



DOLLY VARDEN

Ever wonder where the name Dolly Varden comes from?

The origin of this name has many versions associated with it. The name “Dolly Varden” stems from a character in the Charles Dickens novel, “Barnaby Rudge.” Dolly was a young girl who is described as wearing bright colorful and bold pattern dresses. In the late 19th century, brightly colored fabric was marketed under the name “Dolly Varden” that was created for dressmaking.

A 15-year-old girl named Elda McCloud is credited with connecting the name Dolly Varden with the fish. McCloud’s uncle, George Campbell, was the proprietor of the Soda Springs Resort in Northern California. Upon viewing the catch from a successful fishing trip to the upper McCloud River, the girl remarked that trout was a poor name for such a colorful fish and that it looked like a “regular Dolly Varden.” It remains unknown if she had just read “Barnaby Rudge” or if she had seen the new dress fashion; nonetheless, in any case, the name stuck.



Varden (*Salvelinus malma*). ADF&G’s research on this species enables the Alaska Board of Fisheries to develop sport and subsistence fishing regulations, and for ADF&G to implement those regulations, all of which ensure that these fish are sustainably managed in the face of increasing levels of fishing pressure and habitat change.

It’s hard to believe but there was a time when many people believed that Dolly Varden were not of much benefit to humans or the environment. Early observers of Dolly Varden witnessed them feeding on salmon eggs, which earned them a reputation as a predator of salmon. In fact, during the 1930s there was a federal bounty of 2.5 cents for every Dolly Varden tail, in the hopes that they would be eradicated from Alaska’s precious salmon streams.

Since the 1940s, there have been numerous studies to determine whether or not Dolly Varden are serious predators of salmon eggs and young salmon. Robert Armstrong, one of Alaska’s foremost Dolly Varden researchers, found Dolly Varden actually do not harm salmon populations, but in fact may benefit salmon by eating drifting salmon eggs that would not have survived anyway. These eggs, if they were not eaten, would



Research Efforts

The Alaska Department of Fish and Game (ADF&G) along with a variety of federal land management entities are responsible for managing Alaska’s Dolly



eventually die and become hosts for fungi, which could infect the remaining live eggs and alevins, or very young Dolly Varden living off their yolk sac in the gravel.

Another benefit is that lakes in which Dolly Varden are present feed heavily on freshwater snails, which are hosts for a type of parasite that infects the eyes of young coho and sockeye salmon, eventually causing blindness. Even the competition for space between Dolly Varden and the more serious predators of salmon young, such as illegally-introduced northern pike in Southcentral Alaska or even natural populations of cutthroat trout, may play a role in reducing predation on young salmon.

The search for a greater understanding of Dolly Varden continues. Most research has focused on anadromous (sea-run) Dolly Varden, and very little work has been conducted on resident Dollies. As our understanding of Dolly Varden and their importance to aquatic ecology increases, the need to preserve healthy Dolly Varden populations and habitat becomes more evident.

Life Cycle of Anadromous Dolly Varden

Dolly Varden are one of the most widely distributed salmonids in Alaska. There are two sub-species of Dolly Varden in Alaska, a northern species and a southern species. The northern species is found north of the Alaska Peninsula to the Mackenzie River in Canada. The southern species is found from southeast Alaska throughout the Gulf of Alaska to the south of the Alaska Peninsula.

Dolly Varden are olive green to dark blue or brown, with many yellow, orange, or red spots on the side. The largest spots are usually smaller than the pupil of the eye.

Dolly Varden are fall spawners, with spawning occurring in late September or October in Southcentral Alaska. Females, depending on their size, will deposit between 600 to 6,000 eggs into redds, or their gravel nests. Spawning places great physical demands on Dolly Varden. An estimated 70% of the males, and up to 60% of the females die after spawning.

By March, Dolly Varden eggs have developed into alevin, which survive off their yolk sacs. Once their yolk sac is absorbed, Dolly Varden fry will emerge from the gravel in April or May. Dolly Varden will rear in streams for two to four years before beginning their first migration to sea; however, some may rear as long as six years. Prior to their seaward migration to the ocean in May or June,



Dolly Varden go through a series of physical changes called smoltification which allows them to survive in saltwater. During this process, Dolly Varden lose their parr marks and become silvery in color. A small number of Dolly Varden may migrate to the sea in September and October. After their first seaward migration, Dolly Varden usually spend the rest of their lives migrating to and from fresh water in an interesting and often complicated pattern of migration. The southern species migrate into lakes during the fall where they spend the winter.

