Volume 124
Article 01

Idaho Department of Fish and Game

Rod Sando
Director

Idaho Aquatic Education
Year End Report

July 1, 1999 - June 30, 2000

Grant Number F-87-AE Segment 2

Submitted by:
TerryThompson
Aquatic Education Coordinator

Boise, Idaho
September 25, 2000

Grant Number F-87-AE Segment 2

Grant Agreement for FY-00

Idaho Department of Fish and Game

Aquatic Education

FY-00 Budget Request from Federal Aid:

	Federal Share
Personnel	$219,869
Operation and Maintenance	$138,683
Capital Outlay	$ 3,000
Overhead	$100,753
Total	$462,305

State Match Share: $154,102

Generated from:
- Volunteer Hours
- State License Dollars
- In-Kind Donations of Materials/Labor
- Monetary Donations

FY-00 Expenditures for Grant Agreement F-87-AE Segment 2:

Personnel	**$166,890**
Operation and Maintenance	**$ 97,204**
Capital Outlay	**$ 14,911**
Overhead	**$ 72,871**
Total	**$351,876**

State Match Required: $117,292

State Match Generated: $136,759

FY-00 Goals

Goal 1. Administration of the Aquatic Education Program.

Idaho Fish and Game staff partially funded by Aquatic Education:

John Gahl – Associate Chief Information and Education, Project WILD
Terry Thompson – Nature Center Superintendent
Kathie Hilliard – Wildlife Educator
Brenda Beckley – Wildlife Educator
Adare Evans – Wildlife Educator
Susan Ziebarth – Maintenance Craftsman
Jack Trueblood – Public Information Unit Supervisor
Jennifer Astorquia – Web Page Administrator
Ed Mitchell – Wildlife Educator
Vicky Osborn – T.V./Radio Specialist
Phil Cooper – Regional Conservation Educator
Rod Parker – Regional Conservation Educator
Rick Gilchrist – Regional Conservation Educator
Mike Todd – Regional Conservation Educator
Harry Morse – Regional Conservation Educator
Gregg Losinski – Regional Conservation Educator
Vicki Runnoe – Regional Conservation Educator
TBA – Regional Conservation Educator
Leah Olguin – Public Service Representative
Sharon Watson – Public Service Representative

Goal 1. Accomplished. Partial personnel funding was provided by Aquatic Education monies.

Goal 2. Provide support, instruction and materials to Idaho teachers and students regarding Idaho's aquatic resources.

Objective 1. Provide training through Project WILD – Aquatic to 700 pre- and in-service teachers.
Accomplished: Project WILD – Aquatic training was provided to 307 teachers statewide.

Objective 2. Provide tours to 12,000 school children of the Nature Center focusing on the aquatic environment.
Accomplished: Over 11,500 school children participating in Nature Center activities and tours.

Obective 3. Provide Fishing: A lifetime Sport curriculum to Idaho schools.
Accomplished : 30 Fishing: A Lifetime Sport activities were held statewide.

Objective 4. Provide two issues of Wildlife Express to Idaho's 4th, 5th, and 6th grade school children, which focus on Idaho's aquatic resources.
Not Accomplished: License funding for Wildlife Express was eliminated.

Objective 5. Provide the Nose-to-Nose assembly program to 25,000 K-6 students with topics about Idaho's aquatic resources.
Accomplished: Over 19,500 students attended presentations statewide.

Objective 7. Provide partial funding and program support to Idaho Salmon and Steelhead Days.
Accomplished: Idaho Salmon and Steelhead Days September 8-9-10, 1999, attendance: 3000 4th grade students, 2,000 adults.

Objective 8. Provide partial funding and program support to Critter Club.
Accomplished: Membership of over 50 children. Programs included topics on fish scales and fish behavior.

Goal 3. Increase the public's understanding of the aquatic environmental and the human impacts to those environments.

Objective 1. Provide for operation and maintenance of the Nature Center.
Accomplished: Nature Center partially funded for operation and maintenance FY-00. Visitor numbers exceed 250,000 annually.

Objective 2. Provide informational material at fishing clinics.
Accomplished: 65 fishing clinics held statewide.

Objective 3. Provide information in regional angler guides.
Accomplished: Distribution of 14 regional angler guides. Production of whirling disease brochure, is partnership with the Whirling Disease Foundation.

Objective 4. Provide self-guided tour brochure for Nature Center visitors.
Not Accomplished:

Goal 4. Promote and increase participation in sport fishing, with an emphasis on recruiting children to become life-long anglers.

