

***UPDATE OF ESTIMATED IMPACTS OF
MARCH 2020 ALTERNATIVES FOR
OCEAN SALMON FISHERY MANAGEMENT MEASURES***

April 5, 2020

TABLE 5a. (QTA) Projected key stock escapements (thousands of fish) or management criteria for 2020 ocean fishery Alternatives - STT analyzed^{a/} (Page 1 of 2)

Key Stock/Criteria	PROJECTED			2020
	Alt I	Alt II	Alt III	Criteria
CHINOOK				
Columbia Upriver Brights	226.5	228.2	236.0	74.0 Minimum ocean escapement to attain 40.0 adults over McNary Dam, with normal distribution and no mainstem harvest. The management goal has been increased to 60.0 by Columbia River managers.
Mid-Columbia Brights	77.3	77.9	80.6	14.9 Minimum ocean escapement to attain 7.9 for Little White Salmon egg-take, assuming average conversion and no mainstem harvest.
Columbia Lower River Hatchery Tules	49.3	50.4	53.4	25.0 Minimum ocean escapement to attain 14.8 adults for hatchery egg-take, with average conversion and no lower river mainstem or tributary harvest.
Columbia Lower River Natural Tules ^{c/} (threatened)	37.3%	35.3%	29.4%	≤ 38.0% Total adult equivalent fishery exploitation rate (2020 NMFS ESA guidance).
Columbia Lower River Wild ^{d/} (threatened)	19.3	19.4	20.3	6.9 Minimum ocean escapement to attain MSY spawner goal of 5.7 for N. Lewis River fall Chinook (NMFS ESA consultation standard).
Spring Creek Hatchery Tules	44.2	45.9	49.6	8.2 Minimum ocean escapement to attain 6.0 adults for Spring Creek Hatchery egg-take, assuming average conversion and no mainstem harvest.
Upper Columbia River Summer	37.4	38.0	39.0	29.0 Aggregate escapement to mouth of Columbia River.
Snake River Fall (threatened) SRFI	53.1%	47.2%	28.6%	≤ 70.0% Of 1988-1993 base period exploitation rate for all ocean fisheries (NMFS ESA consultation standard).
Klamath River Fall	36.2	36.2	--	≥ 36.2 2020 minimum natural area adult escapement (FMP control rule).
	--	--	40.7	≥ 40.7 2020 minimum natural area adult escapement (Council guidance).
Federally recognized tribal harvest	50.0%	50.0%	50.0%	50.0% Equals 8.6, 8.6, and 5.3 (thousand) adult fish for Yurok and Hoopa Valley tribal fisheries.
Exploitation (spawner reduction) rate	25.0%	25.0%	--	≤ 25.0% FMP control rule.
	--	--	15.7%	≤ 15.7% Council guidance.
Adult river mouth return	59.0	59.0	60.9	NA Total adults in thousands.
Age-4 ocean harvest rate	8.9%	9.3%	6.1%	≤ 16.0% NMFS ESA consultation standard for threatened California Coastal Chinook.
KMZ sport fishery share	7.5%	6.2%	3.6%	
River recreational fishery share	15.0%	15.0%	15.0%	NA Equals 1.3, 1.3, and 0.8 (thousand) adult fish for recreational inriver fisheries.
Sacramento River Winter (endangered)	16.8%	17.7%	20.0%	≤ 20.0% Age-3 ocean impact rate in fisheries south of Pt. Arena. In addition, the following season restrictions apply: <u>Recreational</u> - Pt. Arena to Pigeon Pt. between the first Saturday in April and the second Sunday in November; Pigeon Pt. to the U.S./Mexico border between the first Saturday in April and the first Sunday in October. Minimum size limit ≥ 20 inches total length. <u>Commercial</u> - Pt. Arena to the U.S./Mexico border between May 1 and September 30, except Pt. Reyes to Pt. San Pedro between October 1 and 15 (Monday-Friday). Minimum size limit ≥ 26 inches total length (NMFS 2020 ESA Guidance).
Sacramento River Fall	228.3	222.6	234.1	≥ 141.955 2020 minimum hatchery and natural area adult escapement (FMP control rule).
Sacramento Index Exploitation Rate	51.7%	52.9%	50.5%	≤ 70.0% FMP control rule.
Ocean commercial impacts	148.6	155.8	145.4	Includes fall (Sept-Dec) 2019 impacts (5.7 thousand SRFC).
Ocean recreational impacts	55.9	55.5	52.4	Includes fall (Sept-Dec) 2019 impacts (3.3 thousand SRFC).
River recreational impacts	40.3	39.3	41.3	
SRKW Prey Abundance				
North of Falcon	1,250.9	1,250.9	1,250.9	≥ 972.0 Oct 1 starting abundance of age 3+ Chinook from U.S./Canada Border to Cape Falcon
Falcon to Horse Mt.	1,063.6	1,063.6	1,063.6	NA Oct 1 starting abundance of age 3+ Chinook from Cape Falcon to Horse Mt.
South of Horse Mt.	543.8	543.8	543.8	NA Oct 1 starting abundance of age 3+ Chinook south of Horse Mt.

