Cascadia Collapse? - Saving Wild Chinook Salmon and Southern Resident Killer Whales in the Face of Climate Change

Kendra Smith, Restoration Ecologist

Photo credit: Soundwatch
Cascadia: The Frasier and Columbia Basins, Coastal Watersheds from AK to CA, their estuaries, the nearshore and off-shore Pacific Ocean

Salish Sea and the San Juan Islands are home to endangered Southern Resident killer whales and endangered wild Chinook salmon, among other at risk species.
SRKW Habitat

Chinook Populations in SRKW Scat Samples
Pods J, K, & L
- Family members work together to hunt
- They eco-locate Chinook in waters 100-300’ deep
- Prey sharing helps maintain family bonds and survival
J35 carried her dead calf for an unprecedented 17 days around the Salish Sea.... in mourning and defiance
Fraser River chinook critical to orcas are in steep decline, new research shows

Southern resident killer whales travel along the west side of San Juan Island this summer. Chinook salmon are the most important part of their diet during much of the year. (Steve Ringman / The Seattle Times)

The fish declines are linked to a combination of factors, including poor ocean survival conditions, warming river temperatures and agricultural water withdrawals. The Fraser has no major dams.
SRKW prey primarily on large Chinook Salmon (80% of diet) that they hunt by ecolocation.

Need diverse sources of their prey to withstand changing conditions

Photo Credit: NOAA
Historic Landscape Level Impacts in Cascadia

Rieman, et al, 2015
Sea Surface Temperature Anomaly (SSTA)
May 2015

Pacific Ocean
“Blob”
2013-2016
May 2015

Difference from 2002-2012 Average

National Geographic, 2017
American Geophysical Union
Toxic Algal Bloom on the West Coast of North America in July 2015 impacting the marine food web

National Geographic, 2017
Source map: NOAA
Use climate resiliency modeling with current conditions assessments to inform management priorities system wide.

Find Climate Change Resiliency Spatial Data on [Databasin.org](http://databasin.org)
Chinook Population Viability Ratings (WSS, 2008)

Water Quality Impacts in Columbia Basin, (ISAB, 2013)
Integrate knowledge of interconnected ecosystems
Break silos and be a learner beyond your area
Personal commitments to act
Acknowledgements

• Robert Naiman, PhD. School of Aquatic and Fisheries Sciences, UW (retired)
• Frances Robertson, PhD. SJC Marine Resources Program Coordinator
• Byron Rot, Former SJC Salmon Recovery Coordinator
• Dawn Uchiyama, City of Portland BES Deputy Director

Citations

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• Wild Salmon Center. 2008. Chinook Population Ratings (for North American Salmon Stronghold Partnership). Downloaded from Databasin.org, 2018