



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

**NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731**

September 23, 2019

Refer to NMFS No: WCRO-2019-02285
and APPS File# 14741

David Stoldt
General Manager
Monterey Peninsula Water Management District
Post Office Box 85
Monterey, California 93942-0085

Re: Issuance of Section 10(a)(1)(A) Enhancement Permit 14741- Scientific research and enhancement activities associated with the Rescue and Rearing Management Plan (RRMP) for the Carmel River Steelhead Rescue and Rearing Enhancement Program

Dear Mr. Stoldt:

Enclosed is Permit 14741, issued to the Monterey Peninsula Water Management District, under the authority of Section 10(a)(1)(A) of the Endangered Species Act (ESA) of 1973, as amended, and its implementing regulations. Permit 14741 authorizes take of the ESA-listed threatened South-Central California Coast steelhead (*Oncorhynchus mykiss*), for scientific research and enhancement activities associated with implementation of the Rescue and Rearing Management Plan (RRMP) for the Carmel River Steelhead Rescue and Rearing Enhancement Program in the Carmel River watershed in Carmel, California. In accepting the take authorized by Permit 14741, you will have accepted the terms and conditions of the permit and you will be prepared to comply with the provisions of the permit, the applicable regulations, and the ESA.

NOAA's National Marine Fisheries Service (NMFS) requires that the individuals acting under the authority of Permit 14741 review the permit before engaging in the permitted activities. Your attention is directed to Sections 1.4 through Section 1.8, which describe the annual take limits, the permit conditions, the annual reporting requirements, and the permit penalties. Please sign and date the last page then fax or e-mail a scanned copy to Mandy Ingham at Mandy.Ingham@noaa.gov or 707-578-3435. Please note that you are not authorized to conduct activities under Permit 14741 until the NMFS California Coastal Office receives a signed copy of the signature page.

Permit 14741 is subject to annual review based, in part, on your reported take per annual period and your compliance with the conditions of the permit. Annual reports are due by March 15th of each year. Permit 14741 expires on September 30, 2024.

Please direct questions regarding this permit to Mandy Ingham, NMFS Central Coast Office-



Santa Cruz at 831-460-7580 or Mandy.Ingham@noaa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Alecia Van Atta".

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

cc: Kevan Urquhart, Senior Fisheries Biologist, MPWMD, kevan@mpwmd.net
Copy to ARN File #151422WCR2019SR00182

**ENDANGERED SPECIES ACT SECTION 10(a)(1)(A) PERMIT FOR DIRECT TAKE
OF LISTED SPECIES FOR SCIENTIFIC RESEARCH AND ENHANCEMENT
PURPOSES**

Permit Number: 14741
Permit Type: Section 10(a)(1)(A) Scientific Research and Enhancement
Program Name: Implementation of the Rescue and Rearing Management Plan for the Carmel River Steelhead Rescue and Rearing Enhancement Program.
Expiration Date: September 30, 2024
Reporting Period: Annually (each rescue year)
Annual Reports Due: March 15

Permit Holder:
Monterey Peninsula Water Management District
Post Office Box 85
Monterey, California 93942-0085

Responsible Party:
David Stoldt
General Manager
Monterey Peninsula Water Management District
Post Office Box 85
Monterey, California 93942-0085
Phone: (831) 658-5650
Email: dstoldt@mpwmd.net

Primary Contact and Principal Investigator:
Kevan Urquhart
Monterey Peninsula Water Management District
Senior Fisheries Biologist
Post Office Box 85
Monterey, California 93942-0085
Phone: (831) 658-5643
Email: kevan@mpwmd.net

Co-Investigators:
Beverly Chaney and Cory Hamilton

1.1 Authorization

This authorization is subject to the provisions of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1543) as amended, the National Marine Fisheries Service (NMFS) regulations governing ESA-listed species permits (50 CFR Parts 222-226), and the conditions set forth hereinafter.

The Monterey Peninsula Water Management District's (District) is hereby authorized to take ESA-listed South-Central California Coast (S-CCC) steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS) as outlined in the Rescue and Rearing Management Plan (RRMP), as cited in the permit holder's application. Take numbers are listed by category in Section 1.4 of this permit. The RRMP specifies operational methods for steelhead rescue, translocation, rearing, and release activities associated with the Sleepy Hollow Steelhead Rearing Facility (Facility). The Facility is located on the Carmel River, along the central California coast. There is no captive spawning of steelhead reared at the Facility.

1.2 Background

The primary objective of the Monterey Peninsula Water Management District's (District) rescue and relocation program (hereafter referred to as "Program") is to assist in the restoration, conservation, and maintenance of the Carmel River steelhead population to viable levels in the Carmel River watershed as mitigation for environmental impacts caused by diversion of surface and subsurface streamflow in the lower twenty-four miles of the mainstem Carmel River and subunits of the Carmel Valley Alluvial Aquifer. The Program began before the 1997 ESA listing of S-CCC steelhead as a threatened species, as a mitigation requirement proposed by the District in the 1990 Environmental Impact Report (EIR) for their Water Allocation Program. When S-CCC steelhead were listed in 1997, the District submitted its first Section 10(a)(1)(A) application to NMFS.

