

## Project Summaries 2003-2004 Whirling Disease Initiative

### National Partnership for the Management of Wild & Native Cold Water Fisheries

Montana University System, MSU-Bozeman

Contract Dates: May 1, 2003 - December 31, 2004

**Total Awarded: \$ 557,585**

**Total Match: \$516,270**

Project #	Title	Principal Investigator	Other Partners	Award/Match
<b>Project #</b>  <b>4.089</b>	<i>Evaluation of Quantitative Real-Time PCR for Rapid Assessments of the Exposure of Sentinel Fish to Myxobolus cerebralis</i>	Mark A. Adkison (Former Research Associate University of California, Davis) California Dept. of Fish and Game 2111 Nimbus Road Rancho Cordova CA 95670 ph. 916.358.2830 email: madkinson@dfg.ca.gov	(1) Dr. Ronald P. Hedrick Professor of Fish Pathology, University of California- Davis; rphedrick@ucdavis.edu	\$56,361/ \$8,011
<b>Project Summary:</b> The researchers in this project will test the sensitivity and specificity of two new rapid and sensitive PCR assays that have already been developed at UC-Davis, and compare these to currently-used detection assays (PCR, histology, and pepsin-trypsin digest). If these methods test out, time can be saved in evaluating sentinel fish in future studies, and the progress of parasite infection in rainbow trout can be evaluated more effectively.				
<b>Project #</b>  <b>4.090</b>	<i>Evaluation of Management Actions to Control the Spread of Myxobolus cerebralis in a Lower Columbia River Tributary</i>	Jerri L. Bartholomew, Microbiologist Oregon State University Department of Microbiology 200 Nash Hall Corvallis, OR 97331 ph. 541.737.1856 fax: 541.737.0496 e-mail: Jerri.Bartholomew@oregonstate.edu	(1) Antonio Amandi, Senior Fish Pathologist, ODFW Fish Health Services; Oregon State University amandia@onid.orst.edu	\$66,390/ \$54,145 \$19,700
<b>Project Summary:</b> The researchers in this project will estimate the frequency of introduction of whirling disease by infected anadromous fish vis-avis the recent decision to close an infected Oregon hatchery, a known point source of infection.				

Project #	Title	Principal Investigator	Other Partners	Award/Match
<p><b>Project #</b> <b>4.091</b></p>	<p><i>Testing Impacts of Channel Modifications to Reduce T. Tubifex Habitat</i></p>	<p>Eric P. Bergersen, Fisheries Biologist Colorado Cooperative Fish &amp; Wildlife Research Unit Colorado State University 201 Wagar Building Fort Collins, Colorado 80523 ph. 970.491.1415 fax: 970.491.1413 e-mail: ericb@cnr.colostate.edu</p>	<p>(1) Terry Waddle, Hydrologist USGS Fort Collins Science Ctr. terry_waddle@usgs.gov (2) Kevin Thompson, Fisheries Biologist, Colorado Div. Of Wildlife; kevin.thompson@state.co.us (3) Jim Terrell, Fish &amp; Wildlife Biologist, USGS Fort Collins Ctr. Jim_terrell@usgs.gov</p>	<p>\$51,785 \$186,700</p>
<p><b>Project Summary:</b> This study will use information from a channel bed survey and hydraulic simulation model completed in Willow Creek (CO) to predict changes in <i>T. Tubifex</i> habitat at a Poudre River (CO) site. The outcome will be set of flow scenerios and channel configurations that create the least amiable habitat for tubifex survival.</p>				
<p><b>Project #</b> <b>4.092</b></p>	<p><i>Effect of Riparian Zone and Associated Stream Substrata on Tubifex tubifex: Density and Infection Rate with Myxobolus cerebralis</i></p>	<p>Deborah Cartwright, PhD SCEP Student University of Georgia USGS, National Fish Health Research Laboratory 11700 Leetown Road Kearneysville, WV 25430 Phone: 304.724.4439 Fax: 304.724.4435 deborah_cartwright@usgs.gov</p>	<p>(1) Vicki Blazer, USGS, National Fish Health Laboratory vicki_blazer@usgs (2) W. Bane Schill, USGS, National Fish Health Laboratory bane_schill@usgs.gov</p>	<p>\$87, 282 \$44,706</p>
<p><b>Project Summary:</b> The investigators will evaluate worm populations in the eastern United States collected from streams of four land types in an effort to determine if certain environments and stream substrata composition select for certain genetic lineages.</p>				

