



Whitefish Species

Whitefish are the most abundant group of fish north of the Alaska Range, inhabiting almost every type of river and freshwater habitat in this section of Alaska. Whitefish are important in the food chain of the aquatic community, as they are a major food item for many predatory fish. They have potential as a sport fish, and a few small commercial fishing operations exist; however, their greatest use in Alaska is as a subsistence food for Natives and their dogs. The sheefish, or inconnu (genus *Stenodus*), is the largest species of whitefish. This paper deals with the seven smaller whitefish species belonging to the genera *Prosopium* and *Coregonus*.

Whitefish in general are silver-colored with large scales, fleshy dorsal and adipose fins, no teeth, and a small fleshy appendage at the base of the pelvic fin called a pelvic axillary process.

Round and pygmy whitefish: Both the round whitefish (*Prosopium cylindraceum*) and the pygmy whitefish (*P. Coulteri*), have rounded cigar-like bodies with tiny, pointed snouts and single nasal flaps. In both species the upper jaw extends out over the lower so the mouth is underneath, or inferior. The young have parr marks, dark transverse bands, which disappear in the second year of life. The pygmy whitefish has a toothless mouth and large eyes. Round whitefish in most streams seldom exceed 16 inches in length, while pygmy whitefish rarely reach 8 inches.

Broad and humpback whitefish: The genus *Coregonus* contains the broad whitefish as well as three whitefish known as "ciscoes." The broad whitefish (*Coregonus nasus*) and the humpback whitefish (*C. oidschian*) are referred to as true whitefish. In both species the mouth is inferior, an adaptation for bottom feeding. Their diet consists mainly of small clams, snails, aquatic insects, larvae, and freshwater shrimp. In both species, the head is small and the body deep or wide from stomach to backbone. The broad whitefish can be distinguished from the humpback by its larger size, deeper head, shorter gillrakers, and short, blunt snout.

In Alaska the broad whitefish is found in the Yukon and Kuskokwim river drainages and in the Bering and Chukchi seas and Arctic Ocean drainages. Spawning occurs in the fall with most fish spawning over a gravel bottom. The humpback whitefish is distributed throughout all drainages north of the Alaska Range, as well as in the Copper and Susitna rivers, Bristol Bay drainages, and in isolated river systems farther south. They first spawn at 4 or 5 years of age and start their upstream migration during the summer and fall. Spawning occurs in the upper reaches of rivers in October, usually over a gravel bottom. As with other whitefish, the humpback digs no nest but broadcasts its eggs which lodge in the gravel. Growth varies from river to river, though humpback whitefish attain lengths of 22 inches and 5 pounds in eight years. Both the broad and humpback whitefish are important in the subsistence economy of Alaska Natives; they have commercial value as well as providing sport fishing opportunities.

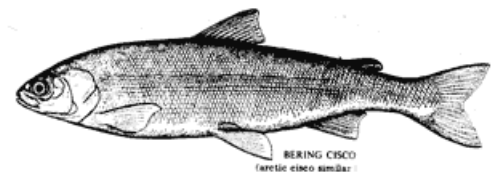
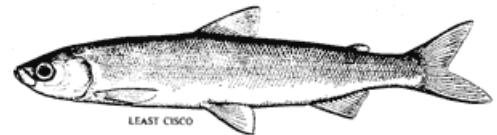
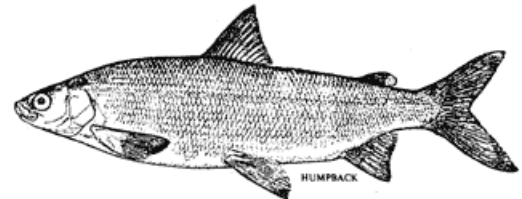
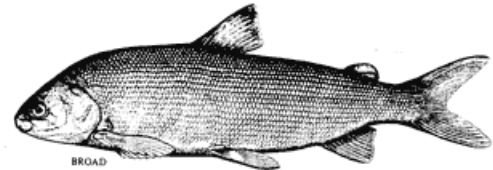
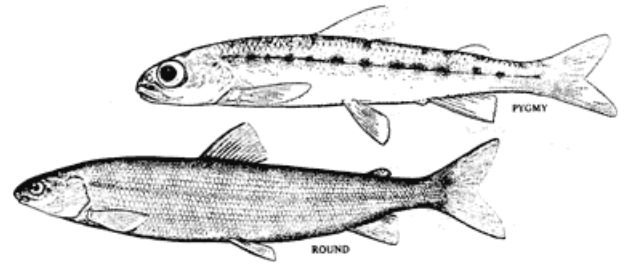
Least cisco: The least cisco (*C. soid*) sometimes erroneously called herring, is a slender herring-like fish with a superior mouth, which means a weak lower jaw projecting beyond the upper. Adults are brown to olive green and silvery below. The least cisco is found in lakes, streams, and estuaries of the Bristol Bay drainage. At the age of 4 to 6, mature least cisco migrate upstream in the fall to spawn in clear streams with gravel bottoms north of the Alaska Range. Spawning takes place in early October. Least cisco found in lakes seldom exceed 14 inches, while those in the Chatanika River in Interior Alaska reach 19 inches and 4.5 pounds. Least cisco are very important in the food chain, as they are eaten by predacious sheefish, pike, and burbot. A sport fishery on least cisco takes place in the upper Chatanika River during the fall; both spears and hook and line are used to catch them.

Arctic and Bering Ciscoes: The Arctic cisco (*C. autumnalis*) and Bering cisco (*C. Laurettae*) are similar in appearance. They are distinguishable from the least cisco by smaller eyes and scales, more silver color, white pectoral and pelvic fins, and terminal mouths (at the tip of the body). Both ciscoes feed on invertebrates and to a lesser extent on other fish. Little is known of the biology of either fish. They are tolerant of high salinity and are often found in estuaries. The Arctic cisco is found in arctic Canada and Siberia and from the Point Barrow area eastward along the Beaufort Sea coast to the Canada border. Bering cisco are found in the Bering Sea drainages of the Seward Peninsula, Norton Sound, and Yukon and Kuskokwim rivers. The Bering cisco is a notable migrant: spawning fish have been observed 1,200 miles up the Yukon River and 600 miles up the Kuskokwim River. They spawn in the fall at an average of 6 years. Bering cisco taken at Hess Creek in the middle Yukon River reach 17 inches and 3.5 pounds. Arctic cisco from the Colville River reach 14 inches, 1.5 pounds, and may live 10 years. Both are much sought-after commercial fish and are sold as "white trout."

Text: Kenneth Alt

Illustration: Courtesy of the Fisheries Research Board of Canada

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