ROARING RIVER HATCHERY

PROGRAM MANAGEMENT PLAN 2024

Roaring River Hatchery

INTRODUCTION

Roaring River Hatchery is located along Roaring River (tributary to Crabtree Creek of the South Santiam River in the Willamette Basin) about 18 miles northeast of Albany, Oregon. The facility is at an elevation of 570 feet above sea level, at latitude 44.6244 and longitude -122.7222. The site area is 41 acres.

Water rights total 11,225 gpm from Roaring River. Water is delivered by gravity flow. Some water is pumped through a filter system to insure a clean supply for egg incubation and starter tanks. Low flow available to the hatchery is 3,366 gpm in October and the high flow is about 15,000 gpm during the winter/spring. Water is reused from the upper to lower ponds.

The hatchery is staffed with 45 FTE's.

Rearing Facilities at Roaring River 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
Brood Ponds	100	20.5	3.6	7,380	2	14,760	concrete	1968	fair	Rainbow trout brood ponds
Canadian Troughs	18	3.25	2.7	158	6	948	fiberglass	2017	good	
Canadian Troughs	15	2.7	2	53	3	159	fiberglass	1991	good	
Raceway	103	19	4	7,828	1	7,828	concrete	1976	good	
Raceways	86	19.5	4.5	7,547	6	45,279	concrete	1986	good	
Raceways	100	10	4.5	4,500	14	63,000	concrete	1996	good	
Raceways	100	10	4.5	4,500	4	18,000	concrete	2018	good	
Vertical Incubators					320		Plastic	2017	good	
Vertical Incubators					80		fiberglass	1975	fair	

PURPOSE

Roaring River Hatchery was constructed in 1924 and currently receives 75% funding from Federal sources through the Sport Fish Restoration Program, and 25% from license fees. Many improvements have been made to the hatchery since original construction. In 1987, 1996 and 2018 new raceway ponds were constructed to replace the original raceways.

The hatchery is mixed-stock facility producing both anadromous fish and resident trout. The hatchery is used for rearing summer and winter steelhead from fingerling to smolt. The rainbow trout program involves broodstock maintenance, spawning, egg incubation and rearing.

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.

Roaring River Hatchery programs are harvest programs, used for the augmentation of fishing and harvest opportunities.

GOALS

Rainbow Trout: Meet subbasin fishery management objectives for six ODFW Fishery Districts and produce trout for broodstock to meet program objectives.

Summer Steelhead:

South Santiam River (24H) Stock: Provide mitigation for lost angling opportunities resulting from the construction and operation of the Willamette Valley Project dams and provide summer steelhead returns to help meet harvest objectives for the Lower Columbia and Willamette rivers.

Winter Steelhead: to release up to 100,000 hatchery winter steelhead while minimizing interactions with wild fish, as outlined in the Coastal Multispecies Conservation Plan.

OBJECTIVES

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

Rainbow Trout:

Cape Cod Triploid (72T) Stock:

Provide 2,309,000 eggs to ODFW hatcheries and STEP programs.

Produce 166,789 legal-sized trout (83,394 pounds) for release into streams and standing water bodies in five ODFW Fish Districts.

Produce 255,400 fingerlings (5,072 pounds) for release into standing water bodies in the Mid-Willamette District.

Produce 46,033 trophy-sized trout (46,033 pounds) for release into streams and standing water bodies in four ODFW Fish Districts.

Produce 43,000 fingerlings (573 pounds) for transfer to Salmon River Hatchery.

Produce 2,000 fry (2.5 pounds) for transfer to Oregon State University for research.

Produce 600 legal-sized trout (200 pounds) for transfer to Cedar Creek Hatchery.

Produce 3,250 legal-sized trout (1,625 pounds) for Free Fishing Day activities and fish pathology.

Summer Steelhead:

South Santiam River (24H) Stock:

Rear 157,000 smolts (34,888 pounds) for release into the Willamette River.

Winter Steelhead:

Siuslaw River (38H) Stock:

Produce 85,000 smolts (14,167 pounds) for release into the Siuslaw River System.

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

Rainbow Trout: Broodstock are maintained at the hatchery.

Summer Steelhead:

South Santiam River (24H) Stock: No adults are collected at this hatchery. Eyed eggs are shipped in from South Santiam Hatchery.

Winter Steelhead: No adults are collected at this hatchery. Adults are collected at traps on Whittaker, Green and Letz creeks from January to March. Eyed eggs are shipped in from Alsea Hatchery.

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

Rearing and Release Strategies

Rearing and release strategies are designed to limit the number of ecological interactions occurring between hatchery and naturally produced fish. Steelhead are reared to sufficient size that smoltification occurs within nearly the entire population, which will reduce the retention time in downstream migration. All steelhead are released off-station. The specific rearing and release strategies used at this hatchery are outlined below.

