

IRRIGON HATCHERY



PROGRAM MANAGEMENT PLAN 2018

Irrigon Hatchery

INTRODUCTION

Irrigon Hatchery is located along the Columbia River above John Day Dam 3 miles west of Irrigon, Oregon. The facility is at an elevation of 277 feet above sea level, at latitude 45.9092 and longitude -119.5442. The area of the site is 33 acres, owned by the USFWS.

The hatchery water supply is provided from 5 wells that can deliver a total of approximately 14,000 gpm. Water rights and design capacity is about 25,000 gpm. The 14,000 gpm is available year round with actual low water use occurring in June when only 9,600 gpm is needed. Water flows from an upper series of raceways and is re-used in the lower series prior to discharge.

The facility is staffed with 9 FTE's.

Rearing Facilities at Irrigon 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
Circular Tanks		6	2.42	68	64	4,624	Fiberglass	1986	good	
Raceways	100	20	3.75	7,500	32	240,000	Concrete	1986	good	
Vertical Incubators					496		Fiberglass	1986	fair	24 stacks of 12 trays 13 stacks of 16 trays

PURPOSE

Irrigon Hatchery began operation in 1984 as part of the Lower Snake River Compensation Program (LSRCP)—a program to mitigate for spring Chinook and summer steelhead losses caused by the four federal dams constructed on the lower Snake River. This facility serves as egg incubation and rearing facility for summer steelhead destined for the Grande Ronde and Imnaha river systems, egg incubation for 575,000 Umatilla Coho eggs for transfer to Cascade Hatchery. In addition, Irrigon is also used as a rearing site for legal and trophy sized rainbow trout destined for northeast Oregon waters.

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.

All Irrigon Hatchery programs are harvest programs used for mitigation of fishing and harvest opportunities lost due to habitat loss and migration blockage resulting from the Lower Snake River hydropower system.

GOALS

Summer Steelhead:

Imnaha River (29H) Stock: To mitigate for fish losses occurring as a result of the construction and operation of the four Lower Snake River Dams. The program goal is to return 2,000 hatchery adults to the area above Ice Harbor Dam. The target for smolt production is set at 215,000 fish.

Program specific goals include:

- Establishing an annual supply of brood fish that can provide an egg source capable of meeting compensation goals.
- Restore and maintain the natural spawning population.
- Reestablish sport and tribal fisheries.
- Establish a total return of adult fish resulting from LSRCP activities in Oregon that meets the compensation goal.
- Minimize the impacts of the program on resident stocks of game fish.

Wallowa River (56H) Stock: to mitigate for summer steelhead harvest opportunity lost as a result of the construction of four Lower Snake River dams while minimizing impacts to listed populations. The LSRCP adult return goal is 9,184 adults for harvest and escapement to the area above Ice Harbor Dam.

Fall Chinook:

Snake River (97H) Stock: To mitigate for fish losses occurring as a result of the construction and operation of the four Lower Snake River Dams and to establish a population in the Grande Ronde River.

Rainbow Trout: To produce legal-size and trophy-size triploid fish to provide sport fishing opportunities in northeastern Oregon lakes, reservoirs and streams.

Coho:

Umatilla (91H) Stock: To produce fish from a locally-adapted broodstock for a restoration program to reintroduce Coho into the Umatilla River Basin and establish ocean and in-river harvest opportunities.

OBJECTIVES

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

Fall Chinook:

Snake River (97H) Stock: Eyed eggs received from Lyons Ferry Hatchery to produce 400,000 sub-yearlings (8,000 pounds) for release into Grande Ronde River and 1,000,000 sub-yearlings (20,000 pounds) for release into the Snake River both in late May.

Rainbow Trout:

Oak Springs (53H) Stock:

Receive 50,000 fingerlings (1,250 pounds) from Oak Springs Hatchery for final distribution to northeast Oregon waters.

Oak Springs Triploid (53T) Stock:

Receive 120,000 sub-legal trout (15,000 pounds) produced at Oak Springs Hatchery
Produce 112,450 legal size trout (37,483 pounds) for release into northeast Oregon waters.

Cape Cod Triploid (72T) Stock:

Receive 106,000 eyed eggs from Roaring River Hatchery to produce 19,000 legal size trout (6333 pounds) and 15,625 trophy size trout (23,674 pounds) for release into northeast Oregon waters.

