

**Aquatic Nuisance Species
Hazard Analysis And Critical Control Point Plan**

Makah National Fish Hatchery Coho Salmon Culture

| Activity Description | |
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| Facility: Makah National Fish Hatchery | Site: Neah Bay, WA (Sooes River) |
| Project Coordinator: Joy Evered, Dave Zajac | Activity: Aquaculture (Coho and Fall Chinook Salmon and Steelhead Trout), and Lake Ozette Sockeye |
| Site Manager: Al Jensen | |
| Address: P.O Box 739 or 897 Hatchery Rd Neah Bay, WA. 98357 | |
| Phone: 360.645.2521 | |

| Project Description |
|---|
| <p>Makah NFH is located on the Sooes River 3 miles above its entrance to the Pacific Ocean. The Sooes River originates in the foothills of the northwest slope of the Olympic Mountains. The river flows through timberlands owned by the Crown Pacific Timber Company until it reaches the Makah Indian Reservation boundary at about river mile (RM) 4.2. All of the lands are managed for timber harvest.</p> <p>Makah NFH was established in 1981 to restore salmon resources of the Makah Indian Reservation and nearby watersheds on the north Washington coast and the Strait of Juan de Fuca.</p> <p>Each year s proposed fish production program is communicated with the State and Tribal co-managers through the annual Future Brood Document process that includes all Washington hatcheries. The current production program includes releases of 3.2 million fall Chinook salmon, 250,000 coho salmon, and 175,000 steelhead trout into the Sooes River. The hatchery also transfers 50,000 yearling coho salmon, 100,000 fall Chinook salmon (if available after on-station production needs are met and after 300 adult Chinook are passed upstream), and 25,000 yearling steelhead trout to the Educket Creek (a tributary to Waatch River on the Makah Reservation) facility operated by the Makah Nation. Eggs for these programs are collected from adults returning to the hatchery. The overall production program, including the species and numbers produced, has remained fairly stable over the last 5 years. However, Lake Ozette sockeye eggs are now temporarily incubated in the Iso/Quarantine unit. The Iso/Quarantine unit in-flow water is filtered through four five micron felt bags and ultra-violet light treated at 254 nanometers of peak radiation with a minimum dosage of 30,000 microwatts/second/square centimeter. The out-flow water is treated with chlorine at more than 2 ppm active ingredient.</p> |

Hazards: Species Which May Potentially Be Moved/Introduced

Vertebrates:

List Species/Types: None.

Comments: No survey done.

Invertebrates:

List Species/Types: None.

Comments: No survey done.

Plants:

List Species/Types: None.

Comments: No survey done.

Other Biologics: (Fish Pathogens)

List Species/Types: *Infectious hematopoietic necrosis (IHN).*

Flavobacter psychrophilum (bacterial coldwater disease).

Aeromonas salmonicida (furunculosis).

Ichthyophtherius multifiliis (Ich).

Viral Hemorrhagic Septicemia (VHS).

Ichthyobodo.

Trichodina.

Others:

List Species/Types: None

Comments:

Flow Diagram

| | |
|------------|---|
| Task 1 | Adult collection, upstream passage, and carcass distribution. |
| Task 2 | Spawning. |
| Task 3 | Egg incubation, shocking, and counting. |
| Task 4 | Fish rearing in tanks/raceways, rearing vessel cleaning, and fish sampling. |
| Task 5 | Fish marked/tagged. |
| Task 6 | Fish transferred to Educket Creek facility. |
| Task 7 | Fish released at the hatchery. |
| Task 8 | |
| Task 9 | |
| Task 10 | |

Hazard Analysis Worksheet

| 1 Tasks (from HACCP Step 3 Flow Diagram) | 2 Potential hazards identified in HACCP Step 2 | 3 Are any potential hazards probable? (yes/no) | 4 Justify evaluation for column 3 | 5 What control measures can be applied to prevent undesirable results? | 6 Is this task a critical control point (yes/no) |
|--|---|---|--------------------------------------|---|---|
| Adult collection, upstream passage, carcass distribution for human consumption | Vertebrates None | No | | n/a | No |
| | Invertebrates None | No | | n/a | No |
| | Plants None | No | | n/a | No |
| | Others Fish Pathogens | Yes | Potential pathogen carriers | Discontinue upstream passage | No |
| Spawning | Vertebrates None | No | | n/a | No |
| | Invertebrates None | No | | n/a | No |
| | Plants None | No | | n/a | No |
| | Others Fish Pathogens | Yes | Potential transmission of pathogens | Egg and/or adult culling. Egg water hardening in iodophor. | No |

