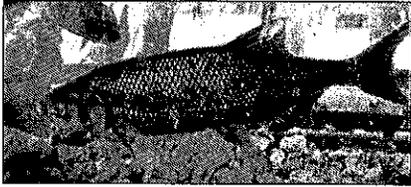


**The Status of Clear Lake Hitch
(*Lavinia exilicauda chi*)
in California**



Kevin Thomas, Senior Fishery Biologist
California Department of Fish and Wildlife
August 6, 2014



Petition History

- September 25, 2012, CA Fish and Game Commission (Commission) received Petition to List Clear Lake hitch as Threatened under the CA Endangered Species Act (CESA)
- Petitioner is the Center for Biological Diversity
- January 31, 2013, Department evaluation recommended accepting the petition
- March 6, 2013, Commission voted to accept the Petition and initiate this review by the Department of the species' status in California

Life History

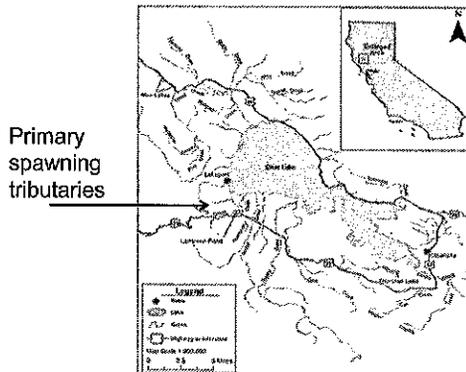
- Member of the Cyprinid family with small head and upward pointing mouth
- Identified by Hopkirk (1973) as a lake adapted sub-species of hitch
- Feeds primarily on invertebrates including water fleas, midges, and crustaceans
- Spawns in tributaries during spring and form schools in open water as adults
- Found only in Clear Lake, Lake County

Cultural Significance

- Food source for local Pomo tribes
- Used to trade for goods from other tribes
- Department regulations allowed for harvest



Clear Lake Hitch Range in CA



Status in California

- Habitat essential for continued existence
- Species status and population trends
- Threat Evaluation - factors affecting the ability to survive and reproduce

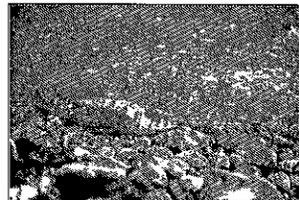


Photo courtesy of Tom Taylor

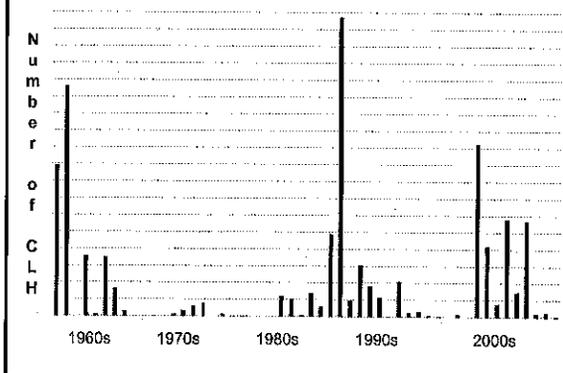
Habitat Essential for Continued Existence

- Clear Lake
- Spawning tributaries
- Wetland rearing habitat
- Open water

Trends in Current Range and Distribution

- No statistically valid population estimate for the species
- Number of fish observed during spawning surveys has decreased in recent years
- Incidental data sources indicate a fluctuating population

Population Trends



Threat evaluation- factors affecting survival and reproduction

- Present or threatened modification and destruction of habitat
 - Exclusion and loss of spawning habitat
 - Loss of wetland habitat
 - Water quality impacts
- Predation and competition from non-native species
- Future impacts from climate change

Management Recommendations

- Derive a population estimate or index
- Assess habitat restoration on spawning tributaries
- Conduct water flow analysis on spawning tributaries
- Develop comprehensive monitoring program for Clear Lake fishes
- Coordinate research efforts and develop outreach program with stakeholders

Listing Factors (14 CCR § 670.1)

Based on scientific evaluation, the Department has determined the continued existence is in serious danger or threatened by:

- Present or threatened modification or destruction of habitat
- Predation
- Competition
- Other natural or human-related factors
 - Climate Change

Independent Peer Review

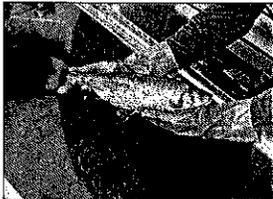
- Five peer reviewers
- Largely supportive of status review and its recommendation for listing as threatened
- Recommendations on:
 - Limits of population trends
 - Impacts to spawning tributaries
 - Hydrology analysis
 - Analysis of competition with non-native species

Listing Recommendation

Based on the best available information, the Department recommends that listing of Clear Lake hitch in California as threatened is warranted at this time.

Thank you

Questions?



Kevin Thomas, Senior Fishery Biologist
kevin.thomas@wildlife.ca.gov
916-358-2845