our FISH

bugs that live in or around the rivers, as they are a source of food for fish.

"We have survey areas around Agency," said Feehan. "We evaluate the rivers periodically, and over time, we can develop a better understanding of our reservation's environmental conditions."

And for these kinds of assessments, that is really what is needed: time. Weather conditions vary from season to season, and year to year, which affects the land and water, as well as what lives there. The only way to accurately tell about the reservation's biological and environmental strengths and weaknesses is over a period of a couple of years.

"We are establishing survey areas in every major reservation stream," said Feehan. "And over time, we will have a more detailed understanding of those streams."

CULTURAL IMPORTANCE

Salmon, eel, and trout were staple foods of Grand Ronde Indians during a time in history when these fish were abundant in streams and rivers of Oregon. Acting in accordance with the Native tradition of respect for life and living things, tribal leaders began to take responsibility for the reservation's environmental conditions immediately after the Tribe was restored, and continues to do so.

June Olson and Lindy Trolan, both cultural resource specialists for the Tribe, said that ancestral respect for fish populations carry valuable lessons we should share with our youth.

"Our people's reverence toward fish is reflected in their stories. We can still share those stories today," said Olson.

Trolan pointed out that both coastal and Willamette Valley tribes used all parts of the fish, and that salmon bones were sometimes thrown back into the rivers, as they were in the area near Willamette Falls (Oregon City).

"The people did this because they believed that salmon were disguised people, living in a village under the sea. They were sent to provide food to the human race. There were cleaning and cooking ceremonies for salmon, and after they were eaten, their bones would be thrown back into the river, in the belief that the salmon were going to return back to their village," said Trolan.

"To tribal people," explained Olson, "fish and water were the essence of life. No matter what tribe, each had a story of respect for fish. Today, many of us might throw our bones in the trash after we eat a fish. But to our ancestors, it was important to

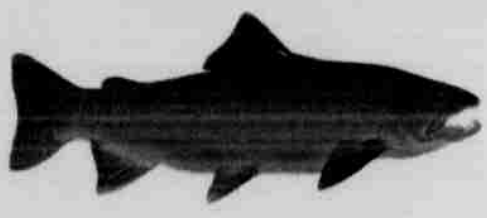
continued on next page

Fish Found in Grand Ronde Waters

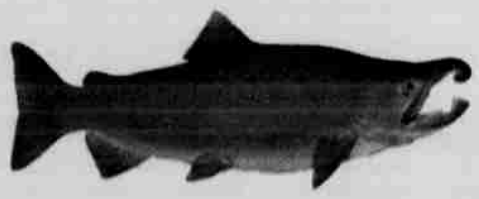
Six species of fish are found in reservation streams. Anadromous fish spend part of their lives in the Pacific Ocean, making their way up the Columbia, Willamette and finally, reservation creeks to breed. Resident fish do not spend part of their life cycle in the ocean.

Not pictured: Pacific lamprey (lampetra tridentata) and Cut-throat trout.

Anadromous Fish



Steelhead trout
(*Oncorhynchus mykiss*)

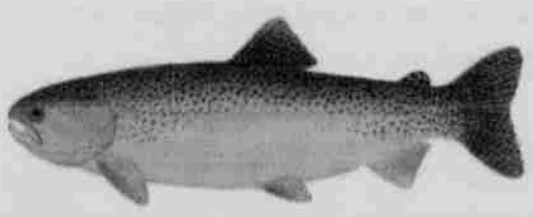


Coho salmon
***(Oncorhynchus kisutch*)**

Resident Fish

Sculpins
(*Cottid* spp.)

Stocked rainbow trout
(*Oncorhynchus mykiss*)



Ecology of a Stream

Aquatic Insects

Caddisfly larvae

Mayfly nymph

Stonefly nymph

The mayfly, stonefly and caddisfly represent the three most common orders of aquatic insects. There are a bunch of other bugs that are also present in our streams but are not quite as common and not as much use as an indicator of water quality.

There is a lot more life in a stream than just the fish. Insects are the largest single group of animals on the planet. Many of these insects spend some or all of their lives in the water. Some, like the mayflies, dragonflies, and caddisflies are fully aquatic only when they are young. These juvenile insects are called either nymphs or larvae depending on their life history. Other insects, such as water striders and backswimmers, are fully aquatic during their entire life cycle.

Scientists can tell a lot about the health of a stream by looking at the insects which live there. Many species of insects require very specific habitat characteristics including clear, fast flowing, cold water. Many fish and amphibians require similar habitat characteristics as well as a healthy supply of insects which are food for many. For all of these reasons and many more, insects are a vital and fascinating part of the aquatic community.

Stream insects are tiny, but important indicators of water quality and river health.

Stream Bank Plants

Because of their often disruptive and destabilizing effects on natural communities, exotic plants like Himalayan blackberry and Reed Canary Grass are sometimes called "biological pollutants." Some of these living pollutants can out compete and greatly restrict or eliminate native plant species in an area. Besides the direct loss of native plants, wildlife and their habitat, these plant intruders can degrade riparian habitat quality and stream bank community composition. These noxious weeds reduce the availability of light, water, nutrients and space available to native species thus preventing plants more valuable to the natural system from becoming established.

Invasive plants:
- ✔ Scotch Broom
- ✔ Reed Canary Grass
- ✔ Himalayan Blackberry

"Good" plants:
Plants that are native to the area, can provide needed shade to the rivers, or woody debris in the rivers.