

California Hatchery Scientific Review Group Recommendations for Steelhead Programs

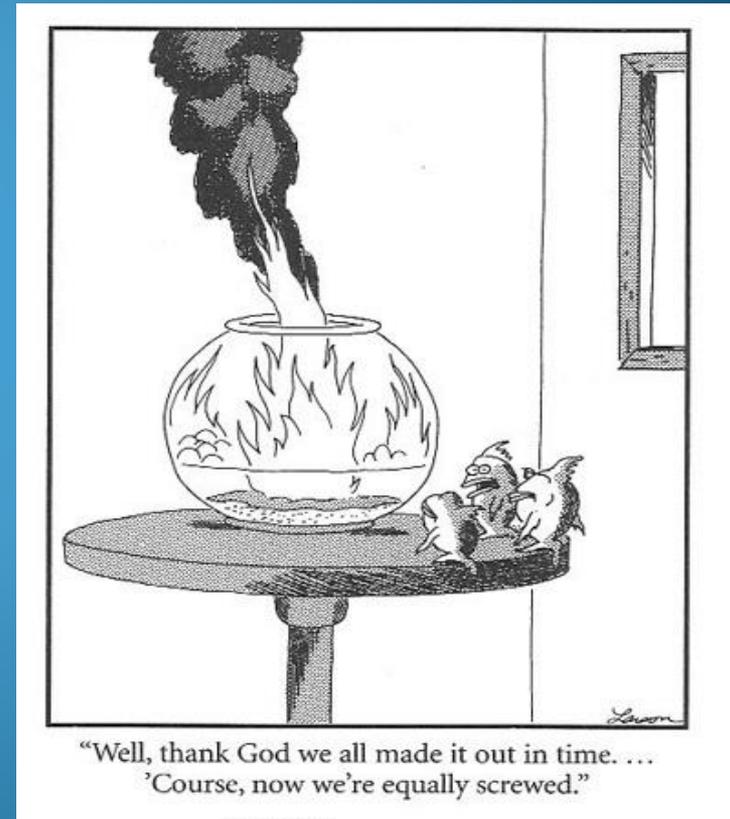
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Pacific Coast Steelhead Management Meeting
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Hatchery Program Review Steelhead

Goals:

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



Iron Gate Hatchery Steelhead Program

- Produce 200,000 steelhead smolts at 10 fpp (fish per pound) for release between March 15 and May 1;
- The production goal was met in most years prior to 1991; however, the production goal has not been achieved since that time;
- Steelhead are released at the hatchery site



Iron Gate Hatchery Recommendations

- Terminate use of the current broodstock (resident fish) and reestablish with broodstock collected from an off-site location;
- Non-anadromous fish typically should not be used as steelhead broodstock;
- The minimum release size at least 8 fpp and variability of fish size at release should be reduced;
- Hatchery-origin adult steelhead returns to the hatchery should be treated as follows: (1) unspawned males should be extended reconditioned and released; (2) unspawned females should be stripped of eggs, extended reconditioned and released; and (3) spawned fish should be removed from the system or extended reconditioned and released;
- Natural-origin adult steelhead returns to the hatchery, whether spawned or unspawned, should be reconditioned and released

Trinity River Hatchery Steelhead Program

- Broodstock used in the steelhead program originated from the Trinity River watershed. From 1974 until 1994, some eggs were imported from Iron Gate Hatchery; however, no eggs or fish from outside the Trinity River watershed have been used in the last 10 years;
- This program has a goal to release 800,000 six-inch-long steelhead smolts from March 15 to May 1;
- Fish released at the hatchery site



Trinity River Hatchery Recommendations

- Program goals should be measured as the number of anadromous hatchery-origin steelhead adults and half-pounders returning to freshwater each year;
- Mitigation goals for the program are described in various historical non-hatchery related documents;
- It does not appear that the program is operated to achieve these goals or adjusted if goals are not achieved