Objective 1. Provide regional fishing clinics throughout the state.
Accomplished: 65 fishing clinics provided statewide.

Objective 2. Establish a rod loaner program in each region throughout the state.
Accomplished: Regional rod loaner program in place throughout the state.

Objective 3. Provide for statewide involvement in Get Hooked on Fishing – Not on Drugs.
Accomplished: Participation in Southwest Region.

Objective 4. Establish a partnership with the state 4-H program to incorporate the Fishing: A Lifetime Sport curriculum into the 4-H program.
Accomplished: Partnership established with University of Idaho state 4-H program to provide Fishing: A Lifetime Sport curriculum.

Objective 5. Promote sport fishing to Nature Center visitors.
Accomplished: Public contacts with visitors – answering questions, providing regulations/guides. Provide stocking reports to visitors. Inclusion of sport fishing information in guided tours to school groups. Fish identification signage to educate visitors about species identification.

Goal 5. Continue existing programs and develop new programs, which educate the public about the fisheries resources found in the state of Idaho.

Objective 1. Develop a variety of fishery exhibits to be displayed in the Visitor Center building at the Nature Center.
Accomplished: Aquarium display with rainbow trout. Trout egg development exhibit. Sturgeon exhibit. Anadromous fish identification exhibit. Cold/cool/warm water fish habitat video exhibit. Fisheries interactive CD exhibit.

Objective 3. Provide fisheries information to the public by means of the Internet/Idaho Fish and Game homepage.
Accomplished: During FY-00, approximately 980,000 user sessions were documented for the Idaho Fish and Game web site. Each session averaged just over 9 minutes. Fisheries areas on the web include: fishing proclamations, fish stocking reports, fisheries management plans, angler guides, regional fish reports, regional news releases, fisheries publications and fish hatcheries.

Objective 4. Provide staff to reply to inquiries concerning the fishery resources found in the state of Idaho.
Accomplished: State headquarters office front desk staff partially funded with Aquatic Education funds – respond to daily questions about sport fishing opportunities throughout the state.

Objective 5. Provide staff to prepare print news releases about the fishery resources found in the state of Idaho.
Accomplished: Partial funding provided for staff to generate statewide and regional video, radio and print news releases.

Objective 6. Provide staff to compile and distribute state fishery information via 1-800-ASK-FISH.
Accomplished: Regional fish managers are responsible for maintaining current fisheries information. Site is administered by American Sport Fishing Association.

Goal 6. Maintain existing, and develop new partnerships and volunteer opportunities for all aquatic education programs.

Objective 1. Develop partnerships to assist with Aquatic Education programs.
Accomplished: University of Idaho – 4-H program. Quality Tile Roofing, Inc. – materials for stream construction (Nature Center – Boise, Habitat Area – Lewiston). Local schools – K-12. Individual volunteers. Sporting good stores – donation of fishing equipment.

Objective 2. Continue and enhance existing volunteer program at the Nature Center.
Accomplished: Over 370 volunteers contributed volunteer hours to the Nature C enter.

Goal 7. Address the special needs of the physically challenged, and culturally diverse, to the various facilities and programs.

Objective 1. Ensure access to mobility-impaired visitors and program participants.
Accomplished: All state facilities are accessible. New viewing window at Lewiston habitat area – accessible.

Objective 2. Provide a self-guided Nature Center brochure for Spanish speaking visitors.
Not accomplished:

