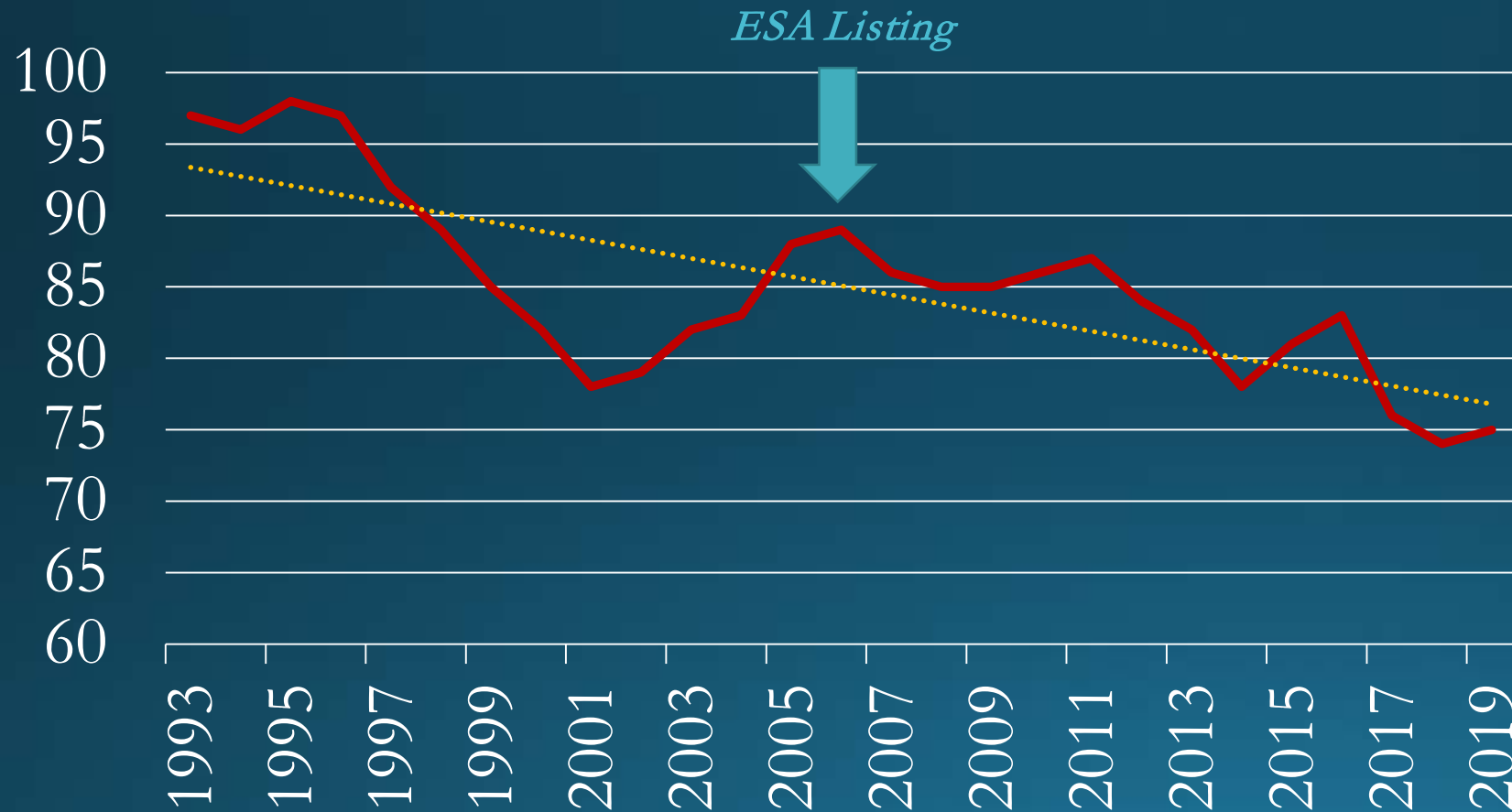


2019 Salmon Fishery Management: Accounting for the needs of endangered orca?

Ben Enticknap

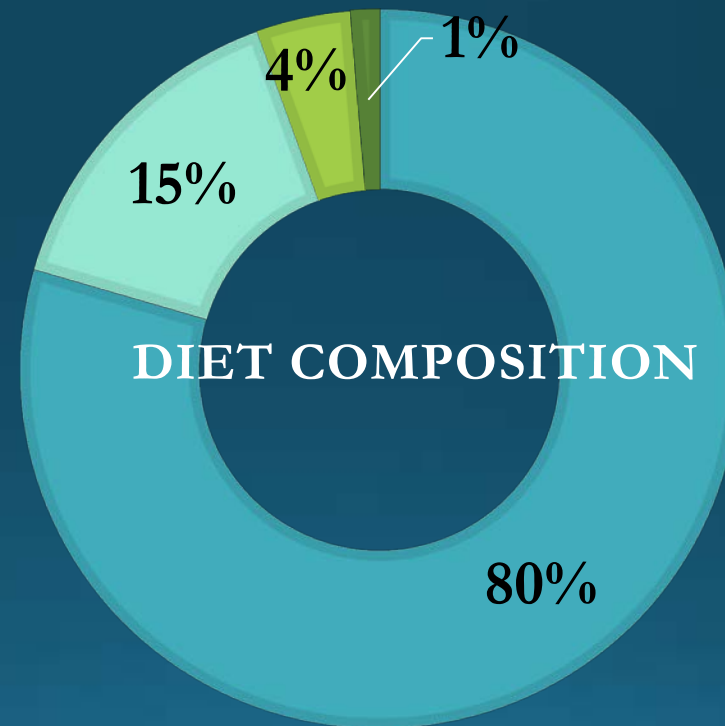


