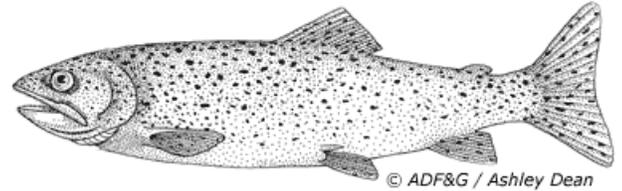


Cutthroat Trout

Coastal cutthroat trout (*Oncorhynchus clarkii clarkii*) exhibit both resident and sea-run life history forms in Alaska and range throughout the coastal waters from the southern tip of Southeast Alaska to Gore Point on the Kenai Peninsula. There are approximately 14 subspecies of cutthroat trout (i.e., Lahontan, Westslope, Yellowstone, etc.) identified in the world but the coastal cutthroat trout is the only one found in Alaska and is also the only one that utilizes the marine environment. It is believed that all of the inland subspecies of cutthroat trout found throughout the western United States evolved from the ancestral coastal cutthroat trout.



The resident or non-migratory form of coastal cutthroat trout live in a wide variety of habitats ranging from small headwater tributaries and beaver ponds to large lakes and rivers. Resident forms may coexist with sea-run forms in anadromous lakes and rivers but the resident or non-migratory form are usually confined to streams and lakes above natural barriers to upstream migrations. Coastal cutthroat trout typically migrate into small tributary streams to spawn, regardless of their life history form.

The sea-run form migrates back and forth between saltwater and freshwater environments and may be found in small ponds and streams to large lakes and rivers. Since sea-run and resident coastal cutthroat trout may occupy the same habitat in lakes and streams they may successfully spawn together; the extent of what life form the progeny may adopt is unknown. There is evidence that resident fish occasionally migrate downstream, often over a natural barrier, such as a waterfall, and adopt a sea-run life history. Obviously this is a one-way street as they can not migrate back over the barrier. In several systems in Southeast Alaska, uniquely tagged resident fish captured above barriers have been subsequently recovered below the barrier in waters suitable for sea-run migrations. The mechanism that triggers a resident fish to migrate downstream is unclear but environmental factors such as food availability, water temperature, and water quality and quantity, may play a role.

General description: Coastal cutthroat trout are silver, brassy, or yellowish in color and have small densely packed irregularly shaped dark brown or black spots on their body, head, and fins. Juvenile coastal cutthroat trout range in size from 1 to 6 inches and have about 10 oval parr marks overlaid with small black spots and may have a faint red or pink coloration along the lateral line and possibly on the gill covers. Typically the distinguishing cutthroat "cut-slash" is present on Alaskan coastal cutthroat trout as a red or orange band of color on the underside of the lower jaw in the skin folds. However, not all coastal cutthroat trout have a distinct slash, especially the silver colored sea-run fish which have just returned to freshwater where the slash may be present but inconspicuous. Coastal cutthroat trout can spawn with rainbow trout and produce fertile hybrids with physical characteristics of both (i.e., cutthroat slash and pink/red color band along the lateral line). Biologists often use the presence of small teeth at the base of the tongue called basibranchial teeth as a means to distinguish between rainbow trout (teeth absent) coastal cutthroat trout (teeth present). However, the presence or absence of basibranchial teeth is not a 100% accurate means of positively distinguishing all coastal cutthroat trout from all rainbow trout and this distinguishing trait may be further complicated in the presence of hybrid trout. Coastal cutthroat trout, like other species of trout, reportedly have the ability to change the size, shape, and distribution of spots in relationship to the environment they live in.

Life History: Both resident and sea-run coastal cutthroat trout have similar early life histories. Adults typically spawn in small, isolated headwater streams from late April through June as daylight hours are increasing and daily water temperatures reach 6 – 9 degrees Celsius. Coastal cutthroat trout in Alaska have been observed spawning in small lake inlet streams 6 inches wide and 2 inches deep to larger rivers in approximately 5 feet of water. While not a preferred choice, coastal cutthroat trout may also spawn successfully in lakes where there is suitable gravel and adequate upwelling. Selection of isolated spawning areas is thought to have evolved to reduce interaction of young coastal cutthroat trout with more aggressive juvenile steelhead trout and coho salmon. Young coastal cutthroat trout emerge from the gravel in July and by fall they may be found in the dense cover of root wads or in along the edges of beaver ponds, sloughs, or lakes.

