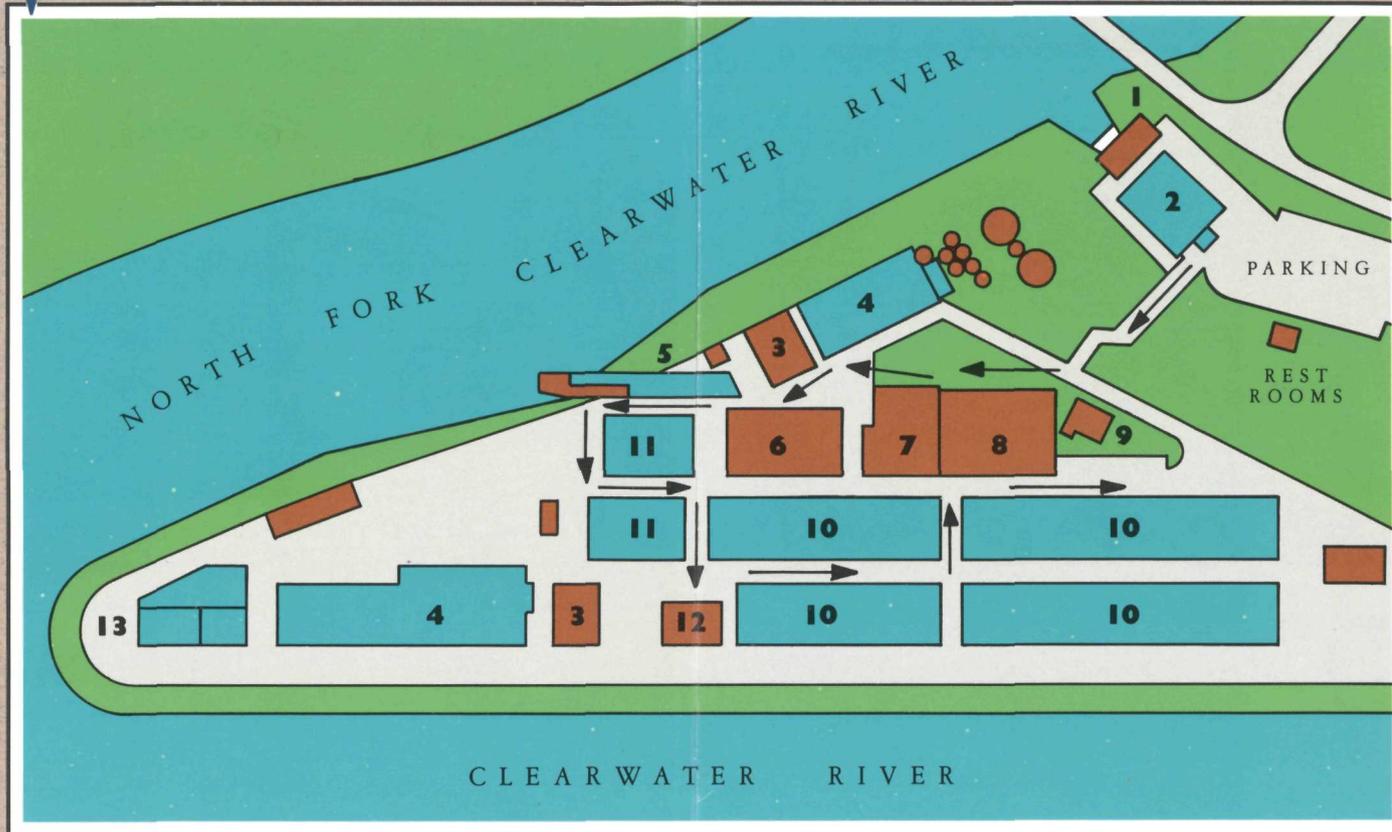


# VISITOR INFORMATION MAP



## 1. MAIN PUMP STATION

Supplies water from North Fork Clearwater River to all outside production ponds. Piped water from Dworshak Reservoir is used for egg incubation and inside nursery rearing.

