

Eulachon – A Fish Unique to Our West Coast



Photo: Jen Zamon, NOAA

Eulachon (*Thaleichthys pacificus*) – also known as candlefish, oolichan, hooligan, salvation fish, or Columbia River smelt - are only found in marine waters, coastal rivers, and estuaries from northern California to Alaska. Because of their high oil content and nutritional value, Eulachon provide important food for many fishes, birds, and marine mammals. They are historically, economically, and culturally significant as a resource for indigenous peoples of the Pacific Northwest, and also support limited and strictly regulated non-tribal fisheries. Eulachon populations in California, Washington, and Oregon are listed as threatened under the Endangered Species Act.

Eulachon Distribution

Life Cycle

Eulachon are anadromous - they hatch in freshwater rivers, migrate to live in the ocean for several years, return to freshwater to spawn, and die after spawning. Adults are broadcast spawners; they spread eggs and milt over fine sands but do not construct nests (redds). One female produces an average of 32,000 tiny, 1 mm (<1/10th of an inch) eggs. Eulachon eggs stick to sand grains, and depending on river temperatures, hatch in 20-40 days. The 4-7mm (~ 1/4 inch) hatchlings (larvae) are flushed downstream by river flow. Fish live on their yolk sac reserves for about 5 days. With luck, after 5 days they reach the estuary and can begin feeding on small diatoms (microscopic plants) before they enter the ocean. Depending on ocean conditions, Eulachon spend 2-7 years out in the saltwater before returning to spawn. Returning adults are typically 172-185 mm (~ 7 inches) long.



Eulachon Eggs

Eyes

Photo: ODFW



Newly-hatched Eulachon

The yolk sac – a 5-day food supply for newly-hatched fish

Photo: Laura Lloyd, WDFW

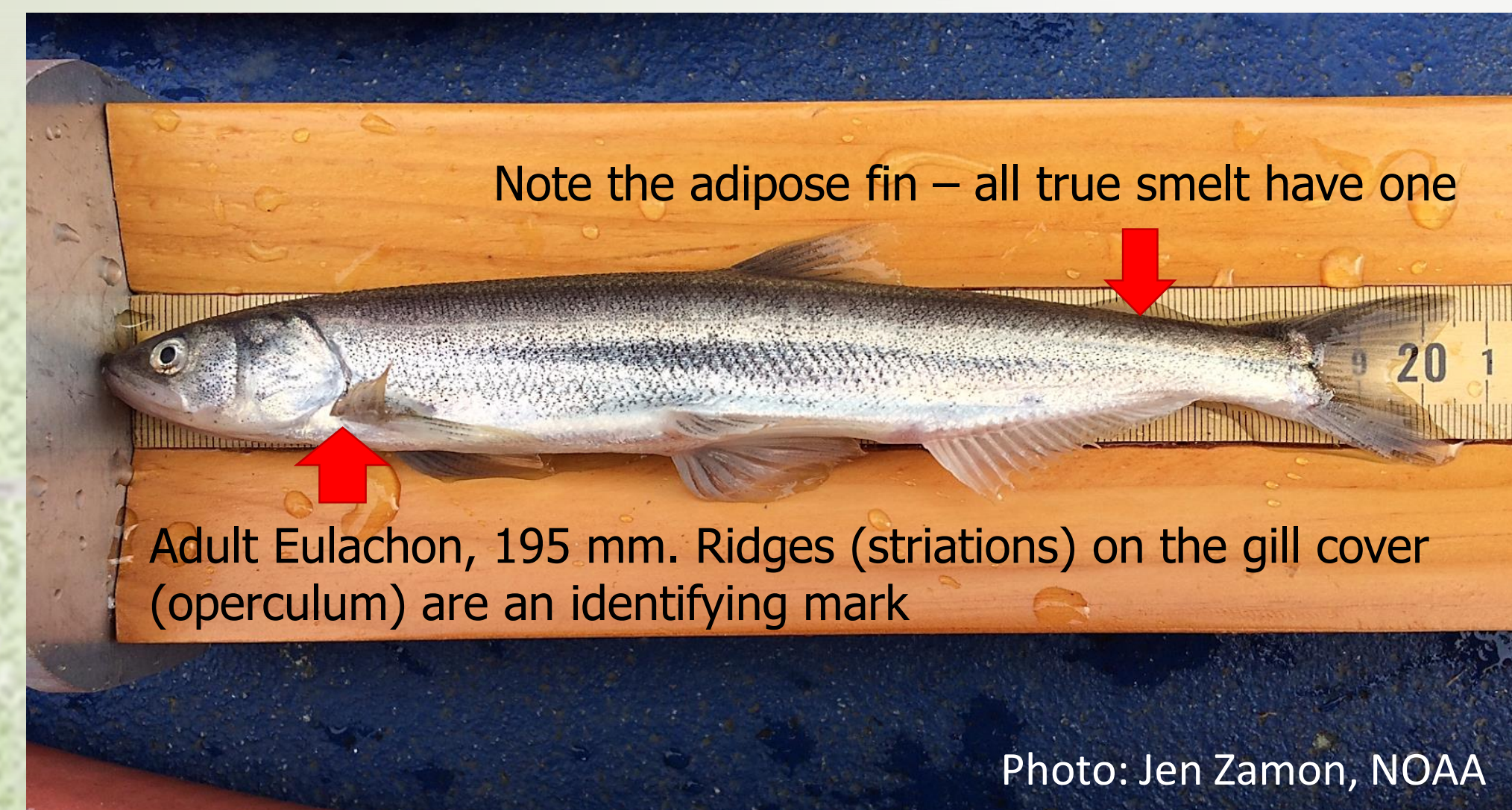
Distribution

Eulachon are found only in the northeast Pacific Ocean, ranging from northern California to southwest and south-central Alaska and into the southeastern Bering Sea. The southern Distinct Population Segment (DPS) of Eulachon is comprised of fish that spawn in glacial, snow, or rain-fed rivers from the Skeena River in northern British Columbia to, and including, the Mad River in northern California. Eulachon in more northern areas tend to spawn in glacially-fed rivers and are considered to be stable.

Contributors:

Michelle Gilroy, California Department of Fish and Wildlife (CDFW)
 Claire Ingel, CDFW
 Laura Lloyd, Washington Department of Fish and Wildlife (WDFW)
 Dr. Jeanette Zamon, NOAA Fisheries

Basemap Source: Esri
 Map: CDFW/WDFW



Note the adipose fin – all true smelt have one

Adult Eulachon, 195 mm. Ridges (striations) on the gill cover (operculum) are an identifying mark

