APPENDIX I

Results of Validation Site Protectiveness Analyses:

Number of Days Per Water Year with Upstream Passage and Spawning Opportunities During the 10/1-3/31 Period

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APPENDIX I

RESULTS OF VALIDATION SITE PROTECTIVENESS ANALYSES:

NUMBER OF DAYS PER WATER YEAR WITH UPSTREAM PASSAGE AND SPAWNING OPPORTUNITIES DURING THE 10/1-3/31 PERIOD

This appendix provides the results of the passage and spawning habitat analysis (described in Appendix G) in terms of the minimum, mean and maximum number of days per water year of passage and spawning opportunities during the October 1 to March 31 period. Results are given for the unimpaired flow conditions and for flows impaired to the maximum extent allowed by the Policy element alternatives selected for five specific Flow Alternative Scenarios, described in Table I-1. Results are presented graphically for each validation site in order from smallest to largest drainage area.

'No Habitat' indicates validation sites that do not have sufficient habitat (defined as suitable width) under any flow condition to provide either passage or spawning opportunities (as indicated) for the indicated species.

Table I-1. Flow Alternative Scenarios Evaluated in the Analysis of Protectiveness.

Flow Alternative Scenario	Description, Policy Element Alternative Criteria Used		
Unimpaired	Flow conditions using the estimated natural hydrology described in the previous section		
Alternative Scenario 1 *(DFG-NMFS 2002 Criteria)*	Flow conditions impaired with the maximum diversions permitted by the following Policy Element Alternatives:		
	DS1	MBF1	MCD1 Rate
	12/15-3/31	February median daily flow	15% of 20% winter exceedance flow
Alternative Scenario 2 *(MTTU 2000 Criteria)*	DS2	MBF2	MCD4 Rate
	Year round	10% exceedance flow	Calculated for each site following the procedure depicted in Figure 3-2
Alternative Scenario 3 *(Upper Flow Scenario)*	DS1	MBF3	MCD1 Rate
	12/15-3/31	Upper MBF specified as a function of drainage area and mean annual flow	15% of 20% winter exceedance flow
Alternative Scenario 4 *(Lower Flow Scenario)*	DS3	MBF4	MCD2 Rate
	10/1-3/31	Lower MBF specified as a function of drainage area and mean annual flow	5% of 1.5 year flood magnitude
Alternative Scenario 5 *(DFG-NMFS 2002 Criteria)*	DS1	MBF1	MCD3 Volume
	12/15-3/31	February median daily flow	CFII = 10% estimated unimpaired runoff

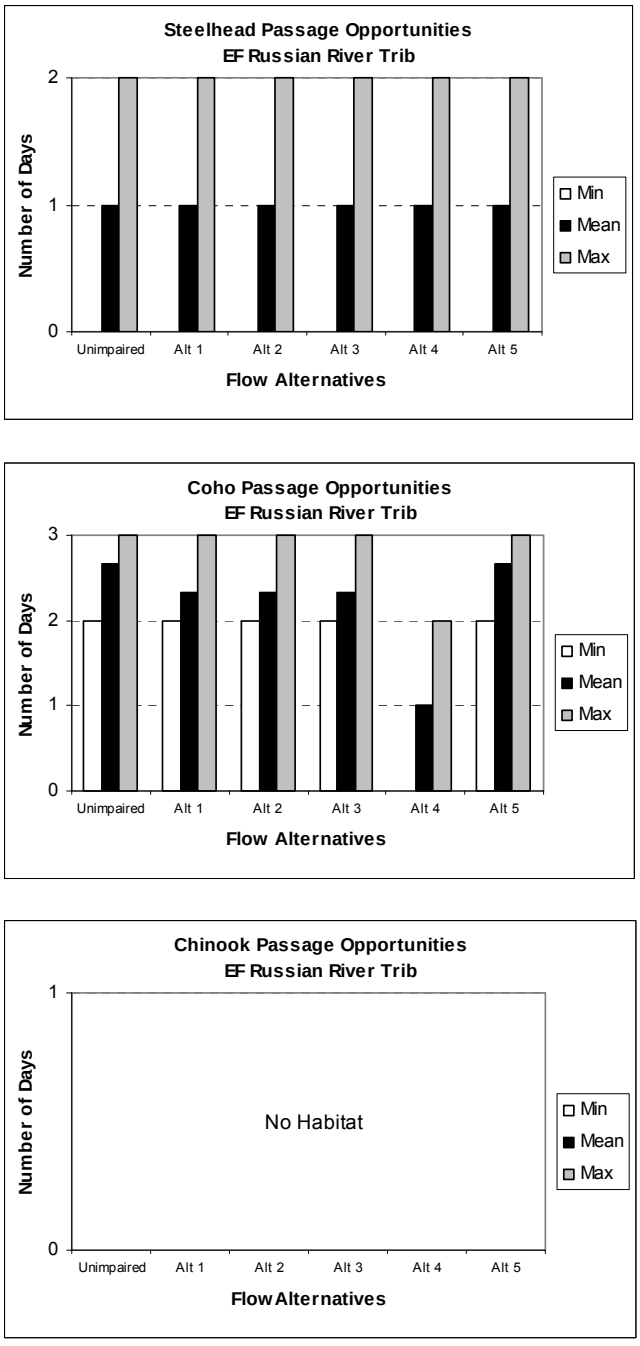

Figure I-1. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage in the East Fork Russian River Tributary validation site (drainage area = 0.25 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage periods, for the period of record at a nearby USGS stream gage. Spawning opportunities were not assessed.