There may be large variation in the size and age of smolting and maturity among different forms and populations of coastal cutthroat trout. Typically coastal cutthroat trout rear in freshwater for two to five years before emigrating to salt water during April through May when they are 6 to 8 inches long. The larger coastal cutthroat trout are the first to emigrate to saltwater every spring, either to migrate to a small stream for spawning or to resume feeding in the rich marine environment after a long winter. Resident forms may reside and feed in the main stem of rivers or lakes and then migrate to small tributaries to spawn. This is similar to the sea-run form except that larger bodies of fresh water are utilized instead of marine waters. While in the marine environment, sea-run coastal cutthroat trout do not stray far from the shoreline and rarely if ever cross large, open bodies of water. During their marine migrations coastal cutthroat trout may enter several freshwater bodies or hold in various intertidal areas but are thought to stay within 50 miles of their natal stream. Time in saltwater may vary from a few days to over a hundred days before they reenter freshwater either following the salmon immigrations to feed on salmon eggs or in the fall returning to a lake system to overwinter.

Homing appears to be very precise as coastal cutthroat trout can return to the same tributary stream where they emerged and reared. The size at which female coastal cutthroat trout first reach sexual maturity may vary greatly. In some populations mature fish as small as 5 to 7 inches have been observed but on average, most female coastal cutthroat trout reach sexual maturity by 11 to 12 inches. However, females in some populations may not become sexually mature for the first time until 13 inches or larger. Like all species of trout, coastal cutthroat trout spawn in the spring but due to cold water temperatures in Alaska their gonad development must be in an advanced stage going into the fall in order to ensure successful spawning. Thus, mature coastal cutthroat trout are occasionally captured in the fall dripping eggs or milt which has lead people to believe they are spawning during the fall. There is evidence to suggest that some coastal cutthroat trout may not spawn annually i.e., they may skip a year before spawning again. The fecundity of coastal cutthroat trout is low and ranges from an average of 100 eggs for a 6 inch fish to just under 600 eggs for a 14 inch fish.

The oldest and biggest coastal cutthroat trout are the resident lake form and some fish are known to be at least 15 years old, reaching lengths over 27 inches and weighing nearly 8 pounds. One uniquely tagged fish in Turner Lake was recaptured 12 years after first being tagged and it had grown from just under 7 inches to over 23 inches. These trophy-class coastal cutthroat trout (≥20 inches) are only found in the large landlocked lakes in Southeast Alaska that also contain good populations of kokanee (landlocked sockeye salmon). Sea-run coastal cutthroat trout tend to have shorter life spans, rarely surviving more than 10 years, and generally only reaching a maximum length of 16 to 22 inches.

Coastal cutthroat trout are highly predaceous and may feed extensively on small fish; coastal cutthroat trout are known to have a higher percentage of fish in their diets compared to either rainbow trout or Dolly Varden. Coastal cutthroat trout in lakes may hide among lily pads, sunken logs, or rubble and dart out and seize insects and small fish while coastal cutthroat trout in streams may establish a territory and adopt a "sit and wait" feeding strategy. Some fish become "cruisers" when they reach about 14 inches, pursuing and primarily eating other fish.

Sport fishing: Coastal cutthroat trout are a wonderful angling fish as their aggressive behavior lends itself well to a variety of tackle and techniques. Small spinners, spoons or lures cast along banks and lake shore lines are highly effective. Coastal cutthroat trout are also readily caught on fly gear using either wet or dry flies. Some of the best wet fly patterns imitate large aquatic insects or small fish while dry fly fishermen can do well by imitating flying insects. Coastal cutthroat trout are very susceptible to bait and the mortality of fish caught with bait and then released may be as high as 50%. Thus, the use of bait to sport fish for coastal cutthroat trout is prohibited throughout much of its range in Alaska.

Catch-and-release: Throughout much of Alaska, minimum size and bag limit regulations for coastal cutthroat trout means that many of the fish captured will subsequently be released. Anglers are encouraged to practice proper catch-and-release techniques to help protect and preserve this beautiful trout.

Text: Steve Elliott

Illustration: Ashley Dean

Revised and reprinted 2008

Links to related information:

- [Southeast Alaska online cutthroat trout informational brochure](#)
- [Southeast Alaska cutthroat trout research](#)