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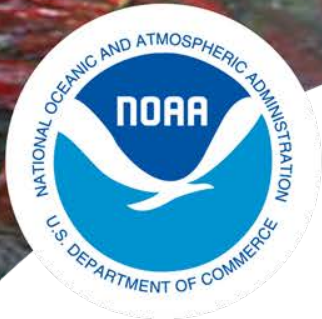
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Agenda Item F.1.e  
Supplemental NMFS Presentation 1 (Jording)  
April 2019

# Assessment of 2019 PFMC Salmon Fisheries on Southern Resident Killer Whales (SRKW)

Teresa Mongillo, Protected Resources Division, Seattle Branch  
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# Progress review



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## NMFS issued guidance relative to SRKW in March 2019 (Agenda Item D.1.a)

### Guidance:

- Re-initiation
- Reassess effects
- Consider priority stocks



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
1201 NE Lloyd Boulevard, Suite 1100  
PORTLAND, OREGON 97232-1274

Agenda Item D.1.  
Supplemental NMFS Report  
March 2019

March 6, 2019

Mr. Phil Anderson, Chair  
Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 101  
Portland, Oregon 97220-1384

Dear Chair Anderson:

This letter supplements our annual guidance letter, dated March 5, 2019, on developing the Pacific Fishery Management Council's (Council) recommendations for the 2019 ocean salmon fisheries. This letter specifically addresses NOAA's National Marine Fisheries Service (NMFS) guidance related to effects of these fisheries on endangered Southern Resident killer whales (SRKW).

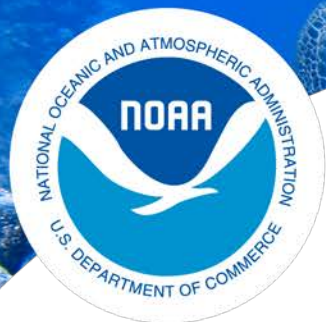
#### **Background**

SRKW are listed as endangered under the ESA. Over the last decade, the population has declined from 87 whales down to an historical low of 74 whales, and future projections under status quo conditions suggest a continued decline over the next 50 years (NMFS 2016). SRKW are one of eight species identified in NMFS' "Species in the Spotlight" initiative because it is at high risk of extinction. We are taking many actions to conserve and recover SRKW<sup>1</sup> and particularly to address the three main threats to the whales: prey limitation, vessel traffic and noise, and chemical contaminants.

Chinook salmon, the whales' primary prey, are important to SRKW survival and recovery. Any activities that affect the abundance of Chinook salmon available to SRKW have the potential to impact the survival and population growth of the whales. Fisheries can reduce the prey available to the whales and in some cases can interfere directly with their feeding. Insufficient prey can impact their energetics (causing them to search more for fewer prey), health (decreasing their body condition), and reproduction (reducing fecundity and calf survival).

NMFS consulted on the effects of Council fisheries under the ESA in 2009 and concluded that Council fisheries did not jeopardize the survival and recovery of SRKW. Since the 2009 consultation was completed, a substantial amount of new information is available on SRKW and their prey.

# 2019 Analysis



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- Council instructed Salmon Technical Team (STT) to work with NMFS to crosswalk FMP stocks with the list of priority Chinook prey stocks at the March 2019 meeting.

(Agenda Item D.8.a, Rpt 2)

- NMFS used the STT's report to crosswalk information on priority stock abundance and contribution to Council fishery catch.

