

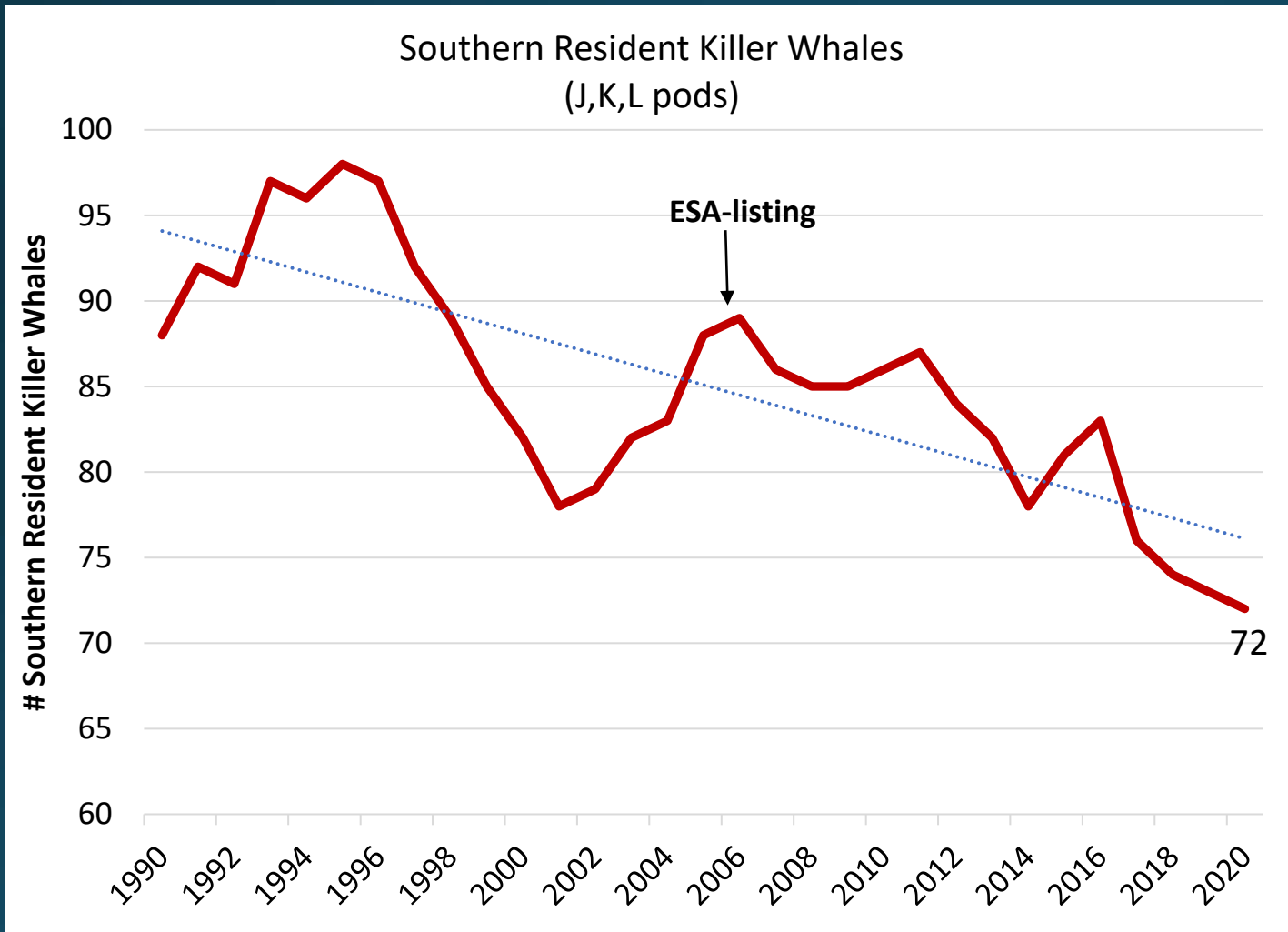
Ocean Salmon Fishery Management & Southern Resident Orca Conservation

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Photo: Karoline Cullen/Shutterstock.com

