



**Release:**

13 Nov. 2009

[www.prbo.org](http://www.prbo.org)

**Contact:**

Tom Gardali

**Phone:**

(415) 868-0655 x381

**E-mail:**

[tgardali@prbo.org](mailto:tgardali@prbo.org)

## Riparian Restoration is Successful at Bringing Birds Back to the Sacramento River

Many millions of dollars are spent restoring riparian habitat in the United States. Yet there is almost no information on the success of restoration. The goal of most restoration projects is to recover an ecosystem's structure and function. An important assumption of ecological restoration is that it provides appropriate habitat for native species. Unfortunately, restoration projects are often designed with little consideration for their effects on wildlife

Riparian habitat along the Sacramento River—California's largest river—has been almost entirely lost, and several wildlife species have been extirpated as a result. Large-scale restoration efforts are focusing on revegetating the land with native plants.

In a paper published in *Restoration Ecology*, we evaluated whether bird populations were responding to the large-scale restoration projects along the Sacramento River.

We conducted surveys of landbirds on revegetated and remnant riparian forests from 1993 to 2003. Our objectives were to estimate population trends of landbirds, compare abundance patterns over time between revegetated and remnant riparian forests, and evaluate abundance in relation to restoration age.

Of the 20 species examined, 11 were increasing, 1 decreasing (Lazuli Bunting), and 8 showed no trend. The negative trend for Lazuli Bunting is consistent with information on poor reproductive success and with Breeding Bird Survey results.

There was no apparent guild association common to species with increasing trends. Nine species were

increasing on revegetated and remnant plots, 4 were increasing on revegetated plots only, 3 were increasing on remnant plots only, the Lazuli Bunting was decreasing on both, and 3 species were stable on both. Although many species were increasing at a faster rate on revegetated plots, their abundance did not reach that of remnant plots. This result suggests that the restoration plots were headed along their intended trajectory.

For revegetated plots, age of restoration was a strong predictor of abundance trends for 13 species: positive for 12, negative for 1.

### Management Implications

- The revegetation work along the Sacramento River has paid off with respect to increasing the number of birds.
- Continued investment in restoration is likely to remain an important conservation tool in the Sacramento Valley and perhaps along other large river systems as well (e.g., San Joaquin River).
- Long-term population monitoring is essential to providing information on restoration progress.
- Birds appear to be excellent indicators of restoration success.

Gardali, T., A.L. Holmes, S.L. Small, N. Nur, G.R. Geupel, and G.H. Golet. 2006. Abundance patterns of songbirds in restored and remnant riparian forests on the Sacramento River, California, USA. *Restoration Ecology* 14:391-403.