	0.06	6	**0.39**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.090	0.08	5	**0.39**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Upper Sacramento River	0.050	0.07	5	**0.37**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Lower Sacramento River	0.075	0.05	7	**0.37**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Middle Sacramento River	0.075	0.05	7	**0.37**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	ACID Dam	0.020	0.05	7	**0.36**	**L**
Battle Creek	0.57	Spawning	0.25	Water Quality	0.025	Water Quality in Battle Creek	1.000	0.36	1	**0.36**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Reverse Flow Conditions	0.050	0.05	7	**0.35**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Temperature	0.050	Upper Sacramento River	0.100	0.09	4	**0.34**	**L**
Sacramento River	0.43	Spawning	0.3	Water Temperature	0.025	Upper Sacramento River	1.000	0.32	1	**0.32**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.075	0.06	5	**0.32**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Invasive Species/Food Web Disruption	0.025	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.300	0.15	2	**0.30**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Battle Creek	0.050	0.05	6	**0.30**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.075	0.05	6	**0.29**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Invasive species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, water hyacinth etc. in the Delta	0.800	0.14	2	**0.28**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Tidal Marsh Habitat	0.010	Loss of Tidal Marsh Habitat in the Delta	0.800	0.14	2	**0.28**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Bays	0.050	0.04	7	**0.25**	**L**

Basalt and Porous Lava Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Delta	0.050	0.04	7	**0.25**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Temperature	0.125	Delta	0.100	0.08	3	**0.24**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Temperature	0.125	Upper Sacramento River	0.100	0.08	3	**0.24**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Passage Impediments/Barriers	0.010	Keswick Dam	0.400	0.07	3	**0.21**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.050	0.03	6	**0.19**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	Battle Creek	0.025	0.04	5	**0.18**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Flow Dependent Habitat Availability in the lower Sacramento River	0.050	0.03	6	**0.15**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Flow Dependent Habitat Availability in the middle Sacramento River	0.050	0.03	6	**0.15**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Flow Dependent Habitat Availability in the upper Sacramento River	0.050	0.03	6	**0.15**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Passage Impediments/Barriers	0.010	ACID Dam	0.300	0.05	3	**0.15**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Passage Impediments/Barriers	0.010	Tributary Barriers	0.300	0.05	3	**0.15**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Bays	0.025	0.02	6	**0.10**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Delta	0.025	0.02	6	**0.10**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Invasive species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, water hyacinth etc. in the Bays	0.200	0.03	2	**0.07**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Tidal Marsh Habitat	0.010	Loss of Tidal Marsh Habitat in the Bays	0.200	0.03	2	**0.07**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.010	0.01	5	**0.04**	**L**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Beegum Creek	0.600	1.43	5	**7.13**	**VH**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Ag Diversion Dams, Braiding, Natural Channel Gradient	0.750	1.17	5	**5.86**	**VH**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Thomes Creek	0.700	1.31	4	**5.25**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	RBDD	0.550	1.05	5	**5.23**	**VH**
Clear Creek	0.38	Spawning	0.4	Physical Habitat Alteration	0.250	Limited Instream Gravel Supply	1.000	3.80	1	**3.80**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Red Bluff Diversion Dam	0.410	0.62	6	**3.74**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Clear Creek	0.400	0.91	4	**3.65**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Whiskeytown Dam	0.355	0.54	6	**3.24**	**VH**
Clear Creek	0.38	Spawning	0.4	Spawning Habitat Availability	0.200	Habitat Suitability	1.000	3.04	1	**3.04**	**VH**
Clear Creek	0.38	Spawning	0.4	Water Temperature	0.200	Water Temperature in Clear Creek	1.000	3.04	1	**3.04**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Delta	0.300	0.60	5	**2.99**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Delta	0.300	0.60	5	**2.99**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Beegum Creek	0.38	Spawning	**0.25**	Spawning Habitat Availability	0.300	Habitat Suitability	1.000	2.85	1	**2.85**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.275	0.55	5	**2.74**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.275	0.55	5	**2.74**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.350	0.53	5	**2.66**	**VH**
Thomes Creek	0.25	Spawning	**0.25**	Spawning Habitat Availability	0.400	Habitat Suitability	1.000	2.50	1	**2.50**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Beegum Creek	0.250	0.50	5	**2.49**	**VH**
Clear Creek	0.38	Spawning	0.4	Flow Conditions	0.150	Flow Fluctuations	1.000	2.28	1	**2.28**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Flow Conditions	0.250	Low Flows - attraction, migratory cues in Clear Creek	0.400	0.76	3	**2.28**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Delta	0.300	0.46	5	**2.28**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the Delta	0.200	0.27	8	**2.13**	**VH**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the lower Sacramento River	0.200	0.27	8	**2.13**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the middle Sacramento River	0.200	0.27	8	**2.13**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Tracy and Banks Pumping Plants	0.200	0.27	8	**2.13**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.350	0.53	4	**2.13**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.300	0.29	7	**2.00**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Middle Sacramento River	0.200	0.40	5	**2.00**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Beegum Creek	0.200	0.40	5	**2.00**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Delta	0.250	0.33	6	**2.00**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the lower Sacramento River	0.250	0.33	6	**2.00**	**VH**
Clear Creek	0.38	Embryo Incubation	**0.15**	Water Quality	0.350	Sedimentation in Clear Creek	1.000	2.00	1.00	**2.00**	**VH**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Watershed disturbance	0.350	Sedimentation	1.000	2.00	1.00	**2.00**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Flow Dependent Habitat Availability in Clear Creek	0.450	0.32	6	**1.92**	**VH**
Beegum Creek	0.38	Spawning	**0.25**	Flow Conditions	0.200	Flow Fluctuations	1.000	1.90	1	**1.90**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.250	0.48	4	**1.90**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in Beegum Creek	0.250	0.48	4	**1.90**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the middle Sacramento River	0.250	0.48	4	**1.90**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the Upper Sacramento River	0.250	0.48	4	**1.90**	**VH**
Beegum Creek	0.38	Spawning	**0.25**	Water Temperature	0.200	Water Temperature in Beegum Creek	1.000	1.90	1	**1.90**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Lower Sacramento River	0.250	0.38	5	**1.90**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.350	0.46	4	**1.84**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Middle Sacramento River	0.350	0.46	4	**1.84**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the Delta	0.250	0.30	6	**1.78**	**VH**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Embryo Incubation	**0.15**	Flow Conditions	0.300	Flow Fluctuations	1.000	1.71	1.00	**1.71**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the middle Sacramento River	0.200	0.27	6	**1.60**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Delta	0.300	0.39	4	**1.58**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Lower Sacramento River	0.300	0.39	4	**1.58**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Delta	0.300	0.39	4	**1.58**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.300	0.39	4	**1.58**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Tracy and Banks Pumping Plants	0.250	0.22	7	**1.53**	**VH**
Clear Creek	0.38	Spawning	0.4	Barriers	0.100	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	1.52	1	**1.52**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Clear Creek	0.200	0.30	5	**1.52**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Clear Creek	0.200	0.30	5	**1.52**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Delta	0.200	0.30	5	**1.52**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Middle Sacramento River	0.200	0.30	5	**1.52**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	Yolo Bypass - Freemont Weir	0.150	0.29	5	**1.43**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the lower Sacramento River	0.200	0.24	6	**1.43**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the middle Sacramento River	0.200	0.24	6	**1.43**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the upper Sacramento River	0.200	0.24	6	**1.43**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.250	0.24	6	**1.43**	**VH**
Clear Creek	0.38	Embryo Incubation	**0.15**	Water Temperature	0.250	Water Temperature in Clear Creek	1.000	1.43	1.00	**1.43**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	Ag, Urban in the lower Sacramento River	0.200	0.23	6	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	Clear Creek	0.200	0.23	6	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.23	6	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Delta	0.150	0.34	4	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Lower Sacramento River	0.150	0.34	4	**1.37**	**VH**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Middle Sacramento River	0.150	0.34	4	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Upper Sacramento River	0.150	0.34	4	**1.37**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Delta	0.300	0.26	5	**1.31**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the lower Sacramento River	0.300	0.26	5	**1.31**	**VH**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Flow Conditions	0.225	Flow Fluctuations	1.000	1.28	1.00	**1.28**	**VH**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Water Quality	0.225	Water Quality in Beegum Creek	1.000	1.28	1.00	**1.28**	**VH**
Thomes Creek	0.25	Spawning	**0.25**	Water Temperature	0.200	Water Temperature in Thomes Creek	1.000	1.25	1	**1.25**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the Delta	0.200	0.18	7	**1.23**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the lower Sacramento River	0.200	0.18	7	**1.23**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the middle Sacramento River	0.200	0.18	7	**1.23**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Clear Creek	0.200	0.30	4	**1.22**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.200	0.30	4	**1.22**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Middle Sacramento River	0.200	0.30	4	**1.22**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the upper Sacramento River	0.150	0.20	6	**1.20**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.20	6	**1.20**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.20	6	**1.20**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.60	2	**1.20**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Delta	0.600	0.60	2	**1.20**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Delta	0.100	0.24	5	**1.19**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Lower Sacramento River	0.100	0.24	5	**1.19**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Middle Sacramento River	0.100	0.24	5	**1.19**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Upper Sacramento River	0.100	0.24	5	**1.19**	**H**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Adult Immigration and Holding	0.2	Flow Conditions	0.250	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.200	0.38	3	**1.14**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Flow Conditions	0.250	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.38	3	**1.14**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Flow Conditions	0.250	Low Flows - attraction, migratory cues in the upper Sacramento River	0.200	0.38	3	**1.14**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.19	6	**1.14**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.19	6	**1.14**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.200	0.19	6	**1.14**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.200	0.19	6	**1.14**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the upper Sacramento River	0.200	0.19	6	**1.14**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Upper Sacramento River	0.150	0.23	5	**1.14**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.300	0.19	6	**1.13**	**H**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Water Temperature	0.300	Water Temperature in Thomes Creek	1.000	1.13	1.00	**1.13**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the middle Sacramento River	0.250	0.22	5	**1.09**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Middle Sacramento River	0.200	0.26	4	**1.05**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Thomes Creek	0.200	0.26	4	**1.05**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Middle Sacramento River	0.200	0.26	4	**1.05**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Thomes Creek	0.200	0.26	4	**1.05**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.200	0.26	4	**1.05**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	Ag, Urban in the middle Sacramento River	0.150	0.17	6	**1.03**	**H**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	Urban, Heavy Metals in the upper Sacramento River	0.150	0.17	6	**1.03**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Beegum Creek	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Upper Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Middle Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Upper Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Middle Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Upper Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Spawning	**0.25**	Barrier	0.100	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	0.95	1	**0.95**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	Sacramento Deep Water Ship Channel	0.100	0.19	5	**0.95**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	Suisun Marsh Salinity Control Structure	0.100	0.19	5	**0.95**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	Sutter Bypass - Tisdale Weir	0.100	0.19	5	**0.95**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.19	5	**0.94**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.19	5	**0.94**	**H**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Watershed disturbance	0.250	Sedimentation	1.000	0.94	1.00	**0.94**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Ocean	0.350	0.13	7	**0.93**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in the Delta	0.175	0.12	8	**0.93**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.175	0.12	8	**0.93**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in the middle Sacramento River	0.175	0.12	8	**0.93**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Tracy and Banks Pumping Plants	0.175	0.12	8	**0.93**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Yolo Bypass - Freemont Weir	0.100	0.15	6	**0.91**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Diversion into Central Delta	0.200	0.14	6	**0.86**	**H**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.150	0.14	6	**0.86**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.14	6	**0.86**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.150	0.14	6	**0.86**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.125	0.12	7	**0.83**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.125	0.12	7	**0.83**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.125	0.12	7	**0.83**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Upper Sacramento River	0.125	0.12	7	**0.83**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Lower Sacramento River	0.350	0.17	5	**0.83**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Beegum Creek	0.500	0.17	5	**0.83**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in Beegum Creek	0.100	0.13	6	**0.80**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.13	6	**0.80**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.40	2	**0.80**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Bays	0.400	0.40	2	**0.80**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.39	2	**0.79**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Delta	0.600	0.39	2	**0.79**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.16	5	**0.78**	**H**
Clear Creek	0.38	Spawning	0.4	Water Quality	0.050	Water Quality in Clear Creek	1.000	0.76	1	**0.76**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Middle Sacramento River	0.100	0.15	5	**0.76**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.400	0.25	3	**0.75**	**H**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in the middle Sacramento River	0.400	0.25	3	**0.75**	**H**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Flow Conditions	0.200	Flow Fluctuations	1.000	0.75	1.00	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.300	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.300	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.300	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Water Quality	0.200	Water Quality in Thomes Creek	1.000	0.75	1.00	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Delta	0.100	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Lower Sacramento River	0.100	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Middle Sacramento River	0.100	0.19	4	**0.75**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in Clear Creek	0.100	0.12	6	**0.71**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Middle Sacramento River	0.300	0.14	5	**0.71**	**H**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Water Temperature	0.125	Water Temperature in Beegum Creek	1.000	0.71	1.00	**0.71**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Bay	0.100	0.11	6	**0.68**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.100	0.10	7	**0.67**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Beegum Creek	0.100	0.10	7	**0.67**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Passage Impediments/Barriers	0.050	Tributary Barriers	0.700	0.33	2	**0.67**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	1.000	0.67	1	**0.67**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.13	5	**0.66**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.13	5	**0.66**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.13	5	**0.63**	**M**
Thomes Creek	0.25	Spawning	**0.25**	Barrier	0.100	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	0.63	1	**0.63**	**M**
Thomes Creek	0.25	Spawning	**0.25**	Flow Conditions	0.100	Flow Fluctuations	1.000	0.63	1	**0.63**	**M**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in Beegum Creek	0.100	0.10	6	**0.57**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in Beegum Creek	0.100	0.10	6	**0.57**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the Bay	0.100	0.10	6	**0.57**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.150	0.09	6	**0.56**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.150	0.09	6	**0.56**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.150	0.09	6	**0.56**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.150	0.09	6	**0.56**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in Clear Creek	0.100	0.07	8	**0.53**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in the upper Sacramento River	0.100	0.07	8	**0.53**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Clear Creek	0.200	0.08	7	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Contra Costa Power Plant	0.050	0.07	8	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in Beegum Creek	0.050	0.07	8	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the upper Sacramento River	0.050	0.07	8	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Pittsburg Power Plant	0.050	0.07	8	**0.53**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.26	2	**0.53**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Thomes Creek	0.100	0.13	4	**0.53**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Bays	0.400	0.26	2	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Delta	0.250	0.08	6	**0.50**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the lower Sacramento River	0.250	0.08	6	**0.50**	**M**
Beegum Creek	0.38	Spawning	**0.25**	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.48	1	**0.48**	**M**
Beegum Creek	0.38	Spawning	**0.25**	Hatchery Effects	0.050	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.48	1	**0.48**	**M**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Clear Creek	0.200	0.10	5	**0.48**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.10	5	**0.48**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.10	5	**0.48**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.200	0.10	5	**0.48**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Urban, Heavy Metals in the upper Sacramento River	0.200	0.10	5	**0.48**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.200	0.10	5	**0.48**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.200	0.10	5	**0.48**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Ag, Urban in Clear Creek	0.200	0.10	5	**0.48**	**M**
Beegum Creek	0.38	Spawning	**0.25**	Water Quality	0.050	Water Quality in Beegum Creek	1.000	0.48	1	**0.48**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Clear Creek	0.200	0.10	5	**0.48**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Changes in Hydrology	0.200	0.07	7	**0.47**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Diversion into Central Delta	0.200	0.07	7	**0.47**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Reverse Flow Conditions	0.200	0.07	7	**0.47**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Sacramento Deep Water Ship Channel	0.050	0.08	6	**0.46**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Suisun Marsh Salinity Control Structure	0.050	0.08	6	**0.46**	**M**
Clear Creek	0.38	Spawning	0.4	Harvest/Angling Impacts	0.030	Recreational, Poaching, Angler Impacts	1.000	0.46	1	**0.46**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in Thomes Creek	0.100	0.09	5	**0.44**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.09	5	**0.44**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	1.000	0.44	1	**0.44**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Thomes Creek	0.500	0.11	4	**0.44**	**M**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Changes in Hydrology	0.100	0.07	6	**0.43**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Reverse Flow Conditions	0.100	0.07	6	**0.43**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Delta	0.300	0.09	5	**0.43**	**M**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.075	Redd disturbance	1.000	0.43	1.00	**0.43**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.200	0.07	6	**0.40**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Middle Sacramento River	0.200	0.07	6	**0.40**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Upper Sacramento River	0.200	0.07	6	**0.40**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Bays	0.050	0.07	6	**0.40**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.07	6	**0.40**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the middle Sacramento River	0.200	0.07	6	**0.40**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the upper Sacramento River	0.200	0.07	6	**0.40**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Diversion into Central Delta	0.300	0.07	6	**0.39**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.050	0.08	5	**0.39**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.050	0.08	5	**0.39**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.050	0.08	5	**0.39**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.08	5	**0.38**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.08	5	**0.38**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.200	0.08	5	**0.38**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Upper Sacramento River	0.050	0.08	5	**0.38**	**M**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Thomes Creek	0.200	0.13	3	**0.38**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Thomes Creek	0.100	0.06	6	**0.38**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the Bays	0.050	0.06	6	**0.36**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.07	5	**0.36**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Lower Sacramento River	0.200	0.07	5	**0.33**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Delta	0.300	0.07	5	**0.33**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.300	0.07	5	**0.33**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Sutter Bypass - Tisdale Weir	0.035	0.05	6	**0.32**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.100	0.06	5	**0.31**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in Thomes Creek	0.100	0.06	5	**0.31**	**M**
Thomes Creek	0.25	Spawning	**0.25**	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.31	1	**0.31**	**M**
Thomes Creek	0.25	Spawning	**0.25**	Hatchery Effects	0.050	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.31	1	**0.31**	**M**
Thomes Creek	0.25	Spawning	**0.25**	Water Quality	0.050	Water Quality in Thomes Creek	1.000	0.31	1	**0.31**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Contra Costa Power Plant	0.050	0.04	7	**0.31**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in Thomes Creek	0.050	0.04	7	**0.31**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Pittsburg Power Plant	0.050	0.04	7	**0.31**	**M**
Clear Creek	0.38	Spawning	0.4	Hatchery Effects	0.020	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.30	1	**0.30**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Upper Sacramento River	0.050	0.08	4	**0.30**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	DO, Ag, Urban, Heavy Metals in the Delta	0.150	0.05	6	**0.30**	**L**
Clear Creek	0.38	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.050	Redd disturbance	1.000	0.29	1.00	**0.29**	**L**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Lower Sacramento River	0.200	0.06	5	**0.29**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Middle Sacramento River	0.200	0.06	5	**0.29**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Upper Sacramento River	0.200	0.06	5	**0.29**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Passage Impediments/Barriers	0.050	Whiskeytown Dam	0.300	0.14	2	**0.29**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Clear Creek	0.150	0.06	5	**0.29**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.06	5	**0.29**	**L**
Clear Creek	0.38	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.29	1.00	**0.29**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Contra Costa Power Plant	0.050	0.03	8	**0.27**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Pittsburg Power Plant	0.050	0.03	8	**0.27**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Delta	0.100	0.04	7	**0.27**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Lower Sacramento River	0.100	0.04	7	**0.27**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Middle Sacramento River	0.100	0.04	7	**0.27**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Upper Sacramento River	0.100	0.04	7	**0.27**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Changes in Hydrology	0.200	0.04	6	**0.26**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Reverse Flow Conditions	0.200	0.04	6	**0.26**	**L**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in Thomes Creek	0.100	0.06	4	**0.25**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Middle Sacramento River	0.150	0.05	5	**0.25**	**L**
Beegum Creek	0.38	Spawning	**0.25**	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	0.500	0.24	1	**0.24**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.100	0.05	5	**0.24**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.100	0.05	5	**0.24**	**L**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Delta	0.100	0.05	5	**0.24**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in Beegum Creek	0.100	0.03	7	**0.23**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.03	7	**0.23**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.03	7	**0.23**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the upper Sacramento River	0.100	0.03	7	**0.23**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Bays	0.050	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Thomes Creek	0.100	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the lower Sacramento River	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the middle Sacramento River	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in Thomes Creek	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban, Heavy Metals in the Bays	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.04	5	**0.22**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Flow Dependent Habitat Availability in the lower Sacramento River	0.050	0.04	6	**0.21**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Flow Dependent Habitat Availability in the middle Sacramento River	0.050	0.04	6	**0.21**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Flow Dependent Habitat Availability in the upper Sacramento River	0.050	0.04	6	**0.21**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Bays	0.100	0.03	6	**0.20**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Beegum Creek	0.050	0.03	6	**0.20**	**L**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.050	0.03	6	**0.20**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in Beegum Creek	0.100	0.03	6	**0.20**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban, Heavy Metals in the Bays	0.100	0.03	6	**0.20**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.100	0.04	5	**0.19**	**L**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.050	Redd disturbance	1.000	0.19	1.00	**0.19**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Lower Sacramento River	0.200	0.04	4	**0.18**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Middle Sacramento River	0.200	0.04	4	**0.18**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Delta	0.100	0.03	5	**0.17**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Middle Sacramento River	0.150	0.03	5	**0.16**	**L**
Thomes Creek	0.25	Spawning	**0.25**	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	0.500	0.16	1	**0.16**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Bays	0.050	0.02	7	**0.13**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.02	6	**0.13**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.02	6	**0.13**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in Thomes Creek	0.100	0.02	6	**0.13**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.050	0.02	5	**0.12**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Upper Sacramento River	0.050	0.02	5	**0.12**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.06	2	**0.11**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Tidal Marsh Habitat	0.010	Delta	0.600	0.06	2	**0.11**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Bays	0.100	0.02	5	**0.11**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Thomes Creek	0.100	0.02	5	**0.11**	**L**