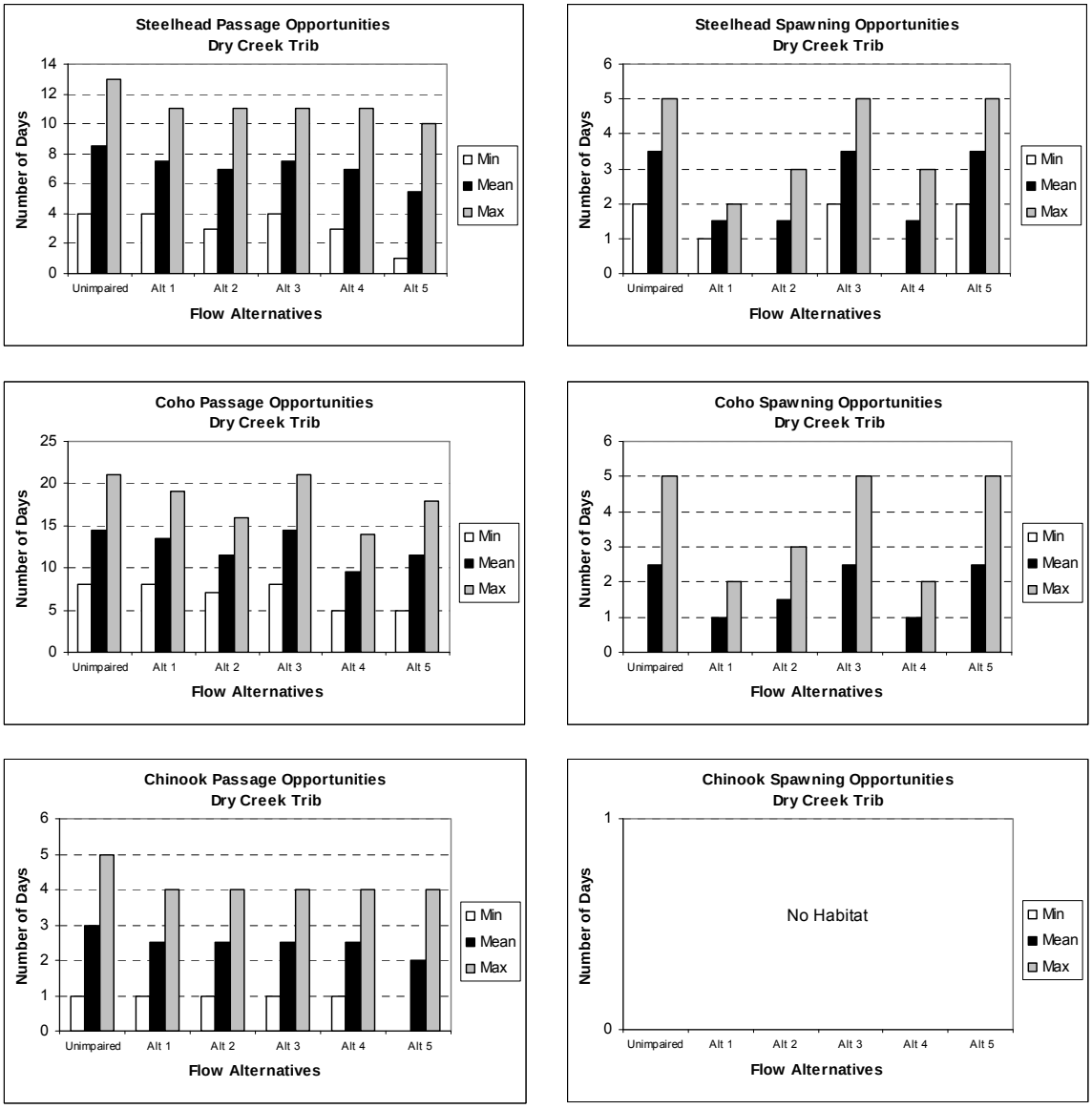

Figure I-2. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Dry Creek Tributary validation site (drainage area = 1.19 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

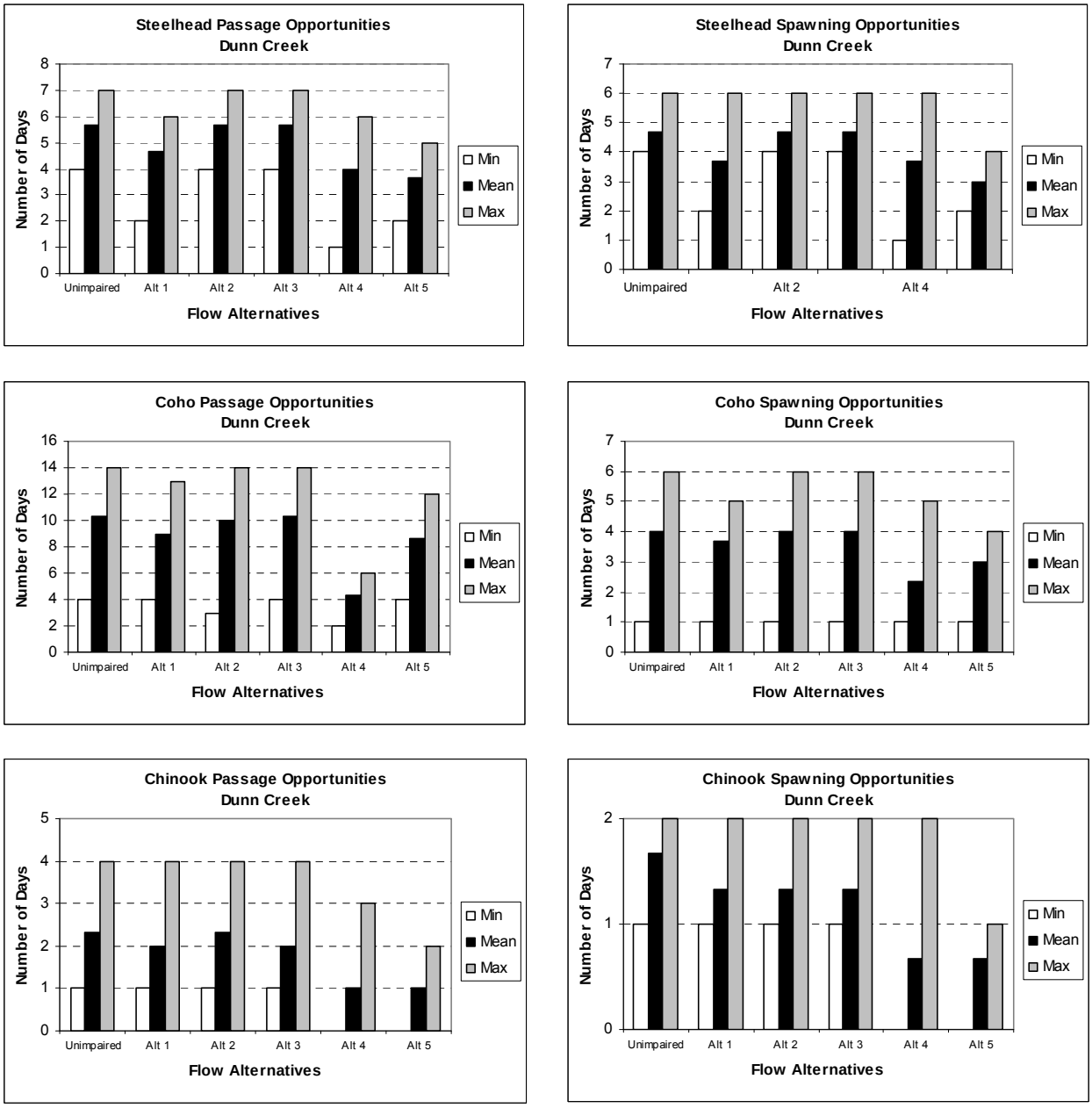

Figure I-3. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Dunn Creek validation site (drainage area = 1.88 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