Rainbow Trout:

Cape Cod Triploid (72T) Stock:

Produce 2,000 fry at a size of 800 fpp for transfer to OSU in April.

Rear 43,000 fingerlings to a size of 75 fpp for transfer to Salmon River Hatchery in June.

Rear 5,400 fingerlings to a size of 75 fpp for release into various standing waterbodies in June.

Rear 250,000 fingerlings to a size of 50 fpp for release into Detroit Reservoir in late June.

Rear 166,789 legal-size trout to a size of 2 fpp for release into various water bodies throughout the year.

Rear 46,073 trophy sized trout to a size of 1 fpp for release into various water bodies throughout the year.

Rear 2.250 legal-sized trout for Free Fishing Day activities and hatchery displays.

Rear 1,000 legal-sized trout for ODFW Fish Health Section for classroom dissection.

Summer Steelhead:

South Santiam River (24H) Stock:

Rear 157,000 smolts (34,888 pounds) to a size of 4.5 fpp for non-acclimated release into the Willamette River in early April. All fish are adipose fin-clipped prior to release.

Winter Steelhead:

Siuslaw River (38H) Stock:

Rear 85,000 smolts to a size of 6 fpp for release into Whittaker Creek (70,000) and Green Creek (15,000) in early May. All fish are adipose fin-clipped prior to release.

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

Broodstock Selection and Spawning

Rainbow Trout: Broodstock are spawned using a matrix dependent upon the number of ripe females for a given spawn day. Triploidy is induced by pressure shocking the eggs shortly after fertilization.

Summer Steelhead:

South Santiam River (24H) Stock: No spawning is conducted at this hatchery. See the South Santiam Hatchery Plan for summer steelhead spawning protocols.

Winter Steelhead: No spawning is conducted at this hatchery. Spawning takes place at Whittaker and Green Creek traps and at Letz Creek STEP Hatchery. At least 30% of broodstock are wild fish; this can increase to 100% when wild steelhead numbers are observed to be high. Broodstock are spawned at a 1:1 male to female ratio in a 3x3 matrix.

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 Roaring River 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.
- At spawning, a minimum of 60 ovarian fluids and 60 kidney/spleen/pyloric caeca (based on a minimum sampling at the 5% incidence level) are examined for viral pathogens from each lot of rainbow trout. Feeding fry (60 fish) are subsequently sampled for IPN virus because the brood fish are not killed at spawning. If pre-spawning mortality level is above

normal, necropsies are conducted on dead adult fish for bacteria, parasites and other causes of death.

- 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.
- 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

- At spawning, eggs are water-hardened in iodophor for disinfection.
- 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 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.
- 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 shortterm 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.
- 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 Ponded 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 groups 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.

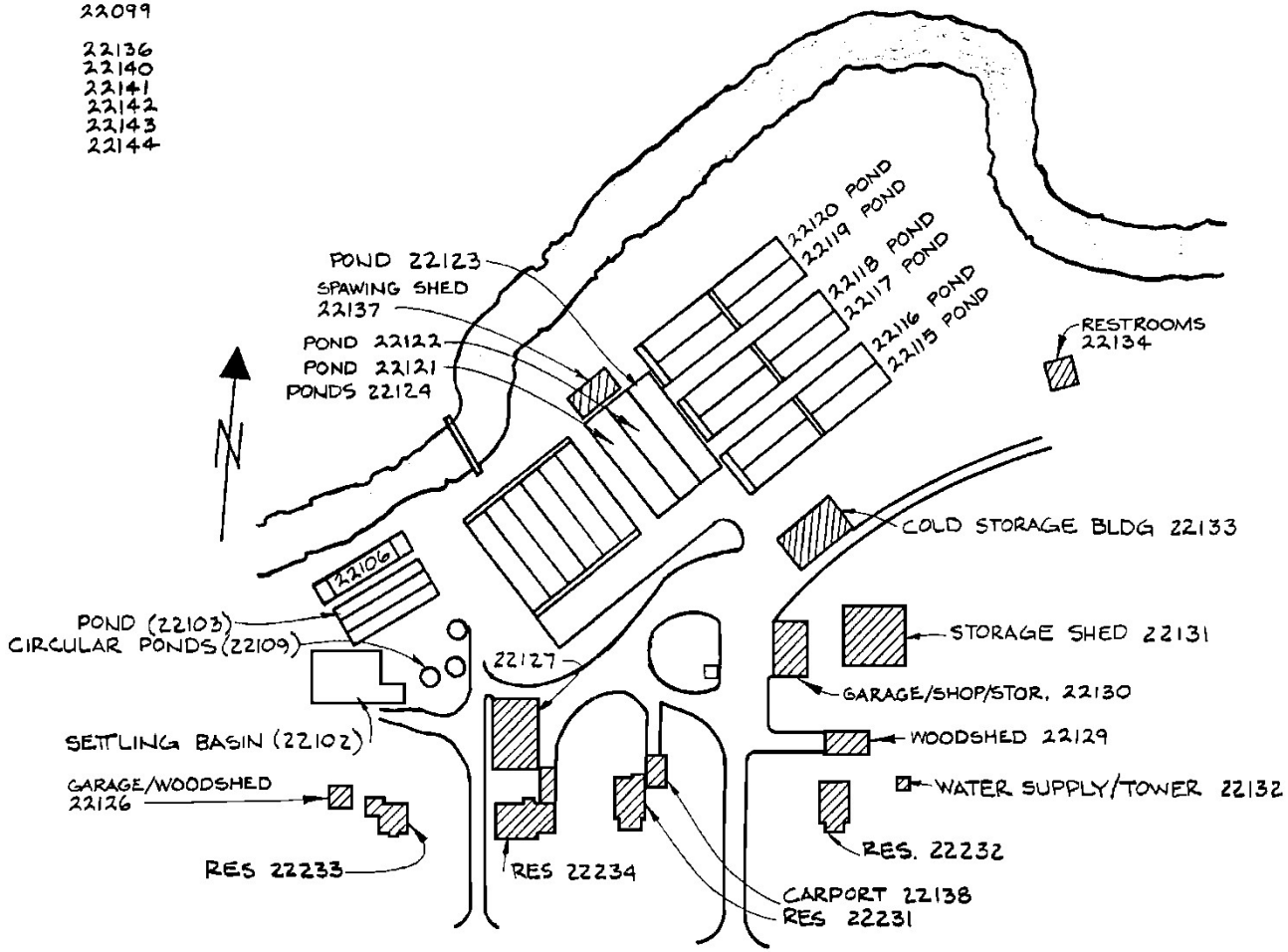
Streamnet (www/streamnet.org)): Hatchery return data are input into StreamNet, a cooperative information management and data dissemination project focused on fisheries and aquatic related data and data related services in the Columbia River basin and the Pacific Northwest. StreamNet is funded through 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.

Communication with the General Public

Roaring River Hatchery receives approximately 18,000 visitors per year.

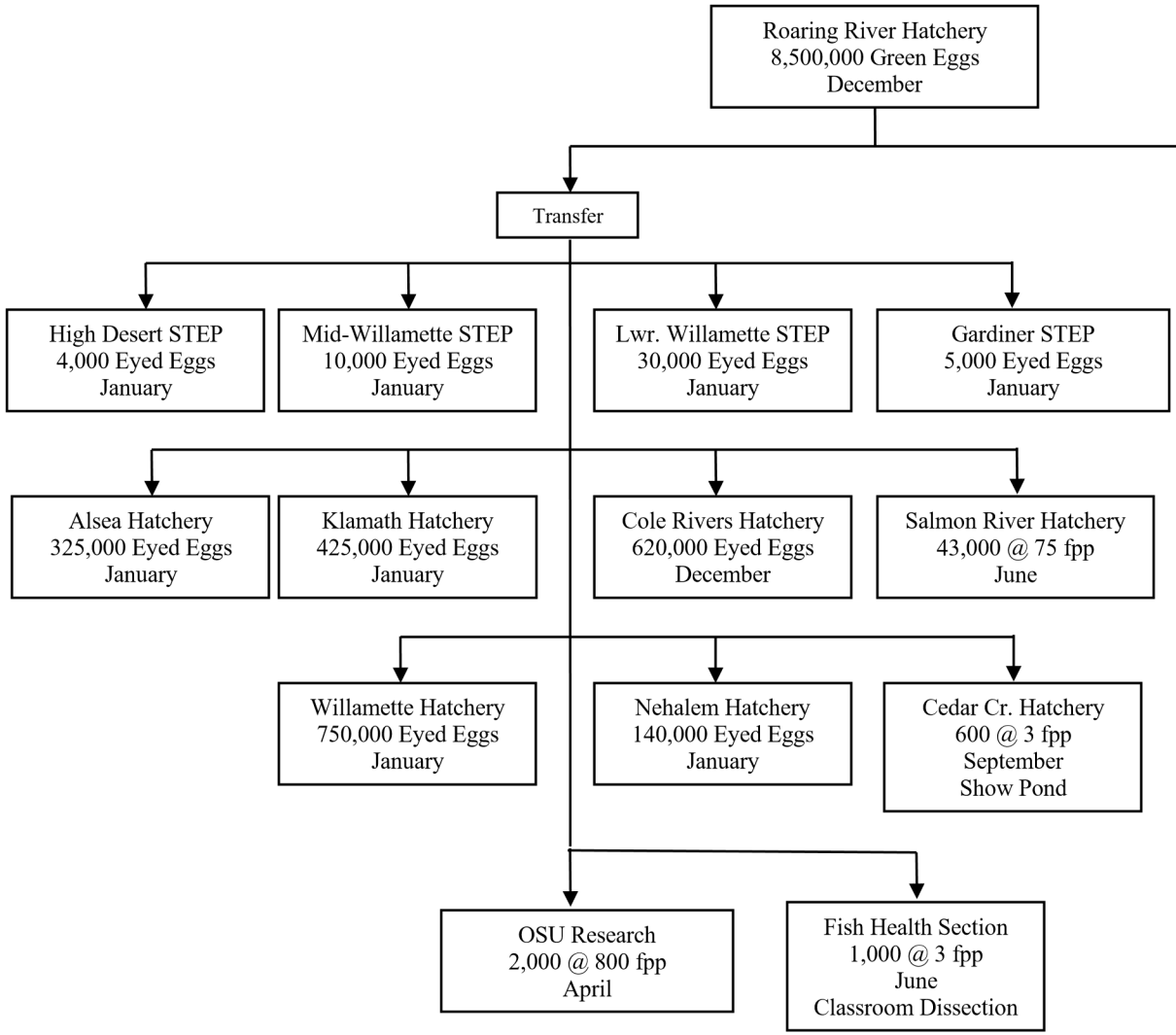
LAND	22095
"	22096
"	22097
"	22098
"	22099
DAM/INTAKE/LADDER	22136
PIPELINE	22140
WALKWAYS	22141
DRAINFIELD	22142
FENCE	22143
GAS TANK (UNLEADED)	22144