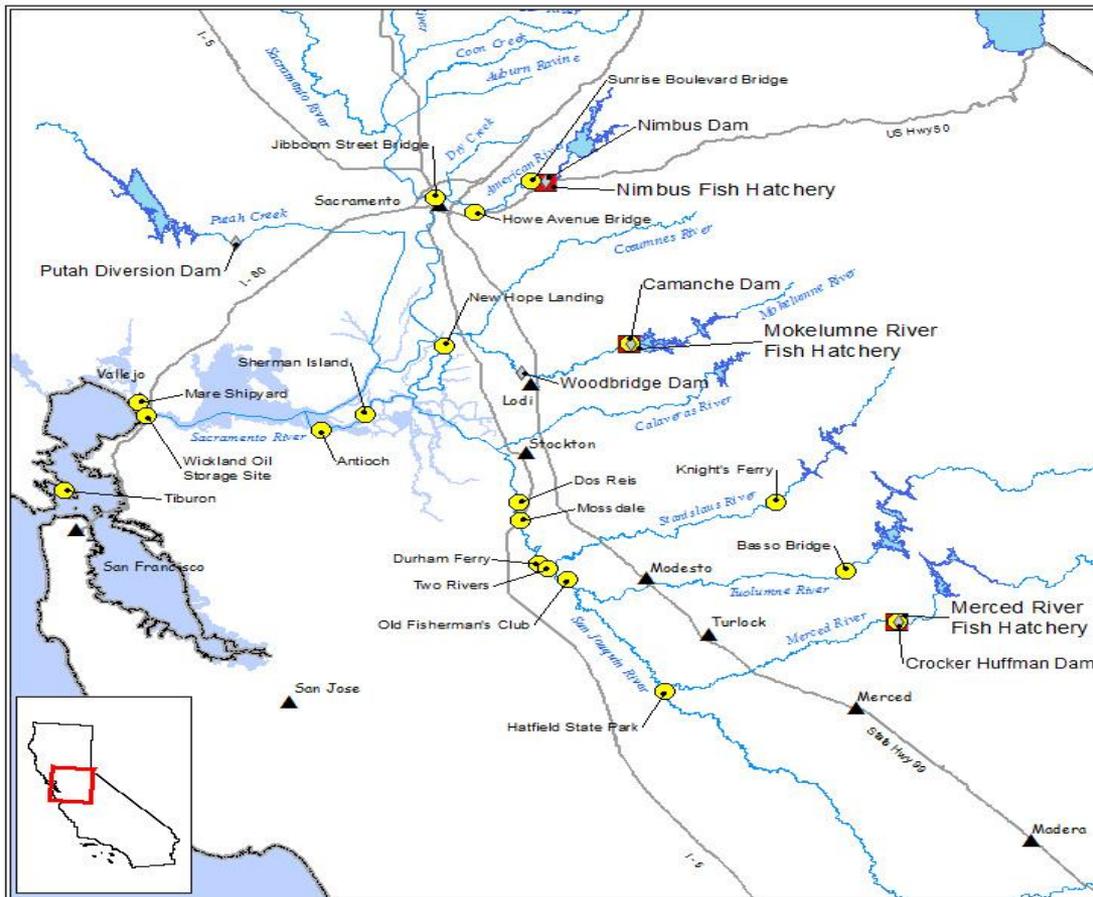
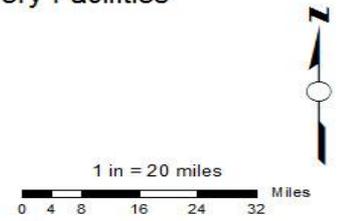


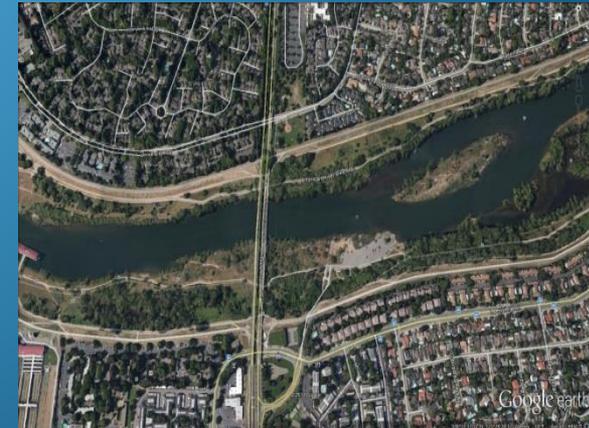
Figure 1-2. Central Valley South Anadromous Fishery Facilities

- | | |
|---|---|
|  Lakes and Other Waterbodies |  Dams |
|  Rivers |  Release Sites |
|  Highways |  Hatcheries |
|  Cities | |



Nimbus Fish Hatchery Steelhead Program

- The steelhead program traps and artificially spawns marked adults -- Unmarked fish are not included in the broodstock and are released back to the river;
- Broodstock has been derived from a number of different populations and presently appears to cluster genetically most closely with Eel River steelhead;
- Annual release goal is 430,000 yearlings at 4 fpp;
- Fish released from January through February in American River at Howe Ave.



