United States Department of the Interior

FISH AND WILDLIFE SERVICE

Hagerman National Fish Hatchery
3059 D National Fish Hatchery Road
Hagerman, Idaho 83332

MEMORANDUM

March 26, 2010

TO: ARD-Fisheries
Attn: Rich Johnson, Field Supervisor

FROM: Project Leader, Hagerman NFH

SUBJECT: February Activity Report

PRODUCTION

Steelhead Brood Year 2009

Lot Number	Stock	Number	Total Weight	Size (#/lb)	Length (inches)	Survival
128	**Sawtooth**	**1,339,927**	**211,978**	**6.3**	**7.53**	**94.9%**
129	**East Fork**	**124,662**	**19,702**	**6.3**	**7.53**	**79.6%***

* 23,531 EF's were lost on 8/23/2009. Survival without accident: 94.7%

The Hatchery experienced an unusual disease incidence in February that resulted in 0.9% overall steelhead mortality. Prior to the increased mortality, the Hatchery observed smolts with blueish hazy marks on the skin encircling the area below the dorsal fin. Within 4-5 days of the first observation, the skin began sloughing and exposing muscle tissue with mortality resulting several days following. The Flow Index in February was 1.13; it will peak around 1.4 in early April just prior to distribution.

The Hatchery believes there are two underlying factors affecting BY09 fish health. First, the hatchery has exceeded its carrying capacity due to declining spring flows; and second, chronic infection with *Nucleospora salmonis* has compromised the fish's ability to fight infection. Both of these issues were identified by the Service's Hatchery Review Team (Recommendations HA11 and HA5). Beginning with Brood Year 2010, the Hatchery will reduce its steelhead production by 100,000 smolts to compensate for the declining water supply. The *Nucleospora salmonis* issue will be addressed as the Hatchery Evaluation Team works to implement the recommendations of the Hatchery Review Team.

There were several other confounding circumstances surrounding the increased mortality:

1) Eight raceways had recently been treated with Aquaflor® for Furunculosis
2) Mass die-off of vegetation and algae due to cloudy weather
3) Similar epizootics at neighboring hatcheries (effect and cause or cause and effect)

1) *Aquaflor® Treatment*

In late January, Kathy Clemens, Idaho Fish Health Center, identified a return epizootic of Furnculosis which was determined to be resistant to Romet®. As a result, the Hatchery treated eight raceways on the upper and middle banks with Aquaflor® (February 5-15th). These raceways responded quickly to the treatment and mortality declined to 1-2 fish per raceway/day within the first 4 days. However, on the fifth and sixth days of this treatment, mortality increased in half of the treated raceways. By the end of the 10-day treatment, the mortality rate had doubled over the pre-treatment rate. These fish exhibited the skin sloughing characteristics. To further confound the issue these eight raceways had been previously treated with antibiotic; once with Romet® during December and once with Aquaflor® during November.

2) *Vegetation Die-off*

Prior to and during the mortality increase, cloudy weather and diminished sunlight during the first two weeks of February appeared to cause an aquatic vegetation and algae die-off in the spring ponds (Bickel and Riley) and in the raceways. The decomposing vegetation increased the Biological Oxygen Demand and instantaneous dissolved oxygen levels dipped below 6 ppm in the effluent of the third-use raceways which may have added stress to the fish.

3) *Epizootics in the Vicinity*

Conversations with hatchery managers in both conservation and commercial production facilities in our vicinity, indicates a prevalence of late for similar skin sloughing problems.

The Idaho Fish Health Center took several samples in February to determine the cause of the skin sloughing and mortality issues. The exams of moribund and dead fish identified Columnaris (*Flavobacterium columnare)* and bacterial gill disease affecting the gills and present on the exposed skin lesions, basically as secondary invaders. The Idaho Fish Health Center also observed steatitis symptoms which could be a potential cause or contributing factor to the skin sloughing. Steatitis can be caused by a deficiency in Vitamin E or from feed rancidity. Feed samples sent to Abernathy Fish Technolgy were not found to be nutritionally deficient or rancid. The Hatchery did not have samples for analysis of feed fed prior to February.