Southern Resident Killer Whale Population (J,K,L pods)



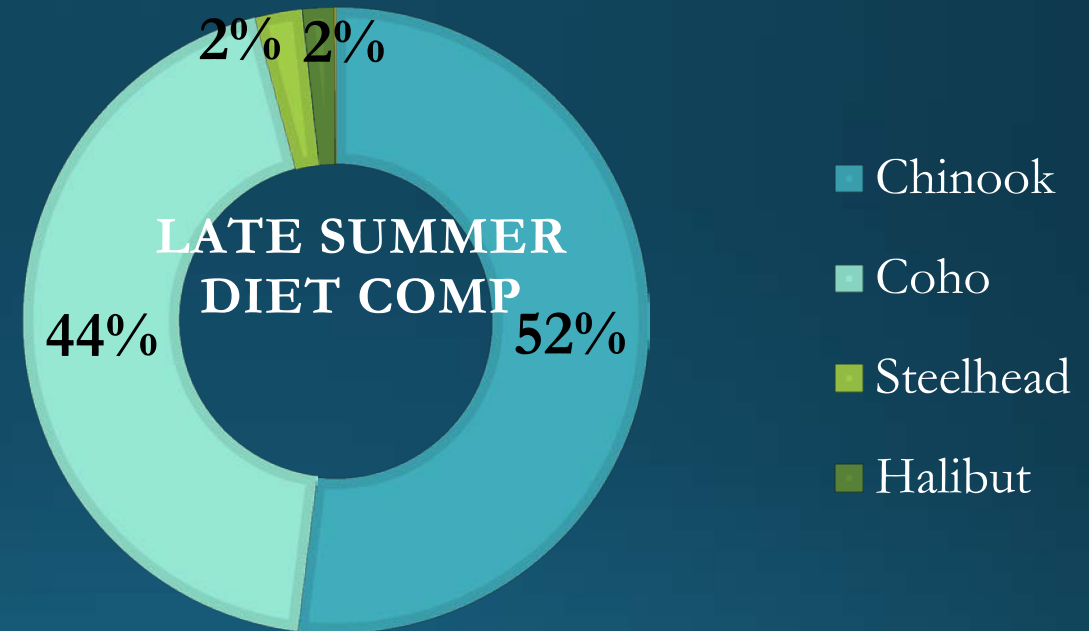
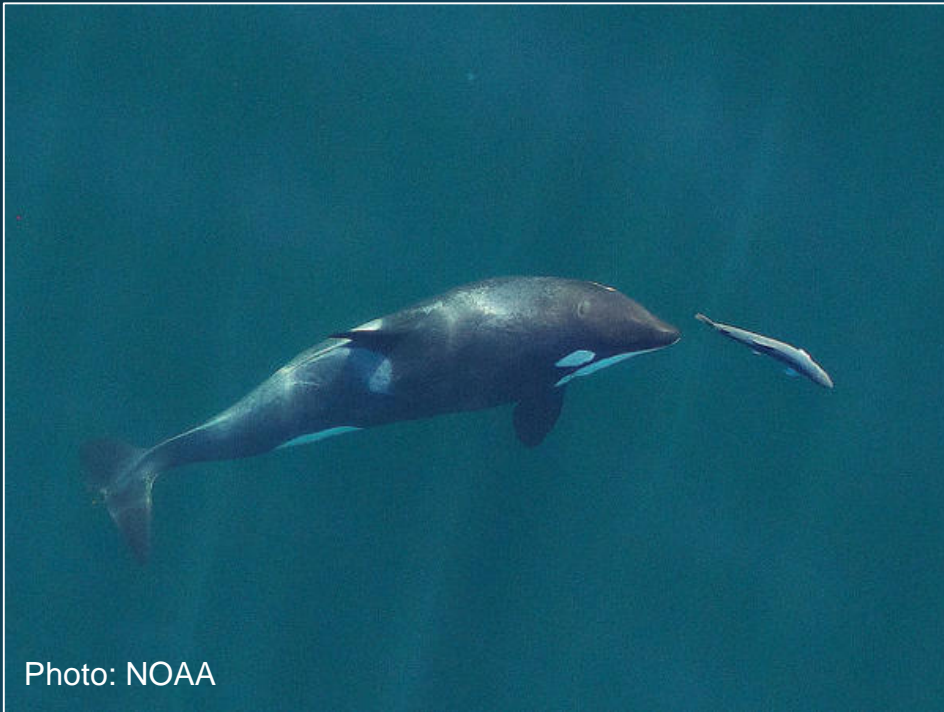
- Fecundity rates have declined
- Only one orca baby has lived since the beginning of 2016 (L124, B 2019)
- Estimated extinction risk of 49% in 25 years, and an expected minimum abundance of 15 individuals during a 100-year period

Ecology: Foraging Selectivity



- Chinook salmon
- coho salmon
- other salmonids including steelhead
- other fish including flatfish, halibut, and herring

Seasonal Diet Composition



Ford MJ, et al. (2016) Estimation of a Killer Whale (*Orcinus orca*) Population's Diet Using Sequencing Analysis of DNA from Feces. PLoS ONE 11(1): e0144956.
doi:10.1371/journal.pone.0144956



Photo: Astrid Van Ginneken, Center for Whale Research

Ecology: Range



Photo: Miles Ritter / Creative Commons



Source: NMFS 2008, SRKW Recovery Plan

Threats

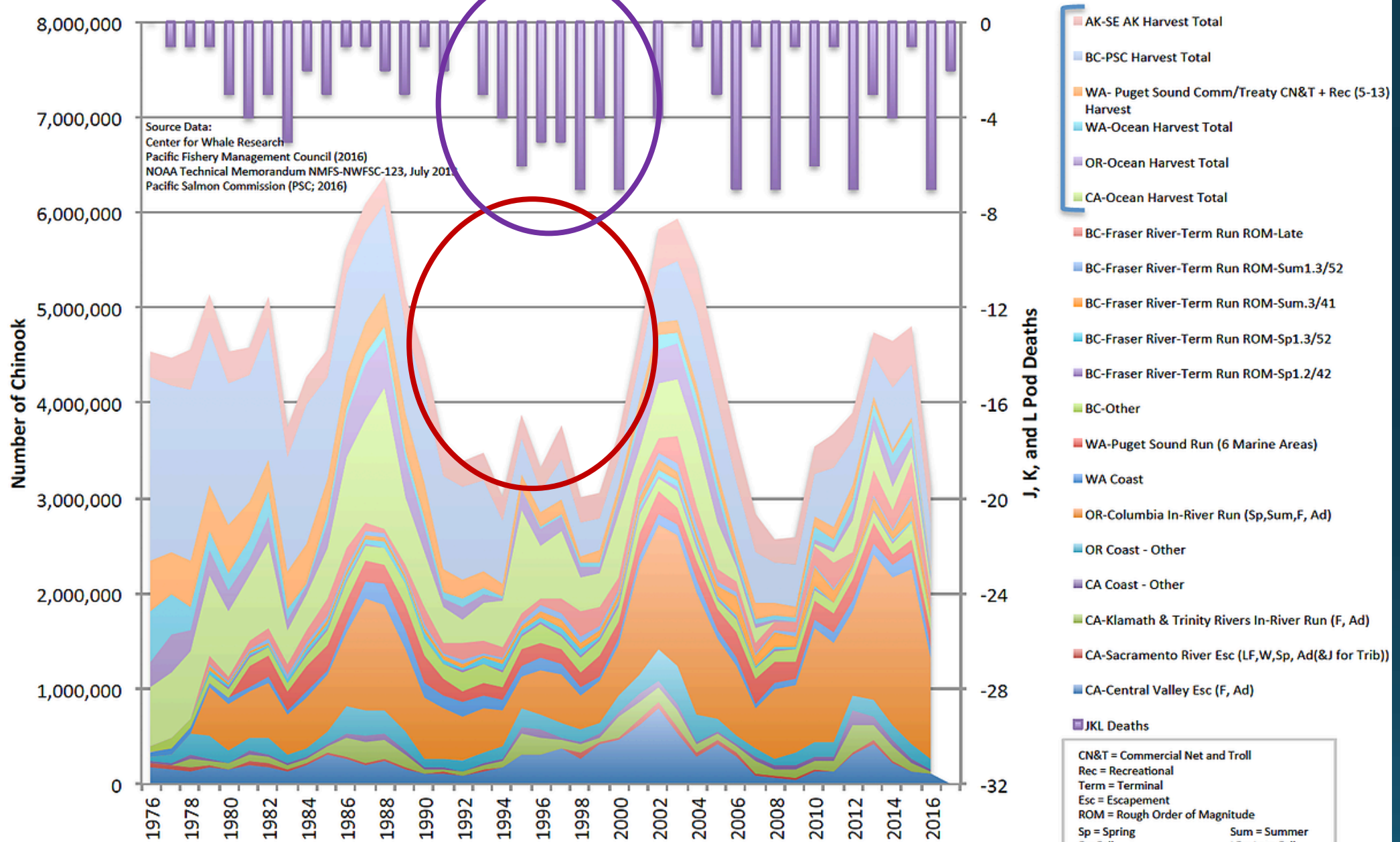
- Lack of prey
- Vessel interactions and noise
- Contamination
- Small population size



