

# COLE RIVERS HATCHERY



## PROGRAM MANAGEMENT PLAN 2024

# Cole Rivers Hatchery

## INTRODUCTION

Cole Rivers Hatchery is located on the Rogue River, 30 miles northeast of Medford, Oregon, on Highway 62, about ½ mile downstream of Lost Creek Dam. The site is at an elevation of 1,545 feet above sea level, at latitude 42.6636 and longitude -122.6836. The hatchery land area is 58 acres.

The ambient hatchery water supply is from the Rogue River below William L. Jess Dam, and a warm water line is available that takes water from the surface of Lost Creek Lake. Water (60 cfs) piped from the surface of Lost Creek Reservoir. The total water right is 224 cfs. Filtered and UV sterilized water is used in the main incubation building.

The hatchery operates one offsite adult collection facility located below Applegate Dam.

The facility is staffed with 16.58 FTE's.

### Rearing Facilities at Cole Rivers Hatchery

Unit Type	Unit Length (ft)	Unit Width (ft)	Unit Depth (ft)	Unit Volume (ft <sup>3</sup> )	Number Units	Total Volume (ft <sup>3</sup> )	Construction Material	Age	Condition	Comment
Raceways	100	20	4.00	8,000	87	696,000	concrete	1973	fair	
Circular Ponds		20	2.50	785	26	20,410	concrete	1973	fair	
Adult Holding Ponds	100	20	5.00	10,000	6	60,000	concrete	1973	fair	
Adult Holding Ponds	100	20	2.50	5,000	2	10,000	concrete	1973	fair	
Canadian Troughs	14	3	3	126	16	1,610	fiberglass	2014	good	
Collection Pond	100	20			1		concrete	1973	Fair	
Vertical Incubators					1056		fiberglass	1995 & 1996	good	66 stacks of 16 trays
<u>Applegate Dam</u>										
Collection Pond	100	20			1		concrete	1973	good	

## PURPOSE

Cole Rivers Hatchery was constructed by the US Army Corps of Engineers (USACE) in 1973 to mitigate for spawning and rearing areas blocked by the construction of Lost Creek, Applegate, and Elk Creek Dams. The Hatchery was named in honor of Cole M. Rivers, a biologist on the Rogue River for 20 years.

The facility is used for adult collection, spawning, egg incubation and rearing of Spring Chinook, Coho, Summer Steelhead, and Winter Steelhead, and egg incubation and rearing of Fall Chinook and Rainbow Trout. The USACE Rogue River mitigation program funds the rearing of the Rogue and Applegate River stocks of fish and a portion of the Rainbow Trout program. The Sport Fish Restoration program funds the remainder of the Rainbow Trout program, and the state of Oregon funds the Coos River and Coquille River Salmon and Steelhead programs.

## 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.

The programs at Cole M. Rivers Hatchery are harvest programs, used for augmentation of fishing and harvest opportunities in the Coos River, and mitigation for the loss of habitat and migration blockage due to the construction of dams on the Rogue and Applegate Rivers.

## GOALS

### Fall Chinook:

Coos River (37H) Stock: to provide fish primarily for commercial harvest and sport fishing that are genetically and ecologically similar to wild populations to minimize any potential impacts to wild populations in the Coos River Basin.

Coquille River (44H) Stock: to provide fish primarily for commercial harvest and sport fishing that are genetically and ecologically similar to wild populations to minimize any potential impacts to wild populations in the Coquille River Basin.

### Spring Chinook:

Rogue River (52H) Stock: to provide fish primarily for commercial harvest and sport fishing to mitigate for loss of spawning and rearing habitat that resulted from the construction of dams in the Rogue River Basin by the United States Army Corps of Engineers.

### Coho

Rogue River (52H) Stock:

Goal 1: to provide an artificial reserve to retain future management options in the recovery of Rogue Basin Coho.

Goal 2: to provide monitoring opportunities related to ocean distribution and marine survival of Rogue River Coho.

Goal 3: to provide fish for commercial harvest and sport fishing while minimizing potential impacts to wild populations in the Rogue River Basin.

Goal 4: to provide a return of 2,060 adult Coho as mitigation for wild production lost to the construction of federal dams in the upper Rogue River Basin.

Rainbow Trout: to produce fingerling, legal-size, and trophy rainbow trout to meet statewide trout management program objectives.

### Summer Steelhead:

Rogue River (52H) Stock: to provide fish primarily for angler harvest to mitigate for loss of spawning and rearing habitat that resulted from the construction of dams in the Rogue River Basin by the United States Army Corps of Engineers.

### Winter Steelhead:

Coos River (37H) Stock: to provide fish primarily for angler harvest that are genetically and ecologically similar to wild populations to minimize any potential impacts to wild populations in the Coos River Basin.

Rogue River (52H) Stock: to provide fish primarily for angler harvest to mitigate for loss of spawning and rearing habitat that resulted from the construction of dams in the Rogue River Basin by the United States Army Corps of Engineers.

Applegate River (62H) Stock: to provide fish primarily for angler harvest to mitigate for loss of spawning and rearing habitat that resulted from the construction of dams in the Rogue River Basin by the United States Army Corps of Engineers.

Tenmile Lakes (88H) Stock: to provide fish primarily for angler harvest that are genetically and ecologically similar to wild populations to minimize any potential impacts to wild populations in the Tenmile Basin.

