



Moccasin Creek State Fish Hatchery Water Conservation Report & Strategy for the Hetch Hetchy Water Shutdown



Water Conservation



- O'Shaughnessy Dam
- Hatchery Stats
- Actions Prior to Water Restriction
- Restriction Process
- Actions & Changes during 14 day conservation
- Post Water Restriction
- Future Directions
- Prior Year Incidents During Water Restriction

O'Shaughnessy Dam



Hetch Hetchy Reservoir



Moccasin Creek Hatchery



Moccasin Powerhouse



Moccasin Hatchery

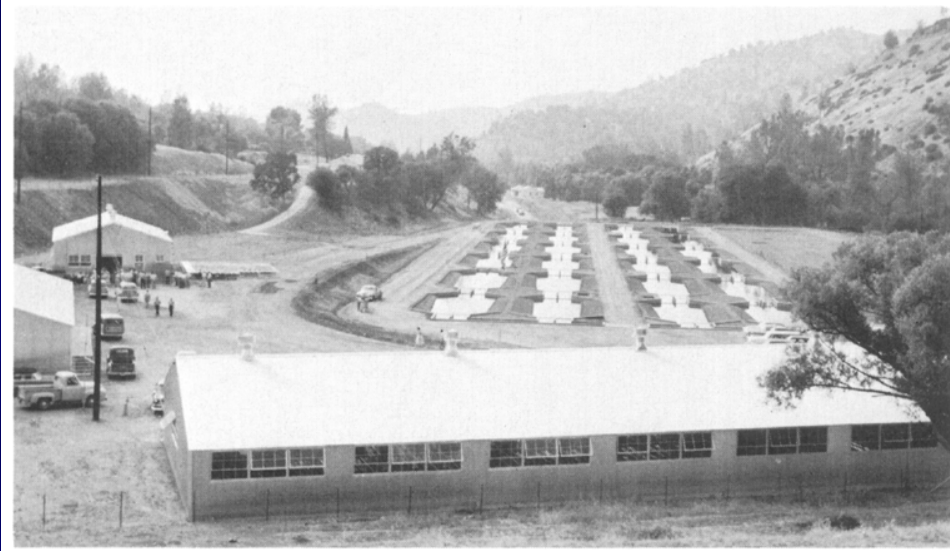


FIGURE 50. Moccasin Creek Hatchery on the day of dedication, June 29, 1954. The initial installation included 24 standard raceway ponds. Twelve additional ponds were added in 1955.



Water Conservation Notice

- Shutdown of water transmission system for maintenance and rehabilitation
- Shutdown shall occur for 14 days (Jan. 5-18)
- Conserve all water including household water use

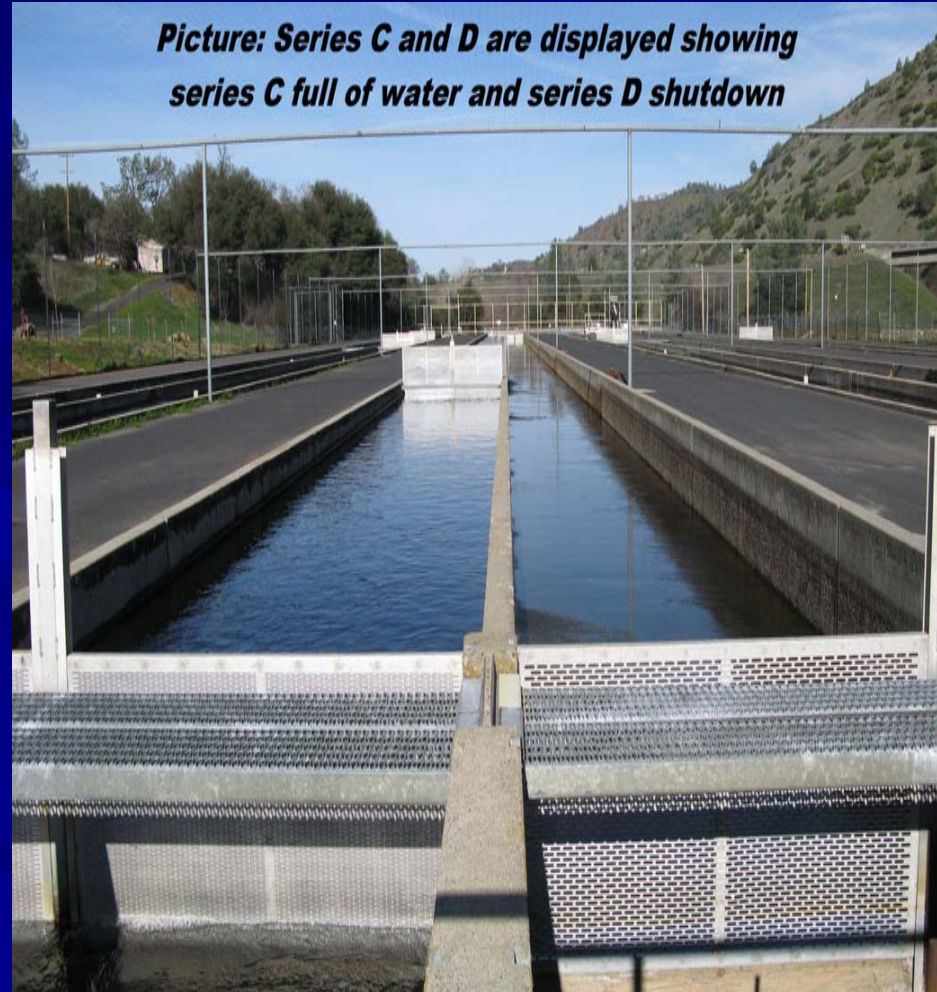


Production Stats Prior to Conservation

- 🐟 154,110 lbs on hand
- 🐟 Pond loss ranged from 29-48
- 🐟 Hatchery building loss ranged from 553- 817
- 🐟 1,478 lbs of feed
- 🐟 DO levels ranged from 9ppm-10ppm
- 🐟 14k gallons per minute entering hatchery
- 🐟 Water temperature 48-50/49-51 degrees