Because of NMFS staffing constraints technical assistance with the permitting of the Program did not begin until 2005. From 2017-2019, NMFS and the District finalized the Section 10(a)(1)(A) permit application and Rescue and Rearing Management Plan (RRMP). NMFS received a Section 10(a)(1)(A) permit application from the District for the Program on February 8, 2018. On June 4, 2018, NMFS provided notice of our receipt of the Section 10(a)(1)(A) permit application and RRMP in the Federal Register, which also initiated a 30 day public comment period. NMFS reviewed all comments, conducted extensive literature reviews, consulted with fish culturists, analyzed stocking data in order to address comments and devised a suite of recommendations for the District to consider implementing to improve the program. As a result, the District made modifications to the project which we have incorporated into Section 1.3 of this permit. In addition, section addendums were made for the RRMP to update any information that was out of date. NMFS completed internal formal section 7 consultation on August 29, 2019.

1.3 Project Description

1.3.1 Rescue Protocols

1.3.1.1 Criteria to Start Rescues

Carmel River mainstem rescues are initiated when flows decline below 8 cubic feet per second (cfs) at the Highway 1 Bridge Gaging Station. Under most circumstances, the start trigger provides adequate time for conducting rescues from downstream to upstream; allowing for two

to four rescue passes through each reach as it dries back. Tributary rescues will commence when they are hydrologically disconnected from the river mainstem. Exceptions to these rescue triggers may occur during critically-dry water years when flows decline rapidly during the late spring. In these situations, the District initiates early rescues by installing and operating a fyke style downstream box trap (box trap).

1.3.1.2 Capture Methodology

During rescues, whenever possible, the District will use a combination of small-mesh seines with electrofishing machines to capture as many steelhead as possible by first seining, and then if necessary herding the fish with the electrofishing machine into seines stationed at the bottom of riffles or at the top or bottom of pools. This technique is designed to reduce exposure of fish to the strongest portion of the electric field and minimize the risk of electro-induced injuries.

The seines used will have a ¼-inch stretch mesh and will be used in deep run and pool habitat units when water quality permits. Seines will not be pulled through pools with large amounts of algae or when there is concern for water-quality degradation caused by the seining event. Seines will be checked for holes and fixed accordingly.

Electrofishing units will be tested and recalibrated at least every other year and then overhauled, if necessary, at the interval specified by the manufacturer. The District follows the electrofishing protocol recommended by NMFS (2000). Electrofishing sessions will begin with all settings (voltage, pulse width, and pulse rate) at the minimums needed to capture fish. Settings will be increased as needed in the field only to the point where fish are immobilized and captured. Block nets will be placed below the area being rescued whenever it will significantly enhance capture efficiency.

A box trap is used infrequently, during extended drought periods or very early season river dry back to capture all steelhead attempting to emigrate downstream in the drying reaches. Steelhead captured in the box trap are sorted into adults, smolts, and non-smolts. Adults and smolts are transported downstream to the Carmel lagoon. Juveniles are transported back upstream into perennial habitat. The box trap is made of an algae/debris screen (passes fish, yet screens out filamentous algae) leading into a large funnel-shaped fence across the river channel, ending in a fyke-frame/net that leads to a 10-inch diameter, 20-foot (ft) long flexible pipe. The pipe discharges fish and a small amount of filtered water into a 4ft x 4ft x 2.5ft live box.

1.3.1.3 Criteria to Stop Rescues

By conducting fish rescues during low-flow conditions in late-spring/summer, water temperature, dissolved oxygen, and conductivity on many days may be above optimal conditions for handling fish. The primary reasons to cease or not initiate fish rescues within a particular river reach are chronically poor water quality, conditions hazardous to human health, and subjecting steelhead to numerous repetitive rescue efforts. Chronically poor water quality often occurs at the end of the rescue season or during the last pass through a section where the stream is about to completely dry. These water quality conditions become tenuous for survival of the remaining steelhead. Conditions hazardous to human health occur every few years. The District

will encounter a stretch of the river where non-point source run-off, septic-tank seepage, or an illegal dumping incident make it unwise to risk further water contact.

In some instances, circumstances will render rescues too risky or ineffective to pursue. For example, when daily fish rescue counts within a reach do not decline with each collection pass, yet stream flow and water quality conditions continuously degrade, the District assumes the remaining fish have been chronically or even terminally stressed, negating the need to rescue them. The District has observed that fish rescued from such conditions tend to suffer immediate mortality when brought to the Facility. The District is also concerned that relocating these fish to perennial habitats may result in very poor net survival, and could even enhance disease outbreaks among healthy fish in the release area. A qualified District biologist will make such determinations on a case-by-case basis in the field.

1.3.1.4 Transport

The District uses dark colored 5-gallon buckets to transport rescued fish from the rescue sites to a transport vehicle. The buckets are outfitted with battery operated aerators. River water is used in the buckets whenever temperature and quality are adequate. When river water is too warm, the water in the truck transport tank is used. The number of fish allowed in the bucket will depend on size of fish captured (See RRMP; Table 6-2). At least one crew member monitors fish health within the transport buckets at all times, keeping a watchful eye out for unusual behavior such as rapid breathing or swimming near the top of the bucket. In addition, rescuers add small leafed branches from local alders and willows to float on the surface of each bucket to discourage fish from leaping out and provide calming cover during transport. Fish are never held in the buckets for more than an hour. Each bucket is transported to the truck as soon as loading densities have been reached.

