Fish of Smith River

Smith River National Recreation Area
Six Rivers National Forest Forest

Illustration by Debra Robasky, Respect the River

Did you know that things people do along the river affect water quality and impact on the future of fish—and fishing—in the Smith River? Where we choose to walk, drive, fish, swim and how we fish, camp and spend time near the water influences water purity and fish survival. Read on to learn about the fish who live in the beautiful Smith River and what we can do to be caretakers of fish and their habitat.

If you were a fish, which would you be?

If you are someone who likes to live your whole life in the town where you were born, then be a cutthroat or rainbow trout. If you can't wait to leave home for adventures on the high seas, be a Chinook salmon, steelhead or sea-run cutthroat trout.

Both salmon and trout are born in the cold waters of Smith River, and ***resident*** cutthroat and rainbow trout stay in this water their whole lives. But other fish, such as sea-run cutthroat and steelhead trout, as well as other species like Chinook and coho salmon, migrate to the ocean as juveniles. They spend most of their adult lives in the ocean, then migrate up river to breed in fresh water. These are called ***anadromous*** fish**.** When anadromous fish are ready to spawn, they return to their birth stream, finding their way home, perhaps by their unbelievable sense of smell, electromagnetic signals or the stars and moon.

Spawning—a beginning . . . and for some . . . an end

When salmon hatched in the Smith Basin return as adults and enter the mouth of the Smith, they stop feeding and live off stored body fats. They struggle upstream for weeks or even months, swimming many miles against strong currents and over logs and rocks until they are "home." That's determination! Salmon die when their spawning is complete, while cutthroat and steelhead trout may spawn several times in their lives.

The female chooses a spot with the right slope and flow of water through gravel to provide the most

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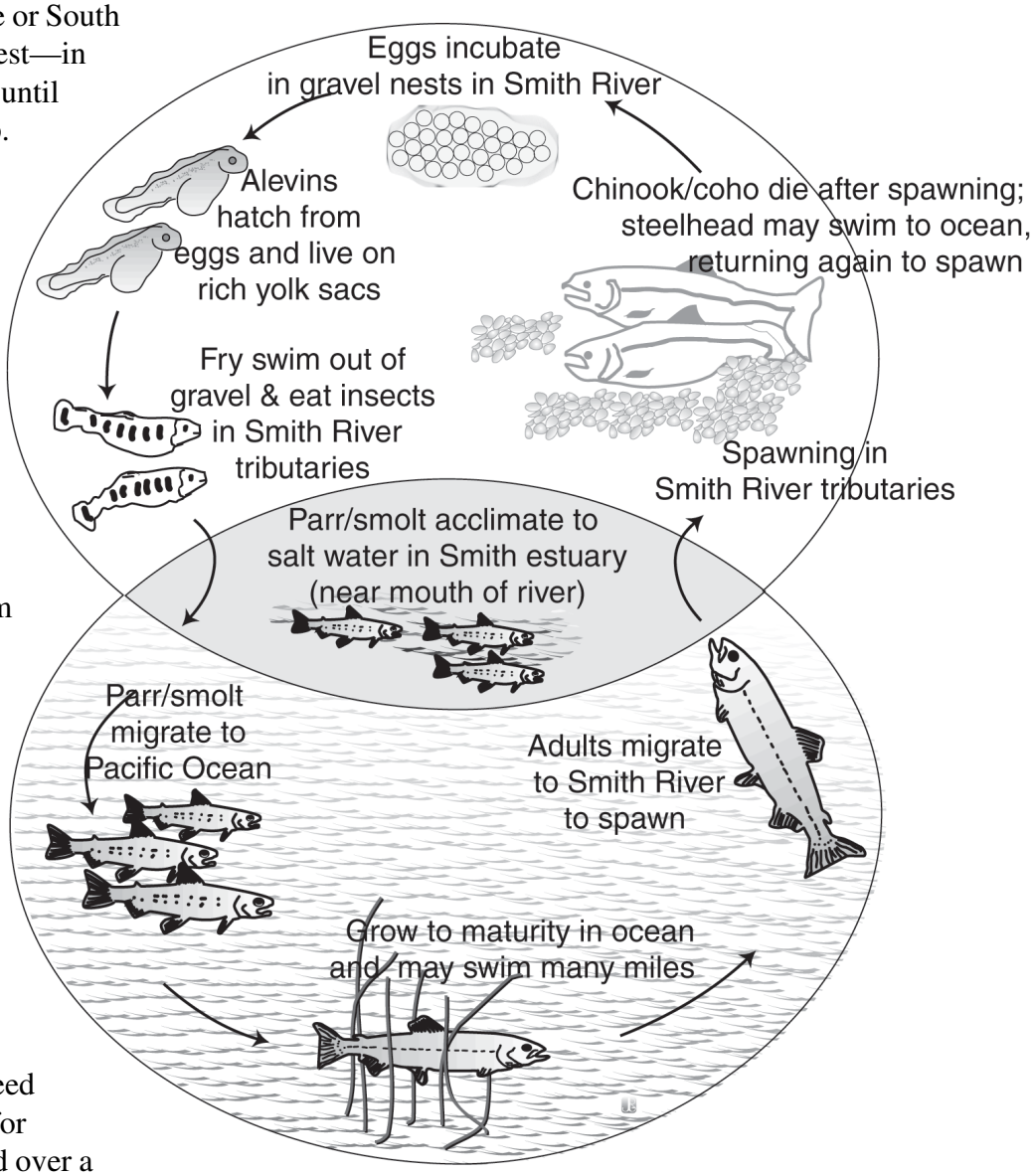
oxygen for her eggs—maybe you'll see one in Patrick or Shelley Creek, or in Middle or South Fork. She begins digging a ***redd***—a nest—in the gravel with strong flips of her tail until she creates a pocket about a foot deep. This may take weeks. Her digging attracts males who chase away competitors. She lays her eggs in the nest (7,000 to 8,000!) and the winning male fertilizes them with a stream of white milt or sperm. The eggs settle into the spaces between the rocks and the female covers them with more gravel, as she digs another nest upstream.