Northwestern California Spring-run Chinook Salmon Diversity Group Stressor Matrix

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Beegum Creek	0.050	0.02	6	**0.10**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Delta	0.100	0.02	4	**0.09**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Upper Sacramento River	0.050	0.02	5	**0.08**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.04	2	**0.08**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Tidal Marsh Habitat	0.010	Bays	0.400	0.04	2	**0.08**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Bays	0.050	0.01	5	**0.07**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Clear Creek	0.050	0.01	5	**0.07**	**L**

Spring-run Chinook Salmon Stressor Matrix - Antelope Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Antelope Creek	0.700	0.63	4	**2.50**	**VH**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Agricultural Diversion Dam(s) in Antelope Creek	0.600	0.49	5	**2.44**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Individual or Terminal Diversions and loss of channel connectivity in Antelope Creek	0.500	0.34	7	**2.39**	**VH**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in Antelope Creek	0.600	0.39	3	**1.17**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Lower Sacramento River	0.350	0.25	4	**1.02**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.350	0.25	4	**1.02**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.350	0.25	4	**1.02**	**VH**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.500	0.16	6	**0.98**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Delta	0.300	0.22	4	**0.87**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Antelope Creek	0.300	0.22	4	**0.87**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.300	0.22	4	**0.87**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Delta	0.300	0.17	5	**0.85**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the lower Sacramento River	0.300	0.17	5	**0.85**	**VH**
Antelope Creek	0.13	Spawning	**0.25**	Spawning Habitat Availability	0.250	Habitat Availability	1.000	0.81	1	**0.81**	**VH**
Antelope Creek	0.13	Spawning	**0.25**	Water Quality	0.250	Turbidity, Sedimentation in Antelope Creek	1.000	0.81	1	**0.81**	**VH**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Water Quality	0.400	Turbidity, sedimentation in Antelope Creek	1.000	0.78	1.00	**0.78**	**VH**
Antelope Creek	0.13	Spawning	**0.25**	Physical Habitat Alteration	0.225	Gravel embeddedness and fines	1.000	0.73	1	**0.73**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the middle Sacramento River	0.250	0.14	5	**0.71**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in Antelope Creek	0.600	0.14	5	**0.68**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Diversion into Central Delta	0.300	0.10	6	**0.61**	**VH**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.300	Sedimentation, turbidity, physical disturbance	1.000	0.59	1.00	**0.59**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Middle Sacramento River	0.200	0.15	4	**0.58**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Antelope Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Delta	0.200	0.15	4	**0.58**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Antelope Creek	0.200	0.15	4	**0.58**	**VH**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Individual Diversions in the Delta	0.100	0.07	7	**0.48**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Individual Diversions in the lower Sacramento River	0.100	0.07	7	**0.48**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Individual Diversions in the middle Sacramento River	0.100	0.07	7	**0.48**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Tracy and Banks Pumping Plants	0.100	0.07	7	**0.48**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Antelope Creek	0.150	0.11	4	**0.44**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Middle Sacramento River	0.150	0.11	4	**0.44**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Middle Sacramento River	0.150	0.11	4	**0.44**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Changes in Hydrology	0.200	0.07	6	**0.41**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Reverse Flow Conditions	0.200	0.07	6	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.100	0.08	5	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.100	0.08	5	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.100	0.08	5	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.08	5	**0.41**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.200	0.13	3	**0.39**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.13	3	**0.39**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.07	5	**0.37**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	0.800	0.18	2	**0.36**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Lower Sacramento River	0.400	0.09	4	**0.36**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Delta	0.100	0.09	4	**0.36**	**H**

Spring-run Chinook Salmon Stressor Matrix - Antelope Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Lower Sacramento River	0.100	0.09	4	**0.36**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Middle Sacramento River	0.100	0.09	4	**0.36**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.07	5	**0.34**	**H**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.07	5	**0.34**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Antelope Creek	0.175	0.06	6	**0.34**	**H**
Antelope Creek	0.13	Spawning	**0.25**	Harvest/Angling Impacts	0.100	Recreational, Poaching, Angler Impacts	1.000	0.33	1	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.200	0.07	5	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.200	0.07	5	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Antelope Creek	0.200	0.07	5	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Bay	0.200	0.07	5	**0.33**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.07	5	**0.33**	**H**
Antelope Creek	0.13	Spawning	**0.25**	Water Temperature	0.100	Water Temperature in Antelope Creek	1.000	0.33	1	**0.33**	**H**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Water Temperature	0.165	Water Temperature in Antelope Creek	1.000	0.32	1.00	**0.32**	**H**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.06	5	**0.30**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Bays	0.100	0.06	5	**0.28**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Middle Sacramento River	0.300	0.07	4	**0.27**	**M**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.05	5	**0.24**	**M**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Flow Conditions	0.125	Flow Fluctuations	1.000	0.24	1.00	**0.24**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Contra Costa Power Plant	0.050	0.03	7	**0.24**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.150	Pittsburg Power Plant	0.050	0.03	7	**0.24**	**M**

Spring-run Chinook Salmon Stressor Matrix - Antelope Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.05	5	**0.23**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in Antelope Creek	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Delta	0.300	0.04	5	**0.20**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Lower Sacramento River	0.300	0.04	5	**0.20**	**M**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.100	0.03	6	**0.20**	**M**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.04	5	**0.18**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Antelope Creek	0.200	0.05	4	**0.18**	**M**
Antelope Creek	0.13	Spawning	**0.25**	Flow Conditions	0.050	Flow Fluctuations	1.000	0.16	1	**0.16**	**M**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.02	6	**0.15**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in Antelope Creek	0.050	0.03	5	**0.14**	**M**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in Antelope Creek	0.100	0.02	5	**0.12**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Antelope Creek	0.100	0.02	5	**0.11**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.02	5	**0.11**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.100	0.02	5	**0.11**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.100	0.02	5	**0.11**	**M**

Spring-run Chinook Salmon Stressor Matrix - Antelope Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.100	0.02	5	**0.11**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.100	0.02	5	**0.11**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Middle Sacramento River	0.150	0.02	5	**0.10**	**L**
Antelope Creek	0.13	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.02	6	**0.10**	**M**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Dam(s)	0.200	0.05	2	**0.09**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Delta	0.100	0.02	4	**0.09**	**L**
Antelope Creek	0.13	Spawning	**0.25**	Hatchery Effects	0.025	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.08	1	**0.08**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Antelope Creek	0.100	0.01	5	**0.07**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Bays	0.100	0.01	5	**0.07**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.03	2	**0.05**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Delta	0.600	0.03	2	**0.05**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.02	2	**0.04**	**L**
Antelope Creek	0.13	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Bays	0.400	0.02	2	**0.04**	**L**
Antelope Creek	0.13	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.010	Redd disturbance	1.000	0.02	1.00	**0.02**	**L**