The truck transport tank has a total volume of 250 gallons. The tank is segregated into two insulated 125-gallon compartments. Each compartment is aerated using a 10-amp vertical pump aerator. Each compartment has a compressed oxygen backup to supplement aeration or in case the aerators fail. When truck transport is unavailable, the District uses a transport trailer. The trailer is a single compartment 400-gallon tank. The tank is aerated using two 10-amp, 12-volt vertical pump aerators with compressed oxygen backup. Water for transport is typically obtained from the Carmel River at the facility or Garland Park. The tank water is conditioned with non-iodized salt (0.3% = 3 ppt salt concentration) and all steelhead are transported in this solution to reduce transport stress. Guidelines for loading densities in the transport tanks are based on steelhead size (See RRMP; Table 6-2). Juvenile steelhead are transported from the field to the Facility whenever possible, rather than being released to perennial habitat upriver. They are dip-netted out of the transport tank, graded into three to five size classes and put into the appropriate quarantine tanks. Adults and smolts are transported to either the lagoon or ocean.

1.3.2 Sleepy Hollow Steelhead Rearing Facility

The seven acre Facility was completed in 1996 and occupies a broad floodplain terrace bench at an elevation of 401 feet (Figure 1). A mature canopy of coast live oak (*Quercus agrifolia*), and several large California sycamores (*Platanus racemosa*) shade the site. Streamflow at the site is

perennial, and augmented during the dry months by releases from Los Padres Reservoir (LPR). The Facility includes a storage/office building, an 800-foot-long rearing channel, two large cylindrical rearing tanks (Tank 1 and Tank 3), eight insulated fiberglass rearing troughs, and six 8-foot diameter quarantine tanks.

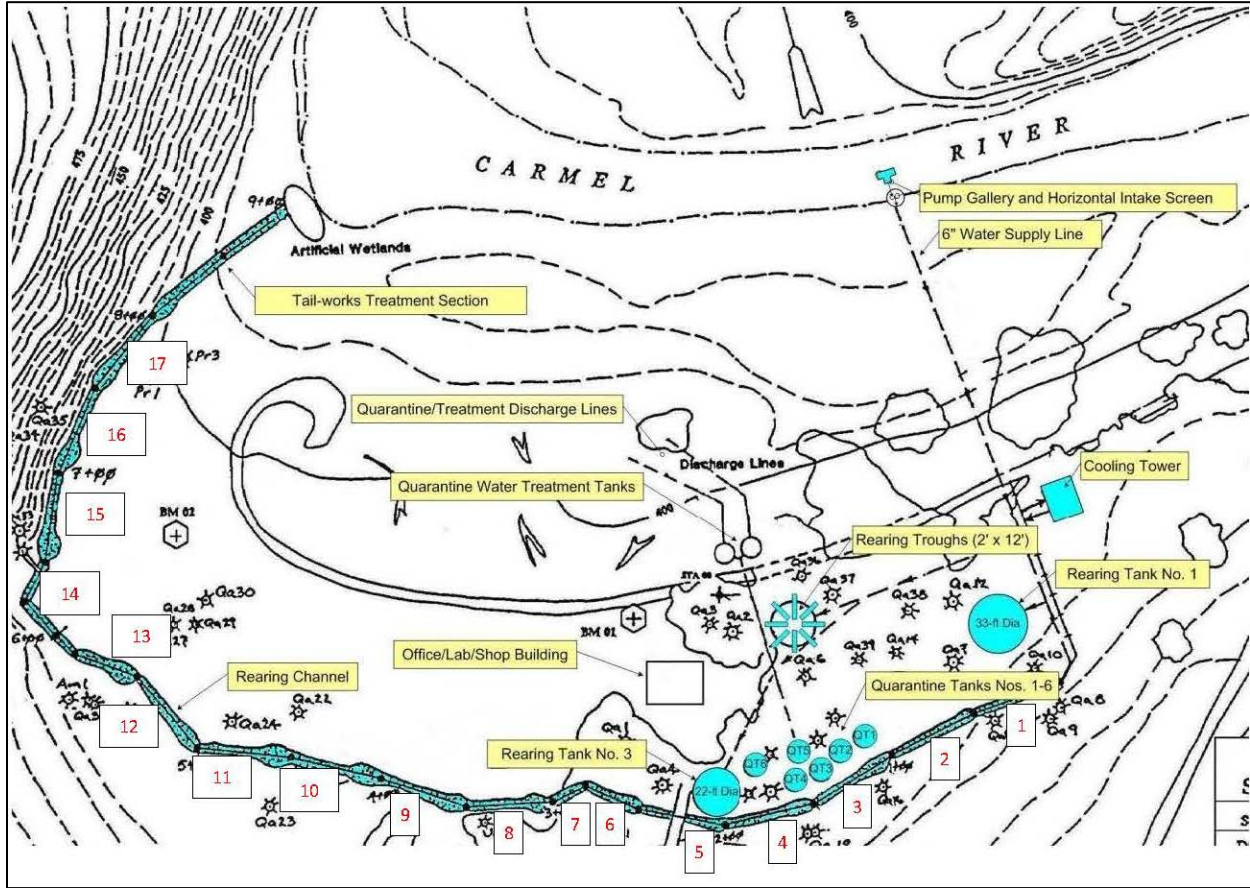


Figure 1: Topographic Map of Sleepy Hollow Steelhead Rearing Facility in Carmel, California. Rearing facilities are highlighted in turquoise. Rearing Tank 1 is no longer used for steelhead. The rearing channel bays are specified by the adjacent numbers.