Sea-run Dolly Varden have complex life histories, since they travel in both fresh and salt water habitats. They may visit many freshwater streams in a single year, which may give an inaccurate impression of their numbers. This mobile lifestyle led Inupiaq Alaskans to assign Dollies different names—bright-colored fish entering a stream in summer were called ‘iqalukpik.’ Three months later, when the same fish was seen in post-spawning coloration, they were called ‘pyraulik.’

Unlike Pacific salmon, Dolly Varden are capable of spawning multiple times during their lives. It is generally believed that males do not spawn more than twice and females not more than three times. Those fish that spawn more than once are likely to spawn in consecutive years. This explains why fish rarely

live more than nine years in Southcentral Alaska. Depending on food availability, adults, particularly the northern species, may skip a year or two between spawning events.

Fishing for Dolly Varden

Most people fish for Dolly Varden from July through October. During this time, Dolly Varden are entering streams from the ocean to forage, spawn, or find a suitable location to spend the winter. From July through early September, Dolly Varden are present in a vast majority of freshwater streams in the Southcentral Alaska area.

Try fishing near spawning salmon, in deep holes, and at the creek mouth on an incoming tide. Knowing that Dolly Varden hang out at the stream mouths and in the near-shore environment during the spring, and that they are feeding on out-migrating pink salmon fry will lead anglers to try small spinners or fly patterns that imitate small fish.



Fishing for sea-run Dolly Varden can also be good as they migrate into lakes from late August through October, and are in prime condition after their spring and summer growing season. During the fall months, try using flesh and egg patterns that imitate salmon flesh and salmon eggs in freshwater streams.

More anglers seem to be adopting a voluntary catch-and-release philosophy when fishing for Dolly Varden. If released correctly, these fish have a high probability of surviving. To effectively practice catch-and-release fishing, or to release a fish which has been snagged:

1. Land the fish as quickly as possible. Playing the fish to complete exhaustion reduces its energy. Keep the fish in the water while handling. The

longer the fish is out of the water, the lower the chance of survival. When you need to breathe, so does the fish.

2. Never squeeze a fish or hold them by their jaw, gills, gill plate, or eyes. Never hold a fish up by its tail, this can dislocate their back. This causes almost certain death.
3. If you handle a fish with your hands, make sure to wet them first. Dry and gloved hands can remove the slime coat off the fish. This is a protective layer on their skin, which protects them from infections.
4. If you need to hold the fish, do so by gently placing one hand on the underside of the fish by the pectoral fins and the other hand near the based of the tail. This will help avoid injury to the internal organs.
5. Use flies or artificial lures. Hooking mortality in some fish is much lower if they are caught with flies or lures instead of bait. If the fish is hooked deeply, cut the leader and leave the hook in the fish. The hook will quickly dislodge or rust away.
6. Dolly Varden have a “soft” mouth that is easily torn and should never be allowed to hang vertically from a hook and line.
7. In flowing water, position the fish with its belly down and with the head facing into the current. Gently hold it there until its gills are working and it swims away on its own.



Dolly Varden are often confused with Arctic char and rainbow trout.

To tell a Dolly Varden from a rainbow trout, look at their spots. Dolly Varden have light spots (white or yellow to red) on a dark body, while rainbow trout have dark spots (brown to black) on a light body.

Division of Sport Fish Getting Social



Follow us on
Instagram

@wefishak



Like us on
Facebook

ADF&G - Ship Creek Fisheries Center

ADF&G - wefishak

ADF&G - Sport Fishing Interior Alaska

ADF&G - Sport Fishing Southcentral Alaska

wefishak

Get out and Fish. Together.
#wefishak



SPORT FISHING SERIES PRODUCED BY:

Southcentral Region
Alaska Department of Fish and Game
Division of Sport Fish

333 Raspberry Road
Anchorage, Alaska 99518
Sport Fish Information Center

(907) 267-2218
M-F 8am - 5pm
Except on state holidays



These opportunities funded in part by Federal Aid in Sport Fish and Wildlife Restoration.

The Alaska Department of Fish and Game complies with Title II of the Americans with Disabilities Act of 1990. This summary is available in alternative communication formats. If you need assistance, please contact the ADF&G ADA Coordinator at (907) 465-6078; TTY/ Alaska Relay 7-1-1; or 1 (800) 770-8973.