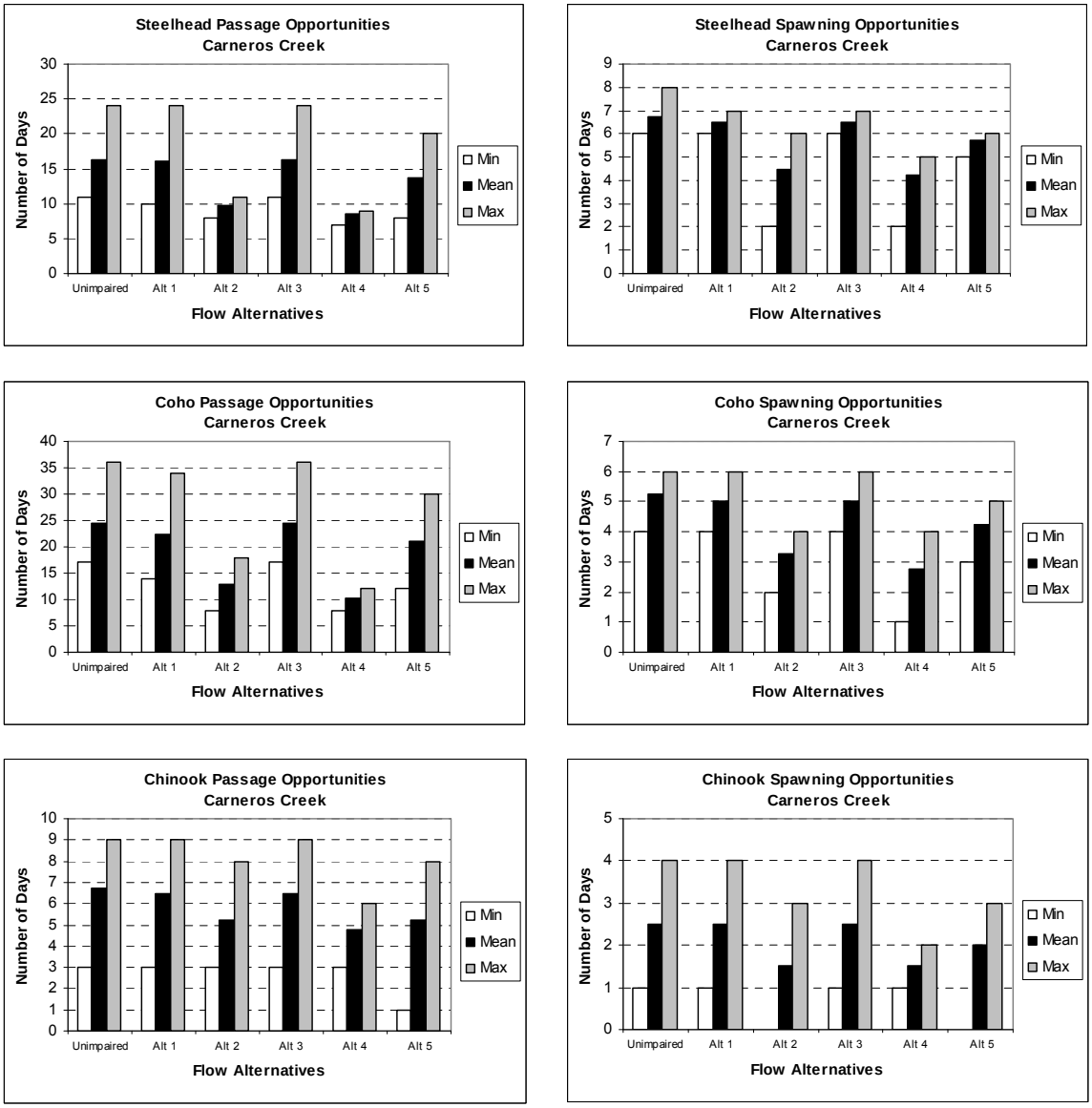

Figure I-4. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Carneros Creek validation site (drainage area = 2.75 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

