



# State Wildlife Action Plan 2015 Update

Sacramento, HUC 1802

Clear Lake Native Fish Assemblage

Jeanine Phillips, Lauren Mulloy and Kevin Thomas

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# Sacramento Subregion, HUC 1802

- Sacramento River watershed
- Drainage divide traverses Coastal, Cascade, Warner and Sierra Nevada mountain ranges and Modoc Plateau
- Upper Cache subbasin encompasses Clear Lake and its tributary streams
  - Isolated from Sacramento River and Russian River
  - Clear Lake drainage basin 338,500 acres; lake 43,600 acres
  - Highly productive, warm water, well mixed



# Clear Lake Native Fish Assemblage

- Residents of Clear Lake and its tributaries
  - Lamprey, blackfish, hitch, pikeminnow, roach, sucker, rainbow trout, stickleback, Sacramento perch, tule perch, sculpin
- Species migrated from the Sacramento River
- Isolation has created lake-adapted species and subspecies (morphological divergence)
  - Clear Lake splittail (*Pogonichthys ciscoides*)
  - Clear Lake hitch (*Lavinia exilicauda chi*)
  - Clear Lake tule perch (*Hysterothorax traskii lagunae*)
  - prickly sculpin (?) (*Cottus asper*)

# Species of Greatest Conservation Need Associated with Clear Lake

- Extinctions
  - Clear Lake splittail, Pacific lamprey, thicketail chub,
- Evidence of population declines
  - Clear Lake hitch
    - candidate for threatened listing under the CESA
  - Clear Lake tule perch
  - Sacramento perch (*Archoplites interruptus*)

# Stresses and Threats

- Anthropogenic influences
  - **Threat:** Dams and water management and use
    - **Stress:** changes in runoff/river flow, water levels and seasonal patterns of flow
    - **Stress:** altered spatial distribution of habitat types
    - **Stress:** habitat fragmentation
  - **Threat:** Invasive aquatic plants and non-native fishes
    - **Stress:** changes in community structure or composition
    - **Stress:** loss or change in biotic interactions

# Strategies

- **Threat:** Dams and water management/use
  - **Strategy: Establish collaborative partnerships**
    - Develop trust among other agencies and stakeholders
  - **Strategy: Best management practices development for water diversions**
    - Understand stakeholder needs and how to meet their needs while meeting BMP criteria
  - **Strategy: Provide education and outreach**
    - Need for BMPs and updates on development and status
    - Impacts associated with actions
  - **Strategy: Effective law enforcement**
    - Increase staffing levels
    - Enforce compliance with 1600 agreements and water rights
    - Reduce illegal diversions
- **Threat:** Invasive aquatic plants and non-native fishes
  - **Strategy: Provide education and outreach**
    - Impacts on native species from non-native species introductions

Thank you for coming.

We appreciate your input.