Terry Thompson

Terry Thompson
Aquatic Education Coordinator

John Gahl

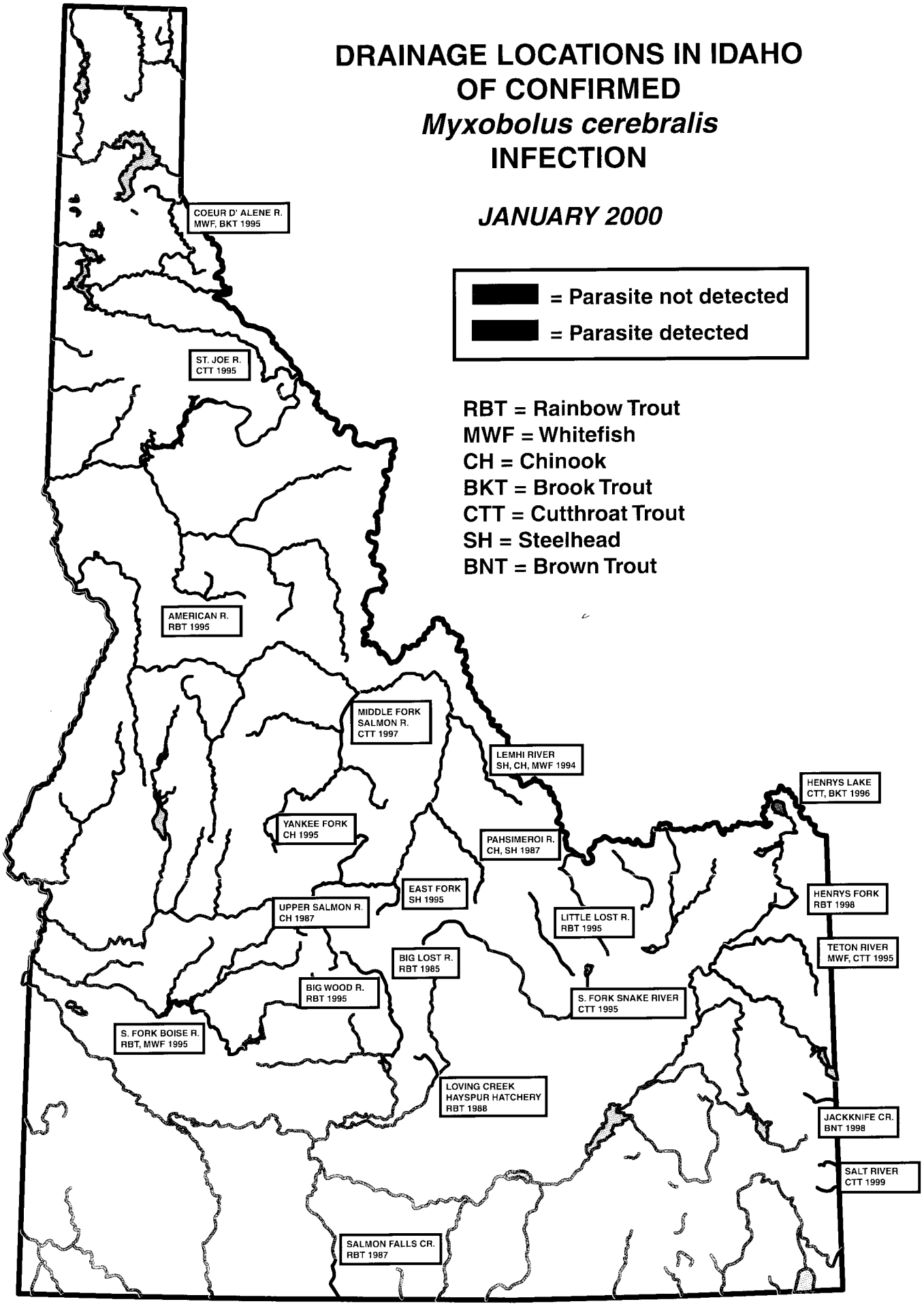
John Gahl
Information and Education Bureau Chief