## 2. WATER TREATMENT FACILITY

Has aeration capability if water becomes oxygen deficient or supersaturated with nitrogen.

## 3. MECHANICAL BUILDINGS

Filters improve water quality and electric boilers adjust temperatures of the three reuse systems.

## 4. WATER REUSE FILTERS

Recondition used water from rearing ponds; 10 percent is then returned to river and replaced by an equal amount of heated new water.

## 5. FISH LADDER

Adult fish move up the fish ladder to holding ponds.

## 6. HOLDING PONDS

Receive adult fish and hold until mature and spawned.

## 7. HATCHERY BUILDING

Spawning room and incubators, displays, viewing balcony, rest rooms, and administrative offices.

## 8. NURSERY BUILDING

Newly hatched fish are held in smaller tanks until fingerling size, then transferred to the larger outside ponds.

## 9. FISH HEALTH CENTER

## 10. STEELHEAD REARING PONDS

## 11. SPRING CHINOOK REARING PONDS

## 12. FOOD SERVICE BUILDING

Refrigerated storage for moist food and space for dry food storage. Location of IDAHO FISHERY RESOURCE OFFICE.

## 13. HATCHERY WASTE WATER TREATMENT PONDS

# DWORSHAK NATIONAL FISH HATCHERY



US Army Corps  
of Engineers  
Walla Walla District

Dworshak / Kooskia  
National Fish Hatchery  
P.O. Box 18  
Ahsahka, Idaho 83520  
(208) 476-4591

# WELCOME TO DWORSHAK NATIONAL FISH HATCHERY

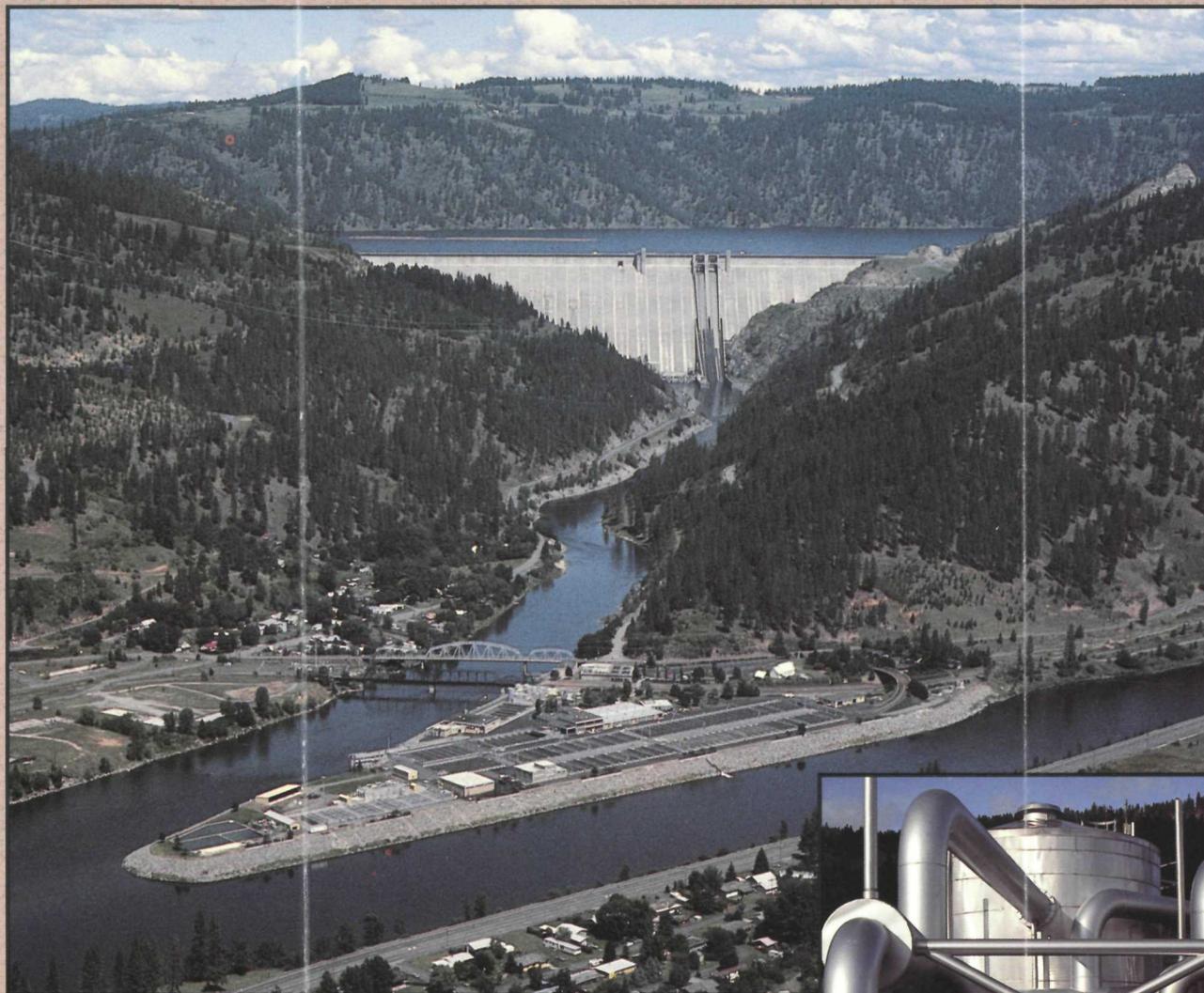
Dworshak National Fish Hatchery is the largest combination producer of steelhead trout and spring chinook salmon in the world. The hatchery, located at the confluence of the North Fork and the main stem Clearwater, three miles west of Orofino in north central Idaho, is operated by the U.S. Fish & Wildlife Service and was designed and built by the Walla Walla District, U.S. Army Corps of Engineers.

