

TOPSMELT (*Atherinops affinis*)



Topsmelt are a species of silversides (family Atherinopsidae), not true smelt. They are small elongate fish that are silvery in color with greenish or bluish colored backs. They have a silver stripe on their sides. They often have some yellowish spots on their sides. Topsmelt are one of about 30 species of what are called forage fish that are key components of the California Current ecosystem. These forage fish eat plankton and are preyed upon by a wide variety of fishes, birds, and marine mammals. These species provide the key trophic link from primary and secondary production to higher trophic order consumers.

OVERVIEW

- **Oregon Conservation Strategy Species**
- **Size:** Up to 15 inches long
- **Weight:** Up to 0.8 pounds
- **Lifespan:** Up to 8 years
- **Key Strategy Habitats:** Nearshore, Estuaries
- **Similar Species:** Jacksmelt, California Grunion.

RANGE AND DISTRIBUTION

In Oregon: Topsmelt can be found throughout the state's marine waters. They also utilize estuaries.

Everywhere Else: Topsmelt range from Vancouver Island to the Gulf of California.

FUN FACTS

Favorite Food: Plankton and small bottom living organisms.

- Topsmelt can survive in a wide range of water temperatures (46° - 91° F) and salinities (0 – 80 ppt).
- Their eggs also can survive and hatch in a wide range of water temperatures and salinities.
- Spawning occurs in shallow water near vegetation that the adhesive stalks on the eggs stick to.
- Peak spawning activity usually occurs during high tides around the full moon.
- Topsmelt in San Ignacio Lagoon in Baja clean whale lice from Gray whales.

LIFE HISTORY AND ECOLOGY

Topsmelt spawn in shallow waters and their eggs have adhesive stalks that stick to vegetation. Females produce 200 to 1,000 eggs per season. Spawning timing varies throughout their range ranging from early fall to late winter in the southern portion to spring and summer further north. Eggs have adhesive stalks that stick to a wide variety of aquatic vegetation. The larvae are planktonic and settle out in quiet nearshore waters when they are about a quarter inch long mostly in spring and early summer months. Topsmelt mature at 1 to 3 years of age and can live up to 8 years. They are often found in large schools and have occasionally been observed schooling with other species like Pacific Sardine and Jack Mackerel.

Known predators of Topsmelt include a wide variety of predatory fish, birds, and marine mammals including Barred Sand Bass, Kelp Bass, Striped Bass, California Halibut, Yellowtail, several species of

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sharks, cormorants, terns, murre, pelicans, loons, grebes, dolphins, harbor seals, and California sea lions. Humans prey on Topsmelt too. They are often caught by recreational fishermen from piers and jetties and used for bait.

DIET AND FORAGING

Topsmelt eat everything from detritus, phytoplankton, small zooplankton, algae, worms, fish eggs, clam siphons, and occasionally small fish. They forage mostly in the water column.

HABITAT CHARACTERISTICS

Topsmelt are a coastal species. Schools are common in areas with vegetation such as eel grass, surf grass or kelp. Schools are also found further from shore in areas without vegetation.

CONSERVATION AND MANAGEMENT

Threats: Changes in ocean conditions and their food sources either due to natural or man-made causes can threaten populations of Topsmelt.

Conservation and management: There is little information about the factors that affect Topsmelt biomass, population size, or trends anywhere in their range. Topsmelt, like all members of the Silversides family, are included as a shared Ecosystem Component Species in all of the Fishery Management Plans administered by the Pacific Fishery Management Council (PFMC) as part of the Comprehensive Ecosystem Based Amendment 1 which prohibits development of new directed commercial fisheries for these species in federal waters. States manage fisheries for Topsmelt in state waters. Oregon has prohibited the development of commercial fisheries targeting Topsmelt, and there is no directed commercial harvest of Topsmelt in Oregon, but recreational harvest is allowed. Topsmelt have been widely used as species for testing toxicity effects of various pollutants on marine fish species on the west coast using methods developed by the US Environmental Protection Agency.

REFERENCES

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