## **OBJECTIVES**

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

### Fall Chinook:

#### Coos River (37H) Stock:

Produce 200,000 pre-smolts (2,667 pounds) for transfer to Morgan Creek STEP facility for acclimation and release.

Produce 200,000 smolts (10,000 pounds) for transfer to Morgan Creek STEP facility for acclimation and release.

#### Coquille River (44) Stock:

Produce 64,600 smolts (4,969 pounds) for transfer to Ferry Creek Acclimation for acclimation and release.

Produce 80,000 smolts (6,154 pounds) for direct release into the Coquille River.

### Spring Chinook:

#### Rogue River (52) Stock:

Provide 10,000 eggs for STEP.

Produce 20,000 fry (21 pounds) for release into the Middle Fork Rogue River.

Produce 150,000 fingerlings (2,344 pounds) for release into Applegate Reservoir.

Produce 50,000 fingerlings (781 pounds) for release into Lost Creek Reservoir.

Produce 5,100 smolts (785 pounds) for release into Fish Lake.

Produce 1,599,877 smolts (174,683 pounds) for release into the Rogue River.

### Coho:

#### Rogue River (52H) Stock:

Produce 75,000 smolts (7,500 pounds) for release into the Rogue River.

### Rainbow Trout:

#### Cape Cod Triploid (72T) Stock:

Produce 50,000 fingerlings (14,285 pounds) for transfer to Fall River Hatchery.

Produce 14,000 fingerlings (3,580 pounds), 311,850 legal-sized fish (104,750 pounds) and 31,500 trophy-sized fish (31,500 pounds) for release into lakes, reservoirs and streams.

#### Cranebow Triploids (127T) Stock:

Produce 116,000 Fingerlings (14,500 pounds), for release into Howard Prairie Reservoir.

### Summer Steelhead:

#### Rogue River (52H) Stock:

Provide 5,000 eyed eggs for STEP programs.

Produce 220,000 smolts (48,889 pounds) for release into the Rogue River.

### Winter Steelhead:

#### Coos River (37H) Stock:

Produce 125,000 smolts (20,833 pounds) for transfer to Millicoma Pond, Big Creek Pond, and Hodges Creek Acclimation Sites.

#### Rogue River (52H) Stock:

Produce 20,000 smolts (4,000 pounds) for release into various standing water bodies.

Produce 132,000 smolts (33,000 pounds) for on-station release into the Rogue River.

Produce 10,000 smolts (2,500 pounds) for transfer to Skunk Creek Acclimation.

Produce 10,000 smolts (2,500 pounds) for transfer to Greens Creek Acclimation.

#### Applegate River (62H) Stock:

Produce 24,000 fingerlings (240 pounds) for release above Applegate Reservoir.

Produce 20,000 smolts (4,000 pounds) for release into various standing water bodies.

Produce 111,040 smolts (27,760 pounds) for release into the Applegate River.

#### Tenmile Lakes (88H) Stock:

Produce 25,000 smolts (4,167 pounds) for release into streams in the Tenmile Basin.

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 optimize 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***

Fall Chinook:

Coos River (37H) Stock: No adults are collected at this facility. Adults arrive at Morgan Creek STEP facility on Coos Bay between October and December. Peak spawning occurs during mid-November.

Coquille River (44H) Stock: No adults collected at Cole Rivers Hatchery; see Bandon Hatchery Plan for details.

Spring Chinook:

Rogue River (52) Stock: Adults return to the hatchery from May through September. Broodstock collection goal is 1,050 females and 525 males and ~5% jacks. Spawning occurs September through early October.

Coho:

Rogue River (52) Stock: Adults return to the hatchery from October to January. Broodstock are drawn from adults that volitionally enter the hatchery trap. Spawning occurs from November through January.

Rainbow Trout:

Cape Cod (72T) Stock: Broodstock are maintained at Roaring River Hatchery.

Oak Springs (53T) Stock: Broodstock are maintained at Oak Springs Hatchery.

Summer Steelhead:

Rogue River (52) Stock: Adults return to the hatchery from May to February. Maximum number of adults to be held for broodstock is 600 pairs. Peak spawning occurs in February.

Winter Steelhead:

Coos River (37) Stock: No adults are collected at this facility. Adults arrive between December and March at Morgan Creek STEP facility on Coos Bay. Peak spawning occurs in February.

Rogue River (52) Stock: Adults return to the hatchery from February to May. Broodstock collection goal is 300 pairs. Spawning occurs in April and May.

Applegate River (62) Stock: Adults are trapped below Applegate Dam from February to May and held at Cole Rivers Hatchery for spawning in April and May. Broodstock collection goal is 300 pairs.

Tenmile Lakes (88) Stock: No adults are collected at this facility. Broodstock are collected at Tenmile Lake and transported to Bandon Hatchery for spawning.

**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.

### Fall Chinook:

#### Coos River (37H) Stock:

Produce 200,000 smolts at a size of 75 fish/pound for transfer to Morgan Creek STEP facility in June for acclimation and release. All fish are fin-clipped prior to transfer.

Produce 200,000 smolts at a size of 20 fish per pound for transfer to Morgan Creek STEP facility in October for acclimation and release. All fish are fin-clipped and 30,000 are coded-wire tagged prior to transfer.

#### Coquille River (44H) Stock:

Produce 64,600 smolts at 13 fish/pound for transfer to Ferry Creek Acclimation site in September for acclimation and release into Ferry Creek. All fish are fin-clipped and 30,000 are coded-wire tagged prior to transfer.

