

APPENDIX C. MAJOR PHYSICAL FACILITIES AT WARM SPRINGS NATIONAL FISH HATCHERY¹

Warm Springs National Fish Hatchery (NFH) began operations in 1978 to support tribal, recreational and commercial harvests on the Deschutes and Columbia Rivers. The U.S. Fish and Wildlife Service (USFWS) and the Confederated Tribes of the Warm Springs Reservation in Oregon (CTWSRO) co-manage Warm Springs NFH with the primary goals to supplement tribal harvest in the Deschutes and Columbia Rivers and to provide much needed subsistence to Tribal members and the Tribal community.

The USFWS began investigating salmon and Steelhead enhancement possibilities on the Warm Springs Reservation in 1959 in response to a request from the CTWSRO. Congress authorized construction of the hatchery in 1966, and the hatchery began propagating Spring Chinook Salmon in 1978 with returns of adults (3-year old fish) first occurring in 1981.

The hatchery is located on the Warm Springs River at river kilometer 16 (river mile 10) and is approximately 14 miles from the town of Warm Springs, Oregon. The hatchery is located on land leased from the CTWSRO. Most of the facilities are located within one building with several wings and floors

Fish culture facilities (Table 1):

- Thirty (30), 16-foot-wide by 75-foot-long modified Barrow's raceways.
- Four (4), 8-foot -wide by 28-foot-long Adult Catch Ponds (only three ponds are used).²
- Three (3), 10-foot-wide by 44.5-foot-long Adult Holding Ponds
- 18 egg incubator stacks, 15 trays per stack, with another 18 stacks in storage if needed.
- 20 indoor nursery tanks, 78 ft³ per tank, for rearing fry.

Physical plant:

- Five 75-hp and three 30-hp pumps located in the mechanical area of the hatchery building, equipped with traveling screens and water management structures.
- A pollution control pond.
- Three sand filters, of which two are typically in operation and one is in back wash/standby mode, that provide filtered water to the UV sterilizer. This water is supplied to (a) the nursery area for egg incubation and early rearing of fry and (b) to the adult holding ponds.
- Two 500 kW back-up generators. Both will operate initially and if the control system determines one can carry the load, the other will shut down. This is a new system installed in 2019 – 2020.

¹ Prepared by Terry Freije, Manager, Warm Springs NFH.

² Three new adult catchment ponds were completed in 2017.

- Concrete barrier weir on the Warm Springs River with a fish ladder and three adult catch ponds for trapping adult salmon for broodstock. The fish ladder includes a manually-operated bypass system that allows fish to be shunted upstream without physical handling.
- An enclosed adult spawning area inside the hatchery building is connected to the adult holding and catch ponds by a common canal. The spawning area includes a hydraulic fish crowder, a hydraulically operated knock-out tank for lifting adult fish to the sorting area, a fish sorting table, a series of connecting pipes to relocate fish sorted for broodstock, fish spawning racks, an area for fish health and data collection, and a carcass collection area.
- Four Carrier chiller units, three of which chill water for the adult holding ponds and one for chilling incubation and rearing water inside the hatchery building
- Two Teton boilers for heating water to the nursery during egg incubation and early rearing of fry in winter

Table 1. WSNFH Rearing Facilities.

Unit Type	Unit Length (ft)	Unit Width (ft)	Unit Depth (ft)	Unit Volume (ft ³)	No. of Units	Total Volume (ft ³)	Age (yrs)	Condition
Adult Catch Ponds	28	8	3	672	3	2,016	39	Good
Adult Holding Ponds	44.5	10	6	2,760	3	8,280	2	New
Modified Rectangular Burrows Rearing Ponds	75	16	3.0	3,600	30	108,000	39	Good
Health Style Incubation Trays	1.25	1	.16	0.2	270 (540)	54 (108)	-	Good
Early Rearing Troughs	13	3	2	78	20	1,560	-	Very good

Buildings:

- A single multi-level hatchery building. The main floor houses administrative offices and a visitor’s center, crew room, rest room/locker room, laboratory, nursery, primary shop area, a four-bay garage area, and a storage room for inflammable materials. The lower levels include the mechanical area which contains the five 75 horsepower pumps (three of five operating at any one time) for water to the raceways and fish ladder, three 30 horse power pumps (one to two operating at any one time) for the nursery and adult

holding ponds, traveling screens, air compressors, sand filters, chillers, boilers, the intake structure on the river, and other smaller devices and storage.

- A feed building that includes parking stalls for USFWS vehicles, two hazardous-materials buildings, a building housing two emergency diesel generators and their fuel supply (5,000 gallon above ground double walled tank), and a well house.
- Three government-owned residence houses for staff who are required to live on station.