M. Carson, D. Oleyar, D. Ethier, L. Goodrich, D. Brandes, J. Brown, and J. Sodergren. 2025. The Raptor Population Index: 2023 Species Assessments. Available at http://rpi-project.org/2023/assessments2023.php

Introduction to North American Raptor Conservation Species Assessments

In the assessments, we provide a summary of the continental and regional migration count trends through 2023 for each species using data from 80 migration count sites across North America, spanning from Canada to Mexico. For complete and/or long-distance migrants such as Osprey, Broad-winged Hawk, Swainson's Hawk, and Mississippi Kite, where essentially the entire population migrates out of its breeding range to a separate wintering range, the migration count trends provide a reliable assessment of actual population trends. For partial and short-distance migrants such as the Red-tailed Hawk, there is evidence that some species may be shifting their migratory behavior or wintering ranges in response to climate change and other factors (Bolgiano, 2013; Paprocki, et al, 2017). Our goal is to provide accurate population trend summaries and highlight species of concern.

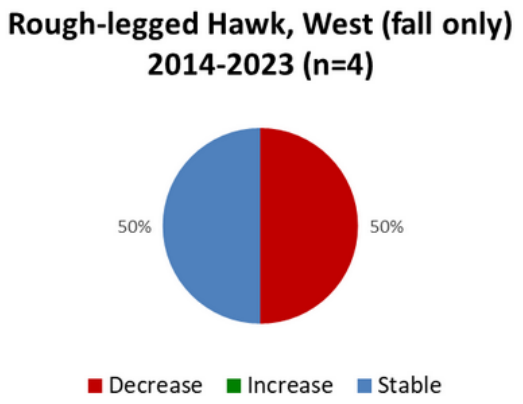
Another factor to consider in viewing the trends is that other species (e.g., Golden Eagle, Peregrine Falcon) have resident populations that may not be well-represented in the migration count data. Therefore, it is important to review results from multiple datasets, including the Christmas Bird Count (CBC, https://netapp.audubon.org/cbcobservation/) and Breeding Bird Survey (BBS, https://www.pwrc.usgs.gov/bbs/results/), for a complete picture of the population status of many raptor species. In these assessments, we also briefly discuss CBC trends where those data augment the findings from the migration count results. The results discussed here derive from www.audubon.org and were published in *Soykan, C.U., Sauer, J., Schuetz, J.G., LeBaron, G.S., Dale, K., and Langham, G.M. 2016. Population trends for North American winter birds based on hierarchical models. Ecosphere, 7(5).* The CBC data represented here only show trends where the confidence interval for the trend derived does not include zero.

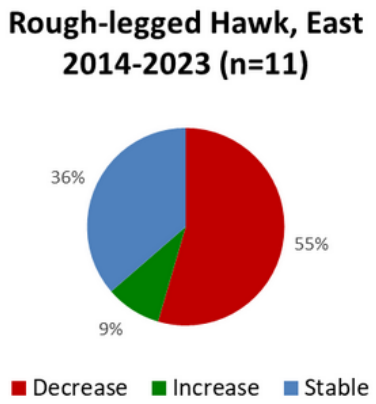
Rough-legged Hawk (*Buteo lagopus*)