ACTIONS PRIOR TO SHUTDOWN

- 🐟 **Discontinued pond feedings Jan. 2**
- 🐟 **Hatchery building feedings decreased**
- 🐟 **Redistribute fish in ponds**
- 🐟 **Shutdown water to unused raceways**



ACTIONS PRIOR TO SHUTDOWN

cont...

-  Fix leaking dam boards
-  Fish in hatchery building were thinned out
-  Aerator screens distributed throughout ponds
-  No salt or chemical treatments were administered
-  Began small water restriction to prep and condition fish

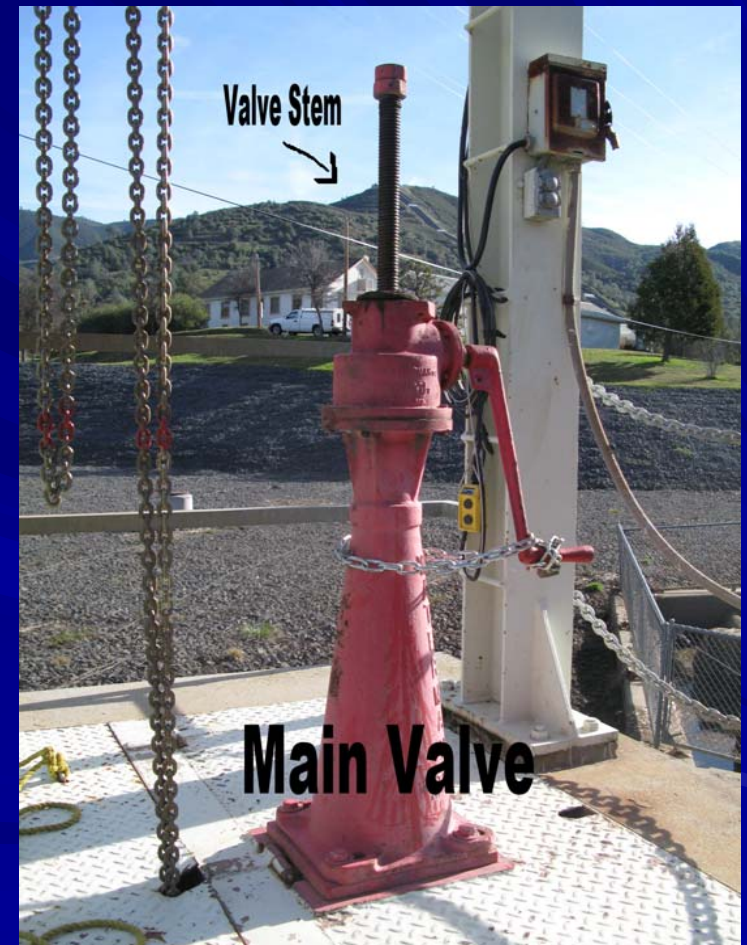
Valve Adjustment

Valve Stem	Thousand GPM	Lake Level
4 inches	10.7	2" below dam boards
3 inches	8.0	2" below dam boards
2 ¾ inches	7.5	2" below dam boards
2 5/8 inches Final Adjustment	6.8	2" below dam boards
2 5/8 inches	5.7*	4" below spillway
2 5/8 inches	6.4*	At spillway level








* Lake level fluctuation will change intake amount

RESTRICTION PROCESS

- 🐟 Started 10.7k gallons per minute
- 🐟 Final adjustment on valve ended at 2 5/8" of stem
- 🐟 Goal intake 6.5k gallons per minute
- 🐟 Ended 6.8k gallons per minute
- 🐟 Redirect hatchery waste water to ponds
- 🐟 Redirect more water into ponds with greater fish capacity
- 🐟 Adjust water just below spill wall in the aeration tower



DURING WATER CONSERVATION

-  No feeding ponds
-  No cleaning of wells
-  Navigation of hatchery building water
-  Change cleaning process in hatchery building
-  Feed hatchery every other day to decrease waste
-  Check DO saturation daily
-  Check aeration tower and alarm


DURING WATER CONSERVATION cont...

 Loss decreased

 Hatchery loss remained parallel to prior loss records

 Production ponds were cleaner

 No fish plants at MCH

 Water pressure decreased (took longer to fill plant trucks at the fill station)

Actions After Water Restriction

- ✿ Opened main valve
- ✿ Adjusted water tower
- ✿ Redirected hatchery building waste water to settling pond
- ✿ Fed production ponds lightly then gradually increased feedings
- ✿ Resumed hatchery buildings normal feed schedule immediately
- ✿ Resumed normal maintenance duties

Future Directions

- Low Head Oxygen Units (LHO's)
- Condense Fish

Prior Year Incidents

- January 2006 Water Restriction
- Reduced water intake to 6.6k gpm
- Increase of loss
- DO levels 9ppm-10ppm
- Pathologist suggested Cold Water Disease
- Water Quality Control board suggested super saturation of nitrogen
- After Restriction loss declined
- Loss of over 75k +