

Western Ecological Research Center

Publication Brief for Resource Managers

Release:
June 2006

Contact:
Michael L. Casazza

Phone:
707-678-0682 x629

Email and web page:
mike_casazza@usgs.gov
<http://www.werc.usgs.gov/dixon/mikec.asp>

Dixon Field Station, USGS Western Ecological Research Center, 6924 Tremont Road, Dixon, CA 95620

Band-tailed Pigeon Population Indices and Mineral Site Use

Distribution of the band-tailed pigeon occurs in two distinct regions of western North America. The Pacific Coast band-tailed pigeon occurs from British Columbia south to Baja California, while the Interior population breeds primarily in the Rocky Mountains south of Wyoming and is commonly referred to as the “Four Corners” population. Wildlife managers have long recognized the need for a range-wide population survey for band-tailed pigeons, which would aid management of this popular game species. USGS scientists evaluated existing survey techniques for band-tailed pigeons in hopes of designing a useful and precise index to population abundance.

Data from the Breeding Bird Survey, an all-bird survey conducted during the primary breeding season (July) across much of North America, indicated a long-term population decline for band-tailed pigeons. High variability and sparse data made trend detection for the Four Corners population unreliable. Local surveys conducted in Oregon (counts at mineral sites where pigeons congregate), and Washington (call-count survey specific to band-tailed pigeons) were also variable but did indicate a long-term decline. USGS scientists examined the effectiveness of each survey method in detecting long- and short-term population changes. Their results, published in the Summer 2005 issue of the *Wildlife Society Bulletin*, demonstrated that three- to five-year trends were most reliably estimated using mineral site surveys adapted from Oregon protocol. Additional research illustrated impacts of weather (i.e., rainfall) on these surveys (*Wildlife Society Bulletin*, Fall 2005) and the importance of adjacent forestland and human use of mineral sites on the likelihood of persistent use by band-tailed pigeons (*Natural Areas Journal*, January 2006).

Management Implications:

- Counts conducted at mineral sites offer the greatest potential to detect short-term trends in breeding populations of band-tailed pigeons.
- Counts should be conducted during the month of July and three or more days after measurable rainfall to reduce bias in the survey data.
- Mineral sites included in the population index that are associated with forested and special status land are more likely to persist in the future.
- Mineral sites associated with hot-springs may be more susceptible to human disturbance, and persistent use of these sites is less likely.

Preliminary studies using satellite telemetry are showing patterns of migration and local movements of pigeons that winter in southern California. Enhancement of current mineral site surveys and species management will result from continued and expanded research in this area. A description of this preliminary study and updated maps of pigeon movements are available at our website (<http://www.werc.usgs.gov/dixon/pigeon/pigeon.htm>).

Casazza, M. L., J. L. Yee, M. R. Miller, D. L. Orthmeyer, D. R. Yparraguirre, R. L. Jarvis, and C. T. Overton. 2005. Evaluation of current population indices for band-tailed pigeons. *Wildlife Society Bulletin* 33(2):606–615.

Overton, C. T., R. A. Schmitz, and M. L. Casazza. 2005. Post-precipitation bias in band-tailed pigeon surveys conducted at mineral sites. *Wildlife Society Bulletin* 33(3):1047–1054.

Overton, C. T., R. A. Schmitz, and M. L. Casazza. 2006. Linking landscape characteristics to mineral site use by band-tailed pigeons in Western Oregon: Coarse-filter conservation with fine filter tuning. *Natural Areas Journal* 26:38–46.