

# Arctic Grayling

# RESOURCE BRIEF

## Importance

One of 11 fish species native to Yellowstone National Park (YNP), fluvial (entirely stream-dwelling) Arctic grayling (*Thymallus arcticus*) were historically common within the Madison, Gibbon, Firehole and Gallatin rivers. However, with the introduction of competing nonnative fishes such as brown trout (*Salmo trutta*) and brook trout (*Salvelinus fontinalis*), and the fragmentation of migratory pathways caused by the construction of the Hebgen dam, fluvial grayling have most likely been eliminated from their entire native range in the upper Missouri River drainage within the park. Although anglers occasionally catch grayling in the Gibbon River, research has shown they are from the headwater lakes. The only known grayling populations that remain in the park are adfluvial (lake-dwelling).

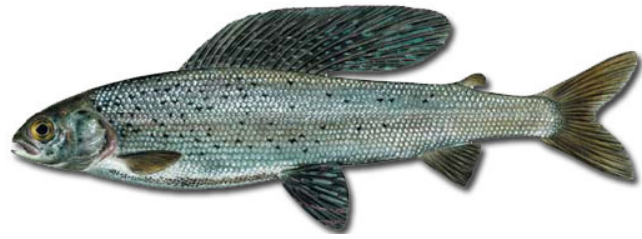


Illustration by Michelle Lagory, Courtesy of Wyoming Game and Fish Department.

Fishery Research Unit, Yellowstone staff began to extensively assess the status of grayling in streams. Electrofishing, snorkeling, fry trapping, and fly-fishing sampling techniques used along the Gibbon River yielded no evidence of grayling spawning. Molecular methods confirmed Grebe and Wolf lakes as the source of fish within the river.

## Status

Adfluvial grayling fry were first stocked in Grebe Lake in 1921, and this lake-dwelling population has flourished, populating Wolf Lake as well. Cascade Lake was also stocked, and continues to support a viable population. Efforts to restore fluvial Arctic grayling began in 1975 in Canyon Creek, a lower tributary of the Gibbon River, and continued in 1993 in Cougar Creek; however, these efforts ultimately failed. In 2005 and 2006, in conjunction with previous park research and with the cooperation of the US Geological Survey's Montana Cooperative

## Discussion

The loss of fluvial Arctic grayling in Yellowstone is an example of the negative effect of nonnative species out-competing native populations. While lake-dwelling grayling populations presently appear to be secure, the prospects for reestablishing stream-dwelling populations remain uncertain. In 1994 the US Fish and Wildlife Service (USFWS) found that Montana fluvial grayling warranted protection under the Endangered Species Act (ESA), but was precluded from listing by higher priority candidates. In 2007, however, the USFWS withdrew it from federal protection consideration.

YNP is looking for ways to restore fluvial grayling. Grayling Creek, a tributary of the Madison River (now of Hebgen Reservoir) was once home to an abundance of fluvial grayling. The restoration project on Grayling Creek was included as a potential action in the Native Fish Conservation Plan/ Environmental Assessment begun in 2010.

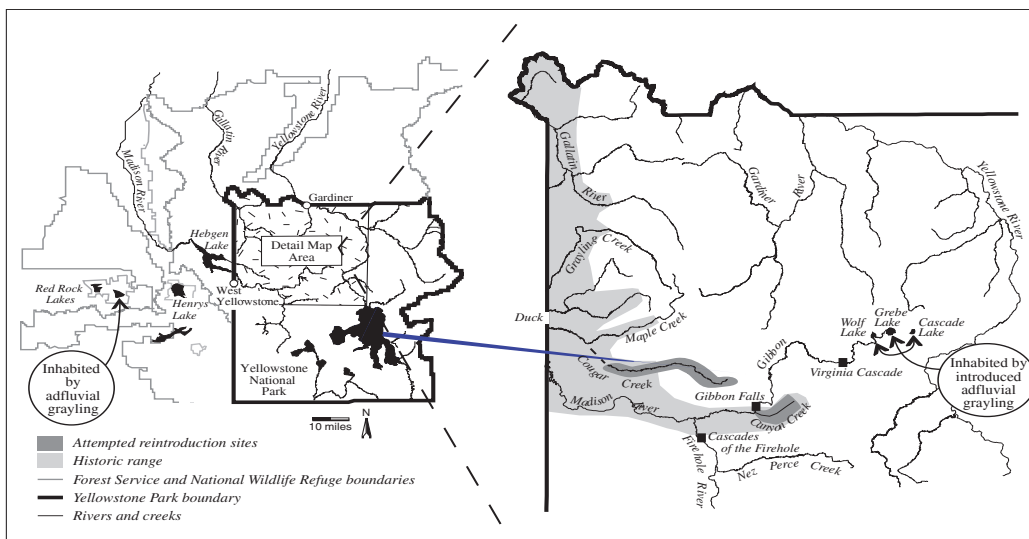


Figure 1. Former and present distribution of, and attempted restoration sites for, Arctic grayling within YNP. Former distribution is based on surveys by Barton Evermann (1983).