

LEABURG HATCHERY



PROGRAM MANAGEMENT PLAN 2017

Leaburg Hatchery

INTRODUCTION

Leaburg Hatchery is located along the McKenzie River (Willamette Basin) 4 miles east of Leaburg, Oregon, on Highway 126 at River Mile 38.8 on the McKenzie River. The site is at an elevation of 740 feet above sea level, at latitude 44° 07' 13" N (44.1357) and longitude 122° 36' 33" W (122.6094). The area of the site is 21.6 acres.

Water rights total 44,900 gpm from the McKenzie River. Water use varies with need throughout the year and is delivered by gravity. All rearing facilities use single-pass water.

The facility is staffed with 6 FTE's.

Rearing Facilities at Leaburg 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
Canadian Troughs	16	2.66	1.5	64	13	832	fiberglass	1987	good	
Canadian Troughs	16	3.0	3.0	144	2	288	Fiberglass	2002	good	
Circular Ponds		20	2.2	690	6	4,140	concrete	1953	good	
Raceways	50	20	3.66	3,660	1	10,980	concrete	1953	good	
Raceways	100	20	3.66	7,320	40	285,480	concrete	1953	good	
Troughs	18	1.17	0.5	11	5	53	aluminum	1970	good	
Vertical Incubators					48		plastic	1990	good	6 stacks of 8 trays

PURPOSE

Leaburg Hatchery was constructed in 1953 by the U.S. Army Corps of Engineers (USACE) to mitigate for lost trout habitat caused by construction of Blue River and Cougar dams and other Willamette Valley projects. The hatchery is used for rearing summer steelhead and rainbow trout, and temporary holding of cutthroat trout and rainbow trout fingerlings for high lakes stocking. Funding is shared between ODFW and USACE.

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.

Leaburg Hatchery programs are harvest programs, used to mitigate loss of fishing and harvest opportunities due to loss of habitat and migration blockage resulting from the construction of hydropower projects in the Willamette River Basin.

GOALS

Rainbow Trout: The mitigation agreement requires USACE funding of up to 277,000 pounds of trout, any additional fish production is funded by ODFW. All trout reared for stocking will be triploid except summer steelhead.

Summer Steelhead: Help achieve the McKenzie River Subbasin Plan's objective to provide an average sport catch of 1,200 adult summer steelhead in the McKenzie River.

OBJECTIVES

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

Cutthroat Trout:

Hackleman Creek/Fish Lake (119H) Stock:

Hold 1,300 fingerlings (7 pounds) for high lakes stocking.

Rainbow Trout:

Cape Cod Triploid (72T) Stock:

Produce 417,545 legal-sized trout (139,182 pounds) and 38,955 trophy trout (26,570 pounds) for release into reservoirs, streams and standing water bodies in the Willamette River Basin.

Crane Prairie Triploid (127T) Stock:

Hold 1,000 fingerlings (5 pounds) for high lakes stocking.

Summer Steelhead:

South Santiam River (24H) Stock:

Produce 108,000 smolts (24,000 pounds) for release into the McKenzie River.

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 and resident 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

Cutthroat Trout:

Hackleman Creek/Fish Lake (119H) Stock: No broodstock are held at this facility.

Rainbow Trout:

Cape Cod Triploid (72T) Stock: No broodstock are held at this facility.

Crane Prairie Triploid (127T) Stock: No broodstock are held at this facility.

Summer Steelhead:

South Santiam River (24H) Stock: Adults arrive in the McKenzie River from April through December. Adults are collected at Leaburg Hatchery and recycled back to the river for enhanced angling opportunity. Adults trapped in December and January are stocked in Junction City Pond. No adults are held for spawning at Leaburg 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.

Cutthroat Trout:

Hackleman Creek/Fish Lake (119H) Stock: Receive 1,300 fingerlings at 250 fish/pound from Oak Springs Hatchery and hold for stocking of Irish Camp (300), and Melakwa (1,000) lakes in July.

Rainbow Trout:

Cape Cod Triploid (72T) Stock: Rear 417,545 fish to 3 fish/pound for release into reservoirs, streams and standing water bodies in the Willamette River Basin from January through December. All fish are fin-clipped prior to release.

