



Chum Salmon

Chum salmon (*Oncorhynchus keta*) have the widest distribution of any of the Pacific salmon. They range south to the Sacramento River in California and the island of Kyushu in the Sea of Japan. In the north they range east in the Arctic Ocean to the Mackenzie River in Canada and west to the Lena River in Siberia. Chum salmon are the most abundant commercially harvested salmon species in arctic, northwestern, and Interior Alaska, but are of relatively less importance in other areas of the state. There they are known locally as "dog salmon" and are a traditional source of dried fish for winter use.

General description: Ocean fresh chum salmon are metallic greenish-blue on the dorsal surface (top) with fine black speckles. They are difficult to distinguish from sockeye and coho salmon without examining their gills or caudal fin scale patterns. Chum have fewer but larger gillrakers than other salmon. After nearing fresh water, however, the chum salmon changes color-particularly noticeable are vertical bars of green and purple, which give them the common name, calico salmon. The males develop the typical hooked snout of Pacific salmon and very large teeth which partially account for their other name of dog salmon. The females have a dark horizontal band along the lateral line; their green and purple vertical bars are not so obvious.

Life history: Chum salmon often spawn in small side channels and other areas of large rivers where upwelling springs provide excellent conditions for egg survival. They also spawn in many of the same places as do pink salmon, i.e., small streams and intertidal zones. Some chum in the Yukon River travel over 2,000 miles to spawn in the Yukon Territory. These have the brightest color and possess the highest oil content of any chum salmon when they begin their upstream journey. Chum salmon spawning is typical of Pacific salmon with the eggs deposited in redds located primarily in upwelling spring areas of streams. Female chum may lay as many as 4,000 eggs, but fecundity typically ranges between 2,400 and 3,100 eggs.

Chum do not have a period of freshwater residence after emergence of the fry, as do chinook, coho, and sockeye salmon. Chums are similar to pink salmon in this respect, except that chum fry do not move out into the ocean in the spring as quickly as pink salmon fry. Chum fry feed on small insects in the stream and estuary before forming into schools in salt water where their diet usually consists of zooplankton. By fall they move out into the Bering Sea and Gulf of Alaska where they spend one or more of the winters of their 3- to 6-year lives. In southeastern Alaska most chum salmon mature at 4 years of age, although there is considerable variation in age at maturity between streams. There is a higher percentage of chums in the northern areas of the state. Chum vary in size from 4 to over 30 pounds, but usually range from 7 to 18 pounds, with females generally smaller than males.

Noncommercial fishery: In arctic, northwestern and Interior Alaska, chum salmon remain an important year-round source of fresh and dried fish for subsistence and personal use purposes. Sport fishers generally capture chum salmon incidental to fishing for other Pacific salmon in either fresh or salt water. Statewide sport harvest usually totals fewer than 25,000 chums. After entering fresh water, chums are most often prepared as a smoked product.

Commercial fishery: In the last decade over 18 million chum salmon, estimated at \$71 million, have been caught in Alaska. Most chum salmon are caught by purse seines and drift gillnets, with smaller amounts harvested by fish wheels and set gillnets. In many areas chum salmon are targeted due to large returns to hatchery terminal areas. The development of markets for fresh and frozen chum in Japan and northern Europe has increased their demand, especially in the last decade. Private non-profit hatcheries along with the Alaska Department of Fish and Game have built or modified several hatcheries for chum salmon production.

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