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**California Fish and Game Commission's
Workshop on Strategic Improvement in
California's Anadromous Hatcheries**

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Strategic Improvement in California's Anadromous Hatcheries

Pacific Southwest Region (R8) Fish and Aquatic Conservation Program

Program oversees water and fish issues throughout California, Nevada and the Klamath Basin. Within this area, the Program focuses on ensuring sustainable populations of aquatic species and restoration of aquatic habitats. Federal responsibilities for conservation of the nation's fishery resources date from 1871 when Congress established the position of Commissioner of Fish and Fisheries in response to concern about the decline in natural food fish supplies. The first hatchery (Baird Station) was developed on the McCloud River here in CA. Currently In the Pacific Southwest Region, Fisheries managers work with many partners to provide hatchery fish production for harvest and recovery programs, monitoring and evaluation of hatchery production programs, and technical assistance to state, tribal and federal agencies in monitoring, fish health and stock assessment, and habitat restoration efforts.

FWS Responsibilities and Initiatives in California include:

- Fish Health investigations (CA/NV Fish Health Center)
- Trinity River Restoration
- Central Valley Project Improvement Act Implementation
- Anadromous Fish Restoration Program
- Non-native Invasive Species Program
- Bay Delta Conservation Plan
- San Joaquin Restoration Program
- Operation and Management of the Coleman NFH Complex (Coleman and Livingston Stone NFHs)

Aside from programs/stations in R8, the U.S. Fish and Wildlife Service also has 15 salmon/steelhead National Fish Hatcheries, 3 Fish Health Centers and a Fish Technology Center in the Pacific Region (R1-Washington, Oregon, Idaho). Communication is maintained between the two Regions resulting in access to a large hatchery network, and Geneticists and Science Advisors.

Coleman National Fish Hatchery. When federal water development projects were constructed, Congress and the federal government committed to mitigating for impacts on recreational, commercial, and tribal fisheries.

Fisheries mitigation programs in the Pacific Southwest Region generally involve stocking Pacific salmon, steelhead trout, and trout species that are native to the altered watersheds. Considerable reimbursement is provided to the Service for its fisheries mitigation programs in the Pacific

Southwest by Bureau of Reclamation. Coleman National Fish Hatchery was constructed in 1942 to partially mitigate for the impacts of Shasta Dam (~187 miles of lost habitat). It is operated by the FWS and funded by Reclamation. CNFH is located on Battle Creek ~ 300 river miles from San Francisco Bay.

Livingston Stone National Fish Hatchery

Located immediately below Shasta Dam, the hatchery was constructed by Reclamation in 1997 as a satellite facility of Coleman NFH. Purpose of the facility/program is to assist in the recovery of endangered winter Chinook salmon. This is a small Conservation type program that is executed with input from CDFW and NMFS and has been referenced by NMFS during Congressional Testimony as an example of a Conservation hatchery.

Coleman NFH Operational Objectives

In our hatchery operations, there are multiple objectives to consider: 1) contribution to salmon harvest in ocean fisheries, 2) contribution to salmon harvest in in-river fisheries, 3) adequate return of adults back to the hatchery in future years for program perpetuation and 4) reducing impacts on natural-origin salmonids.

Requirements to reduce impacts on natural stocks

There are many requirements previously/currently in place that call for effort to reduce impacts on natural-origin fish.

Endangered Species Act: Federal actions are required to attempt minimize impacts to listed species. ESA Section 7 and 10 coordination and consultation with NOAA Fisheries has been occurring since ~ 1993. USFWS shares ESA regulatory functions. FWS has jurisdiction for inland/terrestrial while NMFS has marine. Since FWS has a regulatory ESA role, we strive to be compliant.

California Endangered Species Act=Cooperate with CDFG

Central Valley Project Improvement Act 1992 /Anadromous Fish Restoration Program (~1995)

- Goal/Objective: Increase abundance of naturally produced salmonids
- Includes actions to evaluate/reduce hatchery impacts
- Agency managers are FWS and BOR
- Battle Creek Restoration –ongoing since 1995 is guided by several plans/programs including AFRP

More recent FWS Initiative = Strategic Habitat Conservation (SHC)

Hatchery Scientific Review

In the past 150 years, habitat alterations (particularly hydroelectric development), have impacted most of the salmon and steelhead populations in the Pacific Northwest. To mitigate for those impacts, hatcheries have been used to provide fish available for harvest.

Hatchery review was initiated in about 2000 in the Pacific Northwest. Subsequently, The U.S. Fish and Wildlife Service (Service) Pacific Region (Region 1) initiated a series of hatchery reviews to assure that its hatchery programs in the Northwest are part of a scientifically-sound and integrated strategy — consistent with State, Tribal, and other Federal strategies — for

conserving natural-origin stocks and managing fisheries in watersheds within the Region. The need for this existed to respond to increasing public scrutiny of the Service's hatchery programs and the potential impacts or risks those programs pose to natural fish populations. The Service viewed an internal review as the first step for ensuring that:

- Federal hatchery programs are operated in accordance with best available science;
- Programs are consistent with ESA-protection and recovery plans; and
- Programs are responsive to new scientific information and changing regional priorities.

The Hatchery review process was moved down here to California in 2011 culminating in the 2012 California Hatchery Review report.

Goal of the Hatchery Review

Ensure that hatchery programs are managed and operated to meet one or both of the primary purposes for hatcheries:

- Supporting sustainable fisheries with little or no deleterious consequence to natural populations, and.
- Helping recover and conserve naturally spawning salmon and steelhead populations.

Through ESA consultation and due to other FWS requirements, Coleman and Livingston Stone NFH operations have been taking this into consideration for at least 2 decades.

Future Intent of FWS Pacific Southwest Region and Coleman NFH Complex

Specific to hatchery programs, the U.S. Fish and Wildlife Service will continue execute, evaluate and modify programs to produce fish for mitigation, experimental or restoration/recovery objectives at the Coleman NFH Complex as deemed necessary and will convene a multi-agency Hatchery Coordination Team to work toward implementation of Hatchery Review Report recommendations. Also of note is that the Hatchery Review Report purposefully contains a section describing the connection between habitat loss and hatchery development. In this section it is identified that habitat loss, degradation, and modification seems the single greatest cause of population abundance decline of salmonids in the Central Valley and that protecting and increasing the quality and quantity of habitat (including stream flows) and the biotic community in holding, spawning, and rearing areas and throughout migration corridors must be a priority if natural reproduction of salmon and steelhead populations is desired and the abundance of natural-origin fish expected to increase. To this end, the U.S. Fish and Wildlife Service will continue cooperative aquatic habitat restoration efforts throughout the Region, in attempt to increase abundance of salmon and steelhead in the Central Valley (mention SHC?).