Rear 37,980 fish to a size of 1.5 fish/pound for release into reservoirs, streams and standing water bodies in the Willamette River Basin from January through December. All fish are fin-clipped prior to release.

Rear 700 fish to a size of 1 fish/pound for release into Junction City Pond in January and December. All fish are fin-clipped prior to release.

Rear 275 fish to a size of 0.5 fish/pound for release into reservoirs, streams and standing water bodies in the Willamette River Basin from January through December. All fish are fin-clipped prior to release.

Rear 1,000 fish to 3 fish/pound for educational purposes.

Crane Prairie Triploid (127T) Stock: Receive and hold 1,000 fingerlings from Willamette Hatchery at a size of 200 fish/pound for high lakes backpack stocking in early July.

Summer Steelhead:

South Santiam River (24H) Stock: Rear 108,000 fish to a size of 4.5 fish/pound; release 28,000 on-station and truck 80,000 for release into the McKenzie River in early April. All fish are fin-clipped prior to release.

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 Leaburg Hatchery:

Cutthroat Trout:

Hackleman Creek/Fish Lake (119H) Stock: No broodstock are maintained at this facility. Broodstock selection and spawning take place at Oak Springs Hatchery (see Oak Springs Hatchery Plan for additional information).

Rainbow Trout:

Cape Cod Triploid (72T) Stock: No broodstock are maintained at this facility. Broodstock selection and spawning take place at Roaring River Hatchery (see Roaring River Hatchery Plan for additional information).

Crane Prairie Triploid (127T) Stock: No broodstock are maintained at this facility. Broodstock selection and spawning take place at Wizard Falls Hatchery (see Wizard Falls Hatchery Plan for additional information).

Summer Steelhead:

South Santiam River (24H) Stock: No spawning takes place at this facility. Broodstock selection and spawning take place at South Santiam Hatchery (see South Santiam Hatchery Plan for additional information).

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 Leaburg Hatchery

Health Monitoring

- Monthly health monitoring examinations of healthy and clinically diseased fish are conducted on each fish lot at the hatchery. The sample includes a minimum of 10 dead fish (if available) and 4-6 live fish per lot.
- 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.
- Examinations for *Myxobolus cerebralis*, agent of whirling disease, are conducted annually on 60 fish held for a minimum of 180 days at the facility.
- When returning adult summer steelhead are ripe, a minimum target of 60 ovarian fluids and 60 kidney/spleen/pyloric caeca (based on a minimum sampling at the 5% incidence level) are examined for viral pathogen.
- 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

- Juvenile fish are administered antibiotics orally as needed for the control of bacterial infections and for prevention of diseases.
- Formalin is dispensed into water for control of parasites and fungus on eggs and juveniles. Treatment dosage and exposure time varies with species, life stage and condition being treated.
- 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 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.
- Fish transport trucks are disinfected between the hauling of different fish lots.
- 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.
- 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 weekly.

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 Pondered 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 System (HMS): 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

Production Advisory Committee (PAC): The Columbia River PAC is comprised of representatives from the regulatory management agencies and tribes. This group meets monthly to discuss anadromous fish production issues and to provide an opportunity for communication among the anadromous fish hatchery managers.

Technical Advisory Committee (TAC): The Columbia River TAC is comprised of regulatory fish harvest technicians. This group provides management direction used in establishing hatchery fish production goals. TAC meets monthly.

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.

In-River Agreements: State and tribal representatives meet annually to set Columbia River harvests as part of the *U.S. v. Oregon Agreement*. Periodic meetings are also held throughout the year to assess if targets are being met.