Summer Steelhead:

Imnaha River (29H) Stock:

Produce 215,000 smolts (43,000 pounds) for release into the Imnaha River System.

Wallowa River (56H) Stock:

Produce 760,000 smolts (168,889 pounds) for release into the Wallowa River System.
Produce 40,000 smolts (8,889 pounds) for transfer to Cottonwood Acclimation Pond in Washington.

Coho:

Umatilla (91H) Stock: Transfer approximately 575,000 fingerlings at 400 fish per pound to Cascade Hatchery by May 1, for final rearing.

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 used 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

There are no adult fish collected at Irrigon Hatchery. Eggs, fry or fingerlings are transferred in from other facilities as described below.

Fall Chinook:

Snake River (97) Stock: No adults are collected at the hatchery. Eyed eggs are received from Lyons Ferry Hatchery in Washington.

Rainbow Trout:

Oak Springs (53) Stock: No broodstock are maintained at this facility (see plans for Oak Springs Hatchery for additional information).

Cape Cod (72) Stock: No broodstock are maintained at this facility (see plans for Roaring River Hatchery for additional information).

Summer Steelhead:

Imnaha (29) Stock: Entry of adults into the Imnaha River Sub basin occurs between early March and late May. Adults are collected and spawned at Little Sheep acclimation facility. Eggs are transferred to Wallowa Hatchery for eye-up and then transferred to Irrigon Hatchery for incubation and rearing.

Wallowa (56) Stock: Wallowa stock is used as the broodstock for hatchery releases into the Grande Ronde River System. Entry of adults into the sub basin occurs between early March and late May. Peak spawning occurs in April. Fish are collected and spawned at both the Wallowa Hatchery and the Big Canyon Acclimation Pond. Eggs are transferred to Wallowa Hatchery for eye-up and then transferred to Irrigon Hatchery for incubation and rearing.

Coho:

Umatilla (91) Stock: No broodstock are maintained at this facility, adults are collected and held at Three Mile Falls Dam. Gamete spawning occurs at Three Mile Falls Dam during the

months of October and November. Unfertilized gametes are transferred to Umatilla Hatchery for fertilization and hatching and then transferred to Irrigon Hatchery for rearing to 400 fish per pound. Fingerling will be transferred to Cascade for final rearing by May 1.

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

The Oregon Fish and Wildlife Commission recently adopted a Native Fish Conservation Policy and Hatchery Genetic Management Plans (HGMPs) to help guide the management of wild and hatchery fish in Oregon. These policies are currently being implemented and will likely change future rearing and release strategies for some fish stocks. The following practices are being used at Irrigon Hatchery:

Fall Chinook:

Snake River (97H) Stock: Rear 1,400,000 sub-yearlings to 50 fpp at Irrigon Hatchery. Release 400,000 in late May into lower Grande Ronde River; 200,000 are adipose-clipped and coded-wire tagged prior to release. Release 1,000,000 in late May into the Snake River at Hells Canyon Dam; all are adipose-clipped and 200,000 are coded-wire tagged prior to release.

Rainbow Trout:

Oak Springs (53H) Stock:

Rear 8,500 fingerlings to a size of 35 fpp for release into three northeast Oregon standing water bodies in May and June.

Rear 24,600 sub-legals to a size of 10 fpp for release into Phillips Reservoir in September.

Oak Springs Triploid (53T) Stock:

Rear 112,000 legal trout to a size of 3 fpp for release into various northeast Oregon standing water bodies from March to August.

Cape Cod Triploid (72T) Stock:

Rear 19,000 legal trout to a size of 3 fpp for release into various northeast Oregon standing water bodies from March to August.

Rear 15,625 trophy trout to a size of 0.66 fpp for release various northeast Oregon standing water bodies from April to July.

Summer Steelhead:

Imnaha (29H) Stock:

Rear 215,000 fish to size of 5 fpp for transfer to the Little Sheep Creek acclimation facility in March; acclimate for a minimum of three weeks; release in April. All fish are adipose fin-

clipped prior to release, and a portion (25,000) of the release is also coded-wire tagged and ventral fin-clipped.

Wallowa (56H) Stock:

Rear 440,000 smolts to size of 4.5 fpp for transfer to the Wallowa Hatchery acclimation ponds in late March for acclimation for approximately four weeks and release during April and May. All fish are adipose-clipped and a portion (150,000) are coded-wire tagged and ventral fin-clipped prior to release.