Spring-run Chinook Salmon Stressor Matrix - Battle Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	North Fork Dams	0.325	1.62	7	**11.35**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	South Fork Dams	0.325	1.62	7	**11.35**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Battle Creek	0.550	1.37	5	**6.86**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Red Bluff Diversion Dam	0.150	0.75	7	**5.24**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Battle Creek	0.350	0.87	6	**5.24**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Flow Conditions	0.200	Low Flows - attraction, migratory cues in Battle Creek	0.400	1.14	4	**4.56**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the Delta	0.300	0.75	6	**4.49**	**VH**
Battle Creek	0.57	Spawning	0.25	Flow Conditions	0.300	Low instream flows per FERC license	1.000	4.28	1	**4.28**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in Battle Creek	0.250	0.50	8	**3.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Delta	0.350	0.70	5	**3.49**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Delta	0.350	0.70	5	**3.49**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Delta	0.350	0.70	5	**3.49**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Tracy and Banks Pumping Plants	0.200	0.40	8	**3.19**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Upper Sacramento River	0.200	0.50	6	**2.99**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the lower Sacramento River	0.200	0.50	6	**2.99**	**VH**
Battle Creek	0.57	Spawning	0.25	Barriers	0.200	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	2.85	1	**2.85**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Flow Conditions	0.200	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.250	0.71	4	**2.85**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Battle Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Flow Dependent Habitat Availability in Battle Creek	0.400	0.40	7	**2.79**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Ag, Urban in the lower Sacramento River	0.300	0.45	6	**2.69**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	DO, Ag, Urban, Heavy Metals in the Delta	0.300	0.45	6	**2.69**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.375	0.53	5	**2.67**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Lower Sacramento River	0.350	0.52	5	**2.62**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the middle Sacramento River	0.175	0.44	6	**2.62**	**VH**
Battle Creek	0.57	Spawning	0.25	Hatchery Effects	0.175	Redd superimposition, competition for habitat, Genetic Integrity	1.000	2.49	1	**2.49**	**VH**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Ocean	0.500	0.36	7	**2.49**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in the Delta	0.150	0.30	8	**2.39**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in the lower Sacramento River	0.150	0.30	8	**2.39**	**VH**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in the middle Sacramento River	0.150	0.30	8	**2.39**	**VH**
Battle Creek	0.57	Embryo Incubation	**0.15**	Flow Conditions	0.275	Flow Fluctuations	1.000	2.35	1.00	**2.35**	**H**
Battle Creek	0.57	Embryo Incubation	**0.15**	Water Temperature	0.275	Water Temperature in Battle Creek	1.000	2.35	1.00	**2.35**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.57	4	**2.28**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Lower Sacramento River	0.150	0.37	6	**2.24**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Middle Sacramento River	0.150	0.37	6	**2.24**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Delta	0.300	0.45	5	**2.24**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in Battle Creek	0.200	0.36	6	**2.14**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.36	6	**2.14**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.36	6	**2.14**	**H**

Spring-run Chinook Salmon Stressor Matrix - Battle Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Spawning	0.25	Spawning Habitat Availability	0.150	Habitat Suitability	1.000	2.14	1	**2.14**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Middle Sacramento River	0.200	0.40	5	**2.00**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Middle Sacramento River	0.200	0.40	5	**2.00**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.275	0.39	5	**1.96**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in Battle Creek	0.125	0.31	6	**1.87**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.30	6	**1.80**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Sacramento Deep Water Ship Channel	0.050	0.25	7	**1.75**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Suisun Marsh Salinity Control Structure	0.050	0.25	7	**1.75**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Sutter Bypass - Tisdale Weir	0.050	0.25	7	**1.75**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Passage Impediments/Barriers	0.350	Yolo Bypass - Freemont Weir	0.050	0.25	7	**1.75**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the upper Sacramento River	0.150	0.43	4	**1.71**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.150	0.27	6	**1.60**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.27	6	**1.60**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Lower Sacramento River	0.125	0.31	5	**1.56**	**H**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Middle Sacramento River	0.125	0.31	5	**1.56**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Middle Sacramento River	0.150	0.30	5	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Battle Creek	0.200	0.30	5	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Delta	0.100	0.25	6	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the Bays	0.100	0.25	6	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Predation	0.125	Predation in the upper Sacramento River	0.100	0.25	6	**1.50**	**H**

Spring-run Chinook Salmon Stressor Matrix - Battle Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.25	6	**1.50**	**H**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Diversion into Central Delta	0.200	0.20	7	**1.40**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Ag, Urban, Heavy Metals in the Bays	0.150	0.22	6	**1.35**	**M**
Battle Creek	0.57	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.150	Redd disturbance	1.000	1.28	1.00	**1.28**	**M**
Battle Creek	0.57	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	1.28	1.00	**1.28**	**M**
Battle Creek	0.57	Embryo Incubation	**0.15**	Water Quality	0.150	Water Quality in Battle Creek	1.000	1.28	1.00	**1.28**	**M**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Delta	0.100	0.25	5	**1.25**	**M**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Temperature	0.175	Upper Sacramento River	0.100	0.25	5	**1.25**	**M**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.175	0.25	5	**1.25**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Passage Impediments/Barriers	0.050	North Fork Dams	0.400	0.40	3	**1.20**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Passage Impediments/Barriers	0.050	South Fork Dams	0.400	0.40	3	**1.20**	**M**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.100	0.18	6	**1.07**	**M**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	Urban, Heavy Metals in the upper Sacramento River	0.150	0.21	5	**1.07**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Upper Sacramento River	0.100	0.20	5	**1.00**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Upper Sacramento River	0.100	0.20	5	**1.00**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Battle Creek	0.100	0.20	5	**1.00**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Riparian Habitat and Instream Cover	0.100	Upper Sacramento River	0.100	0.20	5	**1.00**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.15	6	**0.90**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.150	0.15	6	**0.90**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Urban, Heavy Metals in the upper Sacramento River	0.100	0.15	6	**0.90**	**M**

Spring-run Chinook Salmon Stressor Matrix - Battle Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Ag, Urban in the middle Sacramento River	0.100	0.15	6	**0.90**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Individual Diversions in the upper Sacramento River	0.050	0.10	8	**0.80**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Middle Sacramento River	0.100	0.15	5	**0.75**	**M**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Battle Creek	0.150	0.11	7	**0.75**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Hatchery Effects (Competition and Predation)	0.125	Bays	0.050	0.12	6	**0.75**	**M**
Battle Creek	0.57	Spawning	0.25	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.71	1	**0.71**	**M**
Battle Creek	0.57	Spawning	0.25	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	1.000	0.71	1	**0.71**	**M**
Battle Creek	0.57	Spawning	0.25	Water Temperature	0.050	Water Temperature in Battle Creek	1.000	0.71	1	**0.71**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Changes in Hydrology	0.100	0.10	7	**0.70**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.10	7	**0.70**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Invasive Species/Food Web Disruption	0.025	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.700	0.35	2	**0.70**	**M**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Tidal Marsh Habitat	0.025	Delta	0.600	0.30	2	**0.60**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Passage Impediments/Barriers	0.050	Tributary Barriers	0.200	0.20	3	**0.60**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.10	6	**0.60**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Flow Dependent Habitat Availability in the middle Sacramento River	0.075	0.07	7	**0.52**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Flow Dependent Habitat Availability in the upper Sacramento River	0.075	0.07	7	**0.52**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Upper Sacramento River	0.100	0.07	7	**0.50**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Floodplain Habitat	0.100	Battle Creek	0.050	0.10	5	**0.50**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Natural River Morphology	0.100	Battle Creek	0.050	0.10	5	**0.50**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Quality	0.075	Ag, Urban in Battle Creek	0.050	0.07	6	**0.45**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Contra Costa Power Plant	0.025	0.05	8	**0.40**	**L**

Spring-run Chinook Salmon Stressor Matrix - Battle Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Entrainment	0.100	Pittsburg Power Plant	0.025	0.05	8	**0.40**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Loss of Tidal Marsh Habitat	0.025	Bays	0.400	0.20	2	**0.40**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Water Temperature	0.075	Upper Sacramento River	0.050	0.07	5	**0.37**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Lower Sacramento River	0.075	0.05	7	**0.37**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Middle Sacramento River	0.075	0.05	7	**0.37**	**L**
Battle Creek	0.57	Spawning	0.25	Water Quality	0.025	Water Quality in Battle Creek	1.000	0.36	1	**0.36**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Flow Conditions	0.050	Reverse Flow Conditions	0.050	0.05	7	**0.35**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Invasive Species/Food Web Disruption	0.025	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.300	0.15	2	**0.30**	**L**
Battle Creek	0.57	Juvenile Rearing and Outmigration	0.35	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Battle Creek	0.050	0.05	6	**0.30**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Bays	0.050	0.04	7	**0.25**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Harvest/Angling Impacts	0.050	Delta	0.050	0.04	7	**0.25**	**L**
Battle Creek	0.57	Adult Immigration and Holding	0.25	Water Quality	0.100	Battle Creek	0.025	0.04	5	**0.18**	**L**

Spring-run Chinook Salmon Stressor Matrix - Beegum Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Beegum Creek	0.600	1.43	5	**7.13**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	RBDD	0.550	1.05	5	**5.23**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Delta	0.300	0.60	5	**2.99**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Delta	0.300	0.60	5	**2.99**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.300	0.60	5	**2.99**	**VH**
Beegum Creek	0.38	Spawning	**0.25**	Spawning Habitat Availability	0.300	Habitat Suitability	1.000	2.85	1	**2.85**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.275	0.55	5	**2.74**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.275	0.55	5	**2.74**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Beegum Creek	0.250	0.50	5	**2.49**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the Delta	0.200	0.27	8	**2.13**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the lower Sacramento River	0.200	0.27	8	**2.13**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the middle Sacramento River	0.200	0.27	8	**2.13**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Tracy and Banks Pumping Plants	0.200	0.27	8	**2.13**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.300	0.29	7	**2.00**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Delta	0.250	0.33	6	**2.00**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the lower Sacramento River	0.250	0.33	6	**2.00**	**VH**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Watershed disturbance	0.350	Sedimentation	1.000	2.00	1.00	**2.00**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Middle Sacramento River	0.200	0.40	5	**2.00**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Beegum Creek	0.200	0.40	5	**2.00**	**VH**
Beegum Creek	0.38	Spawning	**0.25**	Flow Conditions	0.200	Flow Fluctuations	1.000	1.90	1	**1.90**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.250	0.48	4	**1.90**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Beegum Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in Beegum Creek	0.250	0.48	4	**1.90**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the middle Sacramento River	0.250	0.48	4	**1.90**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Flow Conditions	0.200	Low Flows - attraction, migratory cues in the Upper Sacramento River	0.250	0.48	4	**1.90**	**VH**
Beegum Creek	0.38	Spawning	**0.25**	Water Temperature	0.200	Water Temperature in Beegum Creek	1.000	1.90	1	**1.90**	**VH**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the middle Sacramento River	0.200	0.27	6	**1.60**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	Yolo Bypass - Freemont Weir	0.150	0.29	5	**1.43**	**VH**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.250	0.24	6	**1.43**	**VH**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Flow Conditions	0.225	Flow Fluctuations	1.000	1.28	1.00	**1.28**	**H**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Water Quality	0.225	Water Quality in Beegum Creek	1.000	1.28	1.00	**1.28**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the upper Sacramento River	0.150	0.20	6	**1.20**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.20	6	**1.20**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.20	6	**1.20**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.60	2	**1.20**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Delta	0.600	0.60	2	**1.20**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Delta	0.100	0.24	5	**1.19**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Lower Sacramento River	0.100	0.24	5	**1.19**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Middle Sacramento River	0.100	0.24	5	**1.19**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Upper Sacramento River	0.100	0.24	5	**1.19**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.19	6	**1.14**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.19	6	**1.14**	**H**

Spring-run Chinook Salmon Stressor Matrix - Beegum Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.200	0.19	6	**1.14**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.200	0.19	6	**1.14**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the upper Sacramento River	0.200	0.19	6	**1.14**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Beegum Creek	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Upper Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Middle Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Upper Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Middle Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Upper Sacramento River	0.100	0.20	5	**1.00**	**H**
Beegum Creek	0.38	Spawning	**0.25**	Barrier	0.100	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	0.95	1	**0.95**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	Sacramento Deep Water Ship Channel	0.100	0.19	5	**0.95**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	Suisun Marsh Salinity Control Structure	0.100	0.19	5	**0.95**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.200	Sutter Bypass - Tisdale Weir	0.100	0.19	5	**0.95**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.150	0.14	6	**0.86**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.14	6	**0.86**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.150	0.14	6	**0.86**	**H**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.125	0.12	7	**0.83**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.125	0.12	7	**0.83**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.125	0.12	7	**0.83**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Upper Sacramento River	0.125	0.12	7	**0.83**	**M**

Spring-run Chinook Salmon Stressor Matrix - Beegum Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Beegum Creek	0.500	0.17	5	**0.83**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in Beegum Creek	0.100	0.13	6	**0.80**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.13	6	**0.80**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.40	2	**0.80**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Bays	0.400	0.40	2	**0.80**	**M**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Water Temperature	0.125	Water Temperature in Beegum Creek	1.000	0.71	1.00	**0.71**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.100	0.10	7	**0.67**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Beegum Creek	0.100	0.10	7	**0.67**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	1.000	0.67	1	**0.67**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in Beegum Creek	0.100	0.10	6	**0.57**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in Beegum Creek	0.100	0.10	6	**0.57**	**M**
Beegum Creek	0.38	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the Bay	0.100	0.10	6	**0.57**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Contra Costa Power Plant	0.050	0.07	8	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in Beegum Creek	0.050	0.07	8	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the upper Sacramento River	0.050	0.07	8	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Pittsburg Power Plant	0.050	0.07	8	**0.53**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Delta	0.250	0.08	6	**0.50**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the lower Sacramento River	0.250	0.08	6	**0.50**	**M**
Beegum Creek	0.38	Spawning	**0.25**	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.48	1	**0.48**	**M**
Beegum Creek	0.38	Spawning	**0.25**	Hatchery Effects	0.050	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.48	1	**0.48**	**M**
Beegum Creek	0.38	Spawning	**0.25**	Water Quality	0.050	Water Quality in Beegum Creek	1.000	0.48	1	**0.48**	**M**