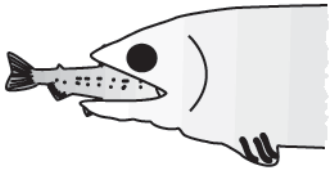
When the yolk is consumed they work their way out of the gravel, swim to the surface to gulp air to fill their swim bladder, and begin feeding on tiny aquatic insects. As the ***juveniles*** eat and grow, they also are wary of being eaten, so they take refuge under rootwads, logs and boulders, and under the riverbank. ***This is why it's so important to leave dead trees, overhanging vegetation, and river rocks in place along the shore.***



Life Cycle of Salmon and Steelhead

In the Smith, Chinook juveniles feed and grow in their freshwater nursery for several months, while coho will spend over a year, and steelhead usually rear in streams for two years. Then, as their freshwater phase comes to an end, they start to ***smolt*** and prepare for the first part of their anadromous journey - migrating downstream and preparing for life in saltwater. To avoid predators, juvenile salmon migrate downstream at night, often swimming along the banks.

An important stop along their seaward migration is the ***estuary***, the mouth of the river where salt and fresh water blend. Here the smolts taste their first "seafood" and complete their physiological changes that help them adapt to life in the ocean. The rich estuary provides an abundance of food such as larval crabs, shrimp and other invertebrates.



Survival is a Challenge!
Only about 10% of the eggs deposited in the redd survive, and as fry they become food for larger fish.and other predators.

As they reach the open sea, they eat greedily in their new ocean "smorgasbord," growing rapidly until they reach maturity. If food supplies are good, the salmon will thrive in their new marine world for two to five years. Then the process begins all over again—unless a fisherman (or a bear, whale, seal, or sea lion) is lucky enough to catch one.

WHICH FISH IS WHICH?

