Food Webs and Predation

What's the issue?

Marine food webs and predation dynamics in the Eastern Pacific are complex and integral to the health of marine ecosystems. Climate change, overfishing, and human development have contributed to changes in animal population sizes and distributions, which can lead to cascading effects throughout marine and terrestrial food webs. Understanding these interactions is crucial for the conservation of biodiversity and the sustainable use of marine resources.

For example, in some areas of the Pacific, a lack of natural predators like sea otters, has allowed sea urchin populations to grow unchecked, devastating kelp forests with their voracious appetites. In turn, this interaction has affected the distribution and abundance of numerous other species. In other areas, especially around the Columbia River and Puget Sound where some salmon and steelhead populations are struggling, resource managers are evaluating and managing marine mammal and fish populations to restore balance between the diets of predators like sea lions and orcas, conservation of threatened and endangered salmon and steelhead populations, and the economics of the commercial fishing industry.

To learn more:

- Sea Lion Management – Oregon Department of Fish & Wildlife
- Columbia River Sea Lion Management — Washington Department of Fish & Wildlife

- (March, 2024) "Marine heat waves disrupt the ocean food web in the northeast Pacific Ocean" — Oregon Sea Grant
- (November, 2023) "Saving the Southern Resident Killer Whales" — NOAA Fisheries
- (March, 2021) "In Hotter Climate, 'Zombie' Urchins Are Winning and Kelp Forests Are Losing" — NPR
- (March, 2021) "When Chinook salmon is off the menu, other prey will do for endangered orcas" — Mongabay

- "What makes the sea otter a keystone species?" — US Fish and Wildlife Service
- "The Urchin and the Otter" — PBS Learning Media
- "Sea Lions, Salmon & Steelhead" — Wild Salmon Center
- "Sea Lion Management" — US Army Corps of Engineers Portland District