Spring-run Chinook Salmon Stressor Matrix - Beegum Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Changes in Hydrology	0.200	0.07	7	**0.47**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Diversion into Central Delta	0.200	0.07	7	**0.47**	**M**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Reverse Flow Conditions	0.200	0.07	7	**0.47**	**M**
Beegum Creek	0.38	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.075	Redd disturbance	1.000	0.43	1.00	**0.43**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.200	0.07	6	**0.40**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Middle Sacramento River	0.200	0.07	6	**0.40**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Upper Sacramento River	0.200	0.07	6	**0.40**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Bays	0.050	0.07	6	**0.40**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.07	6	**0.40**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the middle Sacramento River	0.200	0.07	6	**0.40**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the upper Sacramento River	0.200	0.07	6	**0.40**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Lower Sacramento River	0.200	0.07	5	**0.33**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	DO, Ag, Urban, Heavy Metals in the Delta	0.150	0.05	6	**0.30**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Middle Sacramento River	0.150	0.05	5	**0.25**	**L**
Beegum Creek	0.38	Spawning	**0.25**	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	0.500	0.24	1	**0.24**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in Beegum Creek	0.100	0.03	7	**0.23**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.03	7	**0.23**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.03	7	**0.23**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the upper Sacramento River	0.100	0.03	7	**0.23**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Bays	0.100	0.03	6	**0.20**	**L**

Spring-run Chinook Salmon Stressor Matrix - Beegum Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Beegum Creek	0.050	0.03	6	**0.20**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.050	0.03	6	**0.20**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in Beegum Creek	0.100	0.03	6	**0.20**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban, Heavy Metals in the Bays	0.100	0.03	6	**0.20**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Delta	0.100	0.03	5	**0.17**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Beegum Creek	0.050	0.02	6	**0.10**	**L**
Beegum Creek	0.38	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Upper Sacramento River	0.050	0.02	5	**0.08**	**L**

Spring-run Chinook Salmon Stressor Matrix - Big Chico Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Iron Canyon, City of Chico Swimming Holes and Associated Dams	0.750	0.47	5	**2.34**	**VH**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Big Chico Creek	0.700	0.53	4	**2.10**	**VH**
Big Chico Creek	0.1	Spawning	**0.25**	Spawning Habitat Availability	0.400	Habitat Suitability	1.000	1.00	1	**1.00**	**VH**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.575	0.14	6	**0.86**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.350	0.18	4	**0.74**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Middle Sacramento River	0.350	0.18	4	**0.74**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Delta	0.300	0.16	4	**0.63**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Lower Sacramento River	0.300	0.16	4	**0.63**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Delta	0.300	0.16	4	**0.63**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.300	0.16	4	**0.63**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Tracy and Banks Pumping Plants	0.250	0.09	7	**0.61**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Delta	0.300	0.11	5	**0.53**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the lower Sacramento River	0.300	0.11	5	**0.53**	**VH**
Big Chico Creek	0.1	Spawning	**0.25**	Water Temperature	0.200	Water Temperature in Big Chico Creek	1.000	0.50	1	**0.50**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the Delta	0.200	0.07	7	**0.49**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the lower Sacramento River	0.200	0.07	7	**0.49**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the middle Sacramento River	0.200	0.07	7	**0.49**	**VH**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Water Temperature	0.300	Water Temperature in Big Chico Creek	1.000	0.45	1.00	**0.45**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the middle Sacramento River	0.250	0.09	5	**0.44**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Big Chico Creek	0.200	0.11	4	**0.42**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Middle Sacramento River	0.200	0.11	4	**0.42**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Big Chico Creek	0.200	0.11	4	**0.42**	**VH**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Middle Sacramento River	0.200	0.11	4	**0.42**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Big Chico Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.200	0.11	4	**0.42**	**VH**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.08	5	**0.38**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.08	5	**0.38**	**H**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Watershed disturbance	0.250	Sedimentation	1.000	0.38	1.00	**0.38**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.16	2	**0.32**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Delta	0.600	0.16	2	**0.32**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.06	5	**0.31**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.400	0.10	3	**0.30**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in the middle Sacramento River	0.400	0.10	3	**0.30**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.300	0.08	4	**0.30**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.300	0.08	4	**0.30**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.300	0.08	4	**0.30**	**H**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Flow Conditions	0.200	Flow Fluctuations	1.000	0.30	1.00	**0.30**	**H**
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Water Quality	0.200	Water Quality in Big Chico Creek	1.000	0.30	1.00	**0.30**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Delta	0.100	0.08	4	**0.30**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Lower Sacramento River	0.100	0.08	4	**0.30**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Middle Sacramento River	0.100	0.08	4	**0.30**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.05	5	**0.26**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.05	5	**0.26**	**H**

Spring-run Chinook Salmon Stressor Matrix - Big Chico Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Big Chico Creek	0.1	Spawning	**0.25**	Barrier	0.100	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	0.25	1	**0.25**	**H**
Big Chico Creek	0.1	Spawning	**0.25**	Flow Conditions	0.100	Flow Fluctuations	1.000	0.25	1	**0.25**	**H**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.05	5	**0.25**	**H**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.11	2	**0.21**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Big Chico Creek	0.100	0.05	4	**0.21**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Bays	0.400	0.11	2	**0.21**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	1.000	0.18	1	**0.18**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in Big Chico Creek	0.100	0.04	5	**0.18**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.04	5	**0.18**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Big Chico Creek	0.500	0.04	4	**0.18**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Diversion into Central Delta	0.300	0.03	6	**0.16**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.050	0.03	5	**0.16**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.050	0.03	5	**0.16**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.050	0.03	5	**0.16**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Big Chico Creek	0.200	0.05	3	**0.15**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Big Chico Creek	0.100	0.03	6	**0.15**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.100	0.03	6	**0.15**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.100	0.03	6	**0.15**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Delta	0.300	0.03	5	**0.13**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.300	0.03	5	**0.13**	**M**

Spring-run Chinook Salmon Stressor Matrix - Big Chico Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Big Chico Creek	0.1	Spawning	**0.25**	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.13	1	**0.13**	**M**
Big Chico Creek	0.1	Spawning	**0.25**	Hatchery Effects	0.050	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.13	1	**0.13**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in Big Chico Creek	0.100	0.03	5	**0.13**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.100	0.03	5	**0.13**	**M**
Big Chico Creek	0.1	Spawning	**0.25**	Water Quality	0.050	Water Quality in Big Chico Creek	1.000	0.13	1	**0.13**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Contra Costa Power Plant	0.050	0.02	7	**0.12**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in Big Chico Creek	0.050	0.02	7	**0.12**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Pittsburg Power Plant	0.050	0.02	7	**0.12**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.02	6	**0.11**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Changes in Hydrology	0.200	0.02	6	**0.11**	**M**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Reverse Flow Conditions	0.200	0.02	6	**0.11**	**M**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in Big Chico Creek	0.100	0.03	4	**0.10**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Bays	0.050	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Big Chico Creek	0.100	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the lower Sacramento River	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the middle Sacramento River	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in Big Chico Creek	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban, Heavy Metals in the Bays	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.02	5	**0.09**	**L**
Big Chico Creek	0.1	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.01	6	**0.08**	**L**

Spring-run Chinook Salmon Stressor Matrix - Big Chico Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Big Chico Creek	0.1	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.050	Redd disturbance	1.000	0.08	1.00	**0.08**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Lower Sacramento River	0.200	0.02	4	**0.07**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Middle Sacramento River	0.200	0.02	4	**0.07**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Middle Sacramento River	0.150	0.01	5	**0.07**	**L**
Big Chico Creek	0.1	Spawning	**0.25**	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	0.500	0.06	1	**0.06**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in Big Chico Creek	0.100	0.01	6	**0.05**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.01	6	**0.05**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.01	6	**0.05**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Bays	0.100	0.01	5	**0.04**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Big Chico Creek	0.100	0.01	5	**0.04**	**L**
Big Chico Creek	0.1	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Delta	0.100	0.01	4	**0.04**	**L**

Spring-run Chinook Salmon Stressor Matrix - Butte Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Butte Creek	0.800	0.83	3	**2.48**	**VH**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Butte Creek Diversion Dams and Weirs	0.600	0.34	6	**2.03**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Predation	0.150	Predation in the Delta	0.350	0.28	4	**1.10**	**VH**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.575	0.22	5	**1.08**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Delta	0.425	0.36	3	**1.07**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.400	0.34	3	**1.01**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Delta	0.425	0.33	3	**1.00**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Predation	0.150	Predation in the lower Sacramento River	0.300	0.24	4	**0.95**	**VH**
Butte Creek	0.15	Spawning	**0.25**	Spawning Habitat Availability	0.250	Habitat Availability/Suitability	1.000	0.94	1	**0.94**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.325	0.27	3	**0.82**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.325	0.27	3	**0.82**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Predation	0.150	Predation in Butte Creek	0.250	0.20	4	**0.79**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Lower Sacramento River	0.325	0.26	3	**0.77**	**VH**
Butte Creek	0.15	Spawning	**0.25**	Flow Conditions	0.200	Flow Fluctuations	1.000	0.75	1	**0.75**	**VH**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Recreational Impacts (Summer inner tubing)	0.200	Summer inner tubing and swimming in Butte Creek	1.000	0.75	1	**0.75**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Butte Creek	0.275	0.23	3	**0.69**	**VH**
Butte Creek	0.15	Embryo Incubation	**0.15**	Flow Conditions	0.300	Flow Fluctuations	1.000	0.68	1.00	**0.68**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.090	DO, Ag, Urban, Heavy Metals in the Delta	0.350	0.17	4	**0.66**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Butte Creek	0.250	0.21	3	**0.63**	**VH**
Butte Creek	0.15	Embryo Incubation	**0.15**	Water Quality	0.275	Water Quality, Turbidity in Butte Creek	1.000	0.62	1.00	**0.62**	**VH**
Butte Creek	0.15	Embryo Incubation	**0.15**	Water Temperature	0.275	Water Temperature in Butte Creek	1.000	0.62	1.00	**0.62**	**VH**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Butte Creek	0.250	0.20	3	**0.59**	**H**
Butte Creek	0.15	Spawning	**0.25**	Harvest/Angling Impacts	0.150	Recreational, Poaching, Angler Impacts	1.000	0.56	1	**0.56**	**H**
Butte Creek	0.15	Spawning	**0.25**	Water Temperature	0.150	Water Temperature in Butte Creek	1.000	0.56	1	**0.56**	**H**

Spring-run Chinook Salmon Stressor Matrix - Butte Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the Delta	0.250	0.09	6	**0.55**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.250	0.09	6	**0.55**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Tracy and Banks Pumping Plants	0.250	0.09	6	**0.55**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Yolo Bypass - Freemont Weir	0.150	0.08	6	**0.51**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.090	Ag, Urban in the lower Sacramento River	0.250	0.12	4	**0.47**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.090	Ag, Urban, Heavy Metals in the Bays	0.250	0.12	4	**0.47**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Quality	0.125	Ag, Urban in Butte Creek	0.333	0.16	3	**0.47**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Quality	0.125	Ag, Urban in the lower Sacramento River	0.333	0.16	3	**0.47**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Quality	0.125	DO, Ag, Urban, Heavy Metals in the Delta	0.333	0.16	3	**0.47**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in the lower Sacramento River	0.600	0.23	2	**0.45**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in Butte Creek	0.200	0.07	6	**0.44**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Butte Creek	0.225	0.08	5	**0.42**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.375	0.10	4	**0.39**	**H**
Butte Creek	0.15	Spawning	**0.25**	Water Quality	0.100	Water Quality, Turbidity in Butte Creek	1.000	0.38	1	**0.38**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.050	Delta	0.350	0.09	4	**0.37**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.050	Lower Sacramento River	0.350	0.09	4	**0.37**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Centerville Head Dam	0.100	0.06	6	**0.34**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.050	Delta	0.600	0.16	2	**0.32**	**H**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Predation	0.150	Predation in the Bays	0.100	0.08	4	**0.32**	**H**

Spring-run Chinook Salmon Stressor Matrix - Butte Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.08	4	**0.32**	**H**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Delta	0.100	0.10	3	**0.31**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Water Temperature	0.275	Lower Sacramento River	0.100	0.10	3	**0.31**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Butte Creek	0.400	0.15	2	**0.30**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.090	Ag, Urban in Butte Creek	0.150	0.07	4	**0.28**	**M**
Butte Creek	0.15	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.100	Redd disturbance	1.000	0.23	1.00	**0.23**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.050	Bays	0.400	0.11	2	**0.21**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Butte Creek	0.200	0.05	4	**0.21**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.275	0.05	4	**0.21**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.275	0.05	4	**0.21**	**M**
Butte Creek	0.15	Spawning	**0.25**	Barrier	0.050	Centerville Head Dam - Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	0.19	1	**0.19**	**M**
Butte Creek	0.15	Spawning	**0.25**	Hatchery Effects	0.050	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.19	1	**0.19**	**M**
Butte Creek	0.15	Spawning	**0.25**	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	1.000	0.19	1	**0.19**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.250	0.05	4	**0.19**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.050	Butte Creek	0.175	0.05	4	**0.18**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Sacramento Deep Water Ship Channel	0.050	0.03	6	**0.17**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Suisun Marsh Salinity Control Structure	0.050	0.03	6	**0.17**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.150	Sutter Bypass - Tisdale Weir	0.050	0.03	6	**0.17**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Butte Creek	0.400	0.05	3	**0.16**	**M**