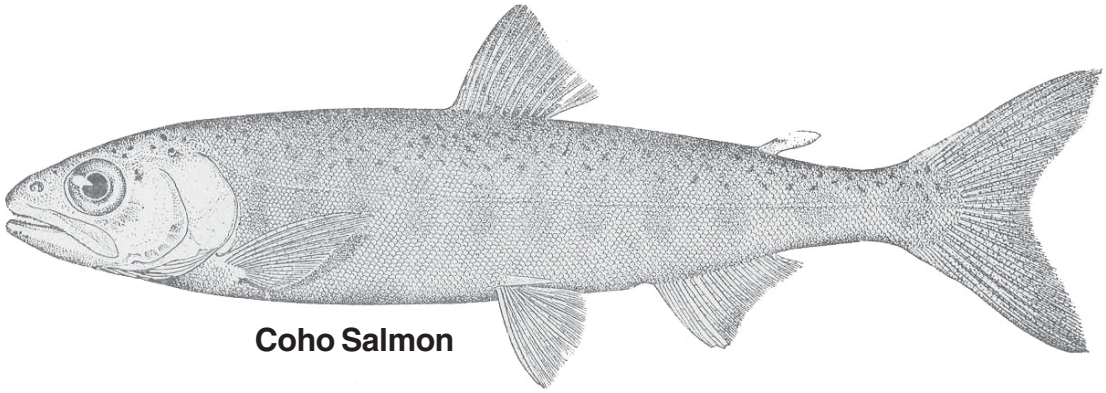
	CHINOOK SALMON (anadromous)	COHO SALMON (anadromous)	STEELHEAD TROUT (anadromous)	RAINBOW TROUT (resident)	CUTTHROAT TROUT (resident)
SIZE	Most are 10-50 lbs.at maturity; 24-60"	Varies from 1-12 lbs.at maturity;17-38"	Most are 4-8 lbs. at maturity; length to 45"	Wide range of sizes at maturity depending on habitat: 8-18 inches	
DISTINGUISHING FEATURES	Olive brown to dark brown in color, almost black on back and sides;inside mouth is gray or blackish;lower gum line black; many spots on its back	Back and head dark bluish-green;lower sides red to wine color; spots on back and upper lobe of tail fin only; lower gum line light colored	Typically bright, silvery fish; color changes with and before spawning. Inside mouth white; often has reddish stripe along sides	Black spots vary in size from pin points to about 1/8" diameter; found on upper half of head and body	Red slash on bottom of jaw; maxillary extends past eye; back is dark olive green, sides lighter and belly is silvery white; teeth on base of tongue
FINS	No white/black stripes on edges of anal and dorsal fins; blank space in adipose; few spots on fins; both upper and lower part of tail fin has spots	Young coho has more than 12 rays on anal fin; leading edges of anal and dorsal fins have white and black stripes; spots on back and upper lobe of tail fin only	12 rays or less on anal fin; relatively few spots on back and dorsal and caudal fins; square-shaped tail fin with radiating pattern of spots; distinct dark spots on dorsal fin	Small spots on dorsal and caudal fins; no wavy marks or bars on back or dorsal fin	Fins usually spotted with large, distinct black spots or irregular marks
DISTRIBUTION	Lower ends of large tributaries of North, Middle, South Forks Smith River	Tributaries of lower mainstem Smith; require slower and smaller streams than Chinook	North, Middle, South Forks Smith River plus smaller streams	Throughout Smith River Basin; common in upper ends of some tributaries upstream of anadromous barriers	Throughout Smith River Basin; more visible January through October
SPAWN ONCE AND DIE?	yes	yes	Some do but may spawn 3 or 4 times in a lifetime	no	no
MIGRATION TIME	After first fall rains	Fall	Winter/early spring	Resident	Resident
SPAWNING TIME	October - January	October - January	Spawn soon after arriving	Spring	Winter and spring
FRESHWATER RESIDENCE	Emerge from nest late winter/early spring; rear in slow water shifting to faster, deeper water as they grow. Most disperse downstream within 3-6 months	Rear in freshwater for over a year, over-wintering in streams, like Mill Creek, that provide protection during long high flow periods	Emerge from nest in spring and reside for 2 years in wide range of habitat, generally in smaller streams rather than main stem	Spends entire life in fresh water	Spends entire life in fresh water
OCEAN RESIDENCE	Enter ocean before they are 1 year old; remain 2-4 years	Almost always spawn at age 3	Enter ocean at 1-2 years of age and live there 1-3 years		

WHICH FISH IS WHICH?