Nimbus Fish Hatchery Recommendations

- The current broodstock for this program should be replaced with one appropriate for the American River;
- Non-anadromous (resident) or unmarked fish should not be used as broodstock and the current 16-inch minimum length for broodstock should be continued;
- An alternative cold-water source should be developed to reduce summer rearing water temperatures;
- The cause of the low egg-to-juvenile release survival rate (24.5 percent) should be determined

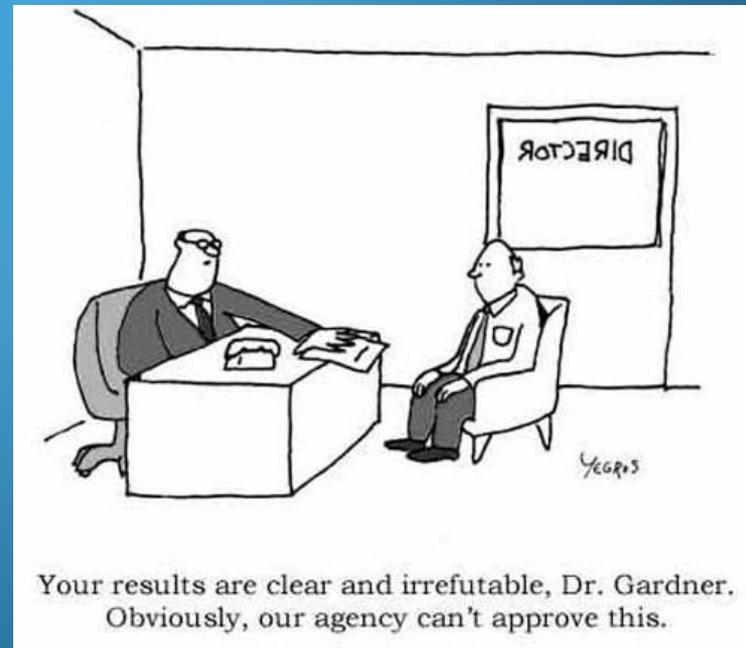
Mokelumne River Hatchery Steelhead Program

- The goal to release 250,000 yearling steelhead at 4 fpp;
- The program has been experimenting with small releases (less than 2,000 fish) of two-year-old steelhead juveniles using a “nature” rearing strategy;
- All steelhead are released from February through March at New Hope Landing



Mokelumne River Hatchery Recommendations

- Non-anadromous (resident) or unmarked fish typically should not be used as broodstock;
- The current 16-inch minimum length for broodstock should be continued