Spring-run Chinook Salmon Stressor Matrix - Butte Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Butte Creek	0.200	0.04	4	**0.15**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Diversion into Central Delta	0.225	0.03	5	**0.15**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in Butte Creek	0.225	0.03	5	**0.15**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Reverse Flow Conditions	0.225	0.03	5	**0.15**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.03	5	**0.14**	**M**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.075	0.03	5	**0.14**	**M**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.050	Bays	0.125	0.03	4	**0.13**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.125	0.03	4	**0.13**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Delta	0.300	0.04	3	**0.12**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Lower Sacramento River	0.300	0.04	3	**0.12**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Changes in Delta Hydrology	0.175	0.02	5	**0.11**	**L**
Butte Creek	0.15	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.11	1.00	**0.11**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the lower Sacramento River	0.150	0.02	5	**0.10**	**L**
Butte Creek	0.15	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.02	5	**0.09**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.010	Agricultural, Wildlife and Terminal Diversions	0.800	0.04	2	**0.08**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.03	2	**0.06**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Contra Costa Power Plant	0.025	0.01	6	**0.06**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Pittsburg Power Plant	0.025	0.01	6	**0.06**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.02	2	**0.04**	**L**
Butte Creek	0.15	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.010	Tributary Barriers	0.200	0.01	2	**0.02**	**L**

Spring-run Chinook Salmon Stressor Matrix - Clear Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Spawning	0.4	Physical Habitat Alteration	0.250	Limited Instream Gravel Supply	1.000	3.80	1	**3.80**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Red Bluff Diversion Dam	0.410	0.62	6	**3.74**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Clear Creek	0.400	0.91	4	**3.65**	**VH**
~~Clear Creek~~	~~0.38~~	~~Adult Immigration and Holding~~	~~0.2~~	~~Passage Impediments/Barriers~~	~~0.200~~	~~Whiskeytown Dam~~	~~0.355~~	~~0.54~~	~~6~~	~~**3.24**~~	~~**VH**~~
Clear Creek	0.38	Spawning	0.4	Spawning Habitat Availability	0.200	Habitat Suitability	1.000	3.04	1	**3.04**	**VH**
Clear Creek	0.38	Spawning	0.4	Water Temperature	0.200	Water Temperature in Clear Creek	1.000	3.04	1	**3.04**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.350	0.53	5	**2.66**	**VH**
Clear Creek	0.38	Spawning	0.4	Flow Conditions	0.150	Flow Fluctuations	1.000	2.28	1	**2.28**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Flow Conditions	0.250	Low Flows - attraction, migratory cues in Clear Creek	0.400	0.76	3	**2.28**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Delta	0.300	0.46	5	**2.28**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.350	0.53	4	**2.13**	**VH**
Clear Creek	0.38	Embryo Incubation	**0.15**	Water Quality	0.350	Sedimentation in Clear Creek	1.000	2.00	1.00	**2.00**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Flow Dependent Habitat Availability in Clear Creek	0.450	0.32	6	**1.92**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Lower Sacramento River	0.250	0.38	5	**1.90**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the Delta	0.250	0.30	6	**1.78**	**VH**
Clear Creek	0.38	Embryo Incubation	**0.15**	Flow Conditions	0.300	Flow Fluctuations	1.000	1.71	1.00	**1.71**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Clear Creek	0.200	0.30	5	**1.52**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Clear Creek	0.200	0.30	5	**1.52**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Delta	0.200	0.30	5	**1.52**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Middle Sacramento River	0.200	0.30	5	**1.52**	**VH**
Clear Creek	0.38	Spawning	0.4	Barriers	0.100	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	1.52	1	**1.52**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the lower Sacramento River	0.200	0.24	6	**1.43**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the middle Sacramento River	0.200	0.24	6	**1.43**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the upper Sacramento River	0.200	0.24	6	**1.43**	**VH**
Clear Creek	0.38	Embryo Incubation	**0.15**	Water Temperature	0.250	Water Temperature in Clear Creek	1.000	1.43	1.00	**1.43**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Clear Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	Ag, Urban in the lower Sacramento River	0.200	0.23	6	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	Clear Creek	0.200	0.23	6	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.23	6	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Delta	0.150	0.34	4	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Lower Sacramento River	0.150	0.34	4	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Middle Sacramento River	0.150	0.34	4	**1.37**	**VH**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Temperature	0.300	Upper Sacramento River	0.150	0.34	4	**1.37**	**VH**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Clear Creek	0.200	0.30	4	**1.22**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.200	0.30	4	**1.22**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Middle Sacramento River	0.200	0.30	4	**1.22**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Flow Conditions	0.250	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.200	0.38	3	**1.14**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Flow Conditions	0.250	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.38	3	**1.14**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Flow Conditions	0.250	Low Flows - attraction, migratory cues in the upper Sacramento River	0.200	0.38	3	**1.14**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Upper Sacramento River	0.150	0.23	5	**1.14**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	Ag, Urban in the middle Sacramento River	0.150	0.17	6	**1.03**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	Urban, Heavy Metals in the upper Sacramento River	0.150	0.17	6	**1.03**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in the Delta	0.175	0.12	8	**0.93**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.175	0.12	8	**0.93**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in the middle Sacramento River	0.175	0.12	8	**0.93**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Tracy and Banks Pumping Plants	0.175	0.12	8	**0.93**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Ocean	0.350	0.13	7	**0.93**	**H**

Spring-run Chinook Salmon Stressor Matrix - Clear Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Yolo Bypass - Freemont Weir	0.100	0.15	6	**0.91**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Diversion into Central Delta	0.200	0.14	6	**0.86**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Lower Sacramento River	0.350	0.17	5	**0.83**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Floodplain Habitat	0.160	Middle Sacramento River	0.100	0.15	5	**0.76**	**H**
Clear Creek	0.38	Spawning	0.4	Water Quality	0.050	Water Quality in Clear Creek	1.000	0.76	1	**0.76**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in Clear Creek	0.100	0.12	6	**0.71**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Middle Sacramento River	0.300	0.14	5	**0.71**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Bay	0.100	0.11	6	**0.68**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Passage Impediments/Barriers	0.050	Tributary Barriers	0.700	0.33	2	**0.67**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in Clear Creek	0.100	0.07	8	**0.53**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Individual Diversions in the upper Sacramento River	0.100	0.07	8	**0.53**	**H**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Clear Creek	0.200	0.08	7	**0.53**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Clear Creek	0.200	0.10	5	**0.48**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.10	5	**0.48**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.10	5	**0.48**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.200	0.10	5	**0.48**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Urban, Heavy Metals in the upper Sacramento River	0.200	0.10	5	**0.48**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.200	0.10	5	**0.48**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.200	0.10	5	**0.48**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Ag, Urban in Clear Creek	0.200	0.10	5	**0.48**	**H**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Clear Creek	0.200	0.10	5	**0.48**	**H**

Spring-run Chinook Salmon Stressor Matrix - Clear Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Sacramento Deep Water Ship Channel	0.050	0.08	6	**0.46**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Suisun Marsh Salinity Control Structure	0.050	0.08	6	**0.46**	**M**
Clear Creek	0.38	Spawning	0.4	Harvest/Angling Impacts	0.030	Recreational, Poaching, Angler Impacts	1.000	0.46	1	**0.46**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Changes in Hydrology	0.100	0.07	6	**0.43**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Reverse Flow Conditions	0.100	0.07	6	**0.43**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Delta	0.300	0.09	5	**0.43**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Natural River Morphology	0.160	Upper Sacramento River	0.050	0.08	5	**0.38**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.200	0.08	5	**0.38**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.200	0.08	5	**0.38**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.200	0.08	5	**0.38**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Predation	0.125	Predation in the Bays	0.050	0.06	6	**0.36**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.07	5	**0.36**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Passage Impediments/Barriers	0.200	Sutter Bypass - Tisdale Weir	0.035	0.05	6	**0.32**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Riparian Habitat and Instream Cover	0.160	Upper Sacramento River	0.050	0.08	4	**0.30**	**M**
Clear Creek	0.38	Spawning	0.4	Hatchery Effects	0.020	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.30	1	**0.30**	**M**
Clear Creek	0.38	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.050	Redd disturbance	1.000	0.29	1.00	**0.29**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Lower Sacramento River	0.200	0.06	5	**0.29**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Middle Sacramento River	0.200	0.06	5	**0.29**	**M**

Spring-run Chinook Salmon Stressor Matrix - Clear Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Upper Sacramento River	0.200	0.06	5	**0.29**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Passage Impediments/Barriers	0.050	Whiskeytown Dam	0.300	0.14	2	**0.29**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Clear Creek	0.150	0.06	5	**0.29**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.06	5	**0.29**	**M**
Clear Creek	0.38	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.29	1.00	**0.29**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Contra Costa Power Plant	0.050	0.03	8	**0.27**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Entrainment	0.070	Pittsburg Power Plant	0.050	0.03	8	**0.27**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Delta	0.100	0.04	7	**0.27**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Lower Sacramento River	0.100	0.04	7	**0.27**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Middle Sacramento River	0.100	0.04	7	**0.27**	**M**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Upper Sacramento River	0.100	0.04	7	**0.27**	**M**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.100	0.05	5	**0.24**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.100	0.05	5	**0.24**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Delta	0.100	0.05	5	**0.24**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Flow Dependent Habitat Availability in the lower Sacramento River	0.050	0.04	6	**0.21**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Flow Dependent Habitat Availability in the middle Sacramento River	0.050	0.04	6	**0.21**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Flow Conditions	0.075	Flow Dependent Habitat Availability in the upper Sacramento River	0.050	0.04	6	**0.21**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.100	0.04	5	**0.19**	**L**
Clear Creek	0.38	Adult Immigration and Holding	0.2	Harvest/Angling Impacts	0.050	Bays	0.050	0.02	7	**0.13**	**L**

Spring-run Chinook Salmon Stressor Matrix - Clear Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.050	0.02	5	**0.12**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Water Temperature	0.050	Upper Sacramento River	0.050	0.02	5	**0.12**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.06	2	**0.11**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Tidal Marsh Habitat	0.010	Delta	0.600	0.06	2	**0.11**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.04	2	**0.08**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Loss of Tidal Marsh Habitat	0.010	Bays	0.400	0.04	2	**0.08**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Bays	0.050	0.01	5	**0.07**	**L**
Clear Creek	0.38	Juvenile Rearing and Outmigration	0.25	Hatchery Effects (Competition and Predation)	0.030	Clear Creek	0.050	0.01	5	**0.07**	**L**

Spring-run Chinook Salmon Stressor Matrix - Deer Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Agricultural Diversion Dam(s) in Deer Creek	0.600	0.64	5	**3.19**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Deer Creek	0.700	0.74	4	**2.98**	**VH**
Deer Creek	0.17	Embryo Incubation	**0.15**	Water Quality	0.665	Turbidity, sedimentation, hazardous spills (HWY 32) in Deer Creek	1.000	1.70	1.00	**1.70**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.525	0.22	6	**1.34**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Middle Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Middle Sacramento River	0.350	0.33	4	**1.33**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	Deer Creek	0.400	0.26	5	**1.28**	**VH**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues in Deer Creek	0.600	0.38	3	**1.15**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Delta	0.300	0.29	4	**1.14**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Delta	0.300	0.22	5	**1.12**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the lower Sacramento River	0.300	0.22	5	**1.12**	**VH**
Deer Creek	0.17	Spawning	**0.25**	Spawning Habitat Availability	0.250	Habitat Availability	1.000	1.06	1	**1.06**	**VH**
Deer Creek	0.17	Spawning	**0.25**	Water Quality	0.250	Turbidity, Sedimentation, Hazardous Spills (Hwy 32) in Deer Creek	1.000	1.06	1	**1.06**	**VH**
Deer Creek	0.17	Spawning	**0.25**	Physical Habitat Alteration	0.225	Gravel embeddedness and fines	1.000	0.96	1	**0.96**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the middle Sacramento River	0.250	0.19	5	**0.93**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban, Hazardous Spills (Hwy 32) in Deer Creek	0.600	0.18	5	**0.89**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Diversion into Central Delta	0.300	0.13	6	**0.80**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Middle Sacramento River	0.200	0.19	4	**0.76**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Delta	0.200	0.19	4	**0.76**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Deer Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.200	0.19	4	**0.76**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the Delta	0.200	0.08	7	**0.58**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.200	0.08	7	**0.58**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the middle Sacramento River	0.200	0.08	7	**0.58**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Jones and Banks Pumping Plants	0.200	0.08	7	**0.58**	**VH**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Deer Creek	0.150	0.14	4	**0.57**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Changes in Hydrology	0.200	0.09	6	**0.54**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Reverse Flow Conditions	0.200	0.09	6	**0.54**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.100	0.11	5	**0.53**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.100	0.11	5	**0.53**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.100	0.11	5	**0.53**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.11	5	**0.53**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	Ag, Urban in the lower Sacramento River	0.150	0.10	5	**0.48**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	Ag, Urban in the middle Sacramento River	0.150	0.10	5	**0.48**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Bay	0.150	0.10	5	**0.48**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Delta	0.150	0.10	5	**0.48**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	0.800	0.24	2	**0.48**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Lower Sacramento River	0.400	0.12	4	**0.48**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.09	5	**0.45**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.09	5	**0.45**	**H**
Deer Creek	0.17	Spawning	**0.25**	Harvest/Angling Impacts	0.100	Recreational, Poaching, Angler Impacts	1.000	0.43	1	**0.43**	**H**

Spring-run Chinook Salmon Stressor Matrix - Deer Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Delta	0.100	0.11	4	**0.43**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Lower Sacramento River	0.100	0.11	4	**0.43**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Middle Sacramento River	0.100	0.11	4	**0.43**	**H**
Deer Creek	0.17	Spawning	**0.25**	Water Temperature	0.100	Water Temperature in Deer Creek	1.000	0.43	1	**0.43**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.200	0.13	3	**0.38**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.13	3	**0.38**	**H**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Deer Creek	0.150	0.06	6	**0.38**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Deer Creek	0.100	0.10	4	**0.38**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Deer Creek	0.100	0.10	4	**0.38**	**H**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Bays	0.100	0.07	5	**0.37**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Middle Sacramento River	0.300	0.09	4	**0.36**	**M**
Deer Creek	0.17	Embryo Incubation	**0.15**	Flow Conditions	0.125	Flow Fluctuations	1.000	0.32	1.00	**0.32**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.06	5	**0.32**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.06	5	**0.30**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in Deer Creek	0.100	0.04	7	**0.29**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in Deer Creek	0.100	0.04	6	**0.27**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.04	6	**0.27**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.04	6	**0.27**	**M**