LEARN TO TELL THEM APART BY COLORING THESE FISH OF SMITH RIVER

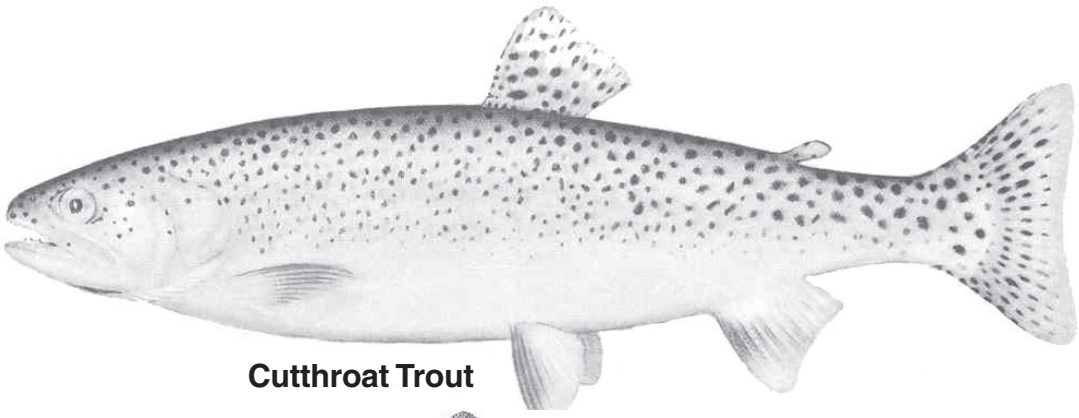
Chinook Salmon

Color them olive brown to dark brown. Make the back almost black.



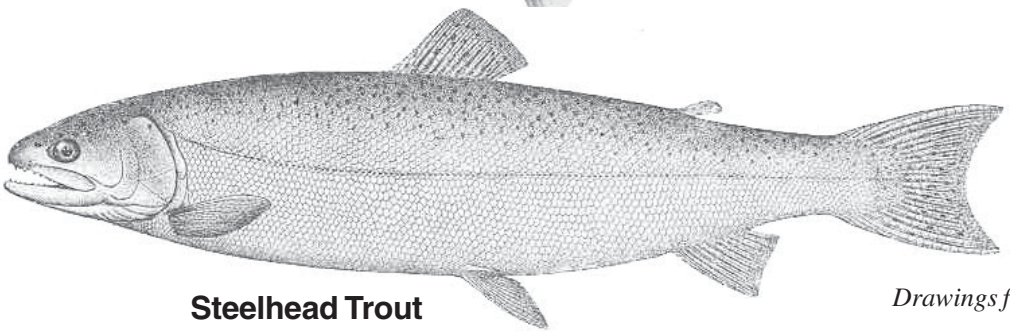
Coho Salmon

Color the back and head dark bluish green. Make the sides a burgundy red.



Cutthroat Trout

Color the back dark olive green. Make the sides lighter and belly a silvery white.



Steelhead Trout

Make the body a bright silvery color. You can also add a reddish stripe along the sides.

Drawings from Freshwater & Marine Image Bank

"The life of the river is interwoven with the life of the forest along its banks . . ."

