Population Viability Of Arctic Grayling In The Gibbon River, Yellowstone National Park

Amber C. Steed, Alexander V. Zale, Montana Cooperative Fishery Research Unit, 301 Lewis Hall, Montana State University, Montana State University, Bozeman, MT 59717, asteed@montana.edu

Todd M. Koel, Fisheries and Aquatic Sciences Section, Yellowstone Center for Resources, P.O. Box 168, Yellowstone National Park, WY 82190, todd_koel@nps.gov

Steven Kalinowski, Department of Ecology, 311-B Lewis Hall, Montana State University Bozeman, MT 59717, skalinowski@montana.edu

Fluvial Arctic grayling (*Thymallus arcticus*) are presently restricted to < 5 percent of their native range in the contiguous United States and are listed as Category 3 under the Endangered Species Act. Fluvial grayling are thought to be restricted to a segment of the Big Hole River, Montana, in which declining abundances have been observed since 1998. Although fluvial grayling of the Madison, lower Firehole, and lower Gibbon Rivers of Yellowstone National Park were thought to be extirpated by 1935, anglers report catching grayling through-out the Gibbon River annually. Our goal was to determine if a viable population of fluvial grayling persists in the Gibbon River, or if fish caught in the river are downstream emigrants from lacustrine populations in headwater lakes. In 2005 and 2006, sixteen and fourteen grayling respectively, were sampled from the Gibbon River by electrofishing and fly-fishing. In both years, fry-trapping yielded no grayling at sites on the Gibbon River below the farthest upstream barrier to headwater lakes (Little Gibbon Falls). Sixteen grayling were caught on

a weir established above Little Gibbon Falls in 2006. Genetic analyses will be performed in 2007 on grayling within and outside of the Gibbon River System. Few grayling adults and fry inhabit the Gibbon River, implying that a reproducing fluvial population may not exist. Our findings may affect the potential Endangered Species Act listing of fluvial grayling while providing valuable data for sound management within and outside of Yellowstone National Park.