1.3.2.1 Rearing Areas

1.3.2.2 Quarantine Tanks

To help reduce the risk of passing infections from newly rescued steelhead to steelhead already stocked in the Facility, the District operates a quarantine system. The system consists of five, 8-foot diameter x 3.5-foot deep insulated 1,200 gallon tanks (Figure 1). Each tank has its own water and air supply line and recirculation chiller. The chillers are capable of maintaining temperatures as low as 50°F with typical inflow rates of 5-10 gallons per minute. Two additional tanks (8-foot diameter x 3.5 feet deep and 4-foot diameter x 2.5 feet deep) are located adjacent to the quarantine system and are used to hold fish for short periods of time or while fish are tallied. Each is fitted with water and air supply lines.

1.3.2.2.1 Rearing Tanks 1 and 3

The Facility includes two large above ground cylindrical rearing tanks (Rearing Tank 1 and Rearing Tank 3) (Figure 1). Rearing Tank 3 is 22-feet in diameter and Rearing Tank 1 is 30-feet in diameter. Valve-controlled water and air flows independently to these tanks and each tank is fitted with a central overflow standpipe to control water volume. Currently, these tanks cannot both be run effectively if the rearing channel, quarantine tanks, and rearing troughs are running at full flow, as the Facility inflow is insufficient for concurrent use of all the rearing containers. Rearing Tank 1 will not be used in the future for steelhead¹ but Rearing Tank 3 could be used in large rescue years depending on water availability.

1.3.2.2.2 Rearing Troughs

There are eight 200-gallon rearing troughs that are 2-foot x 2-foot x 10-foot (Figure 1). They are fitted with an overflow standpipe, independent inflow control valves, and a filtered air source. All the troughs have a chiller in place to help reduce water temperatures, and individual recirculating water filtration systems, which are only used when flow through needs to be minimized for disease treatment. The purpose of these smaller troughs is to provide a controlled environment for holding initial groups of fry and small fingerlings, who are difficult to feed, tend to have more disease outbreaks, and do not adapt well to being immediately stocked into the rearing channel. Once they are stable and have reached a size sufficient to survive well in the rearing channel, they are relocated there.

1.3.2.2.3 Rearing Channel

Most steelhead are reared in an 800-foot long rearing channel (Figure 1). The channel winds along the base of a steep, north-facing hill, under a dense canopy of mature coast live oaks, maples, and sycamores. Water for the rearing channel is routed through the cooling tower from the river (see below). The rearing channel is split into seventeen (17) bays. Each bay has a pool interspersed between a riffle and run with the bottom covered in a layer of cobbles, boulders and large gravel. Nominal depth of the channel is 3 feet; actual depth varies from 2.5 feet in pools to about ¼ foot in the shallowest riffles. The channel is fitted with a horizontal, rotating drum screen at the downstream end to prevent fish from uncontrollably migrating out of the Facility, which is checked daily. Filtered air from the blowers flows into a 6-inch PVC pipe that runs along the top edge of the channel branching off at each pool, where a 2-inch pipe supplies clean air to a series of water filters. Below the 800-foot main section of the channel, there is a 100-foot long tail-works section consisting of six bays filled with red lava rock (¾-inch size). The tail-works function as a final biological filter for all the water leaving the Facility, prior to discharge back into the river, approximately 300 feet downstream of the intake diversion.

1.3.2.3 Facility Water

In 2018, the District upgraded the Facilities' water supply system. The District improved the Facility's water supply intake and cooling tower as well as installed a water recirculation (reuse) system. Improvements to the water supply intake were needed to address existing maintenance

¹ In the past, rearing Tank 1 has occasionally held red-legged frogs in at the request of USFWS.

issues, operational constraints, increases in sandy bed load and to provide greater instream intake screen reliability. The addition of an intake water reuse system will allow for the Facility to operate when river flows fall below 2 cfs and/or when the sediment load spikes during winter storms (≥ 25 milligrams/liter).

The new river water intake pump station consists of two submersible non-clog pumps installed in a concrete wet well, with each pump sized to provide the total desired flow of 1,350 gpm. Two pumps are installed to provide redundancy in the event that the primary pump goes out of service. Pipes and valves are installed to allow operators to direct the river water to the reuse pump station when desired due to high sediment load or other river conditions. This allows the option of receiving flow that would settle and be filtered before being re-pumped to the cooling tower. The river water pumps (either operating alone or in unison with the reuse pump station) typically need to deliver between 810 gpm and 1,350 gpm depending on level of reuse. Alarms are activated in the event of pump motor temperature exceedance, motor seal leakage, low wet well water level, or if the pump is running with zero flow at the flow meter.

