

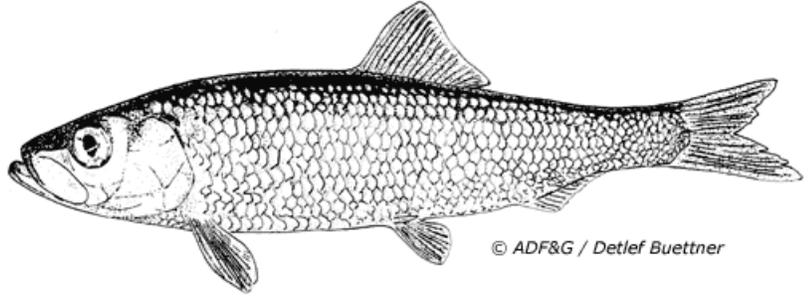


Pacific Herring

The **Pacific herring** (*Clupea pallas*) is one of more than 180 species in the herring family, Clupeidae. This family contains some of the world's most abundant and commercially important fishes. Herring are important food sources for a wide variety of fishes, mammals, and birds.

Pacific herring migrate in schools and are found along both shores of the ocean, ranging from San Diego Bay to the Bering Sea and Japan.

General description: Herring have a blue-green upper body with silvery sides and are devoid of markings. The body is laterally compressed and the scales along the underside project in a slightly serrated arrangement. Scales are large and easily removed. These fish may grow to 18 inches in length, but a 9-inch specimen is considered large.



Life history: Pacific herring generally spawn during the spring. In Alaska, spawning is first observed in the southeastern archipelago during mid-March, in Prince William Sound in April and May, and in the Bering Sea during May and June. Spawning is confined to shallow, vegetated areas in the intertidal and subtidal zones.

The eggs are adhesive, and survival is better for those eggs which stick to intertidal vegetation than for those which fall to the bottom. Milt released by the males drifts among the eggs and fertilizes them. The eggs hatch in about two weeks, depending on the temperature of the water.

Herring spawn every year after reaching sexual maturity at 3 or 4 years of age. The number of eggs varies with the age of the fish and averages 20,000 annually. Average life span for these fish is about 8 years in Southeast Alaska and up to 16 years in the Bering Sea.

Mortality of the eggs is high. Young larvae drift and swim with the ocean currents and are preyed upon extensively by other vertebrate and invertebrate predators. Following metamorphosis of the larvae to the juvenile form, they rear in sheltered bays and inlets and appear to remain segregated from adult populations until they are mature.

Migratory and feeding behavior: Herring are located in distinctly different environments during different periods of the year. After spawning, most adults leave inshore waters and move offshore to feed primarily on zooplankton such as copepods and other crustaceans. They are seasonal feeders and accumulate fat reserves for periods of relative inactivity. Herring schools often follow a diel vertical migration pattern, spending daylight hours near the bottom and moving upward during the evening to feed.

Commercial fisheries: Alaska's herring industry began in 1878 when 30,000 pounds were marketed for human consumption. The total value was \$900. By 1882, a reduction plant at Killisnoo in Chatham Strait was producing 30,000 gallons of herring oil. The industry was slow to expand, but a 1929 record 78,745 tons of these fish was harvested for all uses, including bait.

By 1967, no herring were harvested for reduction products. The total production of 3,025 tons was sold for bait. The decline of the Alaska reduction industry is attributed primarily to the development of Peruvian reduction industries.

Presently, herring are harvested primarily for sac roe to foreign markets. Substantial harvest for sac roe began in Southeast Alaska in 1971 and has expanded up the Alaska coast to Norton Sound. Herring are managed with individual quotas for identified stocks of herring on a spawning area basis and are harvested commercially by gillnetters and purse seiners. Sac roe fisheries in most areas are regulated under the state's limited entry program.

Herring are also commercially harvested for use as bait for the halibut, groundfish, crab, and salmon troll fisheries. Bait harvest has extended to Dutch Harbor in the Aleutian Chain in recent years.

Herring eggs on kelp are also harvested commercially. Wild kelp is harvested by divers and by hand picking in intertidal areas.

Pound kelp harvests, where herring are captured with purse seines and confined until they spawn in pound enclosures containing harvested kelp, produce a very high value product.

Statewide herring harvests have averaged approximately 34,000 metric tons in recent years, with a value of approximately \$10 million. About 10 percent of the commercial harvest is taken in food and bait fisheries, and the rest is taken in sac roe fisheries. In addition, fisheries for herring eggs on kelp harvest about 275 metric tons of product annually with a value of approximately \$3.5 million.

Subsistence fisheries: Herring are used for personal bait by area residents. Herring eggs on kelp are also used for subsistence by Alaska Natives.

Text: Fritz Funk

Illustration: Detlef Buettner

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