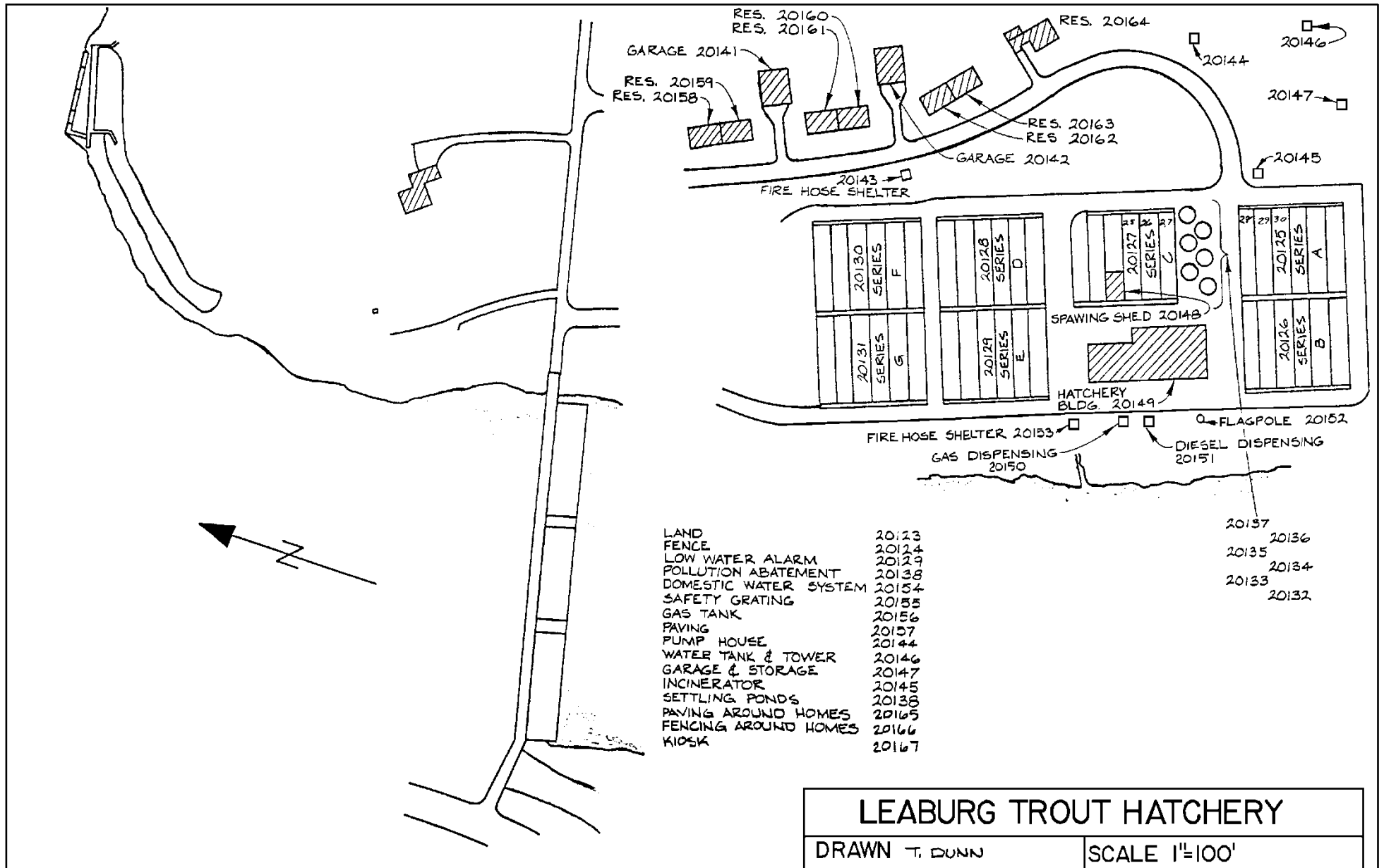
Streamnet (www/streamnet.org): Hatchery return data are input into StreamNet, a cooperative information management and data dissemination project focused on fisheries and aquatic related data and data related services in the Columbia River basin and the Pacific Northwest. StreamNet is funded through the Northwest Power and Conservation Council's Fish and Wildlife Program by the Bonneville Power Administration and are administered by the Pacific States Marine Fisheries Commission. The data are maintained and disseminated through the Pacific States Marine Fisheries Commission (PSMFC).

In-Season Communications: Communication with PAC, the Columbia River Inter-Tribal Fish Commission, Washington Department of Wildlife, Washington Department of Fisheries, U.S. Fish and Wildlife Service and Idaho Department of Fish and Game takes place each year to coordinate proper fish and egg transfers in an effort to meet basin-wide goals at all facilities, where applicable.