Project #	Title	Principal Investigator	Other Partners	Award/Match
Project # 4.093	<i>Epidemiology of Whirling Disease: An Integrated Study of the Rock Creek Drainage, Montana</i>	Willard O. Granath Jr. University of Montana Division of Biological Sciences 32 Campus Drive #4824 Missoula, MT 59812-1002 ph. 406.243.2975 fax: 406.243.4184 e-mail: bill.granath@mso.umt.edu	(1) Michael Gilbert, Research Associate, University of Montana (2) Billie Kerans, Associate Professor, Montana State University, bkerans@montana.edu (3) Eric Reiland, Fisheries Biologist, MT. Dept. FWP	\$88,677/ \$49,327
<b>Project Summary:</b> A continuation of a five-year study to determine the epidemiology of whirling disease throughout a natural system, the Rock Creek drainage, Montana.				
Project # 4.094	<i>Development and Testing of Risk Assessment Tools for Myxobolus cerebralis Infection of Native Cutthroat Trout in Yellowstone National Park</i>	Billie L. Kerans, Assistant Professor Montana State University Biology Department Bozeman, MT 59717 ph. 406.994.3725 fax: 406.994.3190 e-mail: bkerans@montana.edu	(1) Dr. Todd Koel, Supervisory Fisheries Biologist, National Park Service P.O. Box 168, Yellowstone National Park, WY 82190; todd_koel@nps.gov	\$96,470/ \$73,850
<b>Project Summary:</b> In Yellowstone National Park, the researchers will examine the spacial and temporal variation in whirling disease risk to cutthroat trout populations, the biological and physiochemical factors which correlate with infection risk, and the life history of Yellowstone cutthroat trout that possibly could allow some subpopulations to have low risk of infection. This study is part of a long-term project to determine the loss of native Yellowstone cutthroat trout that can be attributed to whirling disease in streams of Yellowstone National Park and the Intermountain West.				
Project # 4.095	<i>Analysis of Non-Lethal Techniques for Detection of Myxobolus cerebralis</i>	Molly Bensley, Fisheries Technician Bozeman Fish Health Center, 920 Technology Blv. Suite G, Bozeman MT, 59715, Ph. 582-8656 x36, molly_bensley@fws.gov	(1) Linda Stanton, Microbiologist, U.S. FWS, Bozeman, MT. linda_stanton@fws.gov	\$11,500 (USFWS direct)/ \$10,400
<b>Project Summary:</b> This study will use a genetically-based DNA diagnostic approach to detect the whirling disease parasite in fish exposed to unknown numbers of TAMs in the natural environment. The goal is to provide non-lethal, highly sensitive DNA techniques for field application.				

Project #	Title	Principal Investigator	Other Partners	Award/Match
<p><b>Project #</b>  <b>4.096</b></p>	<p><i>Development of Molecular Markers Linked to Whirling Disease Resistance in Rainbow Trout</i></p>	<p>Eric Wagner, Director of Research Fisheries Experiment Station Utah Division of Wildlife Resources 1465 West 200 North, Logan, UT 84321 Phone: 435.752.1066 Fax: 435.797.6977 ericwagner@utah.gov</p>	<p>(1) Chris Wilson, Certified Fish Pathologist, Utah Div. of Wildlife Resources; chriswilson@utah.gov (2) Karen Mock, Dept. of Forest, Range and Wildlife, Utah State University karen.mock@usu.edu (3) Mark Miller, Dept. of Forest, Range, and Wildlife Resources, Utah State University, mark.miller@cnr.usu.edu</p>	<p>\$99,120/ \$34,232 \$35,199</p>
<p><b>Project Summary:</b> Investigators will identify and characterize molecular markers associated with whirling disease resistance in the Fish Lake-DeSmet rainbow trout strain. This will identify resistant fish from this strain for further characterization and cultivation, and may provide markers applicable to other strains and species.</p>				