Southern Resident Extinction Risk is Increasing

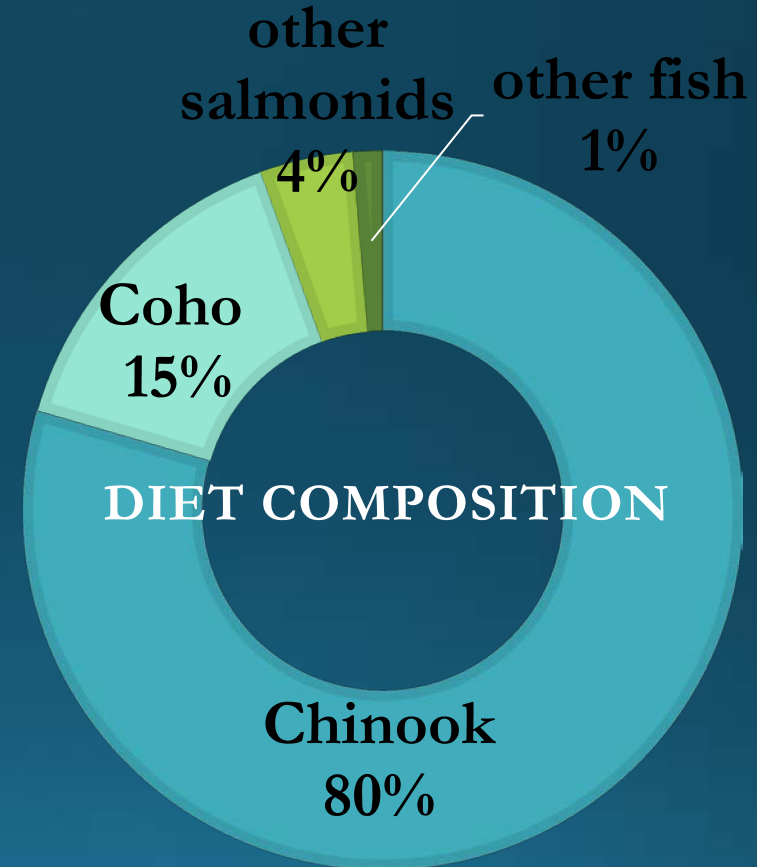


Adapted from Center For Whale Research

Fecundity rates have declined:
69% of detectable pregnancies
unsuccessful, linked to nutritional
stress (Wasser et al. 2017)

At current threat levels, including
current average Chinook abundance,
there is a **59% probability** that the
population will drop below 30 animals
within 100 years, becoming
functionally extinct (Lacy 2020,
update to Lacy et al. 2017 PVA
analysis).

Southern Resident Orcas need an Ocean Abundant with Chinook Salmon



Quantifying the effects of prey abundance on killer whale reproduction

- Ward, Holmes and Balcomb (2009)



“killer whale fecundity is highly correlated with the abundance of Chinook salmon. For example, the probability of a female calving differed by 50% between years of low salmon abundance and high salmon abundance.”

Prey Quality is Essential

	#Average Chinook / day	# Puget Sound Chinook/ day	# Sacramento Chinook/ day
1 adult Southern Resident (♂)	12 to 20	17 to 30	10 to 18



Over 34 years, between 1975 and 2009, Chinook shrunk on average 20% in weight and 7% in length.

"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... and... Fisheries can reduce the prey available to the whales and, in some cases, can interfere directly with their feeding."

- PFMC Agenda Item E.5.b Supplemental NMFS Report 1 March 2020, at 18.



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Critical Ocean Habitat

“Most of the Chinook prey samples obtained while the whales were in outer coastal waters were determined to have originated from the Columbia River basin.”