Bill Hutchinson

Bill Hutchinson
Federal Aid Coordinator

DRAINAGE LOCATIONS IN IDAHO OF CONFIRMED *Myxobolus cerebralis* INFECTION

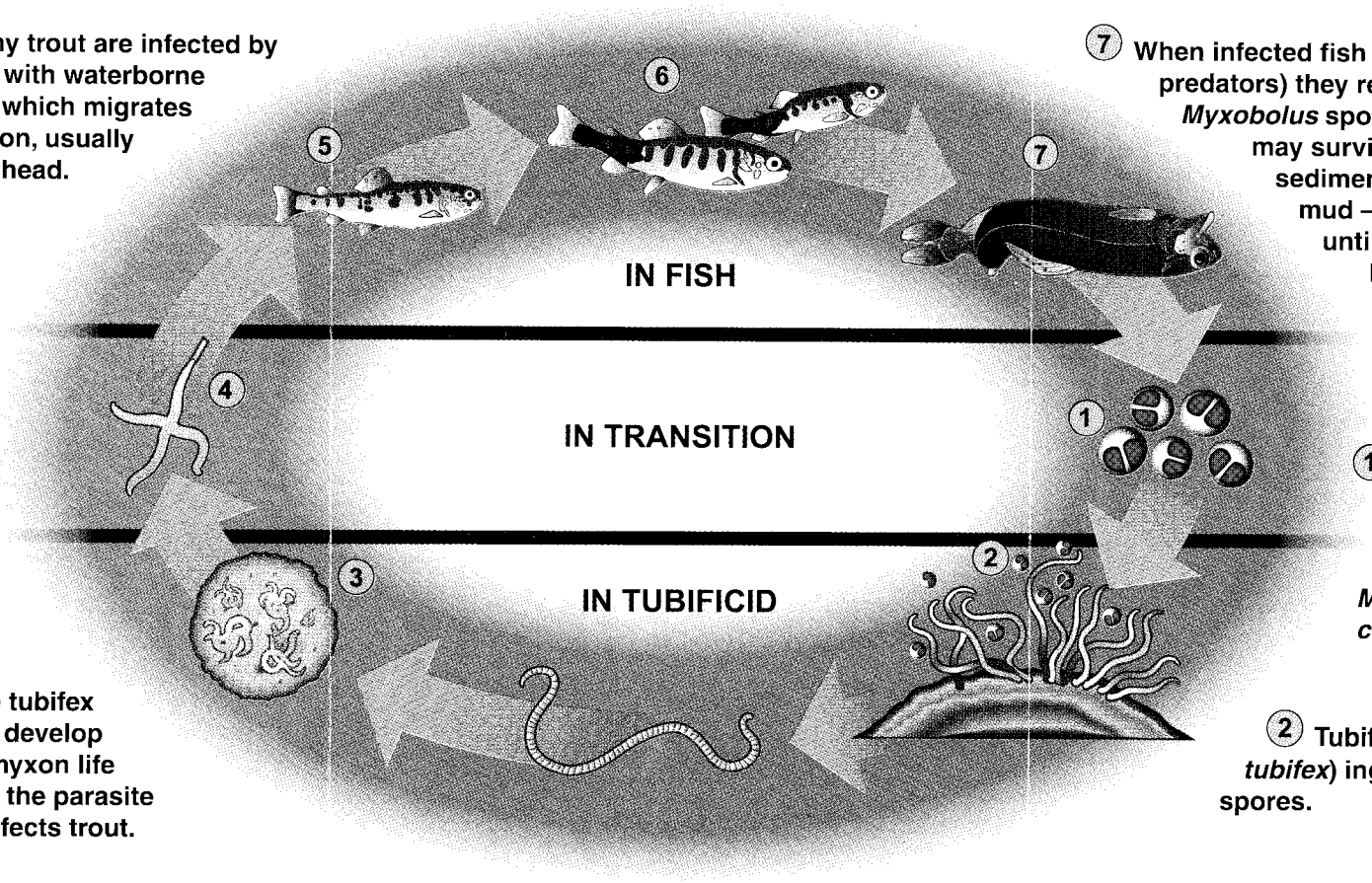
JANUARY 2000



6 Parasites attack developing cartilage. Recently hatched fry are the most severely affected. Infected trout may show sunken cranium, "black tail" (nerves irritated by inflamed cartilage disrupt pigment control) and develop whirling behavior at about 4 to 6 weeks after infection. In 3-4 months, *Myxobolus* spores appear within the fish. Surviving trout may be deformed, or simply act as carriers of the disease.

5 Healthy trout are infected by contact with waterborne triactinomyxon which migrates to its final destination, usually cartilage of the head.

7 When infected fish die (or are eaten by predators) they release the *Myxobolus* spores. These spores may survive in river bottom sediment— even in dry mud — for up to 30 years, until they are ingested by Tubifex worms and start the cycle again.



4 Mature triactinomyxon spores are released into the water. This form lives only about 3-4 days if it cannot find a host.

1 Whirling disease results from an infection caused by a parasite *Myxobolus cerebralis*.

3 In the gut of the tubifex worm, the spores develop into the triactinomyxon life stage, the form of the parasite that infects trout.

2 Tubifex worms (*Tubifex tubifex*) ingest the *Myxobolus* spores.

What can you do to prevent the spread of whirling disease?

- Don't transport live fish between bodies of water. It's prohibited and illegal.
- Don't dispose of fish heads, skeletons or entrails in any body of water. Fish parts should be disposed of in the garbage, or by deep burying or by total burning.
- If you observe the signs of whirling disease in fish or witness illegal stocking, contact your local conservation officer directly or call the Citizens Against Poaching hotline at 1-800-632-5999.
- Rinse mud from wading boots and boats to reduce risk of spreading parasite spores to other waters.

Have Idaho trout populations been impacted by whirling disease?

- We have many healthy populations of susceptible species inhabiting waters where this parasite is found.
- Survival of juvenile wild trout does not currently seem to be hampered by WD.