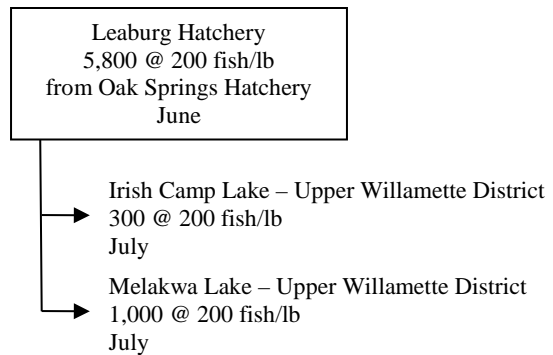
Other: ODFW staff meets occasionally with Eugene Water and Electric Board to discuss hatchery operations.

Communication with the General Public

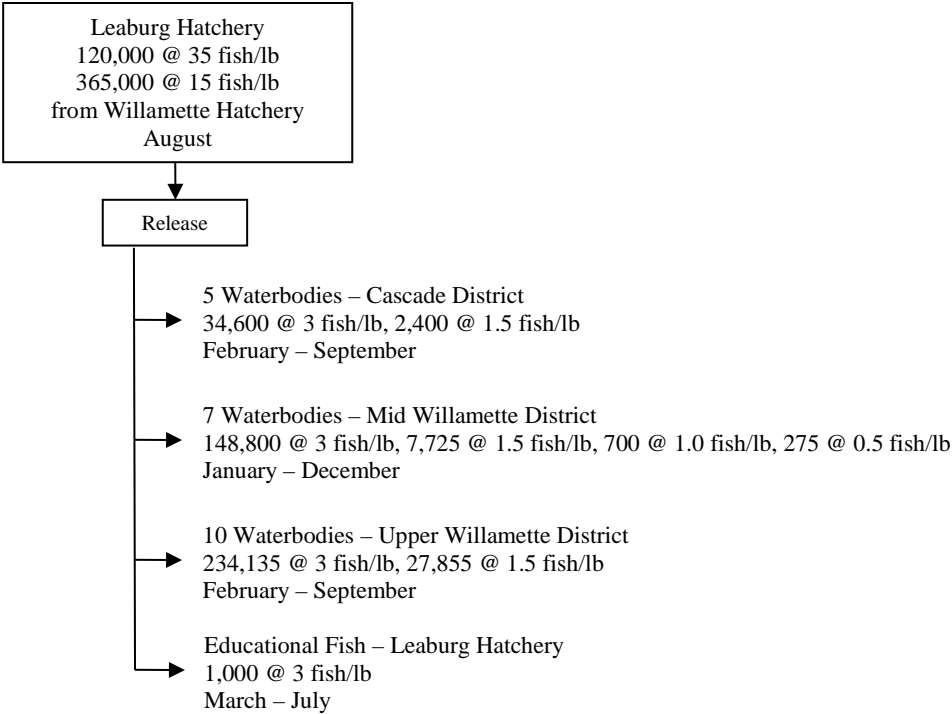
Leaburg Hatchery receives approximately 70,000 visitors each year.



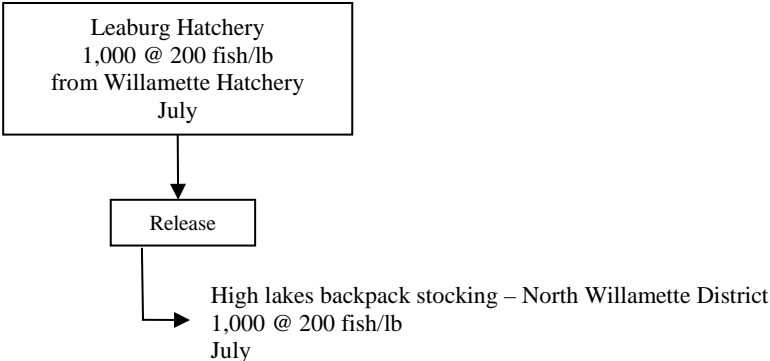
**Leaburg Hatchery
Cutthroat Trout – Stock 119 (Hackleman Creek)**



Leaburg Hatchery
Rainbow Trout – Stock 72T (Cape Cod Triploid)



**Leaburg Hatchery
Rainbow Trout – Stock 127T (Crane Prairie Triploid)**



**Leaburg Hatchery
Summer Steelhead – Stock 24 (South Santiam River)**