Associated with the water upgrade, treatment of water includes the following: solids filtration, cooling, dissolved gas conditioning, and pathogen disinfection. Sediment settling uses the existing LAKOS sand separator with the addition of a sediment settling basin. The facility has the ability to disinfect water with UV irradiation. A UV dose of 30,000 micro-watt seconds per square centimeter will be used to reduce most common fish pathogens. To control solids so that UV transmissivity is increased, water is filtered in a microscreen filter with 30-micron screen media. The system is designed to capture 40 percent of the solids and controlling total suspended solids (TSS) to less than 10 mg/L during moderate river stages. The existing cooling tower will continue to be used to increase dissolved oxygen levels and reduce dissolved carbon dioxide levels, as well as for cooling. To improve system efficiency, the cooling tower was raised by approximately 8 feet and a new elevated headbox was constructed to receive cooling tower flows before discharging to the rearing channel.

The District monitors river water quality at the Sleepy Hollow Weir twice per month. They monitor dissolved oxygen, carbon dioxide, conductivity, turbidity, and pH. River water temperature is recorded continuously. The District monitors daily dissolved oxygen and temperatures within the rearing channel at three points (head, middle, end). Water from the quarantine system, not used in the treatment of fish (i.e., contains no chemicals), is discharged onto the cobble bar where it percolates into the shallow groundwater adjacent to the Facility. The District discharges treatment water containing formalin or antibiotics into a pair of 8-foot diameter holding tanks and treats the formaldehyde-laden water with ozone for three or more days to oxidize the residual formaldehyde into formic acid, carbon dioxide and water. Once treated, the District discharges the water onto the cobble bar (100-feet from the river). The data are provided the Central Coast Regional Water Quality Control Board (CC-RWQCB) on an annual basis. Based on annual reports, the CC-RWQCB issued a General Waiver for Specific Types of Discharges in 2008 and 2014 (RRMP: Appendix 4-E).

1.3.3 Rearing Protocols

During the quarantine phase of rearing, steelhead are typically brought to the Facility daily. Upon arrival, the steelhead are transferred from the transport truck or tanks into a quarantine tank. They are separated by size and recounted to verify numbers. Any steelhead that appear unhealthy or diseased are culled. The remaining steelhead are held overnight without food, and treated the next day with an initial dilute formalin bath of 15-25 ppm for 6-8 hours, followed if necessary the second day by an oxytetracycline bath of similar duration.

The general rearing season begins after steelhead leave the quarantine tanks. The steelhead are separated into the following five groups:

- Fry-fingerling (<50mm) are allocated to the rearing troughs.
- Fingerling (50-100mm) are allocated to specific rearing channel bays filling it from an upstream to downstream direction.
- Larger Fingerlings (100-120mm) are allocated to rearing channel bays downstream of bay 4 (Figure 1).
- 120-150 mm steelhead are allocated to the rearing channel upstream of bay 4, filling it from the uppermost end first (Figure 1).
- >150 mm steelhead are allocated most often to the top sections of the rearing channel, where steelhead less than 150 mm have never been stocked. Occasionally they are placed in Rearing Tank 3, when water capacity can support it and it is a large rescue year.

The rearing areas are checked once to twice per day for mortality. Dead fish are counted and collected. A subsample of incoming rescued steelhead are measured for weight and length, and PIT tagged.

1.3.3.1 Feeding

Steelhead are fed a combination of natural and artificial food. At the outset of stocking, steelhead are fed a mixture of semi-moist pellets and frozen krill or brine shrimp to hasten their acceptance of artificial food. Many readily accept pelletized food, while others resist and continue to eat natural food. “Bug zappers” have been installed above the rearing channel and rearing tanks to deliver additional insects for food to the steelhead. Once steelhead have adjusted to pelletized food, they are fed at the target rate of approximately 2-4 percent body weight/day, according to guidelines for general size and temperature (Leitritz and Lewis 1976). For steelhead in the rearing channel, these rates are adjusted slightly downward to account for natural food that falls into the channel. For YOY, the daily ration is adjusted to account for expected growth and known mortality with a goal of rearing fish to approximately 120 mm by the end of the rearing season. In some cases, larger fish are placed on a maintenance ration to maintain their body size and help inhibit early maturation. In the rearing channel, belt feeders are rotated to different locations, to prevent dominant steelhead from defending territory under the feeder. In addition, fish are fed twice daily by hand application. Steelhead are fed by hand in Rearing Tank 3, rearing troughs, and potentially the quarantine tanks.

1.3.3.2 Disease

The District monitors behavior of the steelhead on a daily basis and notes whether individual fish exhibit obvious signs of disease or unusual behaviors such as flashing, jumping, lethargic swimming, lack of swimming, or rapid breathing. Daily tallies are kept of known mortality. When this tally rises unexpectedly, for example doubles from the average for that year, or a number of fish exhibit abnormal behaviors, the District may request a health inspection by fish pathologists from the CDFW (California Department of Fish and Wildlife) and will implement their recommended control measures.

The ability to chemically treat fish in the Facility is limited to the capacities of the Quarantine Tanks and Rearing Troughs. The outflow from these components is connected to two water treatment tanks, which allow ozonation of treatment water to remove the treatment chemicals as described above. At times, the District treats small groups of diseased fish with formalin and oxytetracycline at concentrations and durations recommended by the CDFW. Due to discharge restrictions and the Facility's limited ability to remove chemical treatments from discharge water, the vast majority of the fish in the Facility cannot be treated with effective chemicals. The only feasible prophylactic compound that can be used and discharged is sodium chloride, and it is applied as needed against *Ichthyophthirius multifiliis* "Ich" outbreaks, and also has beneficial effects on bacterial pathogens. This requires adding pulses of salt brine to the inflow in the rearing channel and other components. The salt treatment does not measurably affect water quality downstream of the facility.