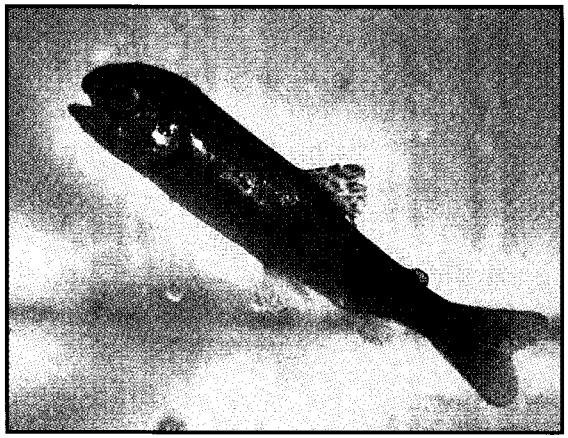
Partial funding of this brochure is from the *Federal Aid in Sport Fish Restoration Program* as an educational service and with funds donated by the *Whirling Disease Foundation.*

Frequently asked questions about whirling disease:

- **Does whirling disease infect people?** No, the parasite only infects members of the trout and salmon family.
- **Has whirling disease spread throughout the state of Idaho?** No, at this time studies have shown the distribution of the parasite as indicated on the enclosed map.
- **Can fish be cured of whirling disease?** No, at this time there is no approved treatment or cure for fish infected by the whirling disease parasite. It has been demonstrated that whirling disease can be controlled in hatchery environments with careful management. The impacts on wild fish populations are being investigated.
- **Are any state hatcheries affected by whirling disease?** The parasite is found in the river water supplies of Sawtooth Hatchery and Pahsimeroi Hatchery, both in the upper Snake River. All other state hatcheries, tested at least once a year since 1987, are negative for whirling disease. Strict disinfection protocols help protect state hatcheries from accidental contamination with the parasite.

  IDFG invested $1.2 million in water system improvements at Hayspur Hatchery and eliminated the parasite. Chinook salmon are raised on disease-free well water at Sawtooth and Pahsimeroi Hatcheries, until 3" in length, to reduce infection and minimize the disease.

WHIRLING DISEASE AND IDAHO TROUT



ANSWERS FOR IDAHO ANGLERS

IDAHO DEPARTMENT OF FISH AND GAME

What is Whirling Disease?

Whirling disease affects trout and salmon and is caused by the microscopic parasite, *Myxobolus cerebralis*. The parasite attacks the cartilage of the head and spine. If sufficiently infected, young fish may develop whirling behavior and black tail, and may even die. If severely infected, fish may become more susceptible to predation and less able to feed and to survive disturbances in the environment. The long-term effects of whirling disease in wild fish populations are receiving increased study among scientists. Studies on the impact of whirling disease on Idaho trout populations are ongoing, but results indicate most populations are not showing declines similar to those of certain locations in the inter-mountain west.

Life Cycle

Myxobolus cerebralis has a complex life cycle, which involves two hosts, trout and tiny aquatic worms called tubifex. Worms that become infected release a fragile stage of the parasite that must infect a trout within a few days or perish. Infected trout develop spores that are very persistent and can survive in moist environments for several years. These spores are released when an infected fish dies and decomposes. They can survive passing through the digestive tract of a predator and can be transferred from place to place on muddy boots or other equipment.

Species Susceptibility

Among fish found in Idaho, rainbow, cutthroat, steelhead, chinook, and kokanee are the most susceptible species. Brook trout, mountain whitefish, brown trout, coho salmon, grayling, lake trout and bull trout are considered less susceptible. Other species of game fish such as bass or crappie do not contract whirling disease. The parasite does not infect human beings, or other warm-blooded animals.

What is being done?

IDFG Whirling Disease Procedures Since 1987

- Positive trout have not been stocked since the early '90s when IDFG eliminated WD at Hayspur Hatchery by using *only* water from wells and enclosed springs.
- Hatchery steelhead are reared only in WD-free locations.
- Chinook are reared at Sawtooth and Pahsimeroi Hatcheries on well water for as long as feasible to minimize early infection.
- IDFG updates distribution of WD in Idaho watersheds.
- Research into potential impacts of WD on wild trout populations is on-going.
- IDFG provides information to biologists and Idaho anglers to limit the spread of this parasite.

Geographic Range

Whirling disease has been in the United States since the early '50s and is now found in 23 states.

In the Western U.S., whirling disease was found in California (1965), Nevada (1966), Oregon (1986), Idaho (1987), Colorado (1987), Wyoming (1988), Utah (1991), Montana (1994), Washington (1996) and New Mexico (2000).

For more information contact an IDFG Fisheries pathologist, at the Eagle Fish Health Lab, (208) 939-2413.