

Standard Operating Procedures For The Distribution Of Fish
Gavins Point National Fish Hatchery
Yankton, South Dakota

In February of 2004 it was discovered that the invasive **Zebra mussel**, *Dreissena Polymorpha* was found in the Missouri river system below Gavins Point Dam as well as below Ft. Randall dam both in South Dakota. In order to eliminate the spread of Zebra mussels within the Gavins Point National Fish Hatchery a Standard Operating Procedures plan has been established. This plan is to serve as a step by step protocol for fish cultural operations when dealing with fish that are reared on the hatchery's lake water supply. This will also serve as a document to our partners so that they will be assured that the personnel of the Gavins Point National Fish Hatchery are taking the appropriate measures in dealing with this invasive species.

1. **Pond Rearing** -Because there is no realistic way to eliminate zebra mussels in the water supply it is to be assumed that the hatchery does have the potential to harbor them. Pond culture operations will be the same as always. Ponds will be filled using pond socks as small as realistically possible without impeding the progress of filling the pond in a timely manner.
2. **Harvesting of ponds** - Ponds will be harvested using normal harvesting procedures. Kettles will be swept clean of debris before harvest. During harvest detritus, algae, and all assorted debris will be removed before fish are loaded on to the distribution truck. Distribution trucks transporting fish from the ponds to the hatchery building will be loaded with lake water that has been filtered through 2 twenty micron pond socks.
3. **Chemical Treatments** – Fish that are harvested from the Gavins Point NFH ponds will be brought to the hatchery building for distribution off site. Using the protocols established at the Fairport State Fish Hatchery, Muscatine, Iowa (personal communication with Ken Snyder, Manager) we will begin a two part treatment using potassium chloride and formalin. **Potassium Chloride** will be used in a static bath treatment at a rate of 750 mg/l for 1 hour prior to loading distribution trucks. Aeration will be provided to the fish in the tanks during this period and dissolved oxygen levels will be monitored. After 1 hour of treatment well water will be added to the tank to boost oxygen levels and the fish will be loaded into the distribution truck.
4. **Loading** – Distribution trucks will be filled from a tank that has been fitted with a 20 micron filter sock on the discharge pipe at the head end of the tank. Water will be pumped onto the truck using a water pump fitted with a 20 micron filter sock. This will serve as a two part filtration regime thereby eliminating the potential for zebra mussels at any life stage to enter the distribution truck. Once the truck has been loaded with fish for distribution a 25 mg/l treatment of formalin will be administered on the distribution truck for a two hour minimum treatment.

5. **Stocking** – Fish will be unloaded at the stocking site (post 2 hour treatment) by hand, using dip nets. No water will be discharged at the stocking site. Once the fish are unloaded at the stocking site the distribution truck will leave the stocking site and unload the hauling water on land away from the site en route back to the Gavins Point NFH.

6. **Post Stocking** – Once the distribution truck arrives back at the Gavins Point NFH it and all equipment associated with loading and distribution will be hosed down and scrubbed thoroughly using chlorinated domestic water. The truck and all equipment will be sprayed with a fish safe disinfectant (Sterilize) and inspected by hatchery staff.

*It will be the responsibility of the receiving hatchery to properly clean and disinfect their own distribution trucks and equipment after receiving fish from the Gavins Point NFH.

Amounts of formalin to use for distribution trucks for a 2 hour static treatment:

GALLONS

50 = 13mls
60 = 15mls
70 = 18mls
80 = 20mls
90 = 23mls
100 = 25mls
110 = 28mls
115 = 30mls
120 = 32mls
130 = 34mls
140 = 36mls
150 = 39mls
160 = 42mls
170 = 44mls
180 = 46mls
190 = 49mls
200 = 51mls

Pond Truck w/ small tank 70 gal/tank = 36mls total (*note water transfers between the two tanks. Use 1 treatment of 36mls before filling the truck up with water

Pond Truck w/ large tank 115 gal/tank = 30mls/tank.

White Distribution Truck = 190 gal/tank = 49mls/tank