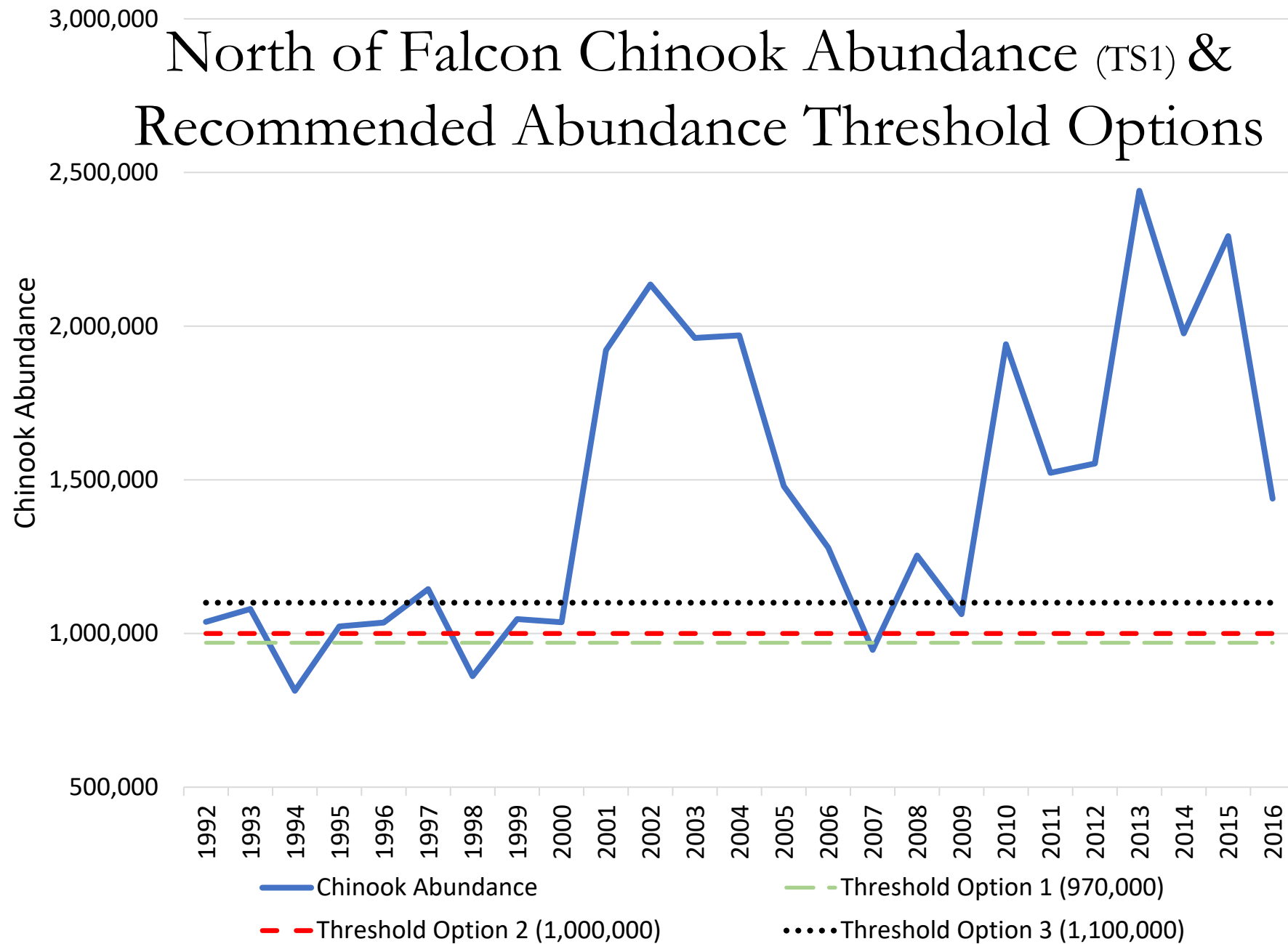
– NMFS 2019 SRKW Critical Habitat Proposed Rule



A precautionary approach is warranted

Identify and implement a critical Chinook abundance threshold – similar in concept to the ‘cutoff’ factor for forage fish in the CPS FMP.

- Develop a range of options for public review: the average of the lowest seven years of estimated ocean Chinook abundance North of Falcon (Threshold Option 1 ~ 970,000 Chinook), the maximum of the lowest seven years of estimated Chinook abundance North of Falcon (Threshold Option 2 ~ 1,000,000), and the maximum of the lowest ten years of estimated Chinook abundance North of Falcon (Threshold Option 3 ~ 1,100,000).



Recommendations Continued...

- Consider a range of management measures for when Chinook abundance is below the threshold:
 - Reduced and limited Chinook catch limits, up to and including no ocean Chinook catch.
 - Time and area closures to avoid competition with Southern Residents.
- Amend salmon FMP with an objective of managing and regulating salmon fisheries in a manner that accounts for the foraging needs of Southern Resident orca.



Photo: USFWS