1.3.3.3 Rearing Densities

The following rearing stocking densities will be implemented at the Facility (Table 2). Stocking densities are based on the type of tank, volume of the tank or rearing channel bay, water quantity and quality, and average weight of steelhead at the end of the season. The maximum capacity of the Facility is 51,585 steelhead.

Table 1: Stocking densities at the Facility by Rearing Channel Bay (RC Bay), Rearing Tank 3, Quarantine Tanks and Rearing Troughs.

Tank type	Volume (m ³)	Stocking Density (kg/m ³)	Stocking Biomass (kg)	End of Season weight (g)	Raw Stocking Calculation	Stocking Estimate (# fish)
RC Bay 1	15.72	5	78.58	0.039	2014.85	2014
RC Bay 2	17.56	5	87.78	0.039	2250.82	2250
RC Bay 3	20.67	5	103.36	0.039	2650.16	2650
RC Bay 4	15.01	5	75.04	0.039	1924.09	1924
RC Bay 5	19.26	5	96.28	0.039	2468.64	2468
RC Bay 6-7	35.68	5	178.40	0.039	4574.25	4574
RC Bay 8	18.97	5	94.86	0.039	2432.34	2432
RC Bay 9	17.84	5	89.20	0.039	2287.13	2287
RC Bay 10	17.98	5	89.91	0.039	2305.28	2305
RC Bay 11	21.24	5	106.19	0.039	2722.77	2722
RC Bay 12	17.70	5	88.49	0.039	2268.97	2268
RC Bay 13	20.25	5	101.23	0.039	2595.71	2595
RC Bay 14	20.10	5	100.52	0.039	2577.55	2577
RC Bay 15	18.41	5	92.03	0.039	2359.73	2359
RC Bay 16	18.26	5	91.32	0.039	2341.58	2341
RC Bay 17	20.53	5	102.65	0.039	2632.01	2632
RC Total	315.17	5	1575.83	0.039	40405.90	40405
Rearing Tank 3	40.00	5	200.00	0.039	5128.21	5128
8 Rearing Troughs	6.72	5	33.60	0.01	3360.00	3360
5 Quarantine Tanks	21.00	5	105.00	0.039	2692.31	2692
Total Facility Capacity						51585

1.3.4 Release Protocols

1.3.4.1 Translocated Steelhead

Translocated steelhead are fish that are released into perennial reaches, lagoon/estuary, or the ocean the same day they are rescued. They are never brought to the rearing facility. They are translocated instead of reared at the Facility because either the capacity of the rearing facility has already been met, there is a desire by NMFS and the District to seed the lagoon, or because of their lifestage (i.e. smolt and adults). NMFS must give prior approval for additional steelhead to be translocated to perennial habitat for another reason.

A portion of the fry (size <50 mm) may be translocated to the lagoon to provide the initial seeding of the habitat. Pre-smolts rescued during the spring of dry and critically dry years may be transported to the lagoon. Smolts and kelts rescued during the spring of dry and critically dry years will be transported and released into the Pacific Ocean at Stewart's Cove. The District will make a decision on exact translocation sites following discussions with the NMFS on a month-

to-month basis, and will depend on lagoon water quality, presence of striped bass, expectation of future flows, and whether the rescued fish have well-developed smolt characteristics.

All steelhead will be transported, acclimated (where applicable) and released using the equipment previously discussed in Section 1.3.1.4 (Transport). Temperature differences between the transport container and translocation sites will be within 5° F. If the difference in temperature is greater than 5° F, temperature in the transport tank will be adjusted by adding block ice in sealed bags to prevent introduction of any significant amount of chlorine, or mixing receiving water with tank water prior to releasing steelhead.

Smolts and kelts that are collected in the box trap will be loaded into the transport vehicle, and held for 25 minutes prior to transport to the lagoon or ocean. Transport densities will be limited with the intention of avoiding overcrowding and extra stress, as described in RRMP section 8. During this period, a visual check shall be made, and the opercular breath rates (gill cover movement) of several steelhead shall be noted and recorded. After breath rates are measured, smolts and kelts will be transitioned to full-strength seawater over a period of 3-5 hours. Following transport and arrival at the lagoon or ocean, the breath rates shall again be noted and recorded. If rates have increased and steelhead appear agitated, the entire group will be released into the lagoon. If rates have declined or the steelhead appear quiescent, the entire group will be released into Stewart's Cove after they are transitioned to full strength seawater.

1.3.4.2 Release of Facility Reared Steelhead

Steelhead brought to the Facility will be released to the general area in the river from which they were rescued in the fall or winter. They will be returned after the river has been rewetted for 2-4 weeks. Historically the release time period has varied from October to February, depending on when the river is rewetted in the areas where rescues occurred.

The capture of steelhead in the rearing channel for release will use the following methodology summarized from RRMP section 8. The water level is lowered in the bay where steelhead are to be captured for release. The steelhead are captured first by seine, dip nets and buckets. This will be continued until fewer than five steelhead are captured per attempt. At that point, steelhead will be herded with an electrofisher into netted off sections within each pool, where they will be dip-netted and transferred to either the transport truck or holding tank. Capturing the steelhead in the entire rearing channel takes 10-15 days to complete. Steelhead in rearing tank 3 and the rearing troughs will be captured with a seine and dip nets. A subsample of steelhead will be PIT tagged prior to release.

