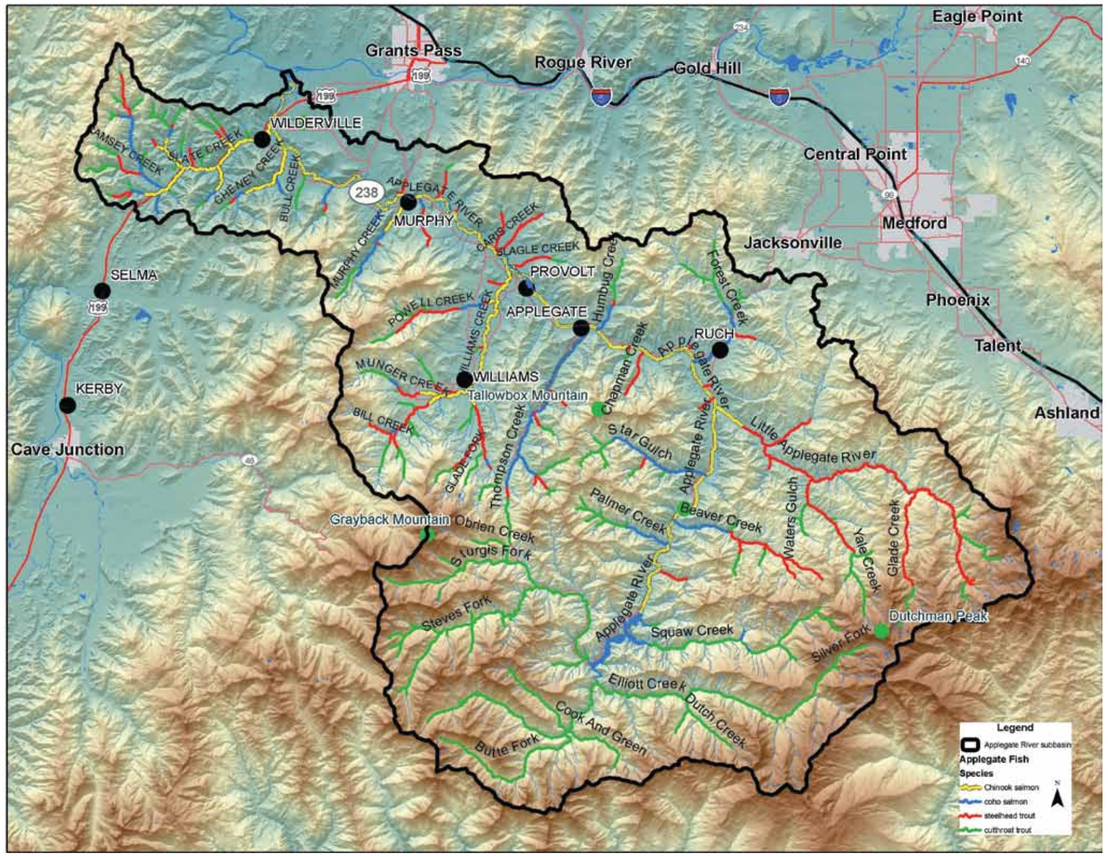

Applegate River Fish

BY CHRIS VOLPE

The Applegate River is home to several of the Northwest's most iconic species of fish, which are renowned far and wide for both their sporting prowess and delectability at the table. Equally remarkable are the round trip migrations these species undertake, and their ability to utilize different niches within the aquatic environments they call home. Both anadromous (fish which go to the ocean and back) and resident species are present from the river mouth near Grants Pass to Applegate Dam. Upstream of Applegate Dam, native resident rainbow and cutthroat trout can be found far up the major tributaries to the lake, while a host of introduced species, such as largemouth bass, have been stocked in the reservoir. While Applegate Dam blocked off many miles of prime spawning and rearing habitat, it did have the benefit of allowing for stable releases of water throughout the summer months, guaranteeing water in the river year round. This was a first for the river, which had been noted to periodically dry up during the summer in certain sections prior to the dam. This likely benefited certain fish, particularly the Chinook salmon, as sufficient flows in early fall have allowed them to ascend the Applegate River to spawn in suitable areas annually. This map displays the known distribution of salmonids in the Applegate River sub-basin. The displayed distribution lines of each species overlap those species listed below them in the legends. For example, where Chinook are present so are coho, steelhead, and cutthroat, while the distribution line of steelhead includes only steelhead and cutthroat.

Chinook salmon: The venerated "King" of the salmon, Chinook are primarily found in the main stem of the Applegate, and in the larger of the tributaries, such as Slate and Williams Creeks. The Chinook in the Applegate are fall Chinook, called so because they enter the Applegate in the fall to spawn. Mid October to mid November is the best time to view these magnificent fish as they build redds (nests) and spawn. Watch for the big males, or "bucks", which may be identified by their hooked jaws, to ward off other would-be suitors with aggressive displays, which often include much splashing about in the shallow waters near the redds. Newly hatched Chinook, called fry at this stage of their life, emerge from redds in the early spring and waste no time in beginning their migration, as they immediately head downriver towards the ocean. Once there, they will spend from one to five years foraging and growing to upwards of 50 lbs before returning to the Applegate to spawn and die, completing their life cycle.


