



**Working to ensure people will be able to fish for native fish, in their native habitats, in the North Cascades National Park Complex, for generations to come.**

**The mountain lakes of North Cascades National Park Complex were naturally fishless.**

Historically, the mountain lakes of North Cascades National Park Complex were naturally free of fish due to the steep and rugged nature of the glacially carved valleys and abundant waterfalls. In the absence of fish, these lakes developed unique ecosystems where frogs and salamanders have become keystone predators bridging terrestrial and aquatic habitats. North Cascades National Park Complex currently has 62 lakes containing introduced fish. Research conducted here and elsewhere has demonstrated that introduced fish have a negative impact on the amphibians, insects (such as caddisflies) and zooplankton, which all need these lakes to survive.

**The primary concerns of North Cascades National Park (and the National Park Service) are the preservation and restoration of native ecosystems and species for the enjoyment of future generations.**

As a unit of the National Park Service, North Cascades National Park Complex is charged with the preservation and restoration of the natural ecosystem. The park does a wide range of work to protect and restore the aquatic ecosystems of the North Cascades. This includes supporting research, monitoring indicators of ecosystem health, habitat restoration and active fish population management.

The priority is to support native aquatic species, and the largest area of work has been and will continue to be the preservation and enhancement of native fish in their natural habitat – to support both the ecosystem and opportunities for anglers to enjoy catching native fish in their natural habitat.

The freshwater habitats managed by North Cascades National Park provide some of the best habitat for several regionally important species of the Pacific Northwest. The Skagit, Chilliwack, Cascade and Stehekin watersheds provide some of the most protected habitat for Chinook, Coho, Sockeye, Steelhead and Chum salmon, coastal and westslope cutthroat trout, rainbow trout and the Federally threatened bull trout in a landscape experiencing rapid change due to human population growth and development.

**Tinkering with nature (stocking non-native fish) is risky.**

Introducing fish into non-native habitats impacts both native fish populations and ecosystem functions. In particular, the introduction of Eastern brook trout into the heart of the North Cascades is now threatening a prime refuge for bull trout. Additionally, lakes with reproducing populations of introduced fish displace native frog and salamander populations and disrupt natural food webs. In both of these examples, people thought they were improving the natural environment by stocking non-native species of fish. But, instead, the result has been negative impacts to the ecosystem and unhealthy and non-recreationally-rewarding fisheries.

**Active Restoration**

Of the lakes that contain introduced fish, 27 contain high-density reproducing populations. Research conducted in North Cascades National Park Complex has demonstrated that these populations of fish are the most damaging to native ecosystems. Reproducing fish populations in naturally fishless lakes tend to over-populate these systems, causing the fish to outstrip their food resources. Not only does this

eliminate or reduce the abundance of many of the native species, it also leads to unhealthy and poor-quality fish.

Of particular concern are situations where non-native Eastern brook trout threaten native bull trout. Where Eastern brook trout have established reproducing populations in lakes, these fish have the ability to harm downstream federally threatened bull trout populations by cross-breeding with them and diluting their genetics.

Lakes with high-density reproducing fish populations are priorities for active restoration and recovery of native biological communities and natural food webs as well as the protection of bull trout populations. Park biologists are developing methods to restore these lakes while minimizing the impacts native species.

### **Fishing will continue**

North Cascades National Park has numerous high-quality fishing opportunities for anglers to catch native fish in their natural habitats. Salmon can be caught in the Skagit River and cutthroat trout in the Stehekin River and its tributaries. Native rainbow trout can be caught in Ross, Diablo and Gorge Lakes. And the NPS will continue to work to preserve and enhance these fisheries and fishing opportunities.

Of the lakes that contain introduced fish, the restoration of 26 of them will occur through the simple act of discontinuing fish stocking. Not only is this a cost-effective and efficient means of recovering the natural biological communities, it will also allow anglers to continue to fish these lakes for years until all of the fish are caught or die of natural causes.

There will also remain far into the foreseeable future numerous opportunities for anglers to seek the challenge of fishing mountain lakes given the difficulty of removing non-native species in large lakes such as Bear, Berdeen, Lower Berdeen, Doubtful, Green, Hanging, Hidden, Monogram, Sourdough, Stout, Lower Thornton, and Trapper lakes.

### **Working to preserve natural ecosystems and provide access for generations to come**

North Cascades National Park Complex staff are testing methods to actively restore nine lakes with high density reproducing fish populations. The goal of these efforts is to develop restoration methods which will enable the recovery of native ecosystems while minimizing the impact to non-target organisms. Spawning habitat exclusion is being tested in one lake, targeted gill netting is being tested to remove fish from six lakes, and antimycin was used in two lakes (Upper and Lower Blum) to restore native ecosystems and protect federally threatened bull trout.

North Cascades National Park Complex will continue to support high-quality fishing opportunities to catch native fish in their natural habitat. To this end, the park is working with the Washington State Department of Fish and Wildlife to monitor native fish populations and collect water quality data on the Skagit and Stehekin rivers and Gorge, Diablo, and Ross lakes. The park will also continue to provide access to fisheries with boat ramps, docks, trails, campgrounds, and information. The park is producing a new *Fishing Guide to The North Cascades* to help share where opportunities exist for native fisheries.