| 1 Tasks (from HACCP Step 3 Flow Diagram) | 2 Potential hazards identified in HACCP Step 2 | 3 Are any potential hazards probable? (yes/no) | 4 Justify evaluation for column 3 | 5 What control measures can be applied to prevent undesirable/undesirable results? | 6 Is this task a critical control point (yes/no) |
|--|---|---|---|---|---|
| Egg incubation, shocking, and counting | Vertebrates None | No | | n/a | No |
| | Invertebrates None | No | | n/a | No |
| | Plants None | No | | n/a | No |
| | Others Fish Pathogens | Yes | Potential pathogen carriers | Disinfect equipment | No |
| Fish rearing, sampling, and rearing vessel cleaning | Vertebrates None | No | | n/a | No |
| | Invertebrates None | No | | n/a | No |
| | Plants None | No | | n/a | No |
| | Others Fish Pathogens | Yes | Potential pathogen amplification | Treat for disease, disinfect equipment | No |
| Fish marking/tagging | Vertebrates None | No | | n/a | No |
| | Invertebrates None | No | | n/a | No |
| | Plants None | No | | n/a | No |
| | Others Fish Pathogens | Yes | Potential pathogen carriers | Disinfection | Yes |

| 1 Tasks (from HACCP Step 3 Flow Diagram) | 2 Potential hazards identified in HACCP Step 2 | 3 Are any potential hazards probable? (yes/no) | 4 Justify evaluation for column 3 | 5 What control measures can be applied to prevent undesirable/undesirable | 6 Is this task a critical control point (yes/no) results? |
|---|---|---|---|---|---|
| Fish transferred to Educket Creek facility | Vertebrates None | No | | n/a | |
| | Invertebrates None | No | | n/a | No |
| | Plants None | No | | n/a | No |
| | Others Fish Pathogens | Yes | Potential pathogen carriers | Treat for disease or do not transfer | Yes |
| Fish released at the hatchery | Vertebrates None | No | | n/a | No |
| | Invertebrates None | No | | n/a | No |
| | Plants None | No | | n/a | No |
| | Others Fish Pathogens | Yes | Potential pathogen carriers | Treat for disease or do not release | Yes |

| HACCP Plan Form | | | | | | | | |
|--|------------------------------|---|--|---|--|------------|---|-----------------------------------|
| | | | Monitoring | | | | | |
| Critical Control Point (CCP) | Significant Hazard(s) | Limits for each Control Measure | What | How | Frequency | Who | Evaluation & Corrective Action(s) (if needed) | Supporting Documentation (if any) |
| Fish Marking/ Tagging | Pathogen or Disease Transfer | Use 200 ppm chlorine, 70% isopropyl alcohol, and 100 ppm iodophor solutions for disinfection-- 10 minute contact time | Disinfect tagging equipment | Apply to all surfaces and pipes via spray or wipe | Between each species and hatchery | Tag Super. | Visual inspection and log check. If not completed disinfect before beginning next tagging program | Log Book |
| Fish Transfer to Educket Creek Facility | Pathogen or Disease Transfer | Pre-transfer sample by pathologist | 60 fish sampled via standard protocols | Random sample from transfer group | Once 28-42 days prior to transfer | OFHC | No transfer or treat for disease before transfer. | Fish Health Inspection Report |
| Fish Released at Hatchery | Pathogen or Disease Carriers | Pre-release sample by pathologist | 60 fish sampled via standard protocols | Random sample from release group | Once 28-42 days prior to release | OFHC | No release or treat for disease before release | Fish Health Inspection Report |
| Facility: Makah National Fish Hatchery | | | | | Activity: Aquaculture (Coho Salmon) | | | |
| Address: P.O. Box 739 or 897 Hatchery Road Neah Bay, WA 98357 | | | | | | | | |
| Signature: | | | | | Date: | | | |
| HACCP Plan was followed. Plan will be modified to reflect future ANS risks as they become apparent and are identified. | | | | | | | | |