**Table 1. NMFS' draft list of priority prey Chinook stocks for SRKW aligned with PFMC Chinook stocks**

Priority Chinook Stock Group	Model	Model Stocks	
Northern Puget Sound Fall	FRAM	Nooksack/Samish Fall	
		Skagit Summer/Fall Fingerling	
		Skagit Summer/Fall Yearling	
		Snohomish Fall Fingerling	
		Snohomish Fall Yearling	
		Stillaguamish Fall Fingerling	
		Tulalip Fall Fingerling	
		Strait of Juan de Fuca Tributaries	Inclu
Southern Puget Sound Fall	FRAM	Mid PS Fall Fingerling	Inclu Gro
		South Puget Sound Fall Fingerling	Inclu syste
		South Puget Sound Fall Yearling	Inclu
		Hood Canal Fall Fingerling	Inclu misc
Lower Columbia Fall	FRAM	Hood Canal Fall Yearling	Inclu
		Columbia River Oregon Hatchery Tule	Low
		Columbia River Washington Hatchery Tule	Low
		Lower Columbia River Wild	
		Columbia River Bonneville Pool Hatchery	
Strait of Georgia Fall	FRAM	Lower Columbia Natural Tule	
		Fraser River Late	Inclu
		Lower Georgia Strait	Inclu
Upper Columbia/Snake Fall & Middle Columbia Fall	FRAM	Columbia R Upriver Bright	Inclu

# 2019 Analysis

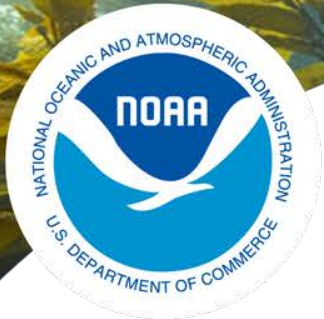


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- NMFS first used methods described in the 2009 biological opinion to evaluate the percent reduction of prey available to SRKW due to Council salmon fisheries.
- Updates to the FRAM base-period since 2009 provide a more contemporary assessment.
- The results on the following slide present this assessment using the 2019 March alternatives, which NMFS preliminarily updated with expectations for northern fisheries and stock abundances in late March.

# Results



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- We calculated % reductions for the three 2019 Alternatives.

<b>2019 PFMC Fishery % Reduction</b>			
<b>Scenario</b>	<b>Winter</b>	<b>Spring</b>	<b>Summer</b>
<b>Alt1:</b>	<b>0.6%</b>	<b>4.7%</b>	<b>9.9%</b>
<b>Alt2:</b>	<b>0.4%</b>	<b>3.9%</b>	<b>8.7%</b>
<b>Alt3:</b>	<b>0.4%</b>	<b>2.8%</b>	<b>7.1%</b>

- Compared to observed % reductions in past.
- Percent reductions in the spring and summer are below the median for all three alternatives.
- Fisheries occurring in the winter time step were planned in 2018

<b>1992-2016 % Reductions</b>	<b>FRAM timestep</b>		
	<b>Winter</b>	<b>Spring</b>	<b>Summer</b>
Lower Quartile:	0.3%	3.4%	7.9%
Median:	0.5%	5.4%	13.9%
Upper Quartile:	0.9%	8.4%	19.0%

# Results



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FMP stocks translated to Priority Stock groups

Thousands of fish		1992-2016 Post Season			2019
Priority Score	Priority.Chinook.Stock.Group	Lower Quartile	Median	Upper Quartile	Preseason
5.00	Northern Puget Sound Fall	63.7	69.3	78.7	67.6
5.00	Southern Puget Sound Fall	98.6	142.2	162.6	175.5
4.63	Lower Columbia Fall	96.1	139.4	234.9	116.6
4.63	Strait of Georgia Fall	131.3	172.0	234.5	167.0
4.25	Lower Columbia Spring	6.8	10.7	19.6	4.2
4.16	Upper Columbia/Snake & Middle Columbia Fall	193.8	309.1	409.5	223.1
3.88	Northern Puget Sound Spring	4.9	6.8	8.6	13.4
3.69	Washington Coast Fall	67.2	84.6	94.7	70.6
3.57	Fraser Spring & Fraser Summer	121.8	160.1	202.8	138.3
3.31	Middle & Upper Columbia Summer	17.7	55.5	77.6	35.9
2.25	Upper Willamette Spring	47.0	59.5	82.0	40.2
1.88	Southern Puget Sound Spring	1.3	2.0	3.0	4.3
1.41	North & Central Oregon Coast Fall	117.3	162.2	181.7	139.3
1.38	West Coast Vancouver Island Fall	99.3	157.9	195.1	195.1
2.75	Sacramento Fall	131.0	319.9	460.6	190.0
2.75	Klamath	65.2	90.9	165.0	98.0
<b>Grand Total</b>		<b>1,625.9</b>	<b>1,843.5</b>	<b>2,576.5</b>	<b>1,679.1</b>

