

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Spatial Dynamics of Arctic Grayling in the Gibbon River, Yellowstone National Park

Type of Project: Research

Funding Agency: National Park Service

Other Partners/Cooperators: Montana State University, USGS

Effective Dates: 9/15/2004 - 7/1/2007

Funding Amount: \$33,460

Investigators and Agency Representative:

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Project Abstract:

The specific objective of this project is to determine if there is a viable population of fluvial Arctic grayling within the Gibbon River system, Yellowstone National Park.

Determination of the spatial dynamics and overall status of arctic grayling within the Gibbon River system will occur by:

- 1) Tagging (using visible implant tags) of juvenile/adult grayling at Grebe and Wolf lakes in the Gibbon River headwaters. Tagging of juvenile/adult grayling in the mainstem Gibbon River above and below the Gibbon Falls. Searching for tagged fish and documenting movement patterns by use of electrofishing gear and also by use of reporting by the sport angling community.
- 2) Conducting intensive surveys for spawning grayling during late May, June, and early July in the Gibbon River and suitable tributary streams. Surveys will likely occur both visually and by use of electrofishing gear.
- 3) Conducting intensive surveys for young-of-year (YOY) grayling during late August, September, and October in the Gibbon River and suitable spawning tributaries. Fry traps will likely be used for these surveys throughout the river.
- 4) Provide estimates of grayling density within various reaches of the Gibbon River per unit area (number of grayling per kilometer or similar) for comparison to estimates from the Big Hole River in Montana and other streams in the region.
- 5) Relating spatial dynamics and any observed inter-annual variation of adult/juvenile/YOY grayling to thermal, flow, and other environmental characteristics of the Gibbon River system. Thermographs already exist on the Gibbon River but additional loggers may be deployed to improve resolution.

The majority of field work for this project will be conducted by a M.S. graduate research assistant and a long term SCA volunteer, both positioned at Madison Junction within Yellowstone National park.

Outcomes with Completion Dates:

- 1) 15 January 2006 - Annual Progress Report
- 2) 15 January 2007 - Annual Progress Report
- 3) 01 July 2007 - Final Report

Keywords: arctic grayling, population estimate, spatial dynamics, Yellowstone National Park, Montana State University, Gibbon River

For Administrative Use Only:

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: