

BUTTE FALLS HATCHERY



OPERATIONS PLAN 2010

Butte Falls Hatchery

INTRODUCTION

Butte Falls Hatchery is located 35 miles northeast of Medford off Highway 62 on the Butte Falls highway, one mile east of the town of Butte Falls. The site is approximately 2,500 feet above sea level, at latitude 42° 32' 15" N (42.5375) and longitude 122° 33' 11' W (122.5531). Total land area is 14.6 acres.

The hatchery water supply is obtained from Big Butte Creek, approximately .5 miles above the hatchery. Water is supplied by gravity. The hatchery's water rights are 15.5 cfs from The South Fork of Big Butte Creek.

The facility is staffed with 3.0 FTE's.

Rearing Facilities at Butte Falls Hatchery

| Unit Type | Unit Length (ft) | Unit Width (ft) | Unit Depth (ft) | Unit Volume (ft ³) | Number Units | Total Volume (ft ³) | Construction Material | Age | Condition | Comment |
|---------------------|------------------|-----------------|-----------------|--------------------------------|--------------|---------------------------------|-----------------------|------|-----------|---|
| Raceways | 70 | 20 | 4 | 5,600 | 6 | 33,600 | Concrete | 1954 | fair | |
| Raceways | 100 | 9.5 | 3 | 2,850 | 5 | 14,250 | Concrete | 2004 | excellent | |
| Raceways | 40 | 10 | 2.5 | 1,000 | 2 | 2,000 | Concrete | 1929 | poor | |
| Raceways | 100 | 10 | 2.5 | 2,500 | 6 | 15,000 | Concrete | 1929 | poor | 2 not usable, two usable for larger fish only |
| Circular Ponds | | 25 | 2 | 246 | 4 | 984 | Concrete | 1929 | poor | Not used for production |
| Troughs | 16 | 2.5 | 1.5 | 60 | 36 | 2,160 | Concrete | 1944 | good | |
| Troughs | 16 | 1.16 | 0.5 | 9 | 20 | 186 | Aluminum | 1987 | good | |
| Vertical incubators | | | | | 104 | | | | fair | 13 stacks of 8 trays each |
| Rearing Pond | 100 | 100 | 6 | | 1 | | Earthen | 1954 | fair | not used for production |

PURPOSE

Butte Falls Hatchery was constructed in 1915 and facility operations are funded by the State of Oregon.

The facility is used for egg incubation and rearing of rainbow trout.

PROGRAM TYPE

The ODFW Hatchery Management Policy defines hatchery programs as either harvest or conservation programs. Harvest programs operate to enhance or maintain fisheries without impairing naturally reproducing populations. Conservation programs operate to maintain or increase the number of naturally produced fish without reducing the productivity of naturally reproducing populations.

Butte Falls Hatchery participates in harvest programs providing augmentation of fishing opportunities.

GOALS

In 2006, an outbreak of infectious hematopoietic necrosis virus (IHNV) occurred at the hatchery. It is believed that wild adult fish carrying IHNV that swam above the hatchery intake caused the viral outbreak. . The ODFW Fish Health Management Policy restricts the transfer or release of fish from hatcheries at which certain disease outbreaks have occurred until it can be shown that susceptible fish stocks at the facility have been free of the specific disease for three consecutive years. Under these restrictions, fish infected with IHNV may only be released into waters in which the pathogen is endemic.

Production at Butte Falls Hatchery has been reduced to small groups of rainbow trout kept on station to test for the presence of the virus and for possible stocking into waterbodies where IHNV has been previously detected. Once testing shows that the facility has been virus-free for three consecutive years, regular production may be resumed.

OBJECTIVES

Objective 1: Foster and sustain opportunities for sport, commercial, and tribal fishers consistent with the conservation of naturally produced native fish.

Rainbow Trout:

Oak Springs Hatchery (053) Stock

Receive 40,000 eggs from Oak Springs Hatchery.

Rear 10,200 fish (3,400 pounds) as an IHN virus test group.

Shasta (071) Stock

Receive 40,000 eggs from the California Department of Fish and Game (CDFG).

Rear 10,200 fish (3,400 pounds) as an IHN virus test group

Cape Cod Triploid (072T) Stock

Receive 50,000 eggs from Roaring River Hatchery.

Rear 20,400 legal size and trophy size fish (6,867 pounds) for release into standing water bodies.

- Objective 2: Contribute toward the sustainability of naturally produced native fish populations through the responsible use of hatcheries and hatchery-produced fish.
- Objective 3: Maintain genetic resources of native fish populations spawned or reared in captivity.
- Objective 4: Restrict the introduction, amplification, or dissemination of disease agents in hatchery produced fish and in natural environments by controlling egg and fish movements and by prescribing a variety of preventative, therapeutic and disinfecting strategies to control the spread of disease agents in fish populations in the state.
- Objective 5: Minimize adverse ecological impacts to watersheds caused by hatchery facilities and operations.
- Objective 6: Communicate effectively with other fish producers, managers and the public.

CURRENT PRACTICES TO ACHIEVE OBJECTIVES

The sections that follow describe the current hatchery practices associated with anadromous fish production at this facility. Because ODFW hatcheries are managed to maximize use of the hatchery rearing space, hatchery operations are dynamic and subject to annual change depending upon statewide program needs.

The Native Fish Conservation Policy, the Fish Hatchery Management Policy, the Fish Health Management Policy and Hatchery Genetic Management Plans provide guidelines for the management of wild and hatchery fish in Oregon. These policies describe the brood collection, rearing, release, and health management strategies currently used at this facility.

Objective 1: Foster and sustain opportunities for sport, commercial, and tribal fishers consistent with the conservation of naturally produced native fish.

Adult Collection

Rainbow Trout:

Oak Springs Hatchery (053) Stock: Broodstock are maintained at Oak Springs Hatchery

Shasta (71) Stock: Broodstock are maintained by CDFG.

Cape Cod Triploid (072T) Stock: Broodstock are maintained at Roaring River Hatchery.

Objective 2: Contribute toward the sustainability of naturally produced native fish populations through the responsible use of hatcheries and hatchery-produced fish.

Rearing and Release Strategies

Rearing and release strategies are designed to limit the amount of ecological interactions occurring between hatchery and naturally produced fish. Fish are reared to sufficient size that smoltification occurs within nearly the entire population, which will reduce the retention time in downstream migration. Rearing on parent river water, or acclimation to parent river water for several weeks is used to ensure strong homing to the hatchery, thus reducing the stray rate to natural populations. Various release strategies are used to ensure that fish migrate from the hatchery with least amount of interaction with native populations. The specific rearing and release strategies used at this hatchery are outlined below.

Rainbow Trout:

Oak Springs Hatchery (053) Stock:

Rear 10,200 fish to 3 fish/pound to serve as an IHN virus test group.

Shasta (071) Stock:

Rear 10,200 fish to 3 fish/pound to serve as an IHN virus test group.

Cape Cod (072) Stock:

Produce 12,500 fish at 3 fish/pound for release into Reinhart Park Pond, Libby Pond and Expo Pond from March through June.

Produce 400 fish at 2 fish/pound for the Slammin Salmon youth angling opportunity.

Produce 7,500 fish at 3 fish/pound for youth angling at Butte Falls Hatchery.

Objective 3: Maintain genetic resources of native fish populations spawned or reared in captivity.

Broodstock Selection and Spawning

Oregon's Native Fish Conservation Policy and Hatchery Genetic Management Plans outline broodstock selection and spawning protocols for some fish stocks. The following practices are currently being used at Butte Falls Hatchery:

Rainbow Trout:

Oak Springs Hatchery (053) Stock: No adult broodstock is maintained at Butte Falls Hatchery. Broodstock selection and spawning take place at Oak Springs Hatchery.

Shasta (071) Stock: No adult brood stock is maintained at Butte Falls Hatchery. Broodstock selection and spawning take place at Mt. Shasta Hatchery (CDFG).

Cape Cod Triploid (072T) Stock: No adult brood stock is maintained at Butte Falls Hatchery. Broodstock selection and spawning take place at Roaring River Hatchery.

Objective 4: Restrict the introduction, amplification, or dissemination of disease agents in hatchery produced fish and in natural environments by controlling egg and fish movements and by prescribing a variety of preventative, therapeutic and disinfecting strategies to control the spread of disease agents in fish populations in the state.

Fish Health Management Programs--All Stocks

ODFW has adopted a Fish Health Management Policy that describes measures that minimize the impact of fish diseases on the state's fish resources. The primary objective of fish health management programs at ODFW hatcheries is to produce healthy smolts that will contribute to the fishery and return sufficient numbers of adults to continue propagation of the stocks and provide supplementation if desired. Equally important is to prevent the introduction, amplification or spread of fish pathogens that might negatively affect the health of both hatchery and naturally reproducing stocks.

ODFW has implemented both disease control and disease prevention programs at all of its facilities to achieve these objectives. These programs include the following standard elements:

Disease Control (Reactive)

- Perform necropsies of diseased and dead fish to diagnose the cause of loss.
- Prescribe appropriate treatments and remedies to disease. This includes recommending modifications in fish culture practices, when appropriate, to alleviate disease-contributing factors.
- Apply a disease control policy as stated in the Oregon Administrative Rules which dictates how specific disease problems will be addressed and what restrictions may be placed on movements of diseased stocks.
- Conduct applied research on new and existing techniques to control disease epizootics.

Disease Prevention (Proactive)

- Routinely remove dead fish from each rearing container and notify ODFW Fish Pathology if losses are increasing. Monthly mortality records are submitted to Fish Pathology from each hatchery.

- Routinely perform examinations of live fish to assess health status and detect problems before they progress to clinical disease or mortality.
- Implement disease preventative strategies in all aspects of fish culture to produce a quality fish. This includes prescribing the optimal nutritional needs and environmental conditions in the hatchery rearing container based on historical disease events. It also involves the use of vaccines or antibiotics in order to avoid a disease problem.
- Use a disease prevention policy that restricts the introduction of stocks into a facility. This will help avoid new disease problems and fish pathogens not previously found at the site.
- Use sanitation procedures that prevent introduction of pathogens into and/or within a facility.
- Conduct applied research on new and existing disease prevention techniques.
- Utilize pond management strategies (e.g., Density Index and Flow Index guidelines) to help optimize the quality of the aquatic environment and minimize fish stress that can be conducive to infectious and noninfectious diseases. For example, a Density Index is used to estimate the maximum number of fish that can occupy a rearing unit based on the rearing unit's size. A Flow Index is used to estimate the rearing unit's carrying capacity based on water flows.

Fish Health Activities at Butte Falls Hatchery

Health Monitoring

- All fish are given a health inspection no longer than 6 weeks before fish are released or transferred. This exam may be in conjunction with the routine monthly visit.
- Monthly health monitoring examinations of healthy and clinically diseased fish are conducted on each fish lot at the hatchery.
- Examinations for *Myxobolus cerebralis*, agent of whirling disease, are conducted annually on 60 fish held for a minimum of 180 days at the facility.
- Whenever abnormal behavior is reported or observed, or mortality exceeds 0.1% per day over five consecutive days in any rearing container, the fish pathologist will examine the affected fish, make a diagnosis and recommend the appropriate remedial or preventative measures.

- Reporting and control of specific fish pathogens are conducted in accordance with the Fish Health Management Policy. Results from each examination mentioned above are reported on the ODFW Fish Health or Virus Examination forms.

Fish and Egg Movements

- Movements of fish and eggs are conducted in accordance with the Fish Health Management Policy.

Therapeutic and Prophylactic Treatments

Only approved or permitted therapeutic agents are used for treatments:

- FDA labeled and approved for use on food fish
- Allowed by the FDA as an Investigational New Animal Drug
- Obtained by extra-label prescription from a veterinarian
- Allowed by the FDA as low regulatory priority or deferred regulatory status
- Approved by the FDA through USFWS for fish listed under the federal Endangered Species Act.

Sanitation

- All eggs brought to the facility are surface-disinfected or water-hardened in buffered iodophor.
- Disinfection footbaths (or other means of disinfection) are provided at the incubation facility's entrance and exit areas while embryos are incubating in the facility.
- All equipment (e.g., nets, tanks, rain gear, boots) is disinfected with iodophor between uses with different fish/egg lots or different rearing containers.
- Dead fish are disposed of promptly and in a manner that prevents introduction of disease agents to the waters of the state.
- Rearing units are cleaned on a regular basis.
- Rearing units are sanitized after removing fish and before introducing a new fish stock either by thorough cleaning and use of a disinfectant or by cleaning and leaving dry for an extended time.

Objective 5: Minimize adverse ecological impacts to watersheds caused by hatchery facilities and operations.

Environmental Monitoring

Primarily, environmental monitoring is conducted at ODFW facilities to ensure these facilities meet the requirements of the National Pollution Discharge Elimination Permit administered by the Oregon Department of Environmental Quality. It is also used in managing fish health. On a short-term basis, monitoring helps identify when changes to hatchery practices are required. Long-term monitoring provides the ability to quantify water quality impacts resulting from changes in the watershed (e.g., logging, road building and urbanization). The following environmental parameters are currently monitored at all ODFW hatcheries:

- Total Suspended Solids (TSS) – measured quarterly. Two composite samples are collected, one during normal operations and one during cleaning. Some facilities may take more samples because of multiple outfalls.
- Settleable Solids (SS) – measured quarterly. Two composite samples are collected, one during normal operations and one during cleaning. Some facilities may take more samples because of multiple outfalls.
- pH – measured quarterly when settleable solids are measured.
- Total Ammonia and Total Phosphorus – measured quarterly when settleable solids are measured.
- Water Temperatures – daily maximum and minimum water temperatures are measured within the hatchery. Temperature units are recorded for egg development in some hatcheries. Effluent and receiving stream temperatures are measured weekly from April to October.
- Dissolved Oxygen (DO) – measured only when conditions warrant (e.g., periods of low flows and high temperatures).
- Air Temperatures – maximum and minimum temperatures are recorded daily at some stations, but there are no special monitoring requirements.
- Flow Logs – changes in water flows through the hatchery ponds are recorded whenever flows are altered for hatchery management activities (i.e., ponding of fish, splitting of fish lots, fish releases, etc.).

Objective 6: Communicate effectively with other fish producers, managers and the public.

Coordination/Communication within ODFW

Annual Fish Production Meetings: ODFW conducts meetings throughout the state to set annual fish production goals for all public hatcheries in Oregon. These meetings involve the participation of ODFW research, management and fish culture staff as well as representatives from applicable federal agencies and tribes.

Record Keeping: The following records are kept at all ODFW hatcheries:

- Anadromous Adult Transaction Report – details the collection and disposition of all adult fish handled at the facility.
- Mark Recovery Report – details sex, fish length and tag information from all marked adult fish that are captured.
- Egg and Fry Report – records all egg and fry movements, treatments, etc.
- Monthly Poned Report – updates hatchery operations from the previous month (i.e., current number of fish, size, transfers or releases, feed conversion, mortality, medication, etc.).
- Monthly Progress Report – document summarizing operational activities for the hatchery and all satellite facilities (e.g., fish culture, fish health, fish distribution, maintenance and safety).
- Fish Loss and Treatment Report – records disease problems and daily mortality.
- Fish Loss Report/Investigation – when 1,000 or more juveniles or 10 or more adult fish are accidentally lost in a single accident.
- Predator Mortality Report – documents any fish predators that may die at the hatchery facility.
- Fish Liberation Reports – details information regarding all fish releases (e.g., fish numbers, size, location, method of release, marks, etc.).
- Coded –Wire Tag Release Reports – record of all juvenile fish released with coded-wire tags.
- Length Frequency Record – details fish lengths of all anadromous fish released (based on a sample of the releases).

- Chemical use, waste discharge monitoring, purchasing, budget, hazardous materials, safety, vehicles, equipment, maintenance and alarm logs.
- Visitor Log – some facilities record the daily visitor use of the facility; however, this is not a requirement.

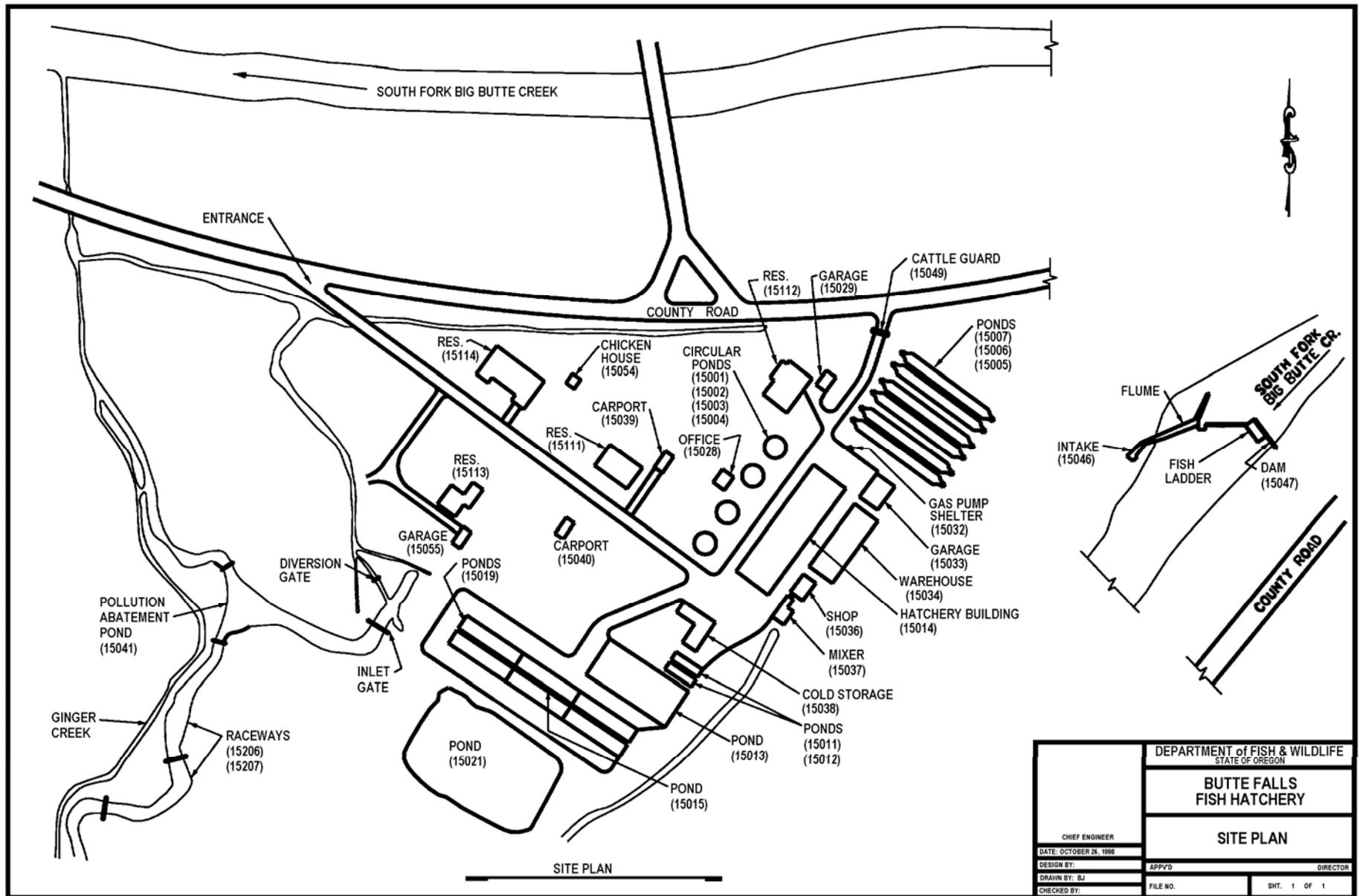
Hatchery Management Information System (HMIS): Computerized system to collect, report, summarize and analyze hatchery production data. This system is a tool to be used in production control at all hatchery management levels.

Interagency Coordination Communication

Pacific Northwest Fish Health Protection Committee (PNFHPC): This group is comprised of representatives from U.S. and Canadian fish management agencies, tribes, universities, and private fish operations. The group meets twice a year to monitor regional fish health policies and to discuss current fish health issues in the Pacific Northwest.

Communication with the General Public

Butte Falls Hatchery receives approximately 2,500 visitors each year.



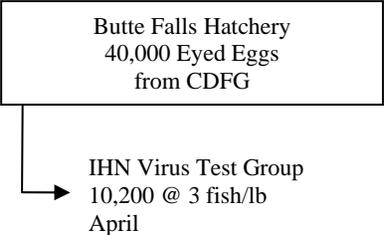
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| DEPARTMENT OF FISH & WILDLIFE STATE OF OREGON | |
| BUTTE FALLS FISH HATCHERY | |
| SITE PLAN | |
| CHIEF ENGINEER | |
| DATE: OCTOBER 28, 1998 | |
| DESIGN BY: | APP'VD |
| DRAWN BY: BJ | DIRECTOR |
| CHECKED BY: | FILE NO. |
| | SHT. 1 OF 1 |

Butte Falls Hatchery
Rainbow Trout – Stock 53 (Oak Springs Diploid)

Butte Falls Hatchery
40,000 Eyed Eggs
from Oak Springs Hatchery
November

→ IHN Virus Test Group
10,200 @ 3 fish/lb
April

**Butte Falls Hatchery
Rainbow Trout – Stock 71 (Shasta)**



**Butte Falls Hatchery
Rainbow Trout – Stock 72 (Cape Cod Diploid)**