Rear 320,000 smolts to a size of 4.5 fpp for transfer to Big Canyon acclimation pond in late March for acclimation for approximately four weeks and release during April and May. All fish are adipose clipped-clipped and a portion (100,000) are coded-wire tagged and ventral fin-clipped prior to release.

Rear 40,000 smolts to a size of 4.5 fpp for transfer to Cottonwood Acclimation Pond in cooperation with the Washington Department of Fish Wildlife.

Coho:

Umatilla (91) Stock: Rear 575,000 fingerling to a size of 400 fpp for transfer to Cascade Hatchery in late April.

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 Irrigon Hatchery:

Fall Chinook:

Snake River (97H) Stock: No spawning takes place at this facility. Broodstock selection and spawning occurs at Lyons Ferry Hatchery.

Rainbow Trout: No broodstock selection or spawning takes place at this hatchery.

Summer Steelhead:

Imnaha (29H) Stock: No spawning takes place at this facility. Broodstock selection and spawning occurs at Wallowa Hatchery and its satellite facilities (see Wallowa Hatchery Plan for additional information).

Wallowa (56H) Stock: No spawning is conducted at Irrigon Hatchery. Broodstock selection and spawning occurs at Wallowa Hatchery and its satellite facilities (see Wallowa Hatchery Plan for additional information).

Coho:

Umatilla (91H) Stock: No spawning takes place at this facility. Broodstock selection and spawning occurs at Three Mile Falls Dam.

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 Irrigon Hatchery

Health Monitoring

- Monthly fish health examinations are conducted on each lot of juvenile steelhead. A minimum of five healthy-appearing fish and a combination of ten moribund, fresh-dead or frozen fish (if available) are sampled per fish lot.
- Pretransfer and preliberation health examinations are conducted on all steelhead lots according to transfer or liberation strategies. These examinations are far more extensive than monthly monitoring, however, monthly monitoring protocols are included.
- 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.
- Clinical findings and results of monthly monitoring, pretransfer/preliminary examinations and loss investigation are reported on ODFW Fish Health Examination forms and in the Lower Snake River Compensation Plan monthly reports.
- Examinations for *Myxobolus cerebralis*, agent of whirling disease, are conducted annually on 60 fish held for a minimum of 180 days at the facility.
- 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 Transfers

- 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, and 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 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 during the first 12 months of the permit 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 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 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.

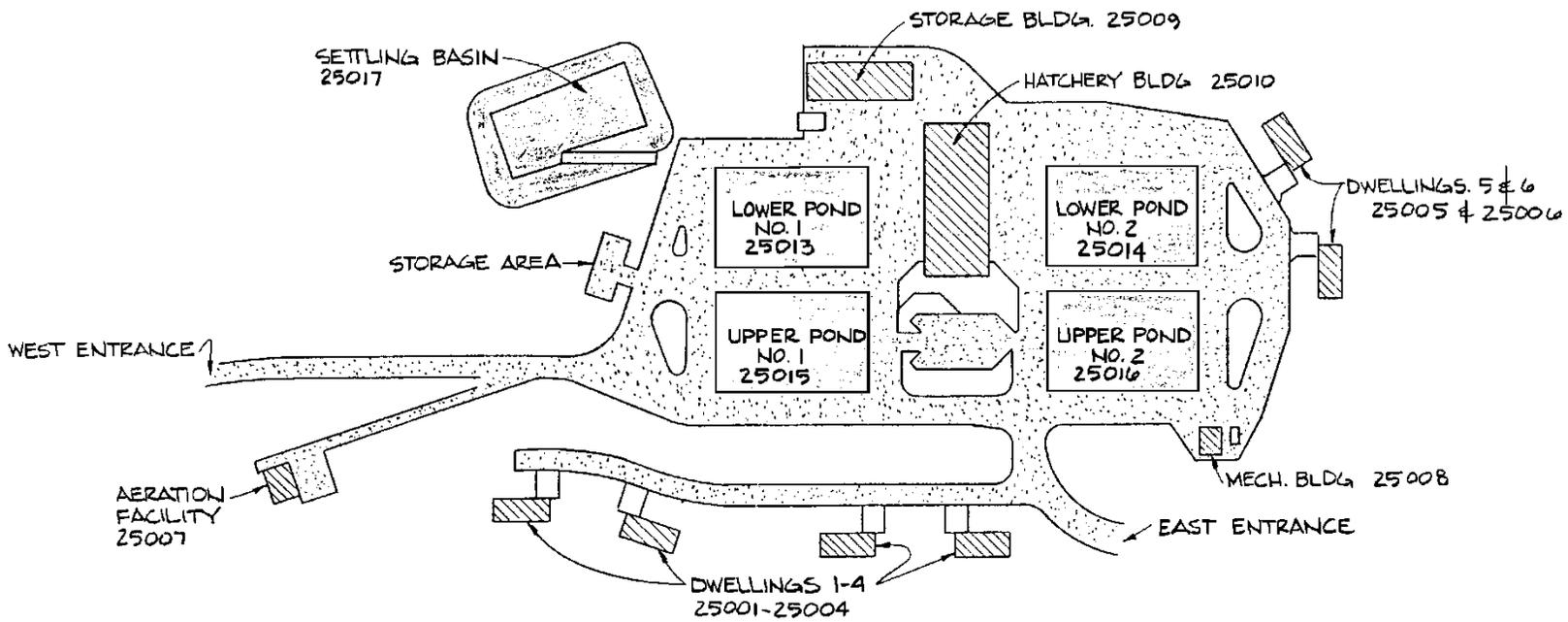
Streamnet (www/streamnet.org): Hatchery return data are input into StreamNet, a cooperative information management and data dissemination project focused on fisheries and aquatic related data and data related services in the Columbia River basin and the Pacific Northwest. StreamNet is funded through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

