

PRBO SIERRA NEVADA BIOREGIONAL AVIAN MONITORING NETWORK: AN ADAPTIVE MANAGEMENT TOOL FOR DETECTING SPECIES DISTRIBUTION SHIFTS IN RESPONSE TO CLIMATE CHANGE (7C)

L. Jay Roberts, Alissa Fogg, and Ryan Burnett, PRBO Conservation Science

With average annual temperatures predicted to rise more than 3° C by the end of the century, and precipitation more likely to be in the form of rain rather than snow, it is likely that many species in the Sierra Nevada will shift their distributions to higher elevations, northerly latitudes, or both. Careful adaptive management strategies will be needed to ensure that habitats are available for species sensitive to the changing climate, and the success of those management strategies will depend on accurate data for tracking species distribution and habitat availability. Since 2009 PRBO has conducted annual avian breeding-season point count and call-playback surveys at over 3000 locations across ten National Forests in the Sierra Nevada of California. The locations range in elevation from 900-2900m and latitude from 35.4 to 42.0 degrees, and are located in a broad range of forest, chaparral, and riparian habitats. Through 2012 we have over 240,000 individual bird detections, and those data can be explored through an online tool called the Sierra Nevada Avian Monitoring Information Network (SNAMIN: <http://data.prbo.org/apps/snamin/>). SNAMIN can be used to analyze species richness, occupancy, or abundance at a customizable set of survey locations, or to visualize where species were detected/undetected on a custom map interface. In addition, SNAMIN contains data from PRBO avian monitoring projects in the northern and eastern Sierras focused on the management of meadows, post-fire habitats, fuels treatments, and aspen. Descriptions of monitoring project design, reports, and publications from each project are also available. We hope this tool will be utilized regularly to achieve adaptive management goals and to optimize management strategies to maximize ecosystem resilience during this period of rapid environmental changes.

Key words: adaptive management, birds, monitoring, online tool, habitat distribution