ROARING RIVER HATCHERY

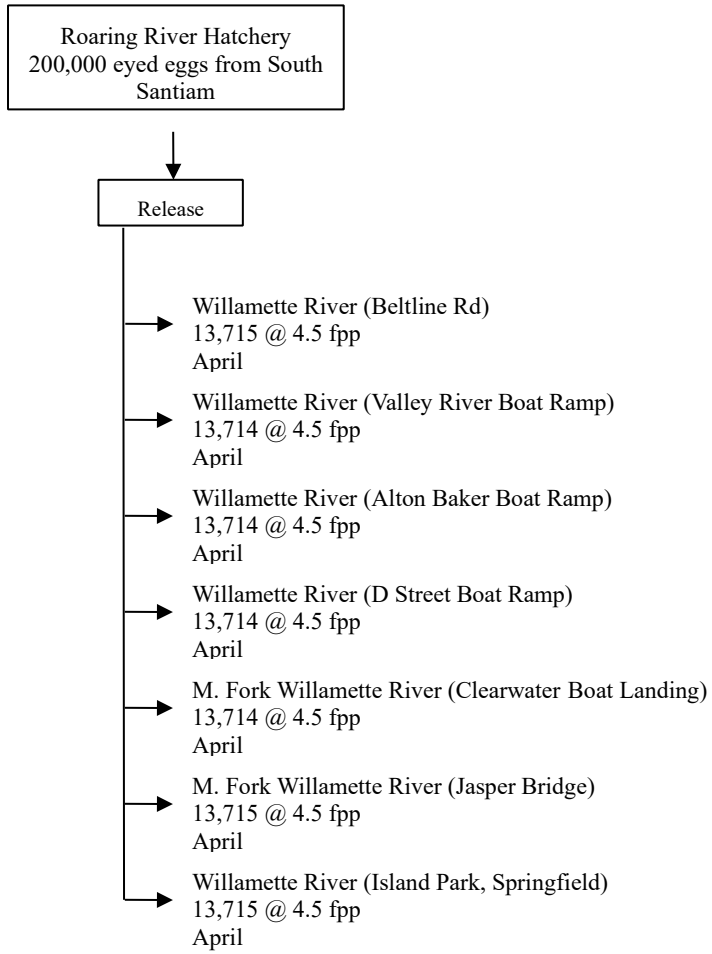
DRAWN T. DUNN | SCALE 1"=100'

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



- Produce 119,548 legal sized trout (58,774 pounds) for release into streams and standing water bodies in five ODFW Fish Districts
- Produce 255,400 fingerlings (5,072 pounds) for release into standing water bodies in the Mid-Willamette District
- Produce 46,033 trophy-sized trout (46,033 pounds) for release into streams and standing water bodies in four ODFW Fish Districts

Roaring River Hatchery
Summer Steelhead – Stock 24H (South Santiam River)



Roaring River Hatchery
Winter Steelhead – Stock 38H (Siuslaw River)