

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

Makah National Fish Hatchery Fall Chinook Salmon Culture

Activity Description	
Facility: Makah National Fish Hatchery	Site: Neah Bay, WA (Sooes River)
Project Coordinator: Dave Zajac Joy Evered	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	
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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

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 reared in tanks/raceways, rearing vessel cleaning, and fish sampling
Task 5	Fish transferred to Educket Creek facility
Task 6	Fish marked/tagged
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
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

HACCP Step 4 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)
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 transferred to Educket Creek facility	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 transfer	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 results?	6 Is this task a critical control point (yes/no) undesirable results?
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
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 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 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 released at hatchery	Pathogen or disease carrier	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 (Fall Chinook 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.								