The Idaho Fish Health Center recommended treatment with Chloramine T for bacterial gill disease and external Columnaris. These treatments will begin in early March.

Extreme Example of Skin Sloughing exposing underlying muscle tissue

Rainbow Trout

Lot Number	Stock	Number	Total Fish Weight	Size (#/lb)	Length (inches)
130	**Hayspur**	**117,678**	**363**	**324**	**1.87**

The trout were moved out of the Hatchery II building to the Trout Raceways the last week of February. Fish health remains good.

OPERATIONS

Bryan Kenworthy, Project Leader; Nathan Wiese, Assistant Project Leader; and Jeremy Trimpey, Biologist, attended 3 sessions of NET DMR training sponsored by the Environmental Protection Agency. The Hatchery will begin using the "test" NET DMR website to enter data in to the Hatchery's Discharge Monitoring Reports to meet the National Pollution Discharge Elimination System permit reporting requirements.

Contracting and General Services awarded the bid for the replacement of the Hatchery II rearing tanks tail screens. The screens will be delivered in April.

The Hatchery submitted proposals to recruit an Americorp outreach position through the Palouse-Clearwater Environmental Institute and to the 2010 Pacific Region Fisheries, Youth and Careers in Nature program.

COORDINATION

Steve Money, Maintenance Mechanic, traveled to Sacramento, CA to attend the Wage Grade Committee meeting. During this meeting, Steve passed on his title of committee chairman which he has held for four years.

Bryan Kenworthy and Jeremy Trimpey attended the Salmon River Annual Operating Plan meeting at the Idaho Department of Fish and Game, Idaho Research Office, Napa, Idaho.

Dr. Christine Moffitt and Kelly Stockton, University of Idaho, began toxicity experiments with Fluorescein dye on Pebble snails as a surrogate for the Bliss Rapids snail. The initial research was done at concentrations of 200, 2000, and 200,000 ppb. Initial tests did not link any Pebble snail mortality to Fluorescein exposures up to 200,000 ppb for 24 hours. Additional Pebble snail tests are planned to confirm these findings.

PERSONNEL/TRAINING/SAFETY

Bob Edwards Filer, Idaho began volunteer duties in the maintenance department.

The Hatchery crew completed annual hearing and respirator fit tests.

Steve Money attended a pesticide applicator training workshop to keep his Idaho pesticide applicator license current. The course covered personal protective equipment, exposure and first aid to start the day and then several speakers covered topics such as: aquatic plant identification, native and invasives; Use of chemicals to prevent weeds in our canal systems; How the Idaho State Department of Agriculture (ISDA) enforces the Federal Insecticide, Fungicide and Rodenticide Acat (FIFRA) and investigates issues with pesticides; Zebra mussels and the eminent danger to our ecosystem; and, Review of equipment calibration and herbicide rate calculations.

Nathan Wiese travelled to the National Conservation Training Center (NCTC) to attend the two-week Project Leader Academy course.

The Hatchery received a new modular flammable building to store flammable liquids. This unit replaces a concrete block and wood structure which no longer met code requirements.

OUTREACH

The Hatchery had a total of 53 registered visitors and 4 guests in February.

Bryce Lindley volunteered 8 hours.

Maintenance

- Finished wiring in new alarm system for Fish Transport #199.
- Put new insulation over wiring and oxygen lines in conduit of the Fish Transport #199.
- Ran oxygen lines to new ceramic oxygen diffusers on Fish Transport #199.
- Installed fittings on new ceramic oxygen diffusers for Fish Transport #469, #319 and #480.
- Installed new ceramic oxygen diffusers in Fish Transports #469, #319 and #480 fish transports.
- Removed air tank, magnahelics, solenoids and associated hardware from Fish Transport #199and #480 fish transports.
- Built and installed stainless steel brackets to mount new oxygen manifolds on all Fish Transports .
- Pulled old carbon stone lines from Fish Transport #199,#469, #319 and #480 fish transports.
- Removed old pneumatic 8 inch knife gates from Fish Transport #480, #319 and #469 fish transports and cleaned flange for new knife gates.
- Replaced Hatch 2 heat pump splash guard with tubing to prevent water damage.