Steelhead and rainbow trout production, begun in 1969, is in conjunction with Dworshak Dam which is the largest and highest straight-axis, concrete-gravity dam ever built in the United States and second largest in the world. Dworshak Dam blocks migrating steelhead from natural spawning grounds on the North Fork of the Clearwater River.

**A**dditional construction, completed in 1982 under the Lower Snake River Compensation Plan, expanded facilities to rear spring chinook salmon to offset losses caused by dams on the lower Snake River.

Kooskia National Fish Hatchery, 35 miles upriver, became part of the Dworshak National Fish Hatchery Complex in 1978. The two hatcheries are managed closely together for the production of salmon and steelhead.

The hatchery, dedicated in 1969, is the culmination of an



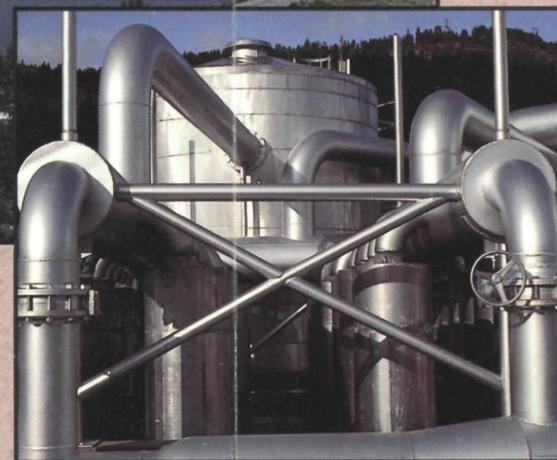
controlled systems. In these systems, 10 percent of the water used in the ponds is added as fresh water after being filtered, supplemented with minerals and heated. The water goes through aerators for re-oxygenation before supplying each pond with 600 gallons per minute of flow. When water returns from the ponds, it flows through biological filters where ammonia is oxidized and then reduced to harmless nitrates.