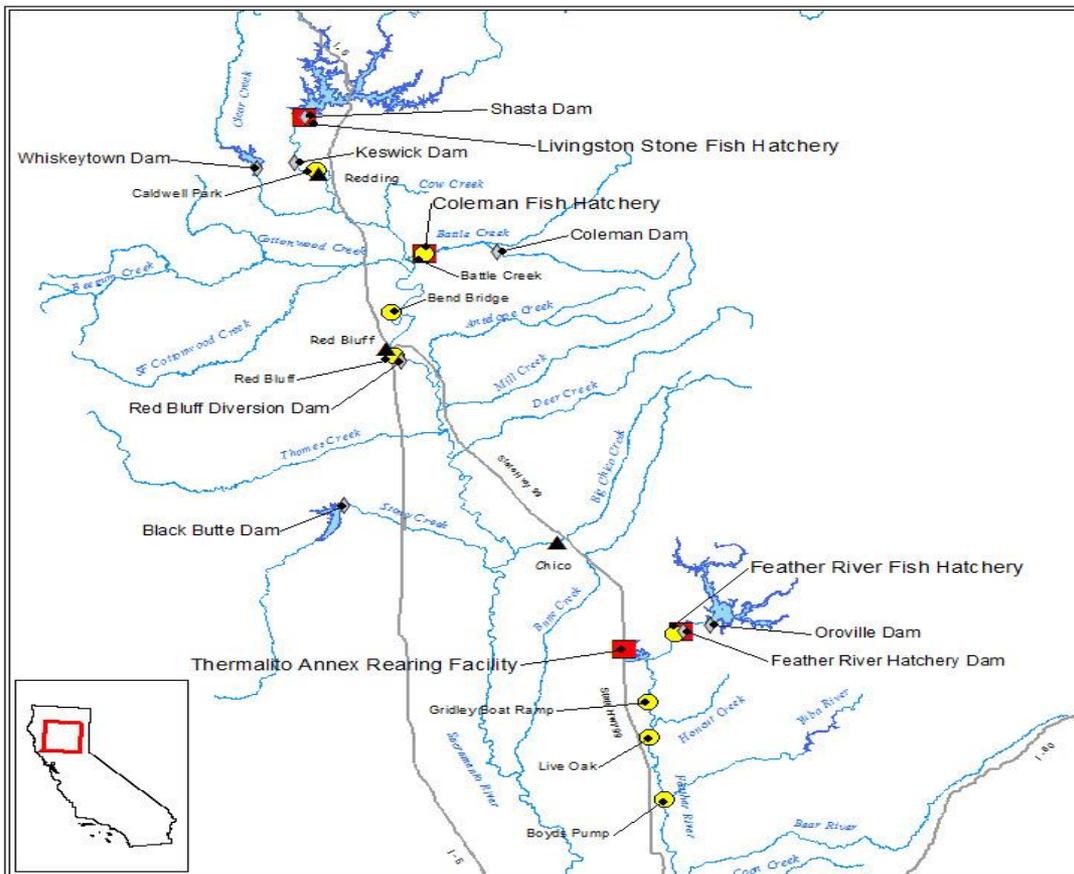


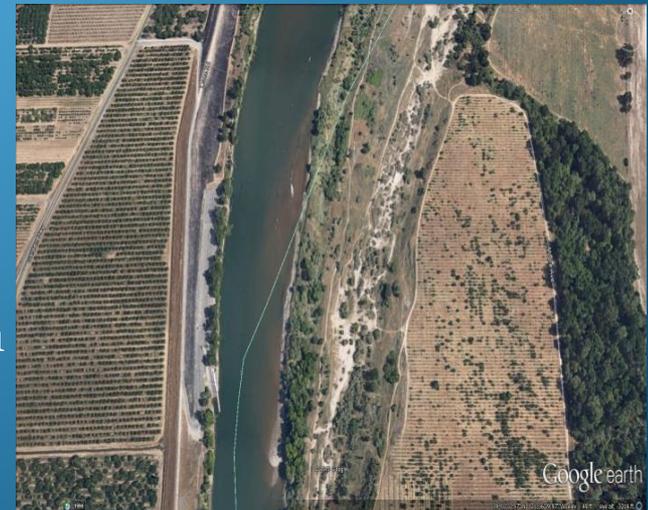
Figure 1-3. Central Valley North Anadromous Fishery Facilities

- | | |
|---|---|
|  Lakes and Other Waterbodies |  Dams |
|  Rivers |  Release Sites |
|  Highways |  Hatcheries |
|  Cities | |

1 in = 18 miles
 0 4 8 16 24 32 Miles

Feather River Hatchery Steelhead Program

- The program traps and artificially spawns both marked and unmarked steelhead
- 1968 to 1987, steelhead eggs were transferred to FRH reared and released – after that time only fish returning to the Feather River Basin have been used;
- Production goal is 450,000 steelhead annually at 3 fpp during late January or February;
- During the past three seasons, the number eggs taken have decreased to 600,000 eggs with a commensurate decrease in the number of fish released;
- Fish are released into the Feather River south of Yuba City at the Boyd's Pump Boat Launch



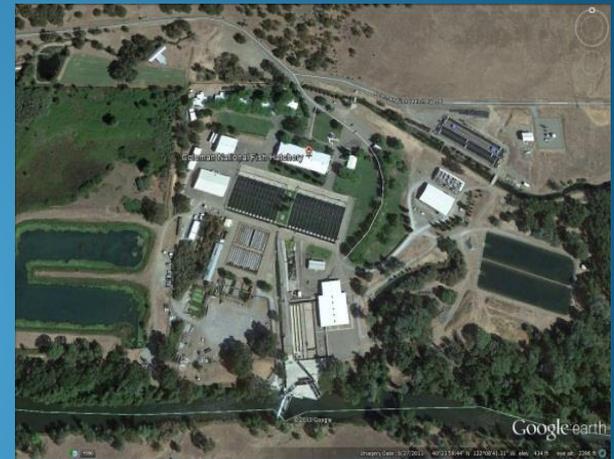
Feather River Hatchery Recommendations

- The number of eggs taken annually should be reduced to a level appropriate to produce 450,000 juveniles and the transfer of eggs to other programs terminated;
- Broodstock for the program should only come from native, locally adapted stocks;
- Non-anadromous (resident) fish should not be used as broodstock;
- The current 16-inch minimum length for broodstock should be continued

Coleman National Fish Hatchery

Steelhead Program

- Steelhead program was operated in an integrated fashion, incorporating into the broodstock natural-origin Sacramento River fish from 1947–1986, and natural-origin Battle Creek fish from 1952–2009;
- The use of natural-origin fish was discontinued in 2009 due to the low abundance of Battle Creek natural-origin fish;
- The program annually releases 600,000 steelhead in January at a size of 4 fpp;
- The adult return goal to the hatchery has been met in 7 of the last 11 years;
- Fish are released into the Sacramento River at Bend Bridge



Coleman National Fish Hatchery

Recommendations

- Facilities should be upgraded and expanded to provide adequate space, water flows and temperature regimes to hold the number of adults required for broodstock at high rates of survival (greater than 90 percent);
- Program should be converted back into an integrated program with a minimum proportion of natural-origin fish used as broodstock of 10 percent;
- Investigate the feasibility of collecting natural-origin adult fish at alternate locations;
- Current efforts should be expanded to determine the cause of low smolt-to-adult returns for this program

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