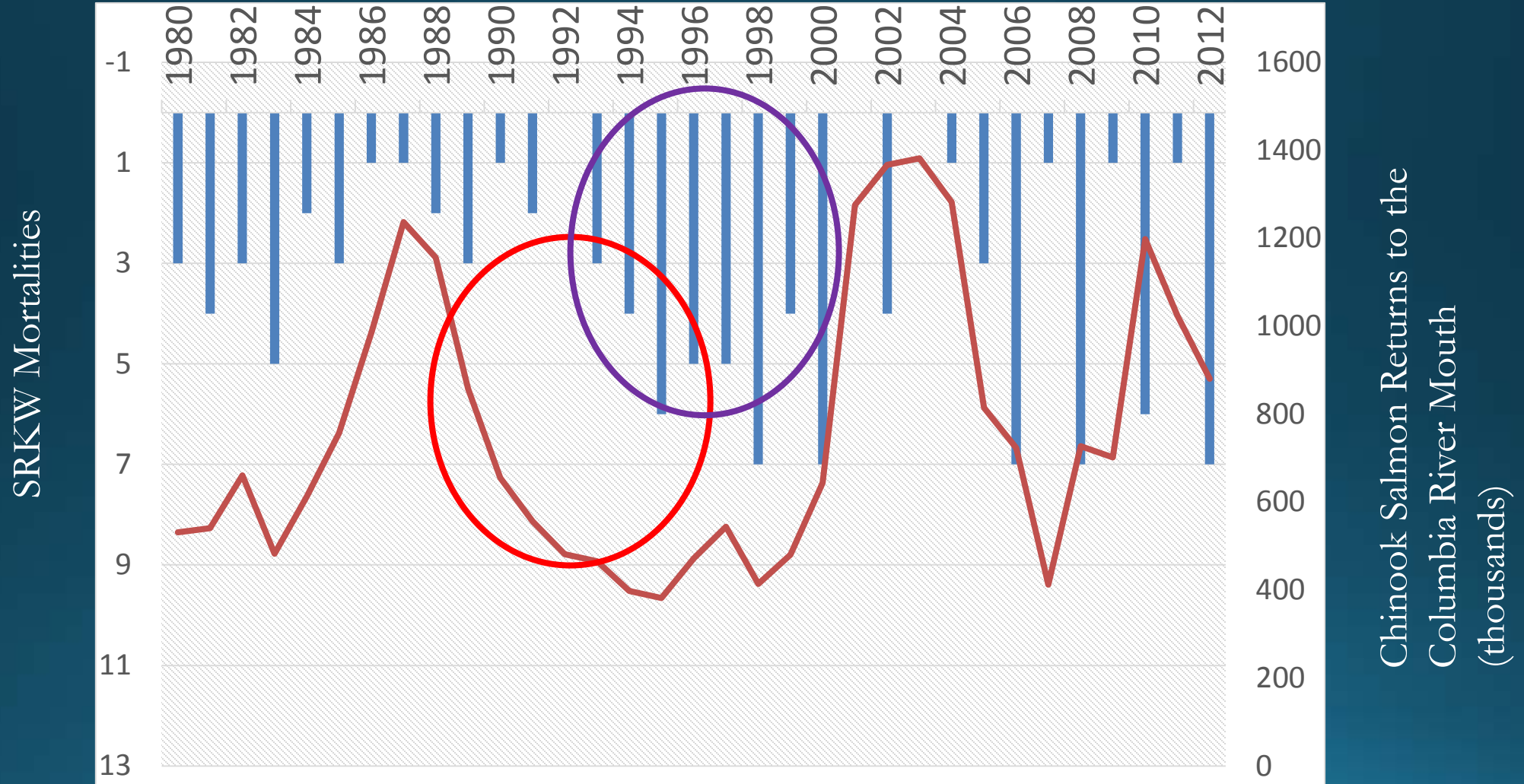
Last summer, 3-year old Scarlet, or J50, was so emaciated that she lost the fat at the base of her head - what scientists call "peanut head." Declared dead September 13, 2018.

Photo: Katy Foster/NOAA Fisheries Permit No. 18786-03

WA/OR/CA/BC/AK Coast-Wide Chinook Abundance Trends & J, K, & L Pod Deaths



A Critical Biomass Threshold?



Orca Need More Salmon Now

- SRKW U.S. recovery goal of 2.3% annual population growth over 28 years implies a 75% increase in energetic requirements. (Williams et al. 2011)
- Reducing salmon fisheries should be considered as a precautionary and temporary mitigation measure to allow time for longer-term management actions to improve salmon productivity to take effect.



PFMC 2019 Chinook and coho quotas

	Chinook Alternative			Coho Alternative		
	I	II	III	I	II	III
North of Falcon	110,000	90,000	70,000	270,000	245,000	129,400
South of Falcon	13,700	14,500	21,500	105,000	88,000	105,000
West Coast Total	123,700	104,500	91,500	375,000	333,000	234,400

West Coast Total	Recreational Fishery: % change in income impacts from 2018	Commercial Fishery: % change in income impacts from 2018
I	+75%	+117%
II	+67%	+89%
III	+35%	+65%

PFMC 2019
Preseason Report
II, Tables 4, 9, 10

Future fishery management considerations:

- Update the Salmon Fishery Management Plan with an objective of managing and regulating salmon fisheries in a manner that accounts for the foraging needs of Southern Resident Killer Whales and ensures their protection.
- Develop and incorporate fishery ecosystem models that evaluate the effects of salmon management alternatives on Southern Resident Killer Whales.