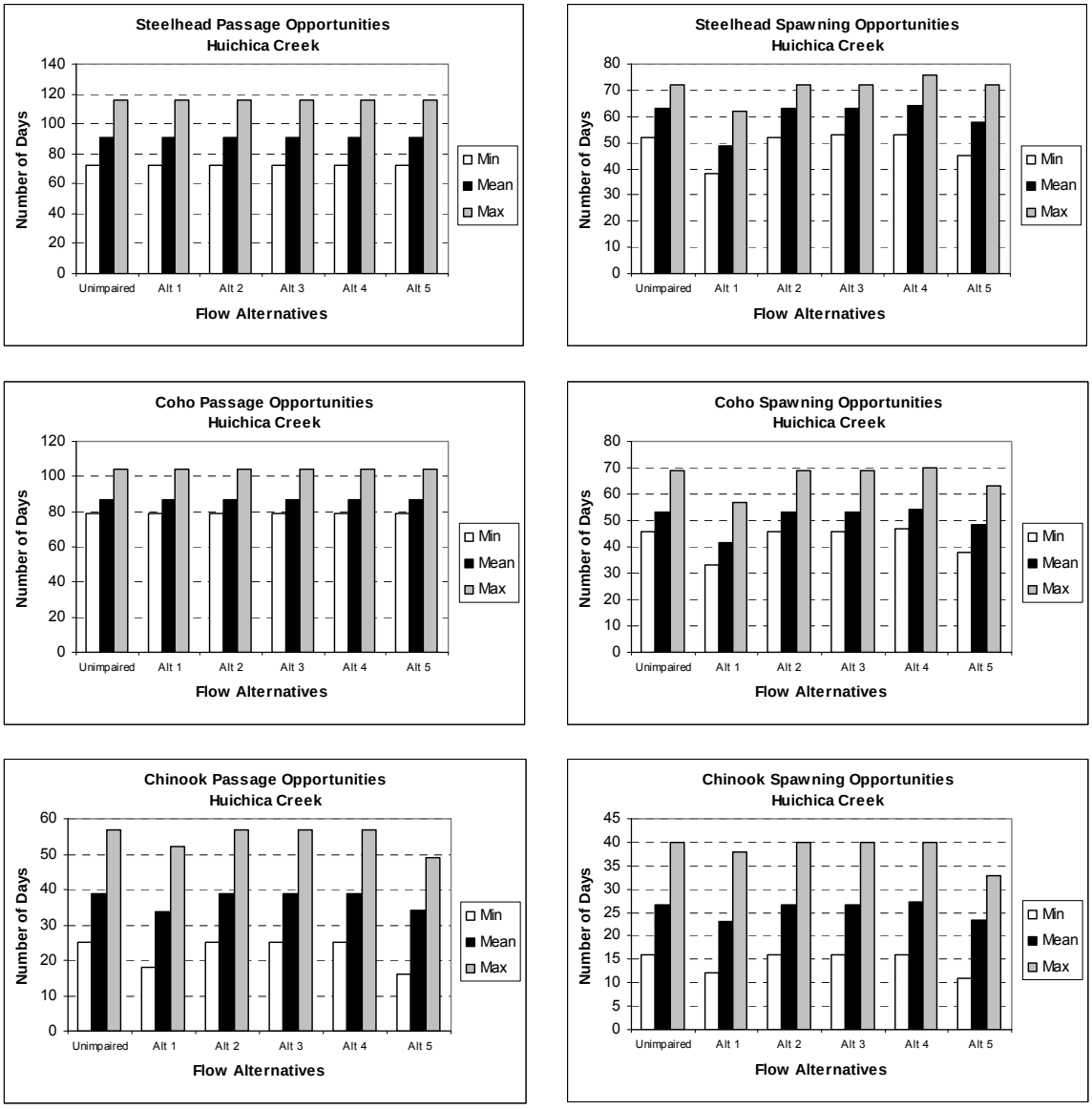

Figure I-5. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Huichica Creek validation site (drainage area = 4.92 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

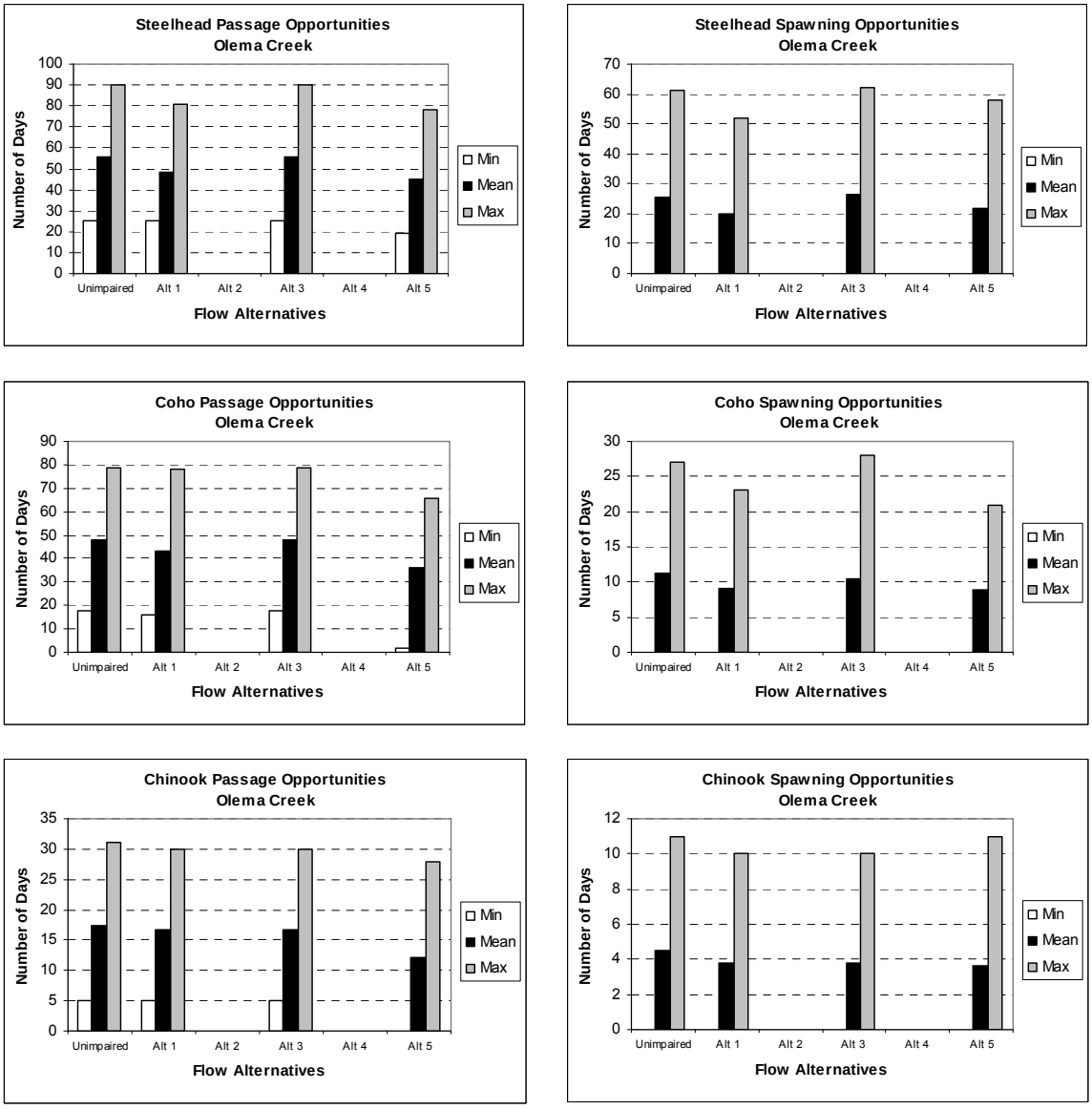

Figure I-6. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Olema Creek validation site (drainage area = 6.47 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