Other: ODFW holds periodic meetings with the U.S. Fish and Wildlife Service and appropriate Indian tribes to discuss hatchery operations.

Communication with the General Public

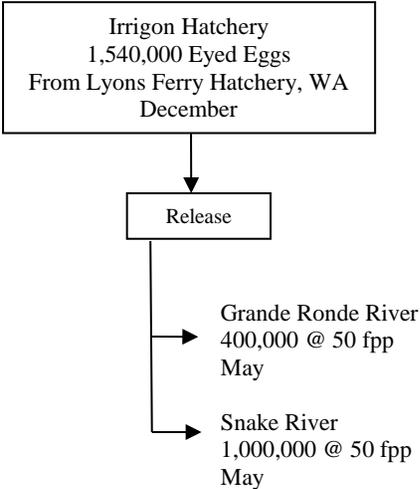
Irrigon Hatchery receives approximately 4,000 annual visitors.



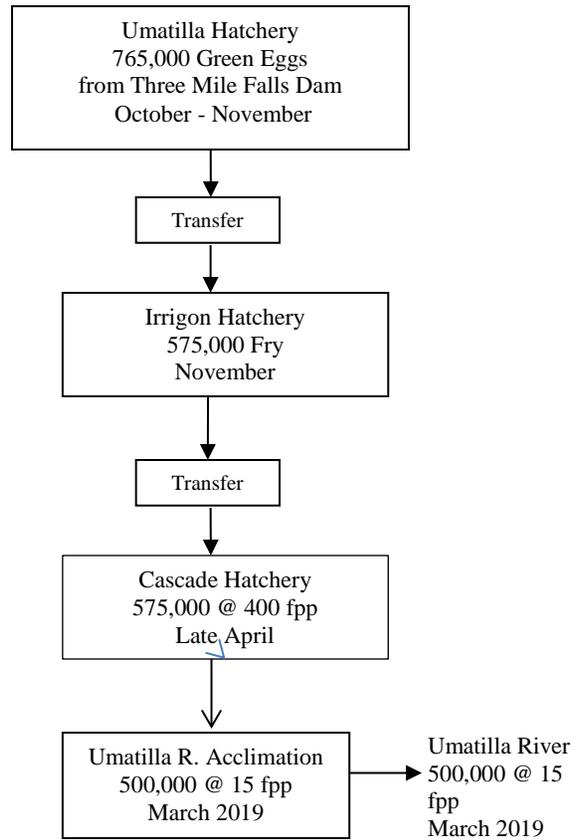
SITE, POLES, CURBS, ETC.- 25018
 LAND, PAVING, ROADS- 25018