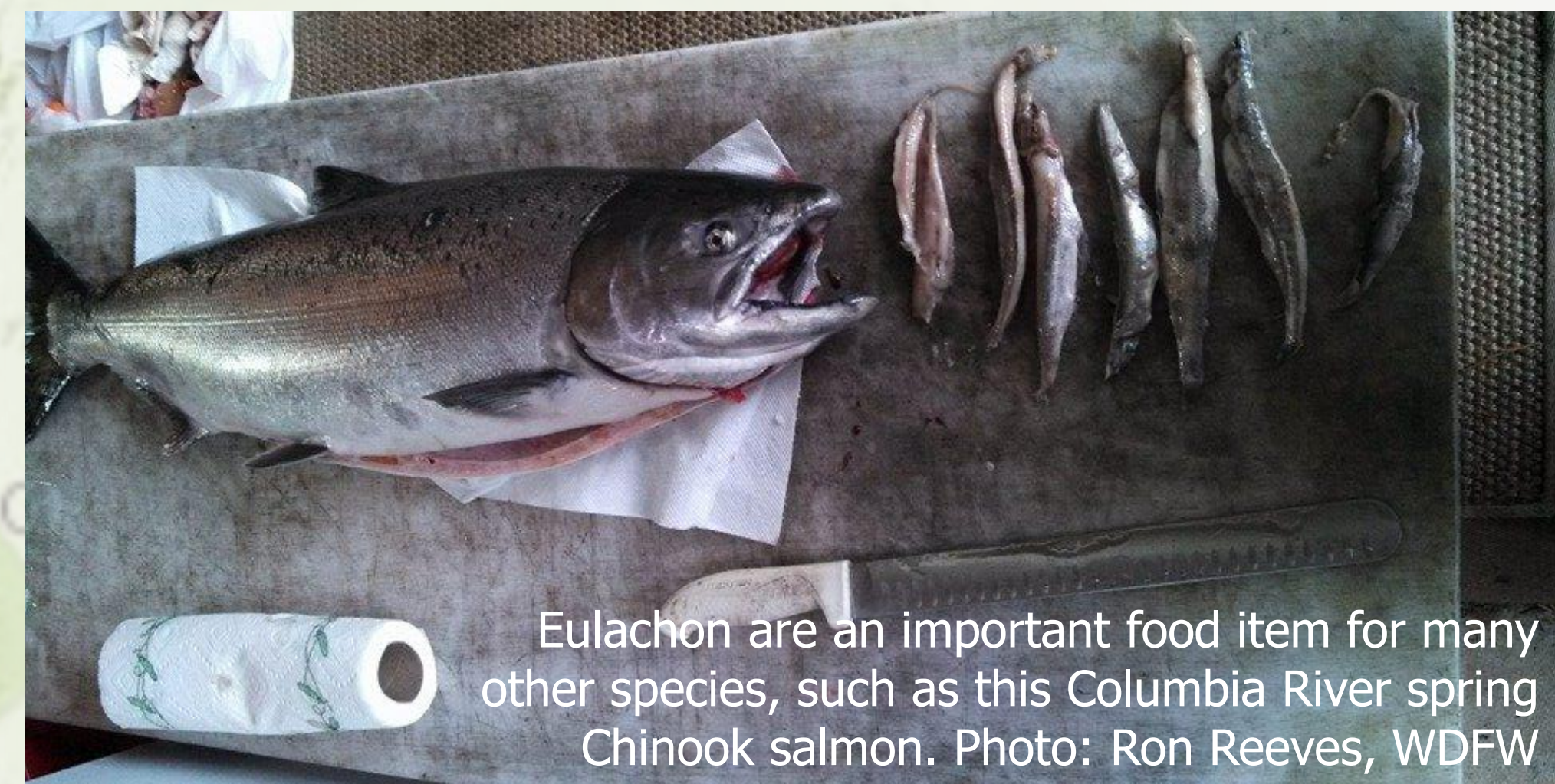
Photo: Jen Zamon, NOAA

Threats to Eulachon Survival

The most serious threats to Eulachon survival include

- rapid climate change in ocean and freshwater habitats,
- damming and water diversion, and
- accidental catch (bycatch) of Eulachon in ocean shrimp fisheries.

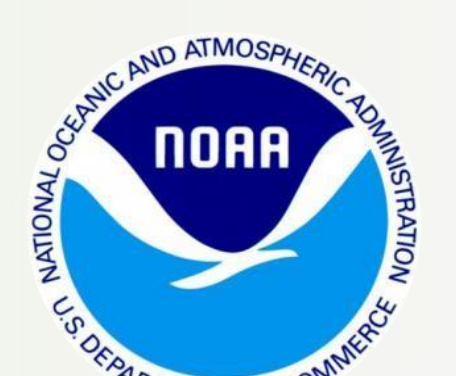
Warming oceans force Eulachon to remain at sea longer to reach the minimum size for spawning. Decreases in rain and snow reduce river flows to the point where newly-hatched fish run out of yolk sac reserves before river flow transports them to appropriate food in the estuary. Dams reduce water flow and block access to spawning grounds, and shrimp nets can accidentally capture Eulachon. People are working together to minimize threats through conservation actions; for example, shrimp fishers in Oregon and Washington now use LED lights on their nets that reduce accidental catches by 80-90%!



Eulachon are an important food item for many other species, such as this Columbia River spring Chinook salmon. Photo: Ron Reeves, WDFW

What You Can Do to Get Involved with Eulachon

- Learn more about our unique and amazing Eulachon here:
 - www.calfish.org/FisheriesManagement/SpeciesPages/Eulachon
 - www.fisheries.noaa.gov/species/Eulachon
 - VIDEO: www.opb.org/television/programs/ofg/segment/eulachon-smelt
- Check your local regulations regarding recreational fishing:
 - wildlife.ca.gov/fishing (California)
 - myodfw.com/fishing (Oregon)
 - wdfw.wa.gov/fishing (Washington)
- Tell your legislators and fisheries managers you support Eulachon recovery



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