- 2019 forecasts translated into priority stock composition fall within a middle range when compared to baseline conditions

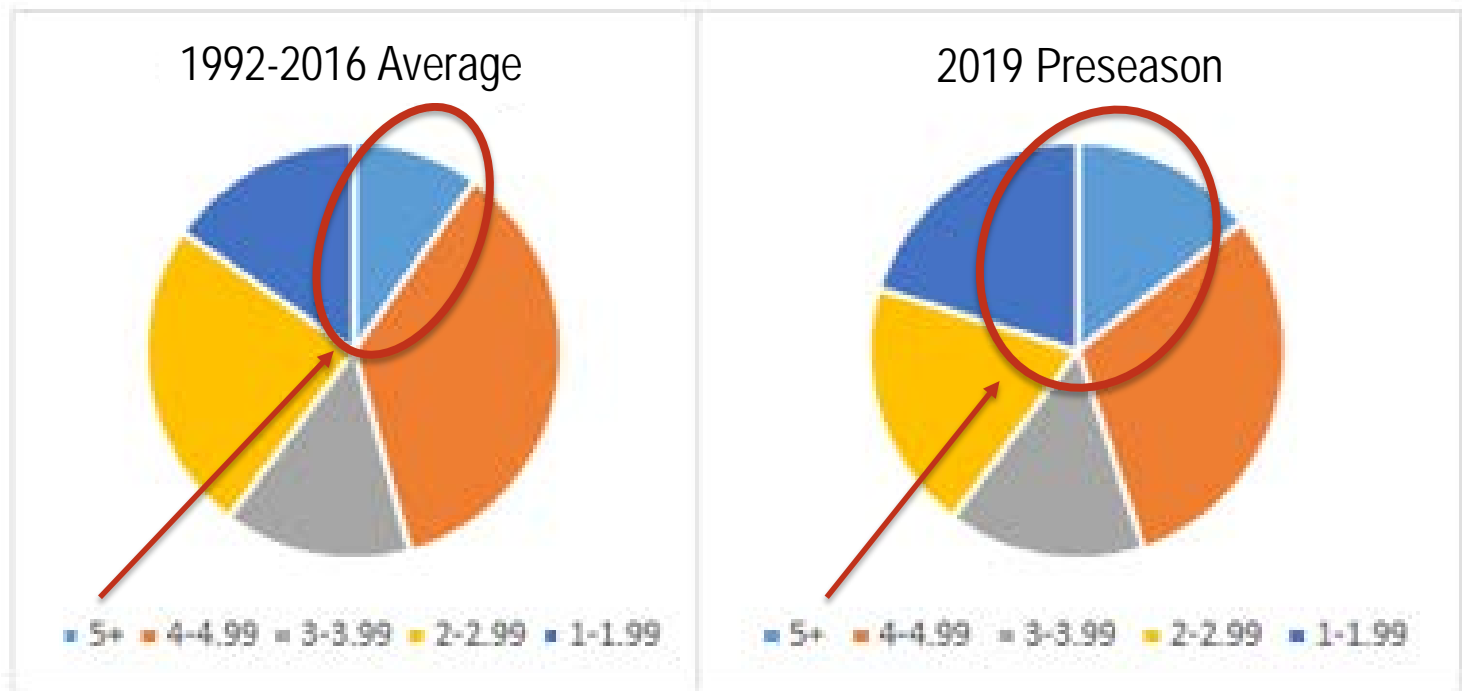
# Results



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- The 2019 overall forecasts composition contains a higher proportion of stocks that have higher priority scores