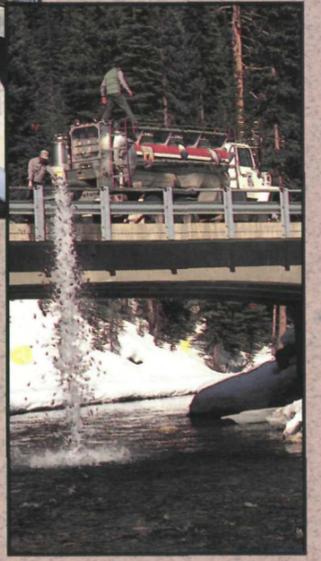
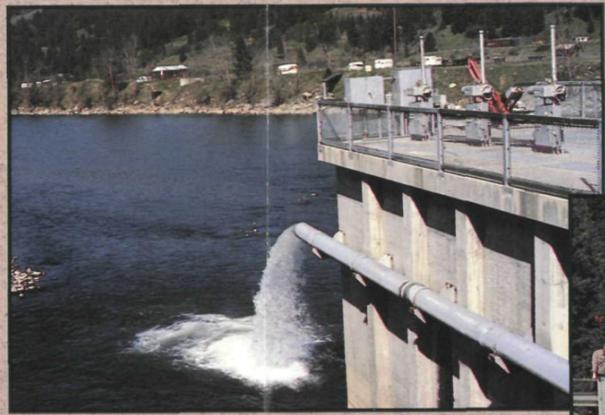
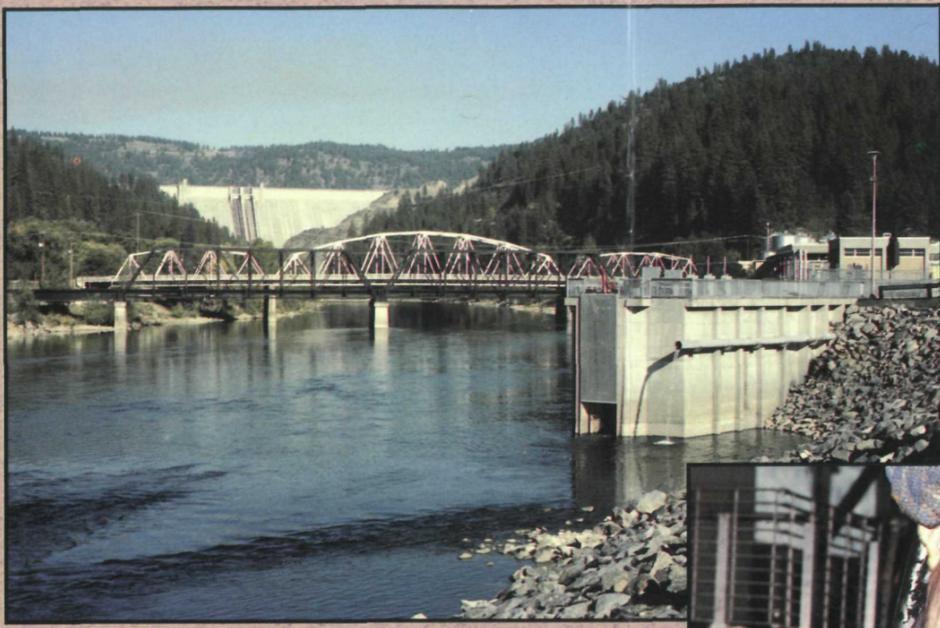
Ability to regulate temperatures and to reuse the water enables the hatchery to use warm water (54° F) in the winter when water temperatures normally run about 39° F. Since growth rates are faster in warmer water, the juvenile steelhead are released the spring following egg hatching at a length of 8 inches. It would take an additional year in colder water to reach the same size.

The hatchery's water system, pumping at a total capacity of 90,000 gallons per minute, is comparable to satisfying the daily drinking needs of all the people residing in the State of Idaho.

intensive cooperative effort by the Army Corps of Engineers, Fish and Wildlife Service and State of Idaho to perpetuate the return of fish from the Pacific Ocean to the Clearwater River.