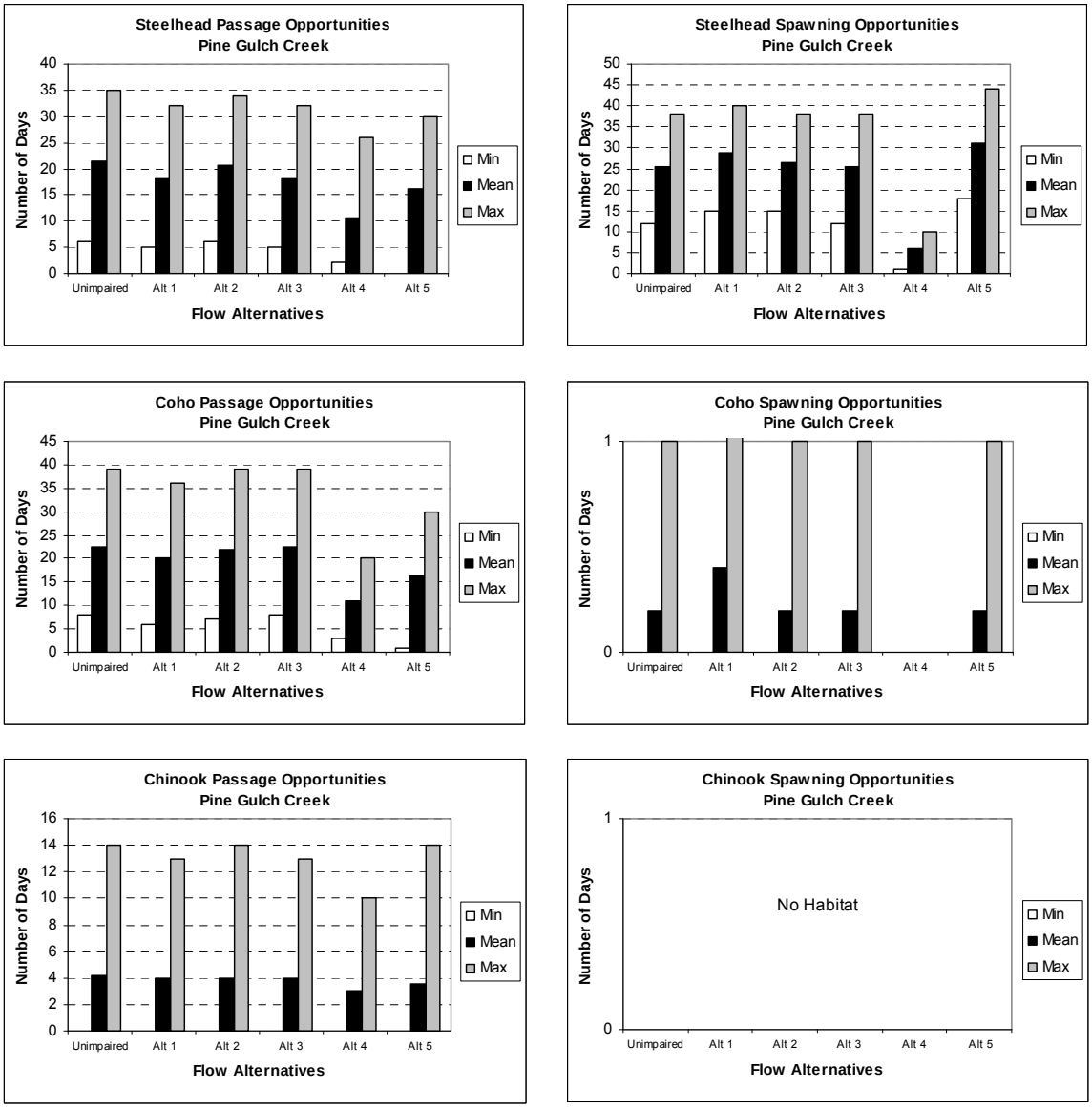

Figure I-7. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Pine Gulch Creek validation site (drainage area = 7.83 mi^2) expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

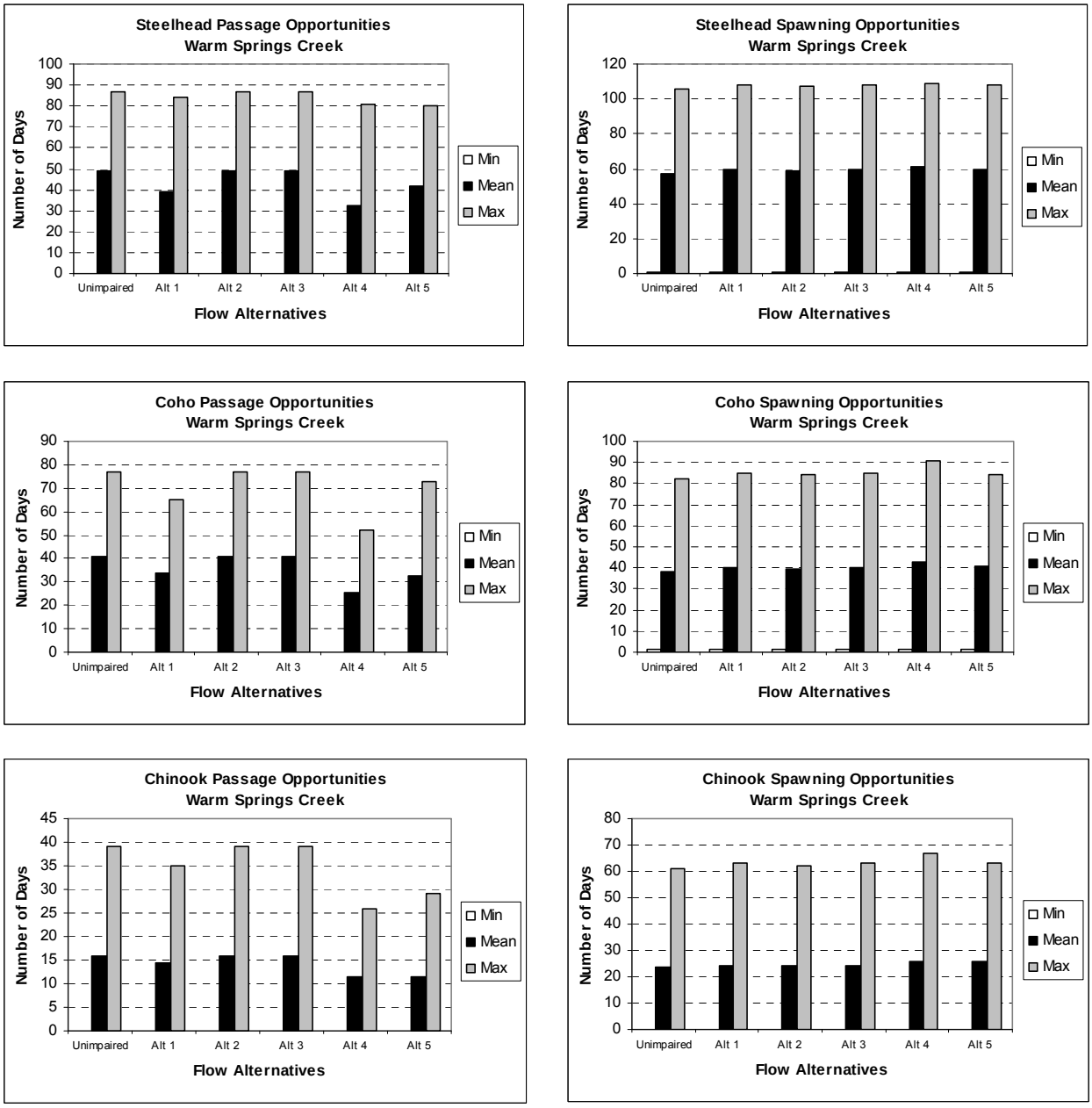

Figure I-8. Comparison of alternative Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Warm Springs Creek validation site (drainage area = 12.2 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