1


2


3

Coho Salmon: Being smaller than the Chinook, and entering fresh water later in the year when stream flows are typically higher, allows coho to ascend some of the medium sized tributaries of the Applegate, which are their preferred spawning and rearing habitats. They are known to occur far upstream in many of these tributaries, such as Thompson Creek and the forks of Williams Creek. Coho also spawn in the main stem river, and may be viewed on their redds generally between Thanksgiving and Christmas. These fish often turn a brilliant shade of red as they get close to spawning. Young coho spend a year rearing in the small streams, feeding on insects before they smolt, a life stage when juvenile salmonids migrate downstream and begin to change to adapt to the saltwater environment. Coho typically spend two to three years at sea before returning to their natal streams to spawn. Like Chinook, coho also die after spawning, their carcasses becoming nutrients for the freshwater ecosystem. Coho salmon in the Applegate and Rogue Rivers are listed as "threatened" under the Endangered Species Act, and wild fish may not be harvested. Because their life history requires a long period in freshwater, these species are more susceptible to changes in the freshwater environment, such as dewatered stream channels resulting from drought or irrigation withdrawals.

Steelhead: Steelhead are rainbow trout that migrate to the ocean and back. These are the athletes of the fish world, capable of ascending great distances up smallish streams, and are known for their ability to pass obstacles such as small waterfalls which the salmon are unable to negotiate. In the Rogue Basin, there are two life histories of steelhead, comprising the summer and winter runs. Summer fish enter the Rogue, as their name implies, during the summer months. These fish, which are usually smaller but more numerous than the winter run fish, typically spawn in December and January. Winter steelhead begin to show up in the Applegate in January, and spawn during the spring, usually peaking in late March to mid April. Unlike salmon, steelhead do not die after spawning, but migrate back down river. A percentage of these fish will return in subsequent years to spawn again. In the Applegate, the winter run is the larger of the two runs, and anglers wait in great anticipation for the chance to cast to these fish which often weigh over ten pounds. March and April are the best times to see winter steelhead in the Applegate. They are usually a little more wary then the salmon, and harder to spot, though they can be easily seen below Applegate Dam when they start to build their redds and spawn. Young steelhead rear in small streams for up to four years before smolting and migrating to the ocean, where they will forage from one to four years before returning to freshwater to spawn.

Cutthroat Trout: Cutthroat trout generally are found farther upstream than other fish, often to the very headwaters of the tributaries. Though they can and do migrate from the small streams to the river, and occasionally even the ocean, most Applegate cutthroat are resident fish, which may spend their entire lives in a small pool or short reach of stream. These fish are usually small, less than 12" in length, though ones that migrate to and from the main stem river can attain respectable sizes of a pound or two. Cutthroat in the Applegate spawn from late winter to early summer. Migratory cutthroat have been seen running up tributary streams at the same time as steelhead. Cutthroat may spawn many times in their life. They get their name not so much from unruly behavior, but from the bright red slash marks present on their throats. Difficult to distinguish between their cousins when little, cutthroat trout are usually more heavily spotted, and have longer heads and jaw bones relative to their size than rainbow or steelhead trout.

Pacific Lamprey: No description of native fish in the Applegate would be complete without mentioning the often maligned lamprey. Lampreys are among the most primitive fishes still alive today. They have a very unique life history, which includes up to seven years spent as blind larvae called ammocoetes. Ammocoetes, which resemble un-segmented earth worms, burrow in small substrates such as sand or detritus, and filter feed on nutrients washed downstream on the current. When conditions are right, they metamorphose into a creature complete with eyes and a curious mouth which features a sucking disc and formidable rasping teeth. At this stage, called a macropthalmia, the fish migrate towards the ocean, where they will attach themselves to a host organism (such as a salmon) and feed off of its blood and other body fluids. After a year or two in the ocean, adult lamprey migrate back to freshwater, where in the late spring they will construct a miniature fortress in which to lay their eggs. Like salmon, lampreys die after spawning. Little is known about their distribution in the Applegate River. They are generally thought to be found in the same areas as Coho, though it is known that they are present much farther upstream in the Little Applegate River. Though weak swimmers, they have the remarkable ability to ascend vertical surfaces, thanks to their sucker disc. So while a ten-foot-tall waterfall may not block them, a culvert perched even a couple of inches above the water's surface may pose an insurmountable barrier to their migration.

Chris Volpe
541-618-2462
Fish Biologist, Bureau of Land Management


4


5


6

Photos by Chris Volpe except the lamprey photo, by Jennifer Smith

Map by Ed Reilly.Chris Volpe

PHOTO 1
Juvenile coho in Star Gulch, an Applegate River tributary. Fish at this stage are called parr, owing to the dusky vertical bars, or "parr marks", which adorn their sides. The small fish looking on near the "Y" of the stick is a sculpin, a native bottom-dwelling species common in Applegate River tributaries.

PHOTO 2
A wild steelhead caught on the lower Rogue River. This fish is still very bright and silvery, indicative of a fish that has only recently entered fresh water. The longer steelhead spend in fresh water before spawning, generally the darker and more colorful they become.

PHOTO 3
The classic lines of a nice cutthroat caught on the Rogue River below the mouth of the Applegate. Note the numerous fine spots and long jaw bone which extends past the back edge of the eye.

PHOTO 4
A fish eye perspective of Chinook on redds in the Applegate, near Jackson Park. These fish are getting ready to spawn.

PHOTO 5
Chinook salmon excavating redds (the clean patches of gravel in the foreground) in the Applegate River, near Jackson Park, 10/20/2009. Salmonids prefer shallows, such as those found at the tail outs of pools or the heads of riffles to spawn in, as these areas have both suitable substrates (cobbles and gravels) and a steady supply of well oxygenated water to protect and nourish the developing eggs.

PHOTO 6
A Pacific lamprey constructing its redd on the Coquille River, Oregon. Lampreys use their sucker mouths to grab and position individual rocks within each redd.