Spring-run Chinook Salmon Stressor Matrix - Deer Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Delta	0.300	0.05	5	**0.27**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Lower Sacramento River	0.300	0.05	5	**0.27**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.05	5	**0.27**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.100	0.04	6	**0.26**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.100	0.04	6	**0.26**	**M**
Deer Creek	0.17	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.26	1.00	**0.26**	**M**
Deer Creek	0.17	Embryo Incubation	**0.15**	Water Temperature	0.100	Water Temperature in Deer Creek	1.000	0.26	1.00	**0.26**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Deer Creek	0.200	0.06	4	**0.24**	**M**
Deer Creek	0.17	Spawning	**0.25**	Flow Conditions	0.050	Flow Fluctuations	1.000	0.21	1	**0.21**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.04	5	**0.21**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.03	6	**0.19**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in Deer Creek	0.050	0.04	5	**0.19**	**M**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.03	5	**0.16**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Deer Creek	0.100	0.03	5	**0.15**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.03	5	**0.15**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.100	0.03	5	**0.15**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.100	0.03	5	**0.15**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.100	0.03	5	**0.15**	**M**

Spring-run Chinook Salmon Stressor Matrix - Deer Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.100	0.03	5	**0.15**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Contra Costa Power Plant	0.050	0.02	7	**0.15**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Pittsburg Power Plant	0.050	0.02	7	**0.15**	**M**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Middle Sacramento River	0.150	0.03	5	**0.13**	**L**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.02	6	**0.13**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Dam(s)	0.200	0.06	2	**0.12**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Delta	0.100	0.03	4	**0.12**	**L**
Deer Creek	0.17	Spawning	**0.25**	Hatchery Effects	0.025	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.11	1	**0.11**	**L**
Deer Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Deer Creek	0.100	0.02	5	**0.11**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Bays	0.100	0.02	5	**0.09**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Deer Creek	0.100	0.02	5	**0.09**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.04	2	**0.07**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Delta	0.600	0.04	2	**0.07**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.02	2	**0.05**	**L**
Deer Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Bays	0.400	0.02	2	**0.05**	**L**
Deer Creek	0.17	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.010	Redd disturbance	1.000	0.03	1.00	**0.03**	**L**

Spring-run Chinook Salmon Stressor Matrix - Feather River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Feather River	0.13	Adult Immigration and Holding	0.150	Passage Impediments/Barriers	0.400	Fish Barrier/Oroville Dam	0.850	0.66	4	**2.65**	**VH**
Feather River	0.13	Spawning	0.350	Barrier	0.300	Fish Barrier Dam/Oroville Dam - Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	1.37	1	**1.37**	**VH**
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Ocean	0.625	0.18	5	**0.91**	**VH**
Feather River	0.13	Spawning	0.350	Hatchery Effects	0.200	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.91	1	**0.91**	**VH**
Feather River	0.13	Spawning	0.350	Physical Habitat Alteration	0.200	Limited Instream Gravel Supply	1.000	0.91	1	**0.91**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.400	0.27	3	**0.82**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Predation	0.125	Predation in the Delta	0.350	0.20	4	**0.80**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Floodplain Habitat	0.125	Delta	0.425	0.24	3	**0.73**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Natural River Morphology	0.150	Delta	0.350	0.24	3	**0.72**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.350	0.24	3	**0.72**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Predation	0.125	Predation in the Feather River	0.300	0.17	4	**0.68**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.325	0.22	3	**0.67**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Natural River Morphology	0.150	Feather River	0.300	0.20	3	**0.61**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Predation	0.125	Predation in the lower Sacramento River	0.250	0.14	4	**0.57**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Riparian Habitat and Instream Cover	0.150	Feather River	0.275	0.19	3	**0.56**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Floodplain Habitat	0.125	Lower Sacramento River	0.325	0.18	3	**0.55**	**VH**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Quality	0.075	DO, Ag, Urban, Heavy Metals in the Delta	0.350	0.12	4	**0.48**	**VH**
Feather River	0.13	Spawning	0.350	Spawning Habitat Availability	0.100	Habitat Suitability	1.000	0.46	1	**0.46**	**VH**
Feather River	0.13	Spawning	0.350	Water Temperature	0.100	Water Temperature	1.000	0.46	1	**0.46**	**VH**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Temperature	0.150	Feather River	0.500	0.15	3	**0.44**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Floodplain Habitat	0.125	Feather River	0.250	0.14	3	**0.43**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Temperature	0.075	Feather River	0.400	0.14	3	**0.41**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Individual Diversions in the Delta	0.250	0.06	6	**0.34**	**H**

Spring-run Chinook Salmon Stressor Matrix - Feather River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Individual Diversions in the lower Sacramento River	0.250	0.06	6	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Tracy and Banks Pumping Plants	0.250	0.06	6	**0.34**	**H**
Feather River	0.13	Adult Immigration and Holding	0.150	Flow Conditions	0.125	Low Flows - attraction, migratory cues in the Feather River	0.700	0.17	2	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.375	0.09	4	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Quality	0.075	Ag, Urban in the lower Sacramento River	0.250	0.09	4	**0.34**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Quality	0.075	Ag, Urban, Heavy Metals in the Bays	0.250	0.09	4	**0.34**	**H**
Feather River	0.13	Embryo Incubation	0.125	Flow Conditions	0.200	Flow Fluctuations, Flooding	1.000	0.33	1.00	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Harvest/Angling Impacts	0.200	Redd disturbance	1.000	0.33	1.00	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Short-term Inwater Construction	0.200	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.33	1.00	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Water Quality	0.200	Water Pollution	1.000	0.33	1.00	**0.33**	**H**
Feather River	0.13	Embryo Incubation	0.125	Water Temperature	0.200	Water Temperature in the Feather River	1.000	0.33	1.00	**0.33**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Temperature	0.075	Delta	0.300	0.10	3	**0.31**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Temperature	0.075	Lower Sacramento River	0.300	0.10	3	**0.31**	**H**
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Feather River	0.200	0.06	5	**0.29**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Individual Diversions in the Feather River	0.200	0.05	6	**0.27**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Invasive Species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.14	2	**0.27**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Tidal Marsh Habitat	0.050	Delta	0.600	0.14	2	**0.27**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.07	4	**0.27**	**H**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Diversion into Central Delta	0.225	0.05	5	**0.26**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Flow Dependent Habitat Availability in the Feather River	0.225	0.05	5	**0.26**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Reverse Flow Conditions	0.225	0.05	5	**0.26**	**M**
Feather River	0.13	Spawning	0.350	Flow Conditions	0.050	Flow Fluctuations	1.000	0.23	1	**0.23**	**M**
Feather River	0.13	Spawning	0.350	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.23	1	**0.23**	**M**

Spring-run Chinook Salmon Stressor Matrix - Feather River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Passage Impediments/Barriers	0.025	Fish Barrier/Oroville Dam	1.000	0.11	2	**0.23**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Predation	0.125	Predation in the Bays	0.100	0.06	4	**0.23**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Temperature	0.150	Delta	0.250	0.07	3	**0.22**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Temperature	0.150	Lower Sacramento River	0.250	0.07	3	**0.22**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Water Quality	0.075	Ag, Urban in the Feather River	0.150	0.05	4	**0.20**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Changes in Delta Hydrology	0.175	0.04	5	**0.20**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Quality	0.100	Ag, Urban in the Feather River	0.333	0.06	3	**0.19**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.333	0.06	3	**0.19**	**M**
Feather River	0.13	Adult Immigration and Holding	0.150	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.333	0.06	3	**0.19**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Invasive Species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.09	2	**0.18**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Loss of Tidal Marsh Habitat	0.050	Bays	0.400	0.09	2	**0.18**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Feather River	0.200	0.05	4	**0.18**	**M**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Flow Conditions	0.050	Flow Dependent Habitat Availability in the lower Sacramento River	0.150	0.03	5	**0.17**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Hatchery Effects (Competition and Predation)	0.025	Feather River	0.375	0.04	4	**0.17**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.275	0.04	4	**0.16**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.275	0.04	4	**0.16**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Passage Impediments/Barriers	0.400	Sacramento Deep Water Ship Channel	0.050	0.04	4	**0.16**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Passage Impediments/Barriers	0.400	Suisun Marsh Salinity Control Structure	0.050	0.04	4	**0.16**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Passage Impediments/Barriers	0.400	Yolo Bypass - Freemont Weir	0.050	0.04	4	**0.16**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.325	0.04	4	**0.15**	**L**

Spring-run Chinook Salmon Stressor Matrix - Feather River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Feather River	0.13	Adult Immigration and Holding	0.150	Flow Conditions	0.125	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.300	0.07	2	**0.15**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.250	0.04	4	**0.15**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Short-term Inwater Construction	0.075	Sedimentation, turbidity, acoustic effects, hazardous spills in the Feather River	0.200	0.03	4	**0.12**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.125	0.03	4	**0.11**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Lower Sacramento River	0.075	0.02	5	**0.11**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Hatchery Effects (Competition and Predation)	0.025	Delta	0.175	0.02	4	**0.08**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Bays	0.050	0.01	5	**0.07**	**L**
Feather River	0.13	Adult Immigration and Holding	0.150	Harvest/Angling Impacts	0.150	Delta	0.050	0.01	5	**0.07**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Hatchery Effects (Competition and Predation)	0.025	Bays	0.125	0.01	4	**0.06**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Contra Costa Power Plant	0.025	0.01	6	**0.03**	**L**
Feather River	0.13	Juvenile Rearing and Outmigration	0.350	Entrainment	0.050	Pittsburg Power Plant	0.025	0.01	6	**0.03**	**L**

Spring-run Chinook Salmon Stressor Matrix - Mill Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Agricultural Diversion Dam(s) in Mill Creek	0.600	0.64	5	**3.19**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Mill Creek	0.700	0.74	4	**2.98**	**VH**
Mill Creek	0.17	Spawning	**0.25**	Water Quality	0.450	Turbidity and Sedimentation in Mill Creek	1.000	1.91	1	**1.91**	**VH**
Mill Creek	0.17	Embryo Incubation	**0.15**	Water Quality	0.665	Turbidity and sedimentation in Mill Creek	1.000	1.70	1.00	**1.70**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.525	0.22	6	**1.34**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Middle Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Lower Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Middle Sacramento River	0.350	0.33	4	**1.33**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues in Mill Creek	0.600	0.38	3	**1.15**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Delta	0.300	0.29	4	**1.14**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Delta	0.300	0.22	5	**1.12**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the lower Sacramento River	0.300	0.22	5	**1.12**	**VH**
Mill Creek	0.17	Spawning	**0.25**	Physical Habitat Alteration	0.225	Gravel embeddedness and fines	1.000	0.96	1	**0.96**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the middle Sacramento River	0.250	0.19	5	**0.93**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Diversion into Central Delta	0.300	0.13	6	**0.80**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Middle Sacramento River	0.200	0.19	4	**0.76**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Delta	0.200	0.19	4	**0.76**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Delta	0.200	0.19	4	**0.76**	**VH**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.13	5	**0.64**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the Delta	0.200	0.08	7	**0.58**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.200	0.08	7	**0.58**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Mill Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in the middle Sacramento River	0.200	0.08	7	**0.58**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Tracy and Banks Pumping Plants	0.200	0.08	7	**0.58**	**VH**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.160	Mill Creek	0.150	0.14	4	**0.57**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Changes in Hydrology	0.200	0.09	6	**0.54**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Reverse Flow Conditions	0.200	0.09	6	**0.54**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.250	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.250	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.250	0.11	5	**0.53**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.150	DO, Ag, Urban, Heavy Metals in the Bay	0.150	0.10	5	**0.48**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	0.800	0.24	2	**0.48**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Lower Sacramento River	0.400	0.12	4	**0.48**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.09	5	**0.45**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.09	5	**0.45**	**H**
Mill Creek	0.17	Spawning	**0.25**	Harvest/Angling Impacts	0.100	Recreational, Poaching, Angler Impacts	1.000	0.43	1	**0.43**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.09	5	**0.43**	**H**

Spring-run Chinook Salmon Stressor Matrix - Mill Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Delta	0.100	0.11	4	**0.43**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Lower Sacramento River	0.100	0.11	4	**0.43**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Temperature	0.250	Middle Sacramento River	0.100	0.11	4	**0.43**	**H**
Mill Creek	0.17	Spawning	**0.25**	Water Temperature	0.100	Water Temperature in Mill Creek	1.000	0.43	1	**0.43**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in lower Sacramento River	0.200	0.13	3	**0.38**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Flow Conditions	0.150	Low Flows - attraction, migratory cues in the middle Sacramento River	0.200	0.13	3	**0.38**	**H**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Mill Creek	0.150	0.06	6	**0.38**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.160	Mill Creek	0.100	0.10	4	**0.38**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.160	Mill Creek	0.100	0.10	4	**0.38**	**H**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in the Bays	0.100	0.07	5	**0.37**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Middle Sacramento River	0.300	0.09	4	**0.36**	**M**
Mill Creek	0.17	Embryo Incubation	**0.15**	Flow Conditions	0.125	Flow Fluctuations	1.000	0.32	1.00	**0.32**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.06	5	**0.32**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban in Mill Creek	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.06	5	**0.30**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Individual Diversions in Mill Creek	0.100	0.04	7	**0.29**	**M**

Spring-run Chinook Salmon Stressor Matrix - Mill Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in Mill Creek	0.100	0.04	6	**0.27**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.04	6	**0.27**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.075	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.04	6	**0.27**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Delta	0.300	0.05	5	**0.27**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Lower Sacramento River	0.300	0.05	5	**0.27**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.100	0.04	6	**0.26**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.100	0.04	6	**0.26**	**M**
Mill Creek	0.17	Embryo Incubation	**0.15**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.26	1.00	**0.26**	**M**
Mill Creek	0.17	Embryo Incubation	**0.15**	Water Temperature	0.100	Water Temperature in Mill Creek	1.000	0.26	1.00	**0.26**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Mill Creek	0.200	0.06	4	**0.24**	**M**
Mill Creek	0.17	Spawning	**0.25**	Flow Conditions	0.050	Flow Fluctuations	1.000	0.21	1	**0.21**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in Mill Creek	0.100	0.04	5	**0.21**	**M**
Mill Creek	0.17	Spawning	**0.25**	Spawning Habitat Availability	0.050	Habitat Suitability	1.000	0.21	1	**0.21**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Mill Creek	0.100	0.04	5	**0.21**	**M**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.075	0.03	6	**0.19**	**M**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Predation	0.125	Predation in Mill Creek	0.050	0.04	5	**0.19**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Mill Creek	0.100	0.03	5	**0.15**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.03	5	**0.15**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Contra Costa Power Plant	0.050	0.02	7	**0.15**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.070	Pittsburg Power Plant	0.050	0.02	7	**0.15**	**L**