Produce 80,000 smolts at a size of 13 fish/pound for direct release into the Coquille River in September. All fish are fin-clipped prior to release.

### Spring Chinook:

#### Rogue River (52H) Stock:

Produce 20,000 unfed fry for release into the Middle Fork Rogue River in February.

Rear 200,000 fingerlings to a size of 64 fish/pound for release in Applegate Reservoir (150,000) and Lost Creek Reservoir (50,000) in early June. All fish are fin-clipped prior to release.

Rear 5,100 smolts to a size of 6.5 fish/pound for release in Fish Lake in mid-October. All fish are fin-clipped prior to release.

Rear 500,877 smolts to a size of 13 fish/pound for on-station release in mid-August. All fish are fin-clipped and 30,000 are coded-wire tagged prior to release.

Rear 78,000 smolts to a size of 13 fish/pound for release into the Rogue Estuary in mid-August. All fish are fin-clipped and 30,000 are coded-wire tagged prior to release.

Rear 630,000 smolts to a size of 9 fish/pound for on-station release in mid-September. Prior to release all fish are fin-clipped and 30,000 are coded-wire tagged.

Rear 300,000 smolts to a size of 6.5 fish/pound for on-station release in mid-October. All fish are fin-clipped and 30,000 are coded-wire tagged prior to release.

Rear 91,000 smolts to a size of 6.5 fish/pound for release at the Gold Hill boat ramp in mid-March. All fish are fin-clipped and 30,000 are coded-wire tagged prior to release.

## Coho:

### Rogue River (52) Stock:

Rear 75,000 smolts to a size of 10 fish/pound for on-station release in late April. All fish are fin-clipped and 25,000 are coded-wire tagged prior to release.

## Rainbow Trout:

### Cape Cod Triploid (72T) Stock:

Rear 50,000 fish to a size of 10 fish/pound for transfer to Fall River Hatchery in October.

Rear 52,000 fingerlings to a size of 25 fish/pound for release into Holy Water in July and Howard Prairie Reservoir in September.

Rear 12,000 fish to a size of 8 fish/pound for release into various standing water bodies in October.

Rear 310,650 fish to a size of 3 fish/pound for release into various standing water bodies from March to October.

Rear 1,000 fish to a size of 3 fish/pound for hatchery display and eventual release.

Rear 18,700 fish to a size of 1.0 fish/pound for release into various standing water bodies from April to June.

Rear 11,200 fish to a size of 0.8 fish/pound for release into various standing water bodies in September and October.

### Oak Springs (53T) Stock:

Rear 116,000 fingerlings to the size of 8.0 fish/pound for release into Howard Prairie Reservoir in early October.

## Summer Steelhead:

### Rogue River (52H) Stock:

Rear 183,000 smolts to a size of 4.5 fish/pound for on-station release in late April. All fish are fin-clipped prior to release.

Rear 37,000 smolts to a size of 4.5 fish/pound for release into the Rogue River at the Gold Hill boat launch in late April. All fish are fin-clipped prior to release.

## Winter Steelhead:

### Coos River (37H) Stock:

Rear 125,000 smolts to a size of 6 fish/pound for transfer to Millicoma Pond (35,000), Big Creek Pond (45,000), and Hodges Creek Acclimation (45,000) for acclimation and release in March and April. All fish are adipose-clipped prior to transfer.

### Rogue River (52H) Stock:

Release up to 20,000 grade-outs and precocials at a size of 5 fish/pound into standing water bodies in early April. All fish are fin-clipped prior to release.

Rear 132,000 smolts to a size of 4 fish/pound for on-station release in late April. All fish are fin-clipped prior to release.

Rear 10,000 smolts to a size of 4 fish/pound for transfer to Skunk Creek Acclimation for acclimation and release into the lower Rogue River in mid-May. All fish are fin-clipped prior to release.

Rear 10,000 smolts to a size of 4 fish/pound for transfer to Greens Creek Acclimation for acclimation and release into the lower Rogue River in mid-May. All fish are fin-clipped prior to release.



Applegate River (62H) Stock:

Rear 24,000 fingerlings to a size of 100 fish/pound for release into the Applegate River above Applegate Reservoir in early October. All fish are AD-LV clipped prior to release.

Release up to 20,000 precocials at a size of 5 fish/pound into standing water bodies in early April. All fish are adipose-clipped prior to release.

Rear 111,040 smolts to a size of 4 fish/pound for release into the Applegate River in mid-April. All fish are adipose-clipped prior to release.

Tenmile Lakes (88H) Stock:

Rear 25,000 smolts to a size of 6 fish/pound for transfer to Eel Creek Acclimation (8,000), Saunders Creek Acclimation (9,000), and Tenmile Creek Acclimation (8,000) for acclimation and release in late March/early April. All fish are adipose-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 Cole Rivers Hatchery:

Fall Chinook:

Coos River (37H) Stock: No spawning takes place at this facility. Broodstock selection and spawning take place at Morgan Creek STEP facility on Coos Bay.

Coquille River (44H) Stock: No broodstock collection or spawning take place at Cole Rivers; see Bandon Hatchery Plan for details.

Spring Chinook:

Rogue River (52) Stock: Eggs are taken throughout the run. Adults are spawned at a 1:2 male to female ratio. Wild fish make up the majority of the broodstock. Males and jacks are used one time only.

Coho:

Rogue River (52) Stock: Spawning takes place throughout the run. Adults are spawned at a 1:1 male to female ratio.

Rainbow Trout:

Cape Cod (72T) Stock: Broodstock selection and spawning take place at Roaring River Hatchery.

Oak Springs (53T) Stocks: Broodstock selection and spawning take place at Oak Springs Hatchery.

Summer Steelhead:

Rogue River (52) Stock: Eggs are taken throughout the run. Adults are spawned at a 1:1 male to female ratio. Wild fish are given preference as broodstock. Males are used one time only.

### Winter Steelhead:

Coos River (37) Stock: No spawning takes place at this facility. Broodstock selection and spawning take place at Morgan Creek STEP facility on Coos Bay.

Rogue River (52) Stock: Eggs are taken from throughout the run. Adults are spawned at a 1:1 male to female ratio. Wild fish make up the majority of the broodstock. Eggs from wild fish are kept separate during incubation; eggs destroyed as excess to program needs are to be from hatchery fish.

Applegate River (62) Stock: Eggs are taken from throughout the run. Adults are spawned at a 1:1 male to female ratio. Wild fish make up 20% to 40% of the broodstock. Eggs from wild fish are kept separate during incubation; eggs destroyed as excess to program needs are to be from hatchery fish.

Tenmile Lakes (88H) Stock: No spawning takes place at this facility. See Bandon Hatchery Plan for further details.

**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 Cole Rivers 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. The sample includes a minimum of 10 moribund/dead fish (if available) and 4-6 live fish per lot.
- Examinations for *Myxobolus cerebralis*, agent of whirling disease, are conducted annually on 60 fish held for a minimum of 180 days at the facility.
- 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 salmon and steelhead lot. If pre-spawning mortality is above normal, necropsies are conducted on dead adult fish for bacteria, parasites and other causes of death.
- 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.
- Hydrogen Peroxide is dispensed into water for control of parasites and fungus on adults and juveniles. Formalin is used for fungus control on eggs. 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 and 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 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. Samples are taken at each major cleaning event.
- 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. 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 monthly.

**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***

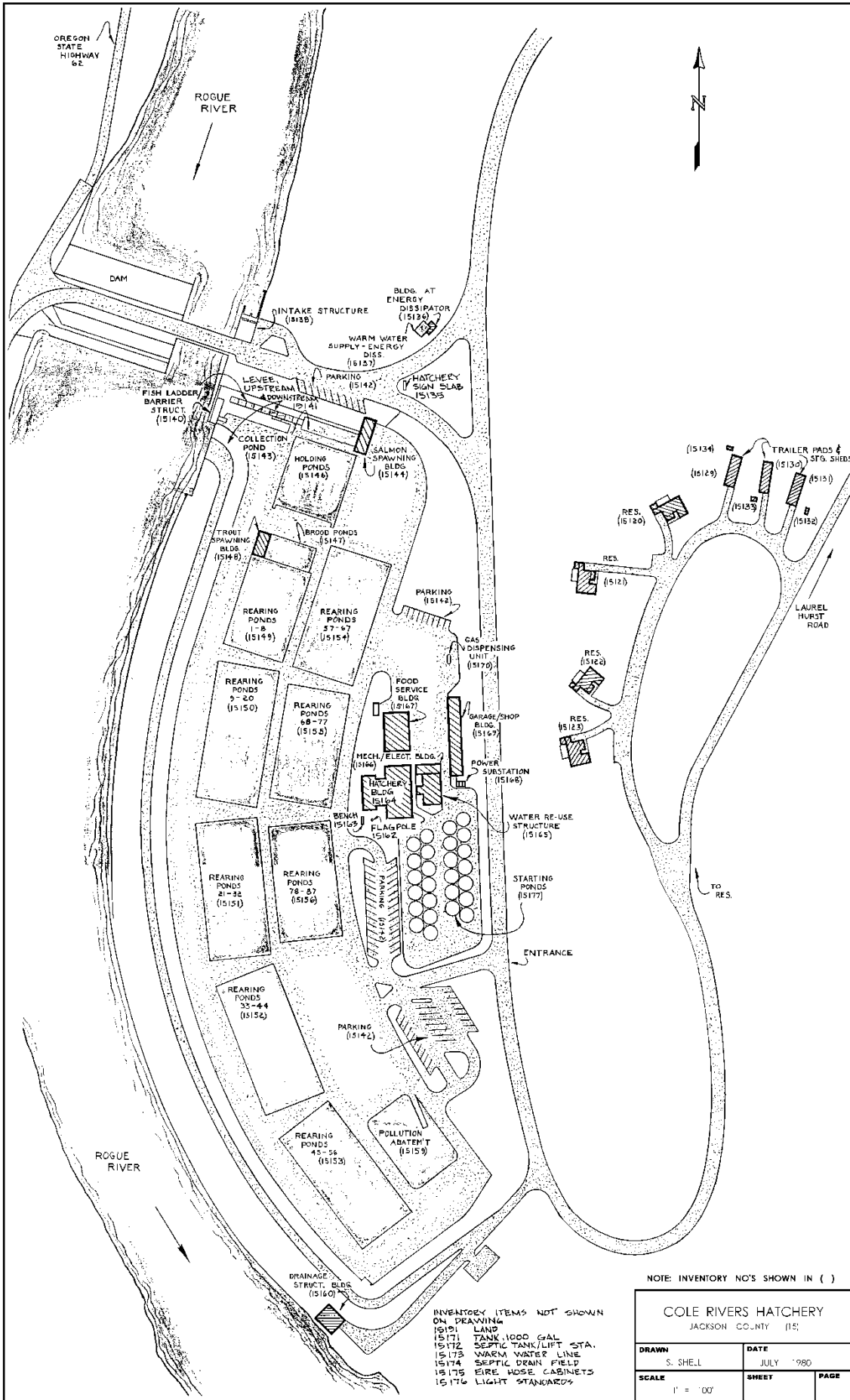
Pacific Northwest Fish Health Protection Committee (PNFHPC): This group is comprised of representatives from U.S. and Canadian fish management agencies, tribes, universities, and private fish operations. The group meets twice a year to monitor regional fish health policies and to discuss current fish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

### ***Communication with the General Public***

Cole Rivers Hatchery receives approximately 5,000 visitors each year.

### **Rock Creek Production Reared at Cole Rivers:**

- Spring Chinook: Umpqua River (55H) Stock Produce 342,000 smolts (37,450 pounds) for release in the North Fork Umpqua River.
- Coho: Cow Creek (18H) Stock Produce 60,000 smolts (3,000 pounds) for release in Cow Creek.
- Summer Steelhead: Umpqua River (55H) Stock Provide 1,000 eyed eggs for STEP. Produce 165,000 smolts (23,571 pounds) for release in the Umpqua River system.
- Winter Steelhead: Cow Creek (18H) Stock Provide 4,000 eyed eggs for STEP. Produce 145,000 smolts (25,000 pounds) for transfer to Canyonville acclimation sites. Produce 5,000 smolts (1,000 pounds) for release into Deer Creek.

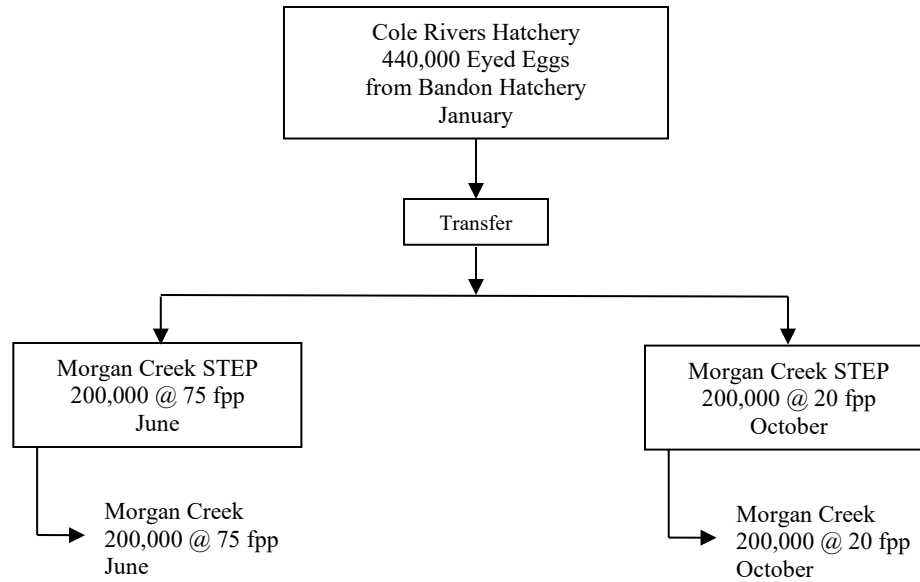


NOTE: INVENTORY NO'S SHOWN IN ( )

COLE RIVERS HATCHERY		
JACKSON COUNTY (15)		
DRAWN	DATE	
S. SHELL	JULY 1980	
SCALE	SHEET	PAGE
1" = 100'		

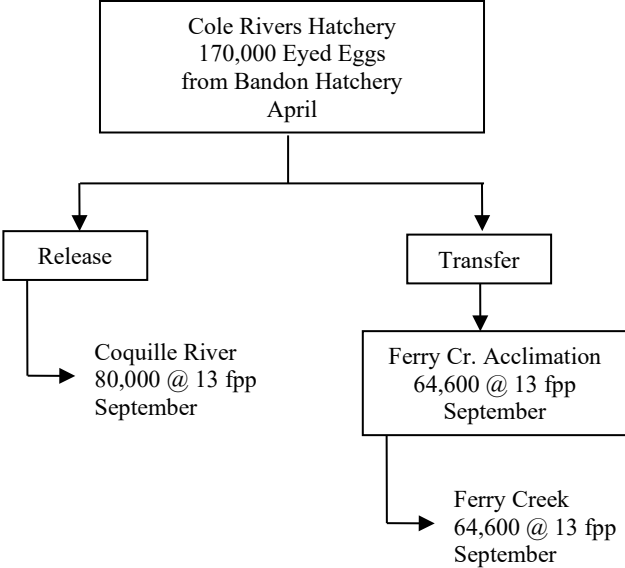
INVENTORY ITEMS NOT SHOWN ON DRAWING  
 15191 LAND  
 15171 TANK 1000 GAL  
 15172 SEPTIC TANK/LIFT STA.  
 15173 WARM WATER LINE  
 15174 SEPTIC DRAIN FIELD  
 15175 FIRE HOSE CABINETS  
 15176 LIGHT STANDARDS

## Cole Rivers Hatchery Fall Chinook Salmon – Stock 37H (Coos River)

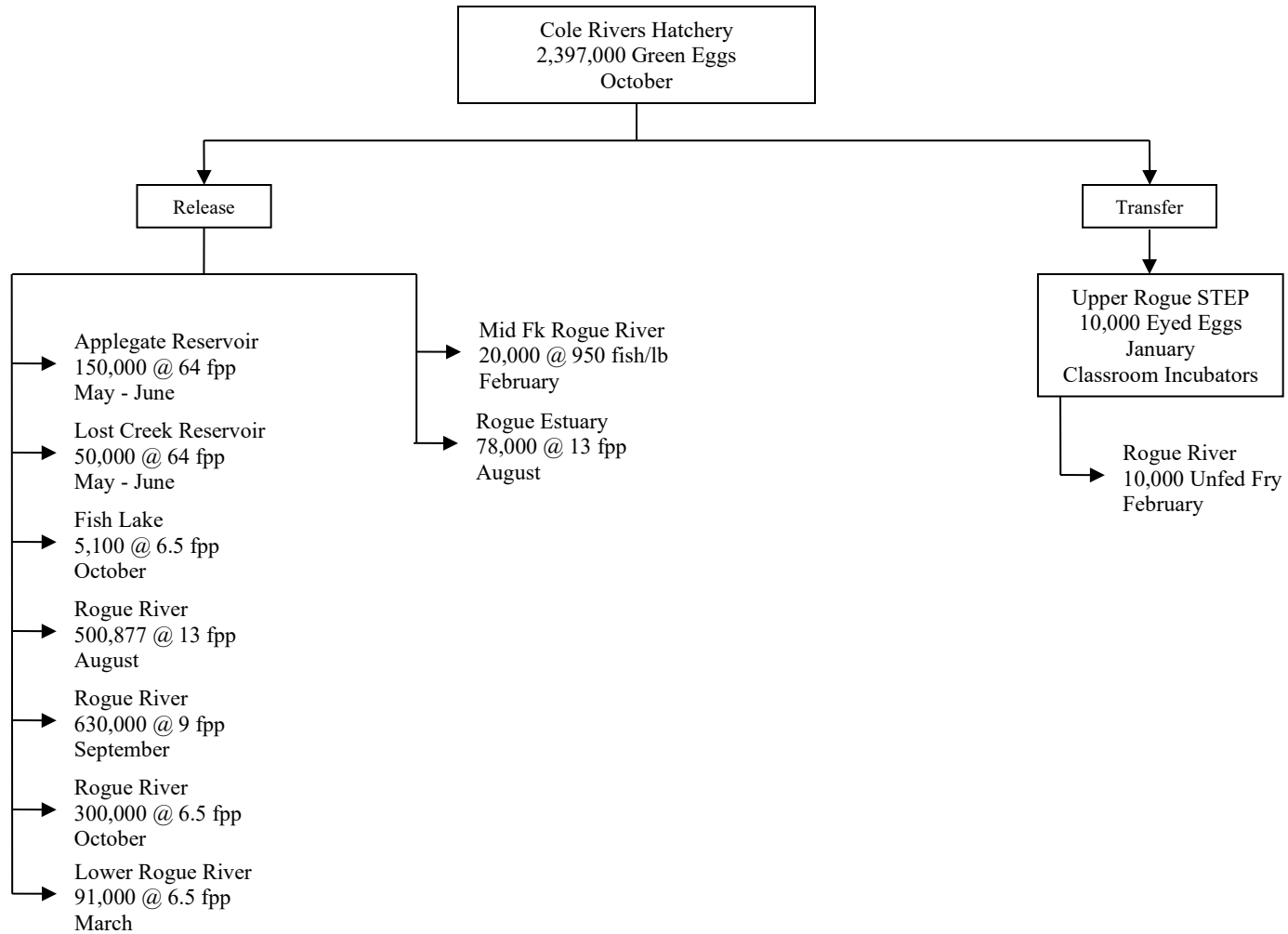




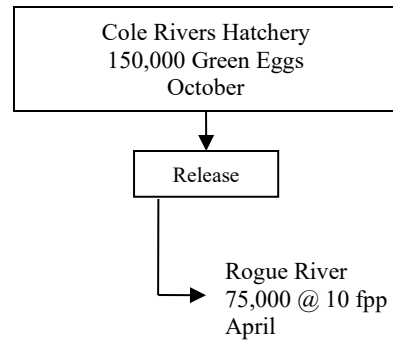
**Cole Rivers Hatchery**  
**Fall Chinook Salmon – Stock 44H (Coquille River)**



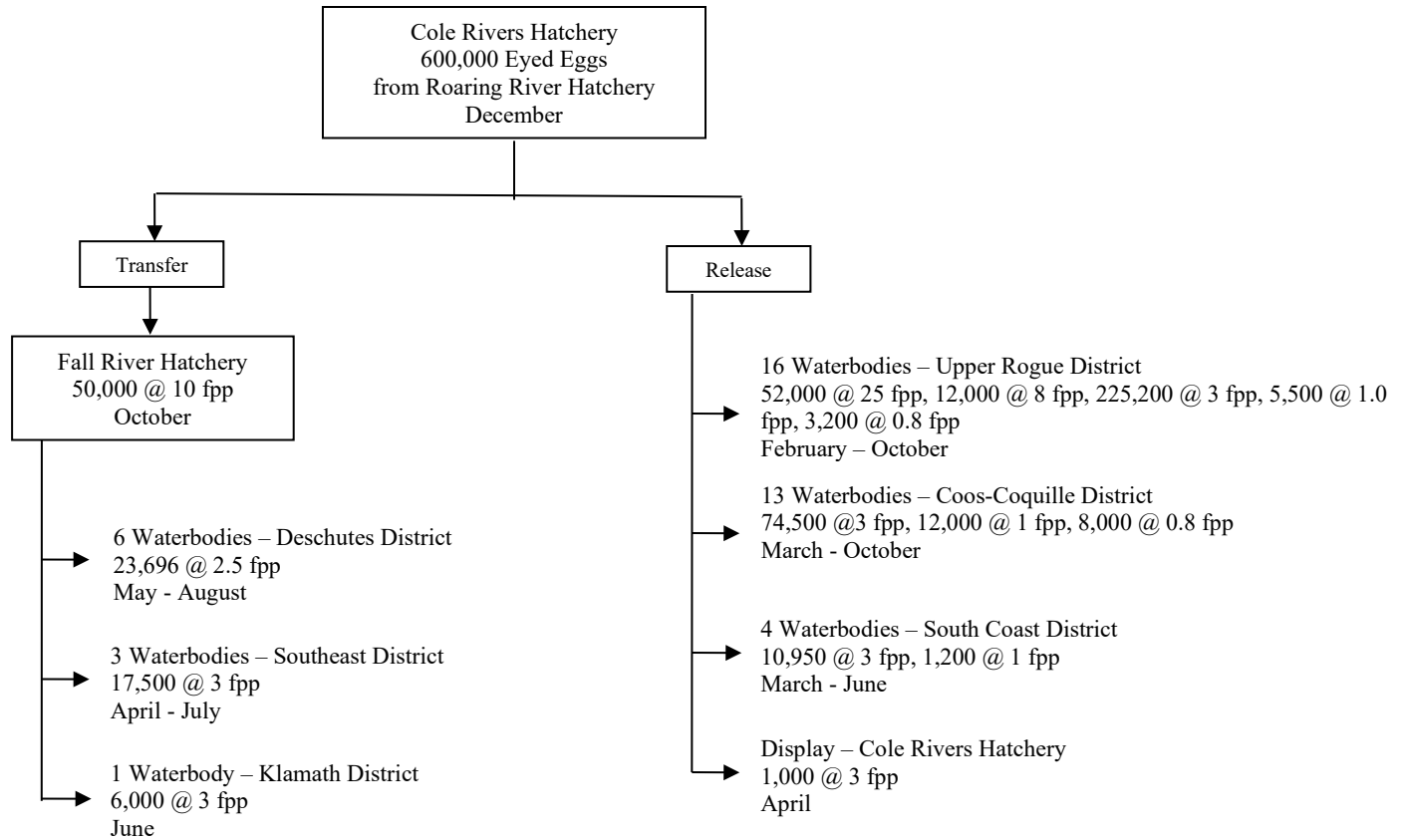
## Cole Rivers Hatchery Spring Chinook Salmon – Stock 52H (Rogue River)



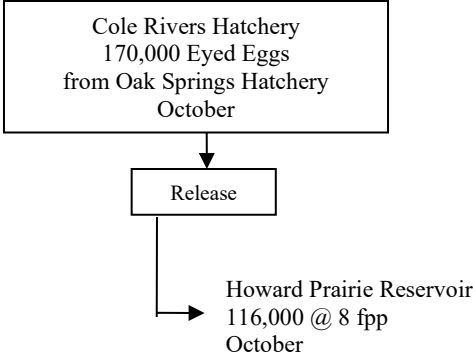
**Cole Rivers Hatchery  
Coho Salmon – Stock 52 (Rogue River)**



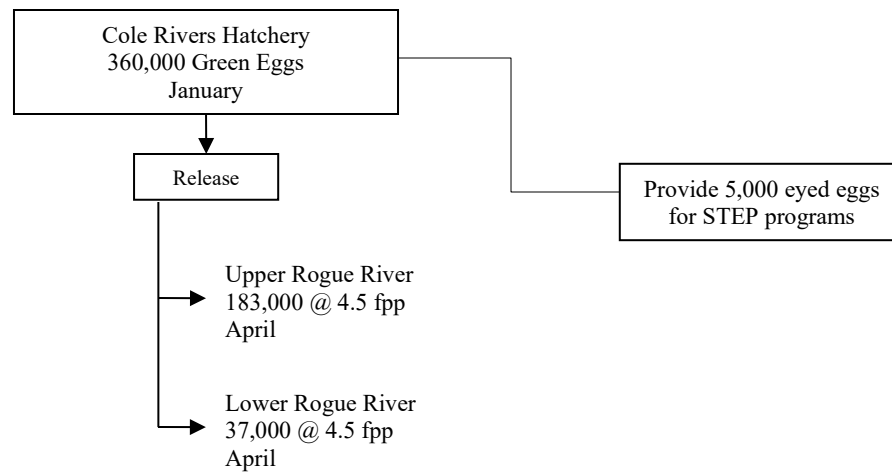
## Cole Rivers Hatchery Rainbow Trout – Stock 72T (Cape Cod Triploid)



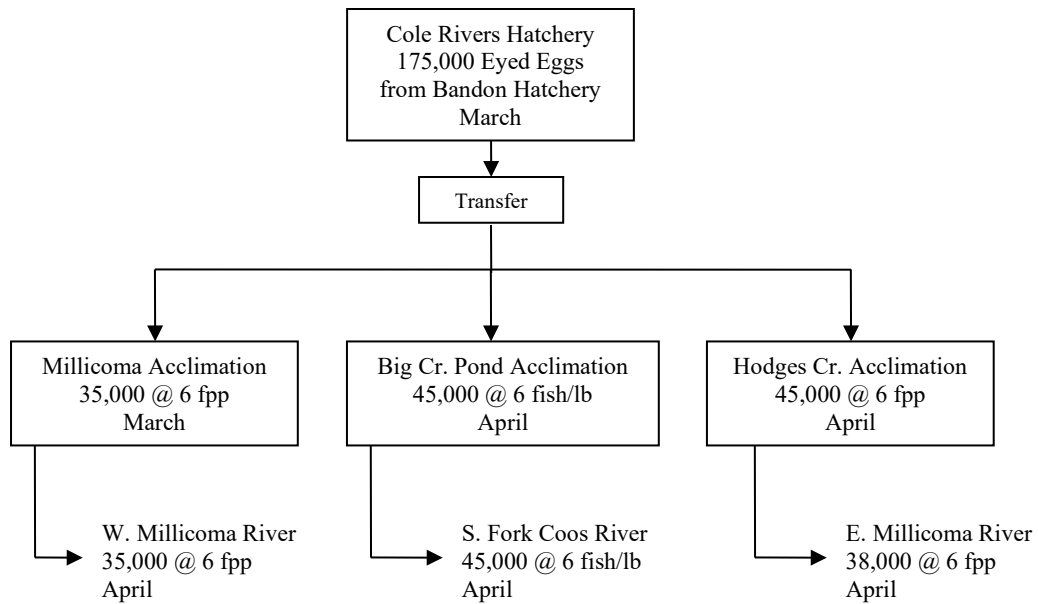
**Cole Rivers Hatchery  
Rainbow Trout – Stock 127T (Cranebow Triploid)**



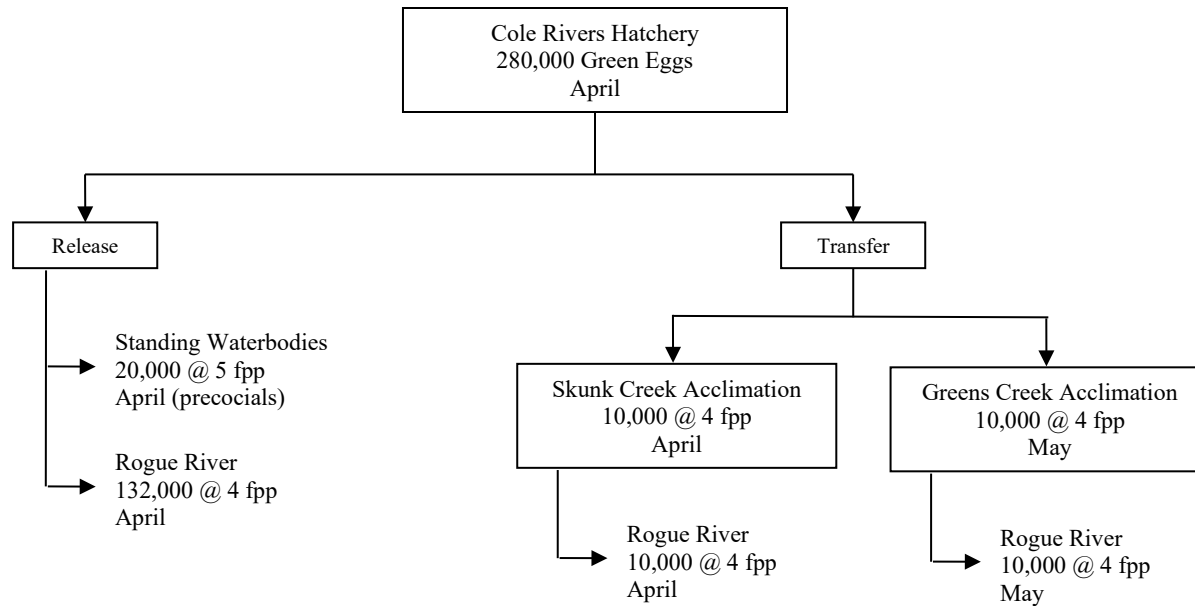
## Cole Rivers Hatchery Summer Steelhead – Stock 52H (Rogue River)



## Cole Rivers Hatchery Winter Steelhead – Stock 37H (Coos River)

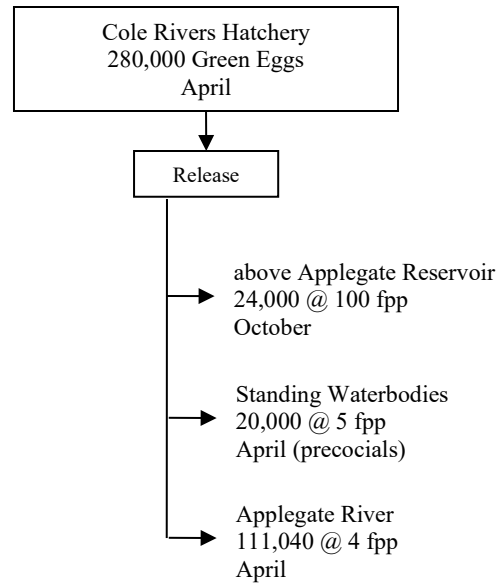


## Cole Rivers Hatchery Winter Steelhead – Stock 52H (Rogue River)





## Cole Rivers Hatchery Winter Steelhead – Stock 62H (Applegate River)



## Cole Rivers Hatchery Winter Steelhead – Stock 88H (Tenmile Lakes)