IRRIGON HATCHERY

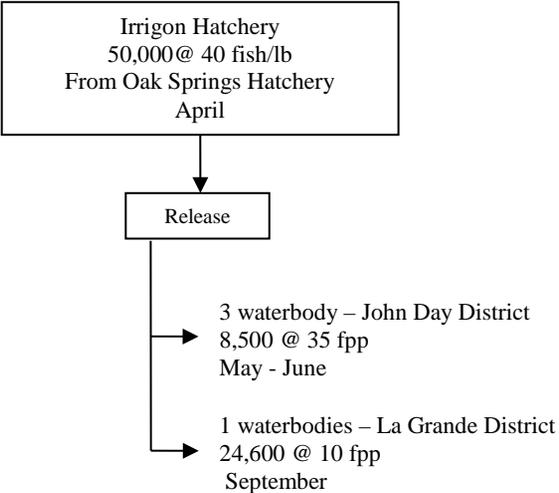
**Irrigon Hatchery
Fall Chinook – Stock 97H (Snake River)**



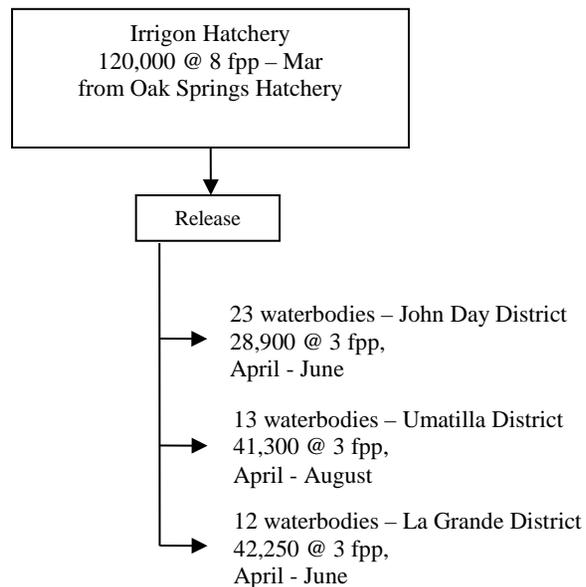
Irrigon Hatchery Coho Salmon – Stock 91H (Umatilla River)



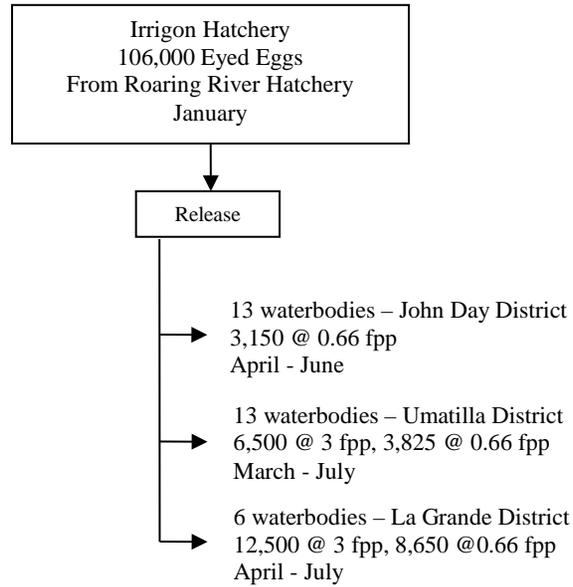
**Irrigon Hatchery
Rainbow Trout – Stock 53H (Oak Springs)**



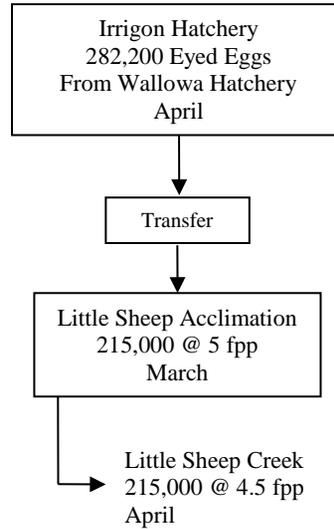
Irrigon Hatchery Rainbow Trout – Stock 53T (Oak Springs Triploid)



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



**Irrigon Hatchery
Summer Steelhead – Stock 29H (Imnaha River and
Tributaries)**



Irrigon Hatchery Summer Steelhead – Stock 56H (Wallowa River)

