

THE VALUE OF EXTENSIVE RAPTOR MIGRATION MONITORING IN WESTERN NORTH AMERICA.

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Abstract

Monitoring raptor migration at migratory concentration points is an efficient and cost-effective method for tracking raptor populations over long periods and large geographic scales. HawkWatch International (HWI) and its organizational precursors have been monitoring fall and spring raptor migrations in western North America since the late 1970s. HWI has gathered more than a decade of annual count data for primarily 16 diurnal raptor species in Nevada (fall), Utah (fall), and New Mexico (fall and spring), and coordinates counts at another 13 sites (3 spring, 10 fall) from Texas to Montana and Washington state to Veracruz, Mexico. The HWI effort is unique in applying standard methods across a geographically extensive network of sites, which is critical for accurately tracking regional population trends. However, several other annual counts in the region also add important nodes to the monitoring network and contribute valuable information about regional population trends and flyway dynamics. HWI also conducts banding programs at five sites (2 spring, 3 fall). Together with data from other projects, band encounters from these sites document three distinct regional flyways west of the Great Plains, which we call the Pacific Coast, Intermountain, and Rocky Mountain flyways. Count data from four of HWI's long-term sites and elsewhere document widespread population increases for Ospreys (*Pandion haliaetus*), Merlins (*Falco columbarius*), Peregrine Falcons (*F. peregrinus*), and Turkey Vultures (*Cathartes aura*), but indicate concern for Northern Goshawks (*Accipiter gentilis*) in the northern Rocky Mountains and Golden Eagles (*Aquila chrysaetos*) in the Great Basin since the late 1970s. The effort to monitor raptor migrations in western North America, although young, is yielding substantial understanding about the dynamics of raptor migrations through the region, valuable information to guide conservation actions, and much additional information concerning the biology and migratory ecology of diurnal raptors. Three primary needs remain: (1) expand the monitoring network to include more of western Canada, the central Rocky Mountains in Colorado and Wyoming, the Sierra Nevada and southern mountains of California, and northern and central Mexico; (2) establish intensive nest productivity studies on selected species to help validate migration monitoring as an effective indicator of population trends; and (3) further improve analytical methods for overcoming biases and summarizing trend data.