**T**he hatchery is unique in that water temperatures for the outside steelhead ponds can be controlled through recirculation similar to an aquarium. There are 84 circulating water-type ponds divided into three reuse or environmentally





Adult steelhead may spawn near the ocean or many miles up stream. The famous Clearwater "B" strain of steelhead, collected at the hatchery from October until May, spawn from January through April. The spring chinook brood fish return to the river from May until September with egg collection over a three-week period beginning in late August. The returning adult fish move up the hatchery fishway, or ladder, directly into large holding ponds. These fish are three to five years in age and weigh from 12 to 15 pounds.

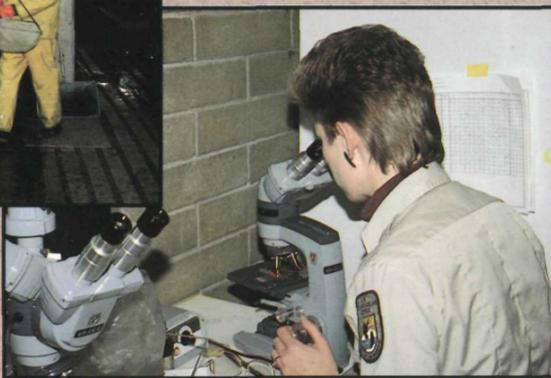
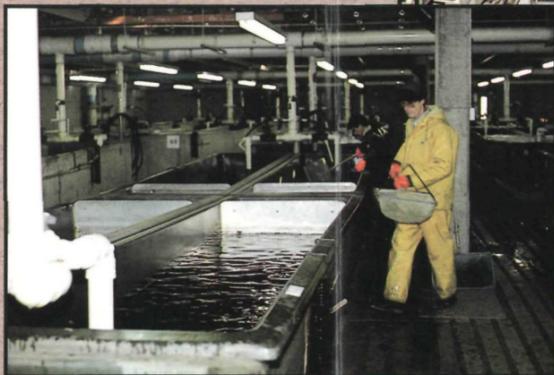
Fifteen million eggs are collected annually from the returning adult fish. Some of these eggs can be used to supply the State of Idaho with fish to various planting programs as well as to provide several million smolts (juvenile fish ready to change from fresh water to a salt water environment) for release the following spring.

Fertilized eggs are placed in incubators for several weeks until hatching occurs and the fish are ready to feed. Baby fish are hatched with yolk sacs attached to their bodies and draw nourishment from this source before learning to feed.

In a good year 6,500 eggs from one steelhead spawner would account for 55 adult fish back to the Clearwater River; 3,700 eggs collected from a female spring chinook returns 10 fish.

Once the yolk sac is absorbed, the young fish are moved to nursery tanks and are fed for the first time. Their first food is very fine particles fed several times daily. As they grow, food size as well as the daily food intake increases.

Small fingerlings remain in the nursery rearing tanks until they reach a size of 2 inches. The young fish are then moved to the outside ponds and held until ready for release as yearlings.



During the course of the incubation and rearing periods, fish health and water quality are closely monitored to help prevent any disease problems. Fish are periodically sample counted and measured for growth information and feeding change.

At the time of release, yearling salmon and steelhead are discharged directly from the ponds to the river, or pumped onto trucks and transported to off-site locations to begin their downstream migration.

To aid the smolts in their journey through the eight dams on the Snake and Columbia rivers, the migrating young fish (both salmon and steelhead) can be collected at Lower Granite, Little Goose and McNary dams and barged or trucked downstream beyond Bonneville, the last dam on the lower Columbia.



A monitor instrument records water flow, temperatures, oxygen levels, pH (acidity or alkalinity of water) and turbidity, (sediment in the water) of each of the different water system in the hatchery.

Operational faults are flashed to an annunciator board pinpointing the exact location of a problem. An alarm sounds through the public address system in the hatchery. If the alarm is not acknowledged and reset by a hatchery employee, the telephones begin ringing in employee's homes.

Visitors are welcome to tour the facilities 7:30 a.m. to 4:00 p.m. daily. Exhibits describing the hatchery activities and a self-guided tour are available.