Prior to release of any steelhead, the CDFW Fish Pathology Lab in Rancho Cordova is notified, and a small subsample of steelhead may be sacrificed and sent for pathogen, disease and parasite testing. In addition, a local vet specializing in fish, will conduct an annual pre-health inspection.

During emergency releases (e.g. fires and floods) the District will discuss release options with NMFS. If the District determines that an emergency release is warranted, they will not release any steelhead within the quarantine tanks that have not undergone a full round of treatment and/or any steelhead that upon visual inspection appear to show signs of disease. In addition, the District will make every effort (within reason considering the type of emergency) to have a pre-

release inspection conducted from the local veterinarian, as would occur under normal release conditions.

The following methods are a guide to emergency releases, actual methods may vary slightly based on the type of emergency and discussions with NMFS, as described in RRMP section 8. Dip-nets and buckets will be used to transfer as many steelhead as possible out of the rearing channel into the river, or into other available rearing space. If space is available, steelhead >120 mm will be transferred to the rearing tanks and steelhead <120 mm will be placed in the river. If no space is available, all steelhead will be released into the river adjacent to the Facility. Following the above mentioned dip-netting, the remaining steelhead will be herded with an electrofisher into netted-off sections in each rearing channel bay where then they will then be dip-netted and transferred depending on the available space and size, as outlined above. The District anticipates that the methods outlined above can take up to nine days to complete. If the emergency requires faster action², as many steelhead as possible, depending on human safety, will be immediately walked to the river in 5 gallon buckets after they are captured from their rearing area.

² For example, if flood or fire will soon prevent safe operation (for people or steelhead) of the Facility's rearing areas, all steelhead remaining at the Facility will be immediately walked to the river in five-gallon buckets if possible.

1.4 Take Description and/or Levels

“Take” is defined in Section 3 of the ESA; it means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect (a listed species) or to attempt to engage in any such conduct. Take numbers listed below (Tables 1-2) are the maximum take authorized per annual rescue and rearing season S-CCC steelhead DPS. All indirect mortality is authorized in the incidental take statement of the Section 7 Biological Opinion on the Program.

Table 2: Annual Take (rescue/rearing season) for S-CCC steelhead for the Carmel River Steelhead Enhancement Program.

Lifestage	Expected Take	Indirect Mortality	Take Action	Observe / Collect Method	Procedure	Transport Location Options
Juvenile	102,450	27,961	Collect, Sample, Transport and Rear Live Animal	Electrofishing, Beach Seine		Rearing Facility, Perennial Reaches, Lagoon, River after it re-wets
Juvenile	150	0	Intentional (directed mortality for disease testing)	Hand and/or Dip Net	Tissue Sample	
Juvenile	2,700	540	Collect, Sample, Transport and Rear Live Animal	Electrofishing, Beach Seine	PIT Tag	Rearing Facility and then River after it re-wets
Smolt	4,100	205	Collect, Sample & Transport Live Animal	Electrofishing, Beach Seine, Box (Weir) Trap		Lagoon or Stewart's Cove
Smolt	1,300	65	Collect, Sample & Transport Live Animal	Electrofishing, Beach Seine, Box (Weir) Trap	PIT Tag	Lagoon or Stewart's Cove
Adult	10	0	Collect, Sample & Transport Live Animal	Electrofishing, Beach Seine, Box (Weir) Trap		Perennial Reach
Spawned Adult (Kelt) / Carcass	90	5	Collect, Sample & Transport Live Animal	Electrofishing, Beach Seine, Box (Weir) Trap	PIT Tag	Lagoon or Stewart's Cove

*All indirect mortality is authorized through the incident take statement in the Section 7 Biological Opinion on this Program.

1.5 Special Conditions

1. Adjustments to the program may be made, provided they are made within the constraints of this permit and subject to the provisions of Section 10(a)(1)(A) of the Endangered Species Act of 1973 (16 U.S.C. § 1531 *et seq.*), NMFS regulations governing ESA-listed species permits (50 CFR Part 222), and the conditions hereinafter set forth. Such program adjustments do not require modification of the permit provided that any adjustment will not result in a level of direct or incidental take in excess of that otherwise allowed by this permit and by the incidental take statement (ITS).
2. NMFS recognizes the need for management flexibility. Therefore, changes in rearing protocols consistent with best management practices, conforming to the intent of the program and having no substantial effects on the survival of steelhead beyond what is authorized in this permit, may be implemented by the District.

