Updated 6/9/08

FISH SALVAGE DEWATERING PLAN
THE DALLES NORTH FISHWAY

FISHLADDER

Overview

Some fish can be expected when dewatering the north fishway for annual winter maintenance (December, January, February). Most fish move downstream with the receding water levels to tailwater elevation. However, the rock channel downstream of the count station can cause fish to hold in the remaining pools. Special attention is given to these pools for missed lamprey and juvenile salmonids. Salmonids will take priority over resident fish for salvage. Efforts are made to capture fish in the upper section (exit to count station) due to easy crane access and short transport to the forebay. Juvenile salmonids are released in the tailrace and adults in the forebay whenever practical. The shortest possible transportation route is used to reduce stress to fish. Release sites are predetermined to efficiently use time and manpower and create the best scenario for captured fish. No flushing water is available, but rock pools prevent stranding. Some bulkhead leakage can be expected.

Preparation

Operations (TDO)

- Orifice flow 48-72 hours prior to dewatering.
    1. PUD turbine off.
    2. Close count station diffuser valve.
- Immediately prior to dewatering.
    1. Notify rescue personnel prior to start of dewatering.
    2. Hang necessary clearance cards.

Structural (TDS)

- Assure adequate exit bulkhead seals. Install exit bulkheads.
- Request necessary safety clearances. Fisheries will work under that clearance during fish salvage.
- Notify project if deck blockage required.

Mechanical (TDM)

- Schedule necessary preventative maintenance

Electrical (TDE)

- Schedule necessary preventative maintenance

Fisheries (TJF)

- Provide extension ladders near required access locations.
    1. Count station
    2. Walkbridge
    3. JBS pipe bridge
    4. Lower rock wall concrete deck transition
- Coordinate dates and times for outage with all involved project personnel, COE Portland District and regional fish managers.
- Open picket leads by rotating after counting is over.
- Establish teams to work at predetermined locations.
- Provide fish rescue equipment.
- Conduct a pre-work/safety meeting. Activity Hazard Analysis, job responsibilities, radio contact plan, preparation status
- Station salvage tank with aeration at count station.

Procedures

1. Mobile crane installs exit bulkheads.
2. Safety clearances accepted. (preferred by radio to save time)
3. Personnel entering fishladder sign clearance master tag.
4. As water level allows, two personnel (team 1) will exit area.

5. Two personnel (team 2)will enter at count station as the water level recedes. Crawling through orifices is the preferred method for safety and speed. Push fish toward tailwater.
6. As water levels permits, two personnel (team 3) enter at walkbridge. Time spent catching fish from rock pools should be minimized. They can be caught on following walkthrough.
7. After all fish are moved to tailwater, orifice-blocking grates will be installed at the lowest exposed weir, with ropes attached to deck handrails.
8. The entire ladder will be checked following the initial dewatering. The diffuser chambers in the lower section will be monitored for Lamprey entrapment.
9. All personnel that entered fishladder sign out clearance master tag.
10. Flushing water will remain open through the night.
11. An orifice blocker will be placed at the first upstream grating to prevent missed fish coming downstream and stranding.
12. Ladder will be checked the following day.

LADDER ENTRANCE DEWATERING (below tailwater)

Overview

The north fishway entrance may require dewatering for maintenance and diffuser grating inspection. To accomplish this, the water must be pumped below tailwater elevation. Fish rescue efforts will happen when water levels allow access. All pumped areas will be monitored to prevent stranding fish. A 48 hour period between the fish ladder dewatering and the entrance will be mandatory to allow fish to vacate the system on their own.

Coordination

Same as above for fishladder dewatering.

Preparation/Procedure

1. Install bulkhead in entrance N1, N2.
2. Start dewater pumps and monitor water level.
3. A water level sensor will be installed to prevent stranding fish.
4. Station crane at north entrance for access.
5. Accept safety clearances.
6. Entry personnel sign clearance master tag.
7. Two personnel enter at north entrance.
8. Install pool blocker mats prior to egress at south entrance.

Safety Concerns

1. Slippery conditions are common on the floor of the fishway. Felt soled waders are recommended.
2. All ladders for entering the fishway should be securely fastened to the handrails.
3. Care should be taken to prevent back injury when lifting bags with fish. Handcarts should be used when possible.
4. The rock walls along the fishway are unstable. Be aware of falling rocks when lifting bags from the fishway and working along the edge of the channel.

Equipment Required

Submersible pumps – remove water from system
Crane - remove fish from upper and lower ladder areas
Fish tank - transport fish from the dewatered areas to the predetermined release sites. Aeration supply will be provided.
Fish bags - transport fish to the tank
Dipnets - capture fish
Seines - crowd fish for capture
Safety Harnesses - fall protection when in the man basket
Hardhats - mandatory
Chest Waders - depending on water depth encountered
Safety Glasses - optional

Gloves - hand protection
Personal Floatation Device – drowning protection
Several Vehicles - for transport of personnel and equipment.
Hand Carts – for transport of full fish bags to release sites or salvage tank.