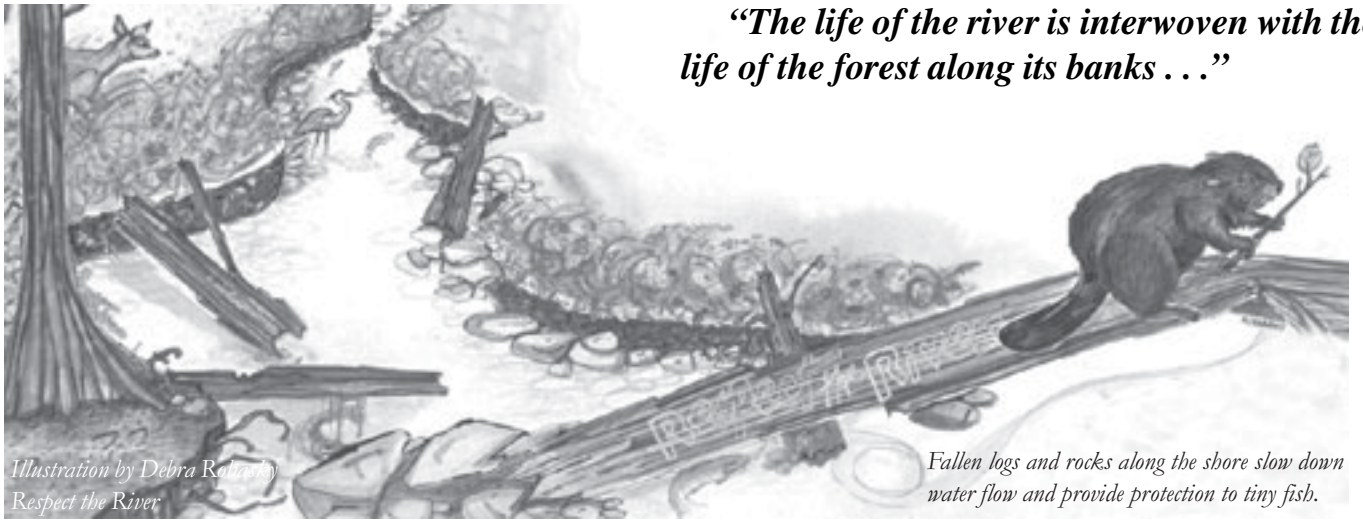


Illustration by Debra Robasky, Respect the River

Fallen logs and rocks along the shore slow down water flow and provide protection to tiny fish.

If you were a fish, wouldn't you want your nursery clean?

Of course! But many of the things people do along the river may "dirty up the fish nursery." The life of the river is interwoven with the life of the forest along its banks and we can all be river caretakers:

- **Stay on established river trails and roads.** Trampling trees, shrubs and stream banks causes soil erosion, which increases sedimentation in streams and smothers eggs and young fish in the gravel.

- **Leave wood and rocks along the edge of the water.** These help slow down fast-moving water, provide shelter for fish and amphibians and create sanctuaries from predators.

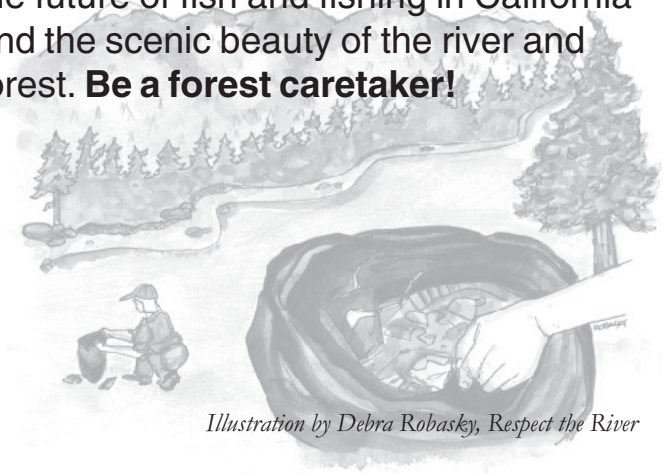
- **Camp at least 100 feet from the river.** Vehicles driven and parked too close to a stream compact the soil, kill vegetation and erode banks. This ruins a beautiful scene and destroys fish habitat.

- **Pretend you're a cat!** If toilets are unavailable, dig a hole 6-8 inches deep, 200 feet (90 paces) or more away from water and campsites. Deposit human waste and toilet paper, and cover it up with soil.

- **Keep your fires small and bring your own firewood**. Use existing fire rings. Gathering firewood, even downed wood, destroys habitat, especially in camping areas near water.

