



## Project Summary

The Carmel River flows northwest out of the Carmel Valley between the Santa Lucia Mountains to the south and the Sierra del Salinas Mountains to the north and east, draining approximately 100 square kilometers. Subsequent to the establishment of two dams and intensified floodplain development over the past 80 years, the river and its riparian corridor have shrunk dramatically. Recently, the watershed has become the focus of multiple restoration efforts in an attempt to restore critical coastal riparian habitat and hydrologic function. In 1998, Big Sur Ornithology Lab (BSOL) initiated an Avian Monitoring Program to evaluate the efficacy of restoration efforts in the watershed. The primary objective of songbird monitoring at these sites is to study avian responses to habitat restoration efforts, with particular attention given to California Partners in Flight (CalPIF) riparian focal species. Currently, eight riparian focal species breed within the watershed. Although water diversion and intensive development continue, the river still provides important passerine breeding, migratory stopover, and overwintering habitats.

## Success Stories

Since 1998, BSOL has conducted breeding season and fall migration mist-netting and banding at the river mouth, and in 2003 BSOL participated in a nest searching study at the mouth of the river. In 2002, BSOL conducted Rapid Ornithological Inventories at five upriver sites; since 2002, BSOL has operated three of these sites as MAPS (Monitoring Avian Productivity and Survivorship) stations during the breeding season. In a comparative analysis between two PIF riparian focal species, Blackheaded Grosbeak and Warbling Vireo, Black-headed Grosbeaks had higher nesting success, nested in both restored and mature habitats, and were more abundant and productive at restored sites with a diverse understory. In contrast, Warbling Vireos had extremely low nesting success, nested only in the mature habitat, were more abundant at restored sites with diverse understory, and were more productive at mature sites with tall canopy. These findings reinforce the importance of using PIF riparian focal species to effectively evaluate habitat restoration techniques and to develop future restoration plans that create healthy, diverse riparian areas. Partners in this Avian Monitoring Program include BSOL, Monterey Peninsula Water Management District, California Department of Parks and Recreation, Dean Witter Foundation, and California Polytechnic State University.



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