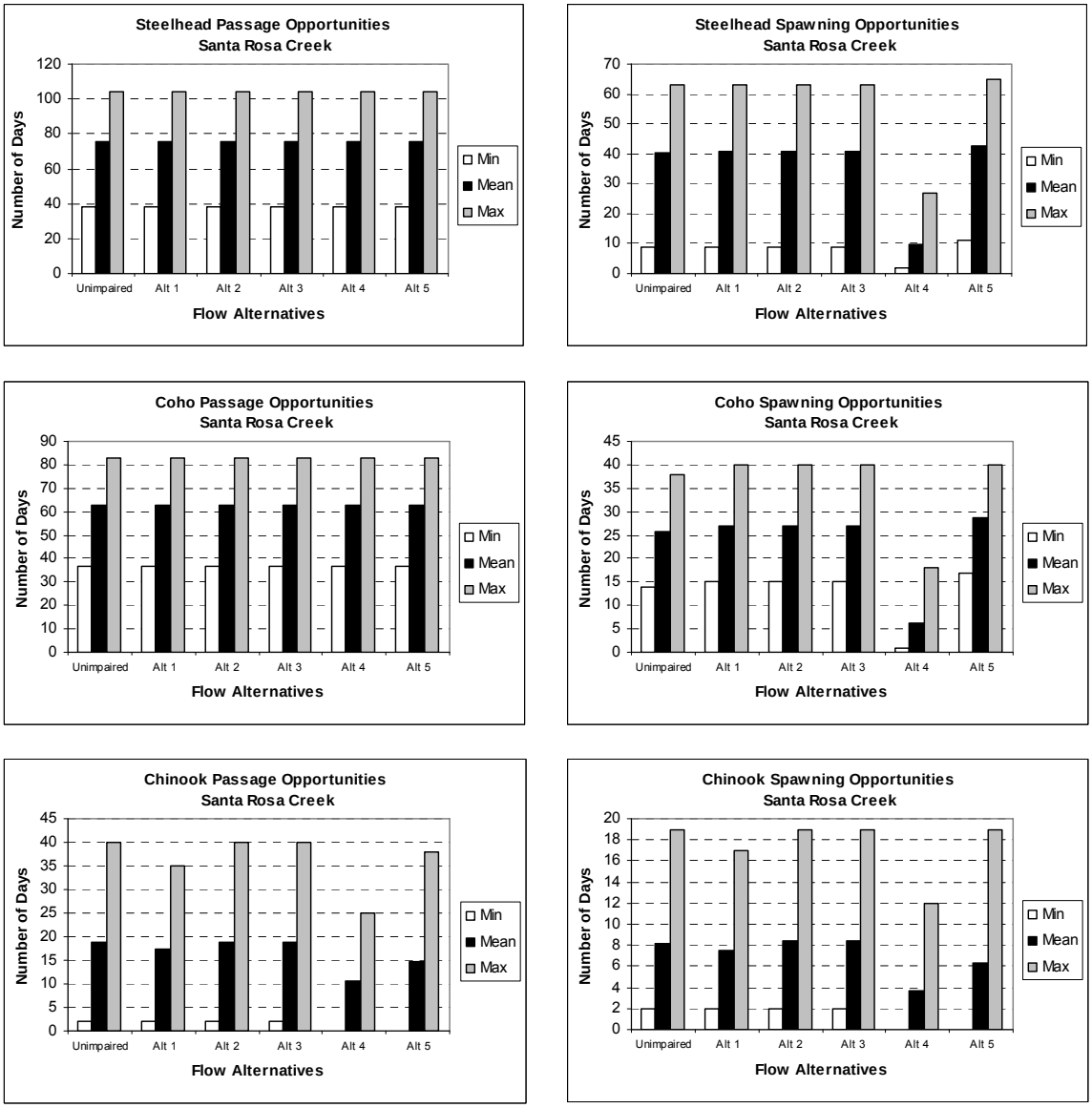

Figure I-9. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Santa Rosa Creek validation site (drainage area = 12.5 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