Spring-run Chinook Salmon Stressor Matrix - Mill Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Middle Sacramento River	0.150	0.03	5	**0.13**	**L**
Mill Creek	0.17	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.050	0.02	6	**0.13**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Dam(s)	0.200	0.06	2	**0.12**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.050	Delta	0.100	0.03	4	**0.12**	**L**
Mill Creek	0.17	Spawning	**0.25**	Hatchery Effects	0.025	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.11	1	**0.11**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Bays	0.100	0.02	5	**0.09**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.030	Mill Creek	0.100	0.02	5	**0.09**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.04	2	**0.07**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Delta	0.600	0.04	2	**0.07**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.02	2	**0.05**	**L**
Mill Creek	0.17	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.010	Bays	0.400	0.02	2	**0.05**	**L**
Mill Creek	0.17	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.010	Redd disturbance	1.000	0.03	1.00	**0.03**	**L**

Spring-run Chinook Salmon Stressor Matrix - Sacramento River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Keswick Dam	0.525	1.35	7	**9.48**	**VH**
Sacramento River	0.43	Spawning	0.3	Barrier/Genetics	0.450	Keswick/Shasta Dam	1.000	5.81	1	**5.81**	**VH**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Red Bluff Diversion Dam	0.300	0.77	7	**5.42**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Natural Morphologic Function	0.160	Loss of Natural Morphologic Function in the lower Sacramento River	0.350	0.96	4	**3.85**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Floodplain Habitat	0.160	Loss of Floodplain Habitat in the Delta	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Floodplain Habitat	0.160	Loss of Floodplain Habitat in the lower Sacramento River	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Natural Morphologic Function	0.160	Loss of Natural Morphologic Function in the Delta	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Riparian Habitat and Instream Cover	0.160	Loss of Riparian Habitat and Instream Cover in the Delta	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Riparian Habitat and Instream Cover	0.160	Loss of Riparian Habitat and Instream Cover in the lower Sacramento River	0.300	0.83	4	**3.30**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Predation in the Delta	0.250	0.65	5	**3.23**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Predation in the lower Sacramento River	0.250	0.65	5	**3.23**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the upper Sacramento River	0.400	0.62	5	**3.10**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Non-site specific and structure (GCID, RBDD) related in the middle Sacramento River	0.225	0.58	5	**2.90**	**VH**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Ocean	0.725	0.47	6	**2.81**	**VH**
Sacramento River	0.43	Spawning	0.3	Physical Habitat Alteration	0.200	Limited Instream Gravel Supply in upper Sacramento River	1.000	2.58	1	**2.58**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the middle Sacramento River	0.300	0.46	5	**2.32**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Non-site specific and structure (ACID) related in the upper Sacramento River	0.175	0.45	5	**2.26**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Floodplain Habitat	0.160	Loss of Floodplain Habitat in the middle Sacramento River	0.200	0.55	4	**2.20**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Floodplain Habitat	0.160	Loss of Floodplain Habitat in the upper Sacramento River	0.200	0.55	4	**2.20**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Sacramento River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Natural Morphologic Function	0.160	Loss of Natural Morphologic Function in the upper Sacramento River	0.200	0.55	4	**2.20**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Riparian Habitat and Instream Cover	0.160	Loss of Riparian Habitat and Instream Cover in the middle Sacramento River	0.200	0.55	4	**2.20**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Riparian Habitat and Instream Cover	0.160	Loss of Riparian Habitat and Instream Cover in the upper Sacramento River	0.200	0.55	4	**2.20**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Individual Diversions in the Delta	0.200	0.24	7	**1.69**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Individual Diversions in the lower Sacramento River	0.200	0.24	7	**1.69**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Individual Diversions in the middle Sacramento River	0.200	0.24	7	**1.69**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Tracy and Banks Pumping Plants	0.200	0.24	7	**1.69**	**VH**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Natural Morphologic Function	0.160	Loss of Natural Morphologic Function in the middle Sacramento River	0.150	0.41	4	**1.65**	**H**
Sacramento River	0.43	Embryo Incubation	0.15	Flow Conditions	0.225	Flow Fluctuations in upper Sacramento River	1.000	1.45	1	**1.45**	**H**
Sacramento River	0.43	Embryo Incubation	0.15	Water Quality	0.225	Water Pollution in upper Sacramento River	1.000	1.45	1	**1.45**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Temperature	0.050	Delta	0.400	0.34	4	**1.38**	**H**
Sacramento River	0.43	Spawning	0.3	Flow Conditions	0.100	Flow Fluctuations in upper Sacramento River	1.000	1.29	1	**1.29**	**H**
Sacramento River	0.43	Spawning	0.3	Harvest/Angling Impacts	0.100	Upper Sacramento River	1.000	1.29	1	**1.29**	**H**
Sacramento River	0.43	Embryo Incubation	0.15	Water Temperature	0.200	Water Temperature in upper Sacramento River	1.000	1.29	1	**1.29**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Predation	0.150	Predation in the Bay	0.100	0.26	5	**1.29**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.300	0.26	5	**1.29**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	Ag, Urban in the middle Sacramento River	0.300	0.26	5	**1.29**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	Urban, Heavy Metals in the upper Sacramento River	0.300	0.26	5	**1.29**	**H**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.250	0.24	5	**1.21**	**H**

Spring-run Chinook Salmon Stressor Matrix - Sacramento River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.24	5	**1.21**	**H**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.250	0.24	5	**1.21**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.275	0.24	5	**1.18**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.275	0.24	5	**1.18**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the upper Sacramento River	0.275	0.24	5	**1.18**	**H**
Sacramento River	0.43	Embryo Incubation	0.15	Harvest/Angling Impacts	0.175	Redd disturbance in upper Sacramento River	1.000	1.13	1.00	**1.13**	**H**
Sacramento River	0.43	Embryo Incubation	0.15	Short-term Inwater Construction	0.175	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	1.13	1	**1.13**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Temperature	0.050	Lower Sacramento River	0.300	0.26	4	**1.03**	**H**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Temperature	0.125	Lower Sacramento River	0.400	0.32	3	**0.97**	**H**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Temperature	0.125	Middle Sacramento River	0.400	0.32	3	**0.97**	**H**
Sacramento River	0.43	Spawning	0.3	Spawning Habitat Availability	0.075	Habitat Suitability in in upper Sacramento River	1.000	0.97	1	**0.97**	**H**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Quality	0.125	DO, Ag, Urban, Heavy Metals in the Delta	0.300	0.24	4	**0.97**	**H**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Changes in Delta Hydrology	0.300	0.15	6	**0.93**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Reverse Flow Conditions in the Delta	0.300	0.15	6	**0.93**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Yolo Bypass-Freemont Weir	0.050	0.13	7	**0.90**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Individual Diversions in the upper Sacramento River	0.100	0.12	7	**0.84**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the Bays	0.100	0.15	5	**0.77**	**M**

Spring-run Chinook Salmon Stressor Matrix - Sacramento River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the Delta	0.100	0.15	5	**0.77**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Hatchery Effects	0.090	Competition, Predation in the lower Sacramento River	0.100	0.15	5	**0.77**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Diversion into Central Delta	0.250	0.13	6	**0.77**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.150	0.15	5	**0.73**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Temperature	0.050	Middle Sacramento River	0.200	0.17	4	**0.69**	**M**
Sacramento River	0.43	Spawning	0.3	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in upper Sacramento River	1.000	0.65	1	**0.65**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Quality	0.125	Ag, Urban in the lower Sacramento River	0.200	0.16	4	**0.65**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Quality	0.125	Ag, Urban in the middle Sacramento River	0.200	0.16	4	**0.65**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Quality	0.125	Urban, Heavy Metals in the upper Sacramento River	0.200	0.16	4	**0.65**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.333	0.21	3	**0.64**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Middle Sacramento River	0.333	0.21	3	**0.64**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Upper Sacramento River	0.333	0.21	3	**0.64**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Sacramento Deep Water Ship Channel	0.035	0.09	7	**0.63**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Suisun Marsh Salinity Control Structure	0.035	0.09	7	**0.63**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Sutter Bypass - Tisdale Weir	0.035	0.09	7	**0.63**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.150	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.10	5	**0.48**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.09	5	**0.43**	**M**

Spring-run Chinook Salmon Stressor Matrix - Sacramento River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Contra Costa Power Plant	0.050	0.06	7	**0.42**	**M**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Entrainment	0.070	Pittsburg Power Plant	0.050	0.06	7	**0.42**	**M**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Upper Sacramento River	0.100	0.06	6	**0.39**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.090	0.08	5	**0.39**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	ACID Dam	0.020	0.05	7	**0.36**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Temperature	0.050	Upper Sacramento River	0.100	0.09	4	**0.34**	**L**
Sacramento River	0.43	Spawning	0.3	Water Temperature	0.025	Upper Sacramento River	1.000	0.32	1	**0.32**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.075	0.06	5	**0.32**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.075	0.05	6	**0.29**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Invasive species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, water hyacinth etc. in the Delta	0.800	0.14	2	**0.28**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Tidal Marsh Habitat	0.010	Loss of Tidal Marsh Habitat in the Delta	0.800	0.14	2	**0.28**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Temperature	0.125	Delta	0.100	0.08	3	**0.24**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Water Temperature	0.125	Upper Sacramento River	0.100	0.08	3	**0.24**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Passage Impediments/Barriers	0.010	Keswick Dam	0.400	0.07	3	**0.21**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.050	0.03	6	**0.19**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Flow Dependent Habitat Availability in the lower Sacramento River	0.050	0.03	6	**0.15**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Flow Dependent Habitat Availability in the middle Sacramento River	0.050	0.03	6	**0.15**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Flow Conditions	0.030	Flow Dependent Habitat Availability in the upper Sacramento River	0.050	0.03	6	**0.15**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Passage Impediments/Barriers	0.010	ACID Dam	0.300	0.05	3	**0.15**	**L**

Spring-run Chinook Salmon Stressor Matrix - Sacramento River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Passage Impediments/Barriers	0.010	Tributary Barriers	0.300	0.05	3	**0.15**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Bays	0.025	0.02	6	**0.10**	**L**
Sacramento River	0.43	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.100	Delta	0.025	0.02	6	**0.10**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Invasive species/Food Web Disruption	0.010	Asian clam, A. aspera, Microcystis, water hyacinth etc. in the Bays	0.200	0.03	2	**0.07**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Loss of Tidal Marsh Habitat	0.010	Loss of Tidal Marsh Habitat in the Bays	0.200	0.03	2	**0.07**	**L**
Sacramento River	0.43	Juvenile Rearing and Outmigration	0.4	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.010	0.01	5	**0.04**	**L**

Spring-run Chinook Salmon Stressor Matrix - Thomes Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Ag Diversion Dams, Braiding, Natural Channel Gradient	0.750	1.17	5	**5.86**	**VH**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Thomes Creek	0.700	1.31	4	**5.25**	**VH**
Thomes Creek	0.25	Spawning	**0.25**	Spawning Habitat Availability	0.400	Habitat Suitability	1.000	2.50	1	**2.50**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.350	0.46	4	**1.84**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Middle Sacramento River	0.350	0.46	4	**1.84**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Delta	0.300	0.39	4	**1.58**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Lower Sacramento River	0.300	0.39	4	**1.58**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Delta	0.300	0.39	4	**1.58**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.300	0.39	4	**1.58**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Tracy and Banks Pumping Plants	0.250	0.22	7	**1.53**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Delta	0.300	0.26	5	**1.31**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the lower Sacramento River	0.300	0.26	5	**1.31**	**VH**
Thomes Creek	0.25	Spawning	**0.25**	Water Temperature	0.200	Water Temperature in Thomes Creek	1.000	1.25	1	**1.25**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the Delta	0.200	0.18	7	**1.23**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the lower Sacramento River	0.200	0.18	7	**1.23**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in the middle Sacramento River	0.200	0.18	7	**1.23**	**VH**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Water Temperature	0.300	Water Temperature in Thomes Creek	1.000	1.13	1.00	**1.13**	**VH**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Ocean	0.300	0.19	6	**1.13**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the middle Sacramento River	0.250	0.22	5	**1.09**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Thomes Creek	0.200	0.26	4	**1.05**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Floodplain Habitat	0.150	Middle Sacramento River	0.200	0.26	4	**1.05**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Thomes Creek	0.200	0.26	4	**1.05**	**VH**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Natural River Morphology	0.150	Middle Sacramento River	0.200	0.26	4	**1.05**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Thomes Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.200	0.26	4	**1.05**	**VH**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.19	5	**0.94**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.19	5	**0.94**	**H**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Watershed disturbance	0.250	Sedimentation	1.000	0.94	1.00	**0.94**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Delta	0.600	0.39	2	**0.79**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Delta	0.600	0.39	2	**0.79**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Yolo Bypass - Freemont Weir	0.100	0.16	5	**0.78**	**H**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Flow Conditions	0.200	Flow Fluctuations	1.000	0.75	1.00	**0.75**	**H**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Water Quality	0.200	Water Quality in Thomes Creek	1.000	0.75	1.00	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.400	0.25	3	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in the middle Sacramento River	0.400	0.25	3	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.300	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in the middle Sacramento River	0.300	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.300	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Delta	0.100	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Lower Sacramento River	0.100	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Temperature	0.300	Middle Sacramento River	0.100	0.19	4	**0.75**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.300	0.13	5	**0.66**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.300	0.13	5	**0.66**	**H**

Spring-run Chinook Salmon Stressor Matrix - Thomes Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Thomes Creek	0.25	Spawning	**0.25**	Barrier	0.100	Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	0.63	1	**0.63**	**H**
Thomes Creek	0.25	Spawning	**0.25**	Flow Conditions	0.100	Flow Fluctuations	1.000	0.63	1	**0.63**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.13	5	**0.63**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Bays	0.150	0.09	6	**0.56**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Delta	0.150	0.09	6	**0.56**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Lower Sacramento River	0.150	0.09	6	**0.56**	**H**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Middle Sacramento River	0.150	0.09	6	**0.56**	**H**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Invasive Species/Food Web Disruption	0.075	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.26	2	**0.53**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Riparian Habitat and Instream Cover	0.150	Thomes Creek	0.100	0.13	4	**0.53**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Loss of Tidal Marsh Habitat	0.075	Bays	0.400	0.26	2	**0.53**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in Thomes Creek	0.100	0.09	5	**0.44**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.200	0.09	5	**0.44**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Passage Impediments/Barriers	0.050	Tributary Barriers	1.000	0.44	1	**0.44**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Thomes Creek	0.500	0.11	4	**0.44**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Diversion into Central Delta	0.300	0.07	6	**0.39**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sacramento Deep Water Ship Channel	0.050	0.08	5	**0.39**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Suisun Marsh Salinity Control Structure	0.050	0.08	5	**0.39**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Passage Impediments/Barriers	0.250	Sutter Bypass - Tisdale Weir	0.050	0.08	5	**0.39**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Flow Conditions	0.100	Low Flows - attraction, migratory cues in Thomes Creek	0.200	0.13	3	**0.38**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Harvest/Angling Impacts	0.100	Thomes Creek	0.100	0.06	6	**0.38**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Delta	0.300	0.07	5	**0.33**	**M**

Spring-run Chinook Salmon Stressor Matrix - Thomes Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.300	0.07	5	**0.33**	**M**
Thomes Creek	0.25	Spawning	**0.25**	Harvest/Angling Impacts	0.050	Recreational, Poaching, Angler Impacts	1.000	0.31	1	**0.31**	**M**
Thomes Creek	0.25	Spawning	**0.25**	Hatchery Effects	0.050	Redd superimposition, competition for habitat, Genetic Integrity	1.000	0.31	1	**0.31**	**M**
Thomes Creek	0.25	Spawning	**0.25**	Water Quality	0.050	Water Quality in Thomes Creek	1.000	0.31	1	**0.31**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in Thomes Creek	0.100	0.06	5	**0.31**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Short-term Inwater Construction	0.100	Sedimentation, turbidity, acoustic effects, hazardous spills in the middle Sacramento River	0.100	0.06	5	**0.31**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Contra Costa Power Plant	0.050	0.04	7	**0.31**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Individual Diversions in Thomes Creek	0.050	0.04	7	**0.31**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Entrainment	0.100	Pittsburg Power Plant	0.050	0.04	7	**0.31**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Changes in Hydrology	0.200	0.04	6	**0.26**	**M**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Reverse Flow Conditions	0.200	0.04	6	**0.26**	**M**
Thomes Creek	0.25	Adult Immigration and Holding	**0.25**	Water Quality	0.100	Ag, Urban in Thomes Creek	0.100	0.06	4	**0.25**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Predation	0.100	Predation in the Bays	0.050	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in Thomes Creek	0.100	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the lower Sacramento River	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in the middle Sacramento River	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban in Thomes Creek	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	Ag, Urban, Heavy Metals in the Bays	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Quality	0.025	DO, Ag, Urban, Heavy Metals in the Delta	0.200	0.04	5	**0.22**	**L**
Thomes Creek	0.25	Embryo Incubation	**0.15**	Harvest/Angling Impacts	0.050	Redd disturbance	1.000	0.19	1.00	**0.19**	**L**

Spring-run Chinook Salmon Stressor Matrix - Thomes Creek

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Lower Sacramento River	0.200	0.04	4	**0.18**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Middle Sacramento River	0.200	0.04	4	**0.18**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Middle Sacramento River	0.150	0.03	5	**0.16**	**L**
Thomes Creek	0.25	Spawning	**0.25**	Physical Habitat Alteration	0.050	Limited Instream Gravel Supply	0.500	0.16	1	**0.16**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in Thomes Creek	0.100	0.02	6	**0.13**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the lower Sacramento River	0.100	0.02	6	**0.13**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Flow Conditions	0.025	Flow Dependent Habitat Availability in the middle Sacramento River	0.100	0.02	6	**0.13**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Bays	0.100	0.02	5	**0.11**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Hatchery Effects (Competition and Predation)	0.025	Thomes Creek	0.100	0.02	5	**0.11**	**L**
Thomes Creek	0.25	Juvenile Rearing and Outmigration	**0.35**	Water Temperature	0.025	Delta	0.100	0.02	4	**0.09**	**L**

Spring-run Chinook Salmon Stressor Matrix - Yuba River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Englebright Dam	0.650	0.55	5	**2.73**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Natural River Morphology	0.150	Yuba River	0.350	0.31	4	**1.25**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Riparian Habitat and Instream Cover	0.150	Yuba River	0.350	0.31	4	**1.25**	**VH**
Yuba River	0.14	Spawning	0.275	Barrier	0.300	Englebright Dam - Redd superimposition, competition for habitat, hybridization/genetic integrity	1.000	1.16	1	**1.16**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Floodplain Habitat	0.125	Delta	0.375	0.28	4	**1.12**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the Delta	0.300	0.22	5	**1.12**	**VH**
Yuba River	0.14	Embryo Incubation	0.15	Flow Conditions	0.525	Flow Fluctuations, Flood Events	1.000	1.10	1.00	**1.10**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Riparian Habitat and Instream Cover	0.150	Delta	0.300	0.27	4	**1.07**	**VH**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Ocean	0.525	0.17	6	**0.99**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the Yuba River	0.250	0.19	5	**0.93**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Natural River Morphology	0.150	Delta	0.250	0.22	4	**0.89**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Natural River Morphology	0.150	Lower Sacramento River	0.250	0.22	4	**0.89**	**VH**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Daguerre Point Dam	0.200	0.17	5	**0.84**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Individual Diversions in the Yuba River and DPD	0.250	0.11	7	**0.78**	**VH**
Yuba River	0.14	Spawning	0.275	Hatchery Effects	0.200	Redd superimposition, competition for habitat, genetic integrity	1.000	0.77	1	**0.77**	**VH**
Yuba River	0.14	Spawning	0.275	Physical Habitat Alteration	0.200	Limited Instream Gravel Supply	1.000	0.77	1	**0.77**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the Feather River	0.200	0.15	5	**0.74**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the lower Sacramento River	0.200	0.15	5	**0.74**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Floodplain Habitat	0.125	Lower Sacramento River	0.250	0.19	4	**0.74**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Riparian Habitat and Instream Cover	0.150	Lower Sacramento River	0.200	0.18	4	**0.71**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Individual Diversions in the Delta	0.200	0.09	7	**0.62**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Individual Diversions in the lower Sacramento River	0.200	0.09	7	**0.62**	**VH**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Tracy and Banks Pumping Plants	0.200	0.09	7	**0.62**	**VH**

Spring-run Chinook Salmon Stressor Matrix - Yuba River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Floodplain Habitat	0.125	Yuba River	0.200	0.15	4	**0.60**	**VH**
Yuba River	0.14	Spawning	0.275	Spawning Habitat Availability	0.150	Habitat Suitability	1.000	0.58	1	**0.58**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Natural River Morphology	0.150	Feather River	0.150	0.13	4	**0.54**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Riparian Habitat and Instream Cover	0.150	Feather River	0.150	0.13	4	**0.54**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Temperature	0.075	Delta	0.300	0.13	4	**0.54**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Temperature	0.075	Feather River	0.300	0.13	4	**0.54**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Temperature	0.075	Lower Sacramento River	0.300	0.13	4	**0.54**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Floodplain Habitat	0.125	Feather River	0.175	0.13	4	**0.52**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.350	0.10	5	**0.52**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	DO, Ag, Urban, Heavy Metals in the Delta	0.350	0.10	5	**0.52**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Flow Dependent Habitat Availability in the Yuba River	0.225	0.07	6	**0.40**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.250	0.07	5	**0.37**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	Ag, Urban in the lower Sacramento River	0.250	0.07	5	**0.37**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	Ag, Urban, Heavy Metals in the Bays	0.250	0.07	5	**0.37**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Diversion into Central Delta	0.200	0.06	6	**0.36**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Reverse Flow Conditions	0.200	0.06	6	**0.36**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Invasive Species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, water hyacinth, etc. in the Delta	0.600	0.18	2	**0.36**	**H**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Tidal Marsh Habitat	0.050	Delta	0.600	0.18	2	**0.36**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Yuba River	0.175	0.06	6	**0.33**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Temperature	0.125	Feather River	0.300	0.08	4	**0.32**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Temperature	0.125	Lower Sacramento River	0.300	0.08	4	**0.32**	**H**

Spring-run Chinook Salmon Stressor Matrix - Yuba River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Individual Diversions in the Feather River	0.100	0.04	7	**0.31**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Delta	0.225	0.06	5	**0.30**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the lower Sacramento River	0.225	0.06	5	**0.30**	**H**
Yuba River	0.14	Spawning	0.275	Flow Conditions	0.075	Flow Fluctuations	1.000	0.29	1	**0.29**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Temperature	0.125	Delta	0.275	0.07	4	**0.29**	**H**
Yuba River	0.14	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues in the Yuba River	0.450	0.09	3	**0.28**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Changes in Delta Hydrology	0.150	0.04	6	**0.27**	**M**
Yuba River	0.14	Embryo Incubation	0.15	Harvest/Angling Impacts	0.125	Redd disturbance	1.000	0.26	1.00	**0.26**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bay	0.200	0.05	5	**0.26**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Yuba River	0.200	0.05	5	**0.26**	**M**
Yuba River	0.14	Embryo Incubation	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills, physical disturbance	1.000	0.26	1.00	**0.26**	**M**
Yuba River	0.14	Embryo Incubation	0.15	Water Quality	0.125	Water Pollution above Daguerre Point Dam	1.000	0.26	1.00	**0.26**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Feather River	0.350	0.05	5	**0.26**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues in the Feather River	0.400	0.08	3	**0.25**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Invasive Species/Food Web Disruption	0.050	Asian clam, A. aspera, Microcystis, etc. in the Bays	0.400	0.12	2	**0.24**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Loss of Tidal Marsh Habitat	0.050	Bays	0.400	0.12	2	**0.24**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Flow Dependent Habitat Availability in the lower Sacramento River	0.125	0.04	6	**0.22**	**M**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Feather River	0.150	0.04	5	**0.22**	**M**

Spring-run Chinook Salmon Stressor Matrix - Yuba River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Yuba River	0.150	0.04	5	**0.22**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Sacramento Deep Water Ship Channel	0.050	0.04	5	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Suisun Marsh Salinity Control Structure	0.050	0.04	5	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Passage Impediments/Barriers	0.400	Yolo Bypass - Freemont Weir	0.050	0.04	5	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Quality	0.100	Ag, Urban in the Feather River	0.250	0.05	4	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Quality	0.100	Ag, Urban in the lower Sacramento River	0.250	0.05	4	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Quality	0.100	DO, Ag, Urban, Heavy Metals in the Delta	0.250	0.05	4	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Quality	0.100	Yuba River	0.250	0.05	4	**0.21**	**M**
Yuba River	0.14	Embryo Incubation	0.15	Water Temperature	0.100	Water Temperature above Daguerre Point Dam	1.000	0.21	1.00	**0.21**	**M**
Yuba River	0.14	Adult Immigration and Holding	0.15	Short-term Inwater Construction	0.125	Sedimentation, turbidity, acoustic effects, hazardous spills in the Feather River	0.150	0.04	5	**0.20**	**L**
Yuba River	0.14	Spawning	0.275	Water Temperature	0.050	Water Temperature in the Yuba River	1.000	0.19	1	**0.19**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Delta	0.100	0.03	6	**0.19**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Lower Sacramento River	0.100	0.03	6	**0.19**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Lower Sacramento River	0.250	0.04	5	**0.19**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Yuba River	0.250	0.04	5	**0.19**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Predation	0.125	Predation in the Bay	0.050	0.04	5	**0.19**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Flow Conditions	0.050	Flow Dependent Habitat Availability in the Feather River	0.100	0.03	6	**0.18**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Passage Impediments/Barriers	0.025	Daguerre Point Dam	0.600	0.09	2	**0.18**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Temperature	0.075	Yuba River	0.100	0.04	4	**0.18**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Short-term Inwater Construction	0.050	Sedimentation, turbidity, acoustic effects, hazardous spills in the Bays	0.100	0.03	5	**0.15**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	Ag, Urban in the Feather River	0.100	0.03	5	**0.15**	**L**

Spring-run Chinook Salmon Stressor Matrix - Yuba River

Population	Pop Weight (0-1) Sum to 1	Life Stage	Life Stage Weight (0-1) Sum to 1	Primary Stressor Category	Primary Stressor Weight (0-1) Sum to 1	Specific Stressor	Specific Stressor Weight (0-1) Sum to 1	Composite Weight (X100)	# of Specific Stressors	Normalized Weight (Composite * # of specific stressors)	Overall Stressor Category
Yuba River	0.14	Adult Immigration and Holding	0.15	Water Temperature	0.125	Yuba River	0.125	0.03	4	**0.13**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Passage Impediments/Barriers	0.025	Englebright Dam	0.400	0.06	2	**0.12**	**L**
Yuba River	0.14	Spawning	0.275	Harvest/Angling Impacts	0.025	Recreational, Poaching, Angler Impacts	1.000	0.10	1	**0.10**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Flow Conditions	0.100	Low Flows - attraction, migratory cues AND Flood Flows - non-natal area attraction in Lower Sacramento River	0.150	0.03	3	**0.09**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Bays	0.050	0.02	6	**0.09**	**L**
Yuba River	0.14	Adult Immigration and Holding	0.15	Harvest/Angling Impacts	0.150	Feather River	0.050	0.02	6	**0.09**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Contra Costa Power Plant	0.025	0.01	7	**0.08**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Entrainment	0.075	Pittsburg Power Plant	0.025	0.01	7	**0.08**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Delta	0.100	0.01	5	**0.07**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Water Quality	0.050	Yuba River	0.050	0.01	5	**0.07**	**L**
Yuba River	0.14	Juvenile Rearing and Outmigration	0.425	Hatchery Effects (Competition and Predation)	0.025	Bays	0.050	0.01	5	**0.04**	**L**