1.6 General Conditions

1. The permit holder shall ensure that ESA-listed salmonids are taken only by the means, in the areas, and for the purposes set forth in the permit application, as limited by the special conditions in this permit.
2. Should NMFS determine that a sampling procedure provided for under this permit is no longer acceptable, the permit holder shall immediately cease the use of such a procedure until an acceptable replacement has been prescribed by NMFS.
3. The permit holder, in effecting the take authorized by this permit, is considered to have accepted the conditions of this permit and shall be prepared to comply with the provisions of this permit, the applicable regulations, and the ESA.
4. The permit holder is responsible for the actions of any individual operating under the authority of this permit.
5. The permit holder, personnel, or designated agent acting on the permit holder's behalf, shall possess a copy of this permit when conducting the activities for which take of ESA-listed salmonids is authorized herein.
6. The permit holder may not transfer or assign this permit to any other person(s), as person is defined in section 3(12) of the ESA without prior authorization from NMFS.
7. The permit holder must obtain any other federal, state, and local permits/authorizations necessary for the conduct of the activities provided for in this permit.
8. Any personnel operating under Permit 14741 that require federal or state licenses to practice their profession shall be duly licensed under the appropriate law.
9. The permit holder shall coordinate with other researchers to ensure that unnecessary research duplication and/or adverse cumulative effects to ESA-listed salmonids shall not occur as a result of the permit holder's activities.
10. The permit holder shall allow any NMFS employee(s), or any other person(s) duly designated by NMFS, to accompany field personnel during the activities provided for in this permit and/or to inspect the permit holder's records and facilities if such records and

facilities pertain to activities for which take of ESA-listed species is authorized by this permit, relate to ESA-listed species, or otherwise pertain to NMFS' responsibilities under the ESA.

11. Under the terms of the regulations, a violation of any of the conditions of this permit will subject the permit holder, and/or any individual who is operating under the authority of this permit, to penalties as provided for in the ESA.
12. The provisions of this permit may be amended by the NMFS, California Coastal Office, upon reasonable notice to the permit holder.
13. 50 CFR section 222.308(d)(8) provides for a reasonable fee to be charged to cover the costs of the issuance of permits under the ESA. The fee for this permit has been waived.
14. This permit may be revoked by NMFS if the activities authorized by this permit are not carried out, if the activities are not carried out in accordance with the conditions of the permit and the purposes and requirements of the ESA and its implementing regulations, or if NMFS otherwise determines that the findings made under section 10(d) of the ESA no longer hold.
15. Any falsification of annual reports or records pertaining to this permit is a violation of this permit.
16. The permit holder, in signing this permit, has accepted and will comply with the provisions of this permit, applicable regulations (50 CFR Part 222), and the ESA.

1.7 Permit Reporting and Reauthorization Requirements

National Marine Fisheries Service Contact:

Mandy Ingham

Central Coast Branch Chief

National Marine Fisheries Service, West Coast Region

Phone: (831) 460-7580

Email: Mandy.Ingham@noaa.gov

Mailing Address: USGS Pacific Coast & Marine Science Center; 2885 Mission Street; Santa Cruz, CA 95060

1. The permit holder must submit to NMFS for approval, in writing, changes in any aspect of program implementation and operations, including rescue and rearing protocols or numbers, juvenile release numbers, and marking, that could potentially result in increased amount of take, or alter the manner or effect of take of ESA-listed species covered in this permit.
2. Upon the written request of NMFS, the permit holder shall provide NMFS with the identities and qualifications of all personnel authorized to act under the authority of this permit.
3. For the duration of this permit, work in each succeeding year is contingent upon submission and approval of an annual report on each preceding year's rescue, release, monitoring, evaluation, and research activities. Annual reports must be submitted online at the Applications and Permits for Protected Species (APPS) website

(<https://apps.nmfs.noaa.gov>) by March 15 annually.

4. In addition to the report questions and reporting of take information within the APPS annual report, an additional report must be attached to the APPS report that includes the information outlined below. Once an annual report is submitted to NMFS, the permit holder may continue permitted activities unless otherwise notified in writing by NMFS. NMFS will notify the permit holder if the annual report is inadequate, or if additional information is required. If information is requested but not supplied, this ESA Section 10(a)(1)(A) permit may be suspended until the NMFS request is met.
5. The annual report shall contain the following information:
 - a. A detailed description of all ESA-listed steelhead collection activities conducted under Permit 14741, including the number and composition of ESA-listed fish captured and sampled for tissues, their sex/size/condition, the date of collection and disposition.
 - b. A detailed description of all rearing, release, and translocation activities, including total rearing densities, number and dates of releases, release locations, number and date of translocations, translocation locations, rescue, release, and translocation methodologies, and levels of incidental mortality.
 - c. A detailed description of all Facility operations, including, but not limited to: steelhead survival rates, problems encountered (e.g. disease), feeding methodologies, and rearing locations and densities.
 - d. All monitoring that informs the operations and success of the Program.

1.8 Penalties and Permit Sanctions

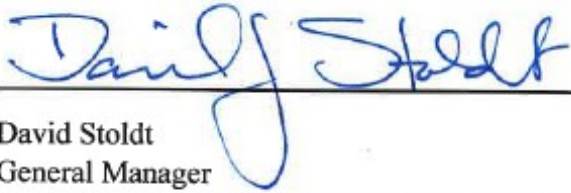
1. Any person who violates any provision of this permit is subject to civil and criminal penalties, permit sanctions, and forfeiture as authorized under the ESA and 15 CFR part 904.
2. All permits are subject to suspension, revocation, and denial in accordance with the provisions of subpart D [Permit Sanctions and Denials] of 15 CFR part 904.



September 23, 2019

Alecia Van Atta
Assistance Regional Administrator
California Coastal Office
National Marine Fisheries Service, West Coast Region

Date



David Stoldt
General Manager
Monterey Peninsula Water Management District

9-24-19

Date