

## Project Summary

### Rocky Mountains Cooperative Ecosystem Studies Unit

<b>Project Title:</b> Lab Assessment of Yellowstone Cutthroat Trout Whirling Disease Infection as part of the Yellowstone National Park Whirling Disease Study
<b>Type of Project:</b> Research
<b>Funding Agency:</b> National Park Service
<b>Effective Dates:</b> June 15, 2002 - June 15, 2003
<b>Funding Amount:</b> \$9,000
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<b>Project Abstract:</b> This project looks at cutthroat trout and the infection rate by <i>Myxobolus cerebralis</i> , the parasite responsible for whirling disease (WD) in Yellowstone National Park. <i>M. cerebralis</i> was detected for the first time in native cutthroat from Yellowstone Lake in 1998. It is now considered a serious threat to declining stocks of Yellowstone cutthroat trout, which are already fighting predation by another exotic species, the lake trout. The loss of native cutthroat, a keystone species in the Yellowstone ecosystem, will severely and negatively impact wildlife species such as grizzly bears, ospreys, eagles, otters, and pelicans that use the cutthroat as a food source.  Specific objectives of this research, which is part of a larger Yellowstone Whirling Disease Study, include: <ol style="list-style-type: none"><li>1) Laboratory testing of sentinel cage fish and wild-reared cutthroat trout from streams to determine the prevalence and severity of WD</li><li>2) Laboratory testing of incidental catch from gillnetting operations in Yellowstone Lake to determine the occurrence of WD in adult cutthroat trout</li></ol> Laboratory work at the Bozeman Fish Health Center includes screening for the presence of <i>M. cerebralis</i> by the pepsin/trypsin digest method followed by the polymerase chain reaction technique. Histological confirmation will be accomplished to describe pathology associated with the presence of <i>M. cerebralis</i> in cranial cartilage. Spore counts will be conducted on a subsample of fish to determine potential spore loading of streams by migratory adults. The observation of cartilage disruption at the cellular level provides a more complete diagnosis of the WD condition.
<b>Outcomes with completion dates :</b> All information collected during this study will be provided in electronic format to the Fisheries and Aquatic Sciences Section, Yellowstone Center for Resources and the RM-CESU. Final product describing overall research results will be in the form of a brief technical report.
<b>Keywords:</b> <i>Myxobolus cerebralis</i> , whirling disease, Yellowstone National Park, cutthroat trout
<b><u>For Administrative use only:</u></b> <i>Date Annual Report Received:</i>  <i>Date Final Report Received:</i>  <i>Publications, etc. on file:</i>