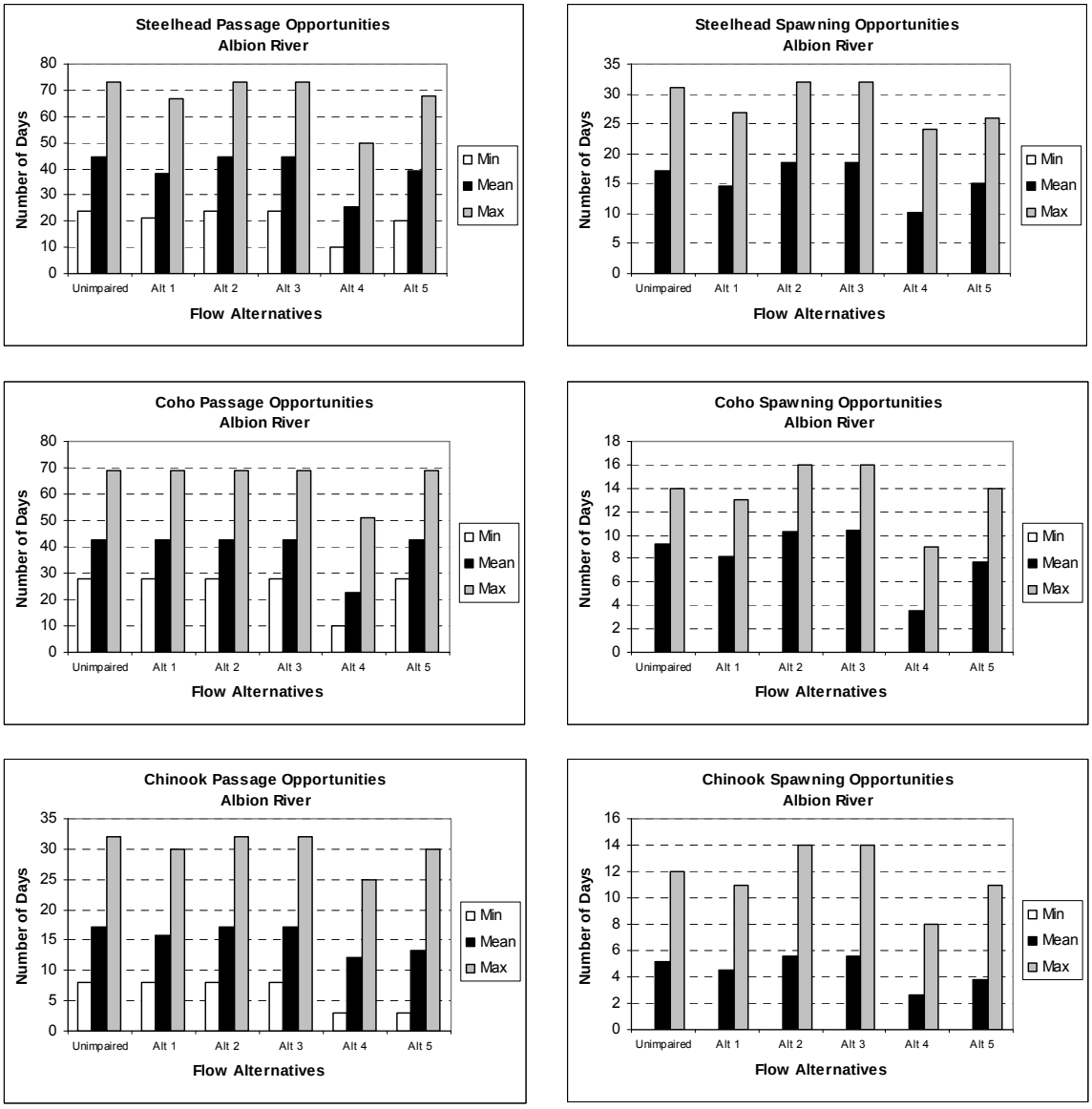

Figure I-10. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Albion River validation site (drainage area = 14.4 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

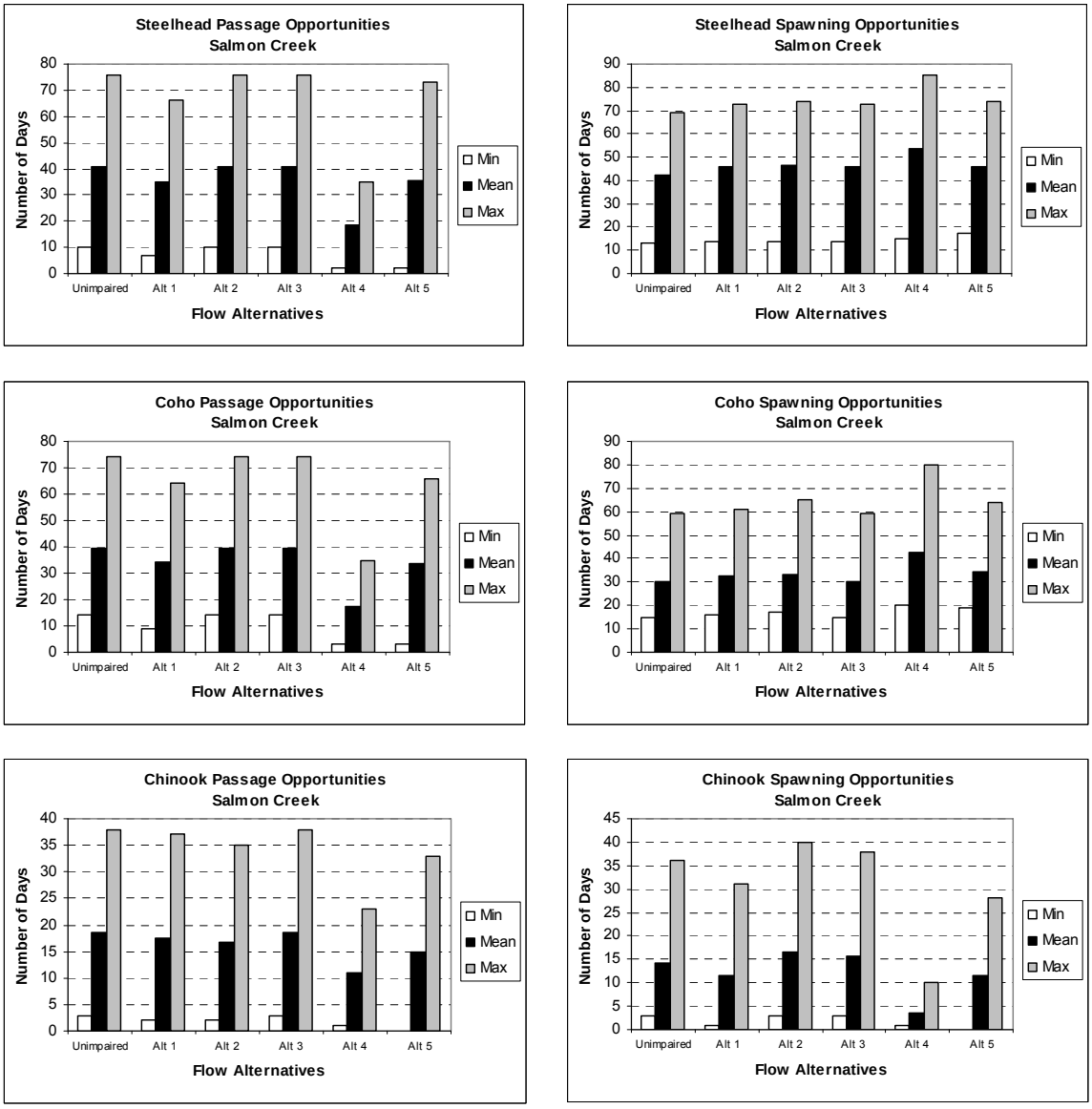

Figure I-11. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Salmon Creek validation site (drainage area = 15.7 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

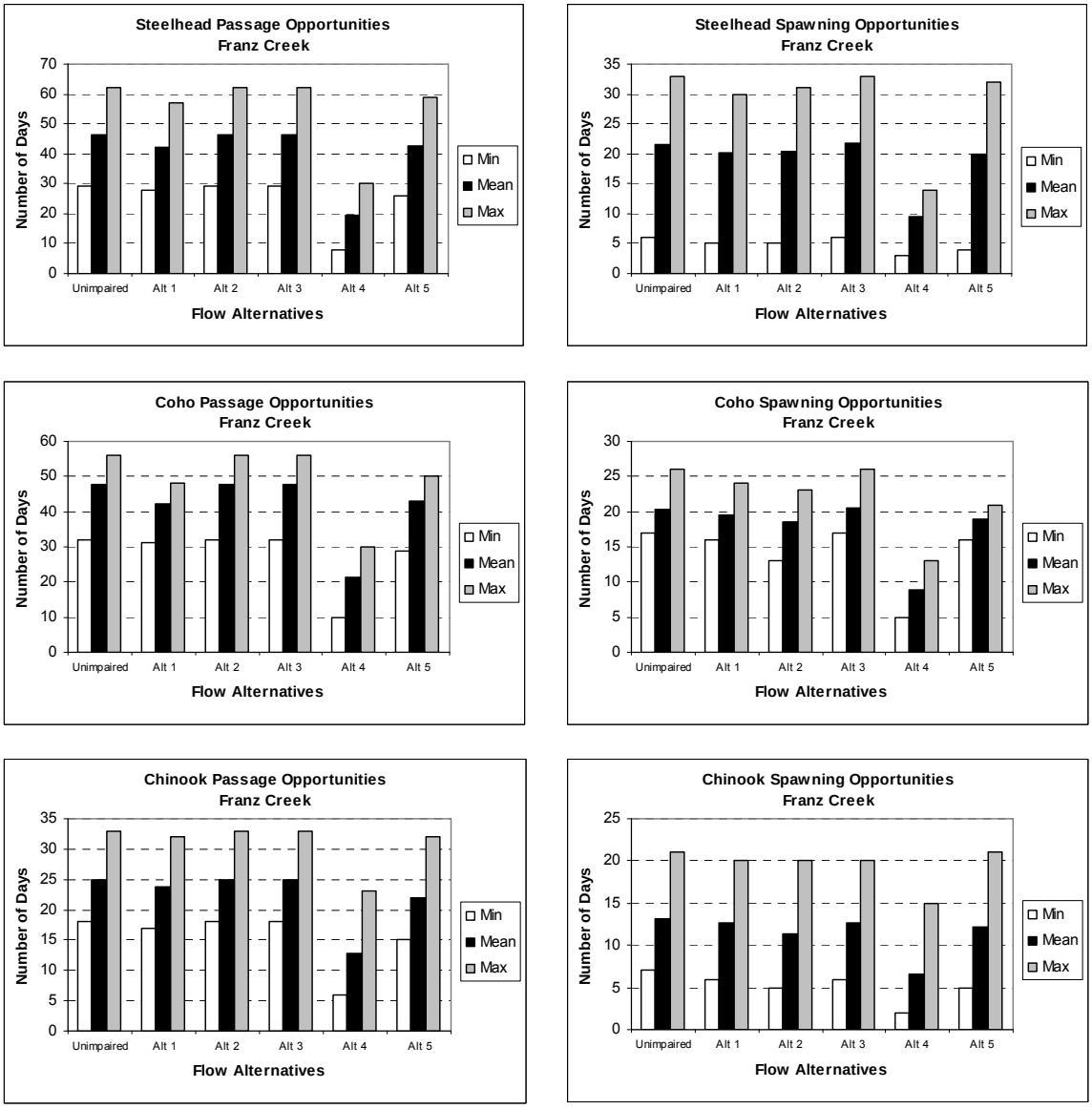

Figure I-12. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Franz Creek validation site (drainage area = 15.7 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated for each species' passage and spawning periods, for the period of record at a nearby USGS stream gage.

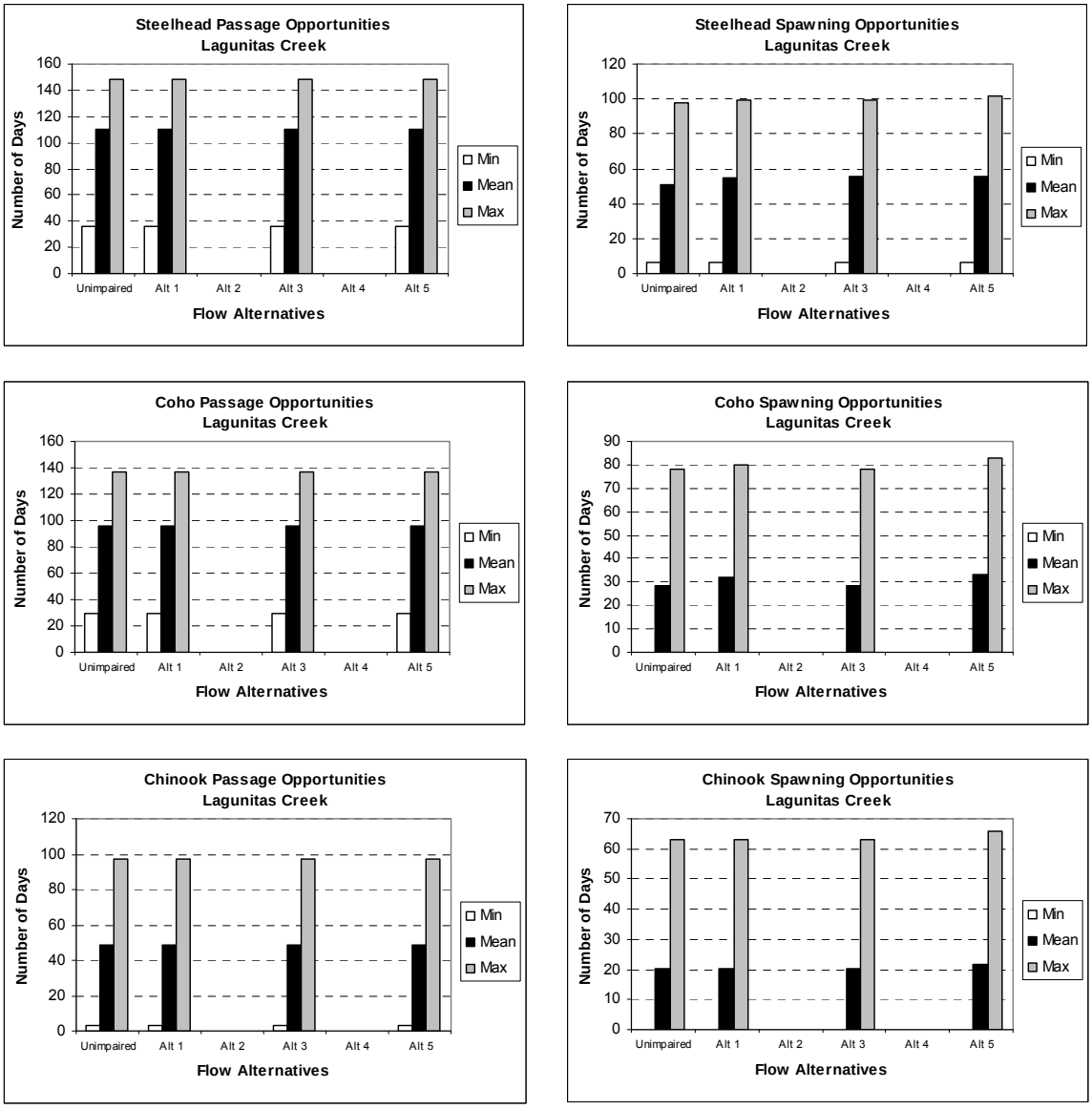

Figure I-13. Comparison of Flow Alternative Scenarios 1 to 5 and unimpaired flow conditions for upstream passage and spawning in the Lagunitas Creek validation site (drainage area = 34.3 mi^2), expressed as number of days per water year. Minimum, mean, and maximum values are evaluated between 10/1-3/31 over the period of record at a nearby USGS stream gage.

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