- **Pack out trash and never leave used fishing line** along shore where birds, fish and other animals can become entangled.

Think about how your actions can affect the future of fish and fishing in California and the scenic beauty of the river and forest. **Be a forest caretaker!**



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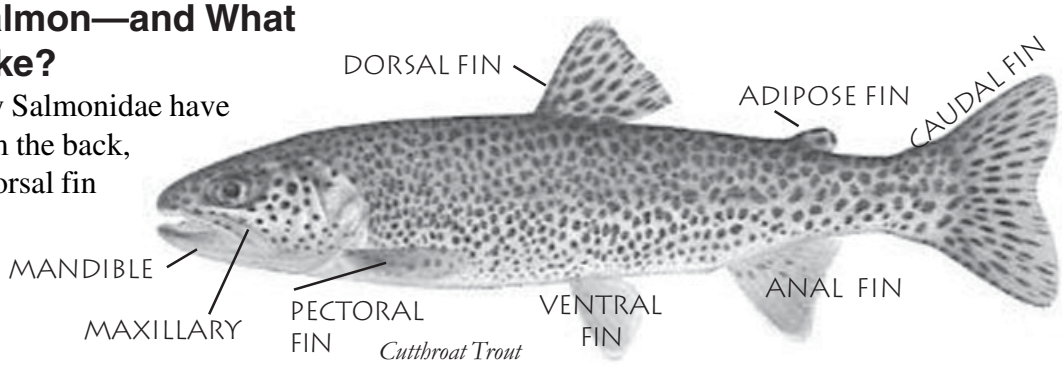
Is That a Trout or a Salmon—and What Difference Does It Make?



All members of the family Salmonidae have an adipose fin that grows from the back, about half way between the dorsal fin and the tail, and all are generally shaped like the illustration above. The mouth is quite large and located at the tip of the head, never on the underside. Pectoral fins are set low behind the head and ventral fins are about half way between the tip of the head and the tip of the tail. Once you are familiar with these general traits you can easily tell a bass from a trout. However, **distinguishing among trout and salmon species is not so easy.**

Steelhead and salmon look much the same in the water and most people can tell them apart only when laid out beside each other. Fishermen often catch young salmon and think they have steelhead. Even after the fish have returned to the sea and matured they may be difficult to distinguish. One way is to grasp the fish around the base of the tail and if it slips through your hand, it's a steelhead. If you can hold it easily, it's a salmon.

What difference does it make? If you catch a non-fishable species and mistake it for a legal fish, you may be in trouble with California Fish and Game. Equally important is the fact that you are killing a fish whose species cannot afford to lose any more members. Also, if it's a young Chinook salmon, let him go so he can return as a 20 lb. salmon! The chart inside lists some distinguishing characteristics to help you identify fish. **Fishermen are responsible for knowing current California Department of Fish & Game regulations, which may change yearly.**

Role of USFS

Since the turn of the century the numbers of salmon and steelhead have declined steadily. Many populations are now extinct, or close to extinction. The highest quality freshwater habitat left for these wild-spawning fish is within National Forests. As the largest single undammed Wild and Scenic River system in the United States, the Smith River National Recreation Area plays a major role in preserving the quality and quantity of this important habitat refuge.

Forest Service efforts are also aimed at improving the habitat's capability to produce as many smolts as possible. Restoring, maintaining, and, in some cases, improving stream habitat within forests are important parts of this strategy to rebuild and protect salmon and steelhead populations.

For More Information please visit, call, or write one of the Forest Service offices below. Office hours at Smith River National Recreation Area are Monday — Friday, 8:00 a.m.– 4:30 p.m. All Forest Service offices are wheelchair accessible.

Smith River National Recreation Area
10600 Highway 199 N. P.O. Box 228
Gasquet CA 95543
(707) 457-3131 (also TYY#)

Six Rivers National Forest Supervisor's Office
1330 Bayshore Way
Eureka CA 95501
(707) 442-1721 (also TYY#)

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