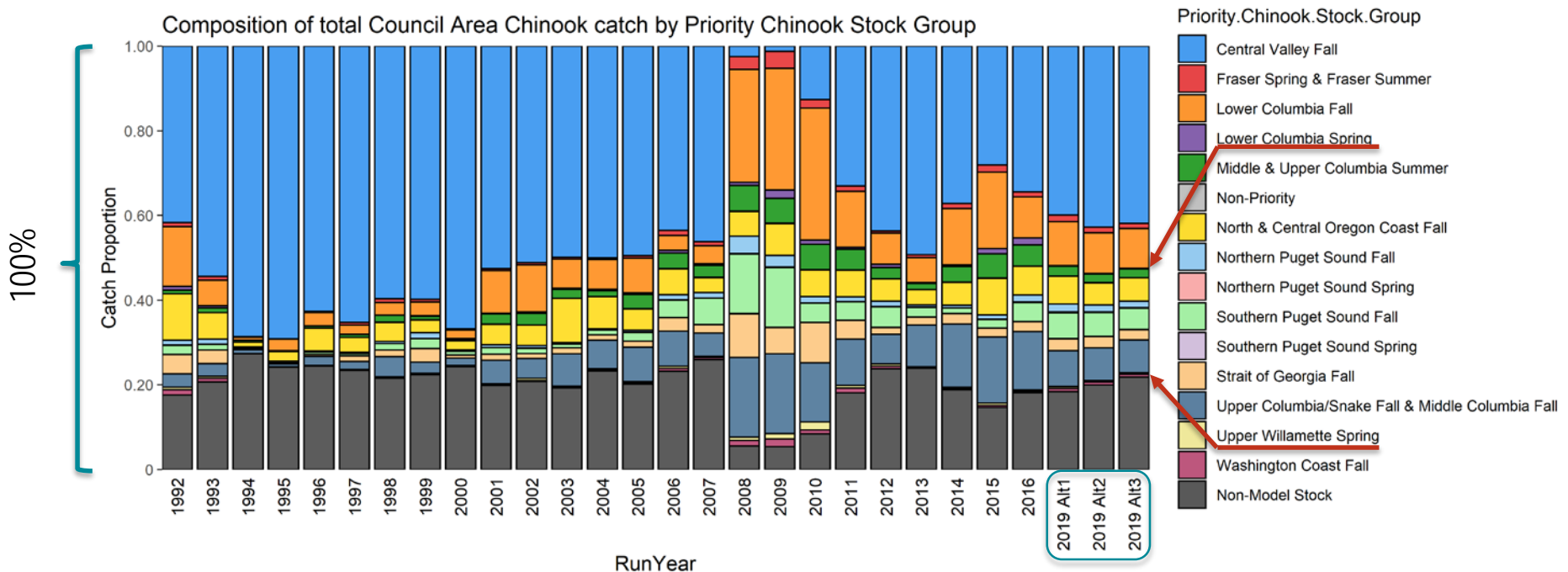
# Results



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- Evaluated contribution of priority Chinook stocks to total Council area Chinook salmon harvest retrospectively
- Compared to 2019 alternatives

Composition of total Council Area Chinook catch by Priority Chinook Stock Group



Note: 'Non-Model Stock' includes Klamath River Fall and Central Valley Winter, in addition to all other stocks identified as having no model representation in Table 1 of Supplemental STT Report 2 to Agenda Item D.8.a of the March 2019 PFMC Meeting



# Summary



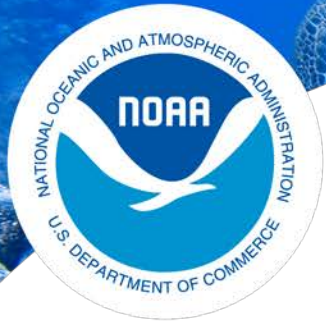
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- Used information provided by the STT as directed by the Council to evaluate 2019 in terms of priority stocks
- Evaluated the abundance and % reductions available and compared the composition of 2019 in terms of priority scores
- Evaluated the contribution of priority Chinook stocks in Council area Chinook salmon harvest retrospectively and compared this with 2019 alternatives

## Conclusion

NMFS does not anticipate the 2019 Council fisheries would contribute at an unacceptable level to conditions that pose a risk to SRKW recovery.



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# Questions?