



**RIPARIAN HABITAT CONSERVATION
AND FLOOD MANAGEMENT
IN CALIFORNIA**



RIPARIAN HABITAT JOINT VENTURE



**DECEMBER 2007
CONFERENCE PROCEEDINGS**

PREDICTING BIRD ABUNDANCE ASSOCIATED WITH TRINITY RIVER RESTORATION


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Riparian birds are one component of monitoring the response of wildlife following implementation of the restoration program. Riparian bird abundance is expected to increase or be maintained in the 40-mile treatment reach as the complexity of riparian habitat from the water's edge to the upland boundary of the floodplain increases. A set of target riparian birds have been selected for monitoring because they are good indicators of riparian habitat conditions, are of some management concern, and can respond rapidly (in 1 to 2 years) to changes in habitat. From point count surveys conducted from 2002 to 2006, we have developed statistical models to predict abundance of target species from a set of riparian habitat characteristics including spatial arrangement, structural complexity, vegetative characteristics, and species composition. By monitoring changes in habitat conditions and bird abundance we can validate the predictive models, identify trends, and estimate population size for the set of target riparian bird species.

The yellow-breasted chat is one riparian nesting species of concern that has been selected for monitoring. We have found chat abundance as high as 4 birds within 150 meters of a station with higher numbers tending to be downstream of Steiner Flat. About half of our stations had chat detections. Our predictive model suggests that higher abundance of chats is associated with larger riparian habitat patches, presence of wet soil plants, and Himalayan blackberry within

YELLOW-BREASTED CHAT

- + % Alder-Shiney Willow
- + % Dusky Narrow-Leaf Willow
- + % Mixed Willow
- + % Grass
- + Presence of small amount of alder or hardwoods
- + Presence of small amount of conifer



- % Alluvial Floodplain
- % Bedrock
- % Medial Bar

Several methods were used to select the best statistical models associated with target riparian bird species abundances. Model results for the yellow-breasted chat showed several vegetative characteristics that were positively associated with abundance, while three geomorphic variables were negatively associated with abundance. Yellow warbler abundance was positively associated with several vegetation characteristics and habitat types. In addition, yellow warblers were more abundant closer to the dam.

100 meters of the count station. Lower abundance is associated with higher percentages of tree cover, more bedrock and medial bars within 100 meters of the station, and arroyo willow at the count station. In general, chats require larger patches of habitat with a mix of riparian plant species and structural complexity. We will be able to use the parameter estimates from the models to predict the number of chats that will be present at the station, reach, or 40-mile scale as restoration and alluvial processes change the riparian habitat over time.

**MORE
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