TABLE 5a. (QTA) Projected key stock escapements (thousands of fish) or management criteria for 2020 ocean fishery Alternatives - STT analyzed^{a/} (Page 2 of 2)

Key Stock/Criteria	PROJECTED			2020 Criteria	Spawner Objective or Other Comparative Standard as Noted ^{b/}
	Alt I	Alt II	Alt III		
COHO	COHO			COHO	
Interior Fraser (Thompson River)	6.8%(2.3%)	6.2%(1.8%)	5.1%(0.6%)	≤ 10.0% 2020 Southern U.S. exploitation rate ceiling; PSC coho agreement.	
Skagit	30.5%(2.3%)	30.1%(1.7%)	29.2%(0.6%)	≤ 35.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Stillaguamish	26.6%(1.7%)	26.1%(1.3%)	25.4%(0.4%)	≤ 35.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Snohomish	14.8%(1.7%)	14.4%(1.2%)	13.5%(0.4%)	≤ 20.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Hood Canal	45.9%(2.7%)	45.4%(2.0%)	44.6%(0.8%)	≤ 45.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Strait of Juan de Fuca	8.9%(2.1%)	8.5%(1.7%)	7.4%(0.6%)	≤ 20.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Quillayute Fall	8.7	8.8	8.9	6.3 FMP MSY adult spawner estimate. Value depicted is ocean escapement.	
Hoh	3.6	3.7	3.8	2.0 FMP MSY adult spawner estimate. Value depicted is ocean escapement.	
Queets Wild	6.7	6.8	7.1	5.8 FMP MSY adult spawner estimate. Value depicted is ocean escapement.	
Grays Harbor	47.2	47.6	48.2	24.4 FMP MSY adult spawner estimate. Value depicted is ocean escapement.	
Willapa Bay	27.5	28.3	29.2	17.2 FMP MSY natural area adult spawner estimate. Value depicted is ocean escapement.	
Lower Columbia River Natural (threatened)	15.1%	12.9%	9.6%	≤ 18.0% Total marine and mainstem Columbia R. fishery exploitation rate (2020 NMFS ESA guidance).	
Upper Columbia ^{c/}	70%	73%	76%	≥ 50% Minimum percentage of the run to Bonneville Dam.	
Columbia River Hatchery Early	87.7	92.1	93.8	77.2 Minimum ocean escapement to attain hatchery egg-take goal of 21.7 early adult coho, with average conversion and no mainstem or tributary fisheries.	
Columbia River Hatchery Late	34.5	37.2	42.2	9.7 Minimum ocean escapement to attain hatchery egg-take goal of 6.4 late adult coho, with average conversion and no mainstem or tributary fisheries.	
Oregon Coastal Natural	11.8%	11.1%	10.3%	≤ 15.0% Marine and freshwater fishery exploitation rate (NMFS ESA consultation standard).	
Southern Oregon/Northern California Coast (threatened)	3.2%	3.5%	2.7%	≤ 13.0% Marine fishery exploitation rate for R/K hatchery coho (NMFS ESA consultation standard).	

a/ Coho projections in the table assume post-season 2018 fishery scalars for Canadian fisheries, except Fraser net and terminal fisheries (post-season 2016), and Fraser Sport (post-season 2017). Model results for Chinook in this table used 2018 pre-season catches and fishing effort scalars, and are updated with 2018 post season data if available. Assumptions for these fisheries will be changed prior to the April meeting as new information becomes available.

b/ Ocean escapement is the number of salmon escaping ocean fisheries and entering freshwater with the following clarifications. Ocean escapement for Puget Sound stocks is the estimated number of salmon entering Area 4B that are available to U.S. net fisheries in Puget Sound and spawner escapement after impacts from the Canadian, U.S. ocean, and Puget Sound troll and recreational fisheries have been deducted. Numbers in parentheses represent Council area exploitation rates for Puget Sound coho stocks. For Columbia River early and late coho stocks, ocean escapement represents the number of coho after the Buoy 10 fishery. Exploitation rates for LCN and OCN coho represent marine and freshwater impacts. Values reported for Klamath River fall Chinook are natural area adult spawners. Values reported for Sacramento River fall Chinook are hatchery and natural area adult spawners.

c/ Includes projected impacts of inriver fisheries that have not yet been shaped.

d/ Annual management objectives may be different than FMP goals, and are subject to agreement between WDFW and the treaty tribes under U.S. District Court orders. It is anticipated that fishery management will be adjusted by state and tribal comanagers during the pre-season planning process to comply with stock management objectives.

e/ Includes minor contributions from East Fork Lewis River and Sandy River.

TABLE 5b. (Makah Tribe) Projected key stock escapements (thousands of fish) or management criteria for 2020 ocean fishery Alternatives - STT analyzed^{d/} (Page 1 of 2)

Key Stock/Criteria	PROJECTED			2020
	Alt I	Alt II	Alt III	Criteria
CHINOOK				
Columbia Upriver Brights	225.1	227.2	235.5	74.0 Minimum ocean escapement to attain 40.0 adults over McNary Dam, with normal distribution and no mainstem harvest. The management goal has been increased to 60.0 by Columbia River managers.
Mid-Columbia Brights	76.9	77.6	80.4	14.9 Minimum ocean escapement to attain 7.9 for Little White Salmon egg-take, assuming average conversion and no mainstem harvest.
Columbia Lower River Hatchery Tules	49.0	50.2	53.3	25.0 Minimum ocean escapement to attain 14.8 adults for hatchery egg-take, with average conversion and no lower river mainstem or tributary harvest.
Columbia Lower River Natural Tules ^{c/} (threatened)	37.9%	35.7%	29.6%	≤ 38.0% Total adult equivalent fishery exploitation rate (2020 NMFS ESA guidance).
Columbia Lower River Wild ^{d/} (threatened)	19.2	19.3	20.3	6.9 Minimum ocean escapement to attain MSY spawner goal of 5.7 for N. Lewis River fall Chinook (NMFS ESA consultation standard).
Spring Creek Hatchery Tules	43.9	45.6	49.4	8.2 Minimum ocean escapement to attain 6.0 adults for Spring Creek Hatchery egg-take, assuming average conversion and no mainstem harvest.
Upper Columbia River Summer	37.2	37.9	39.0	29.0 Aggregate escapement to mouth of Columbia River.
Snake River Fall (threatened) SRFI	56.7%	49.8%	30.1%	≤ 70.0% Of 1988-1993 base period exploitation rate for all ocean fisheries (NMFS ESA consultation standard).
Klamath River Fall	36.2	36.2	--	≥ 36.2 2020 minimum natural area adult escapement (FMP control rule).
	--	--	40.7	≥ 40.7 2020 minimum natural area adult escapement (Council guidance).
Federally recognized tribal harvest	50.0%	50.0%	50.0%	50.0% Equals 8.6, 8.6, and 5.3 (thousand) adult fish for Yurok and Hoopa Valley tribal fisheries.
Exploitation (spawner reduction) rate	25.0%	25.0%	--	≤ 25.0% FMP control rule.
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Adult river mouth return	59.0	59.0	60.9	NA Total adults in thousands.
Age-4 ocean harvest rate	8.9%	9.3%	6.1%	≤ 16.0% NMFS ESA consultation standard for threatened California Coastal Chinook.
KMZ sport fishery share	7.5%	6.2%	3.6%	
River recreational fishery share	15.0%	15.0%	15.0%	NA Equals 1.3, 1.3, and 0.8 (thousand) adult fish for recreational river fisheries.
Sacramento River Winter (endangered)	16.8%	17.7%	20.0%	≤ 20.0% Age-3 ocean impact rate in fisheries south of Pt. Arena. In addition, the following season restrictions apply: <u>Recreational</u> - Pt. Arena to Pigeon Pt. between the first Saturday in April and the second Sunday in November; Pigeon Pt. to the U.S./Mexico border between the first Saturday in April and the first Sunday in October. Minimum size limit ≥ 20 inches total length. <u>Commercial</u> - Pt. Arena to the U.S./Mexico border between May 1 and September 30, except Pt. Reyes to Pt. San Pedro between October 1 and 15 (Monday-Friday). Minimum size limit ≥ 26 inches total length (NMFS 2020 ESA Guidance).
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SRKW Prey Abundance				
North of Falcon	1,250.9	1,250.9	1,250.9	≥ 972.0 Oct 1 starting abundance of age 3+ Chinook from U.S./Canada Border to Cape Falcon
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Key Stock/Criteria	PROJECTED			2020 Criteria	Spawner Objective or Other Comparative Standard as Noted ^{b/}
	Alt I	Alt II	Alt III		
COHO	COHO			COHO	
Interior Fraser (Thompson River)	8.9%(4.5%)	7.7%(3.3%)	6.4%(2.0%)	≤ 10.0% 2020 Southern U.S. exploitation rate ceiling; PSC coho agreement.	
Skagit	32.0%(4.2%)	31.1%(3.1%)	30.1%(1.8%)	≤ 35.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Stillaguamish	27.7%(3.1%)	27.0%(2.2%)	26.1%(1.3%)	≤ 35.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Snohomish	16.1%(3.1%)	15.2%(2.2%)	14.3%(1.3%)	≤ 20.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Hood Canal	47.1%(4.6%)	46.3%(3.4%)	45.4%(2.0%)	≤ 45.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Straits of Juan de Fuca	10.5%(3.8%)	9.6%(2.8%)	8.4%(1.6%)	≤ 20.0% 2020 total exploitation rate ceiling; FMP matrix ^{d/}	
Quillayute Fall	8.5	8.7	8.8	6.3 FMP MSY adult spawner estimate. Value depicted is ocean escapement.	
Hoh	3.4	3.6	3.7	2.0 FMP MSY adult spawner estimate. Value depicted is ocean escapement.	
Queets Wild	6.5	6.7	6.9	5.8 FMP MSY adult spawner estimate. Value depicted is ocean escapement.	
Grays Harbor	46.2	46.9	47.7	24.4 FMP MSY adult spawner estimate. Value depicted is ocean escapement.	
Willapa Bay	26.9	27.9	28.8	17.2 FMP MSY natural area adult spawner estimate. Value depicted is ocean escapement.	
Lower Columbia River Natural (threatened)	16.8%	14.1%	10.6%	≤ 18.0% Total marine and mainstem Columbia R. fishery exploitation rate (2020 NMFS ESA guidance).	
Upper Columbia ^{c/}	69%	73%	76%	≥ 50% Minimum percentage of the run to Bonneville Dam.	
Columbia River Hatchery Early	86.1	90.9	92.8	77.2 Minimum ocean escapement to attain hatchery egg-take goal of 21.7 early adult coho, with average conversion and no mainstem or tributary fisheries.	
Columbia River Hatchery Late	33.8	36.7	41.7	9.7 Minimum ocean escapement to attain hatchery egg-take goal of 6.4 late adult coho, with average conversion and no mainstem or tributary fisheries.	
Oregon Coastal Natural	12.2%	11.4%	10.5%	≤ 15.0% Marine and freshwater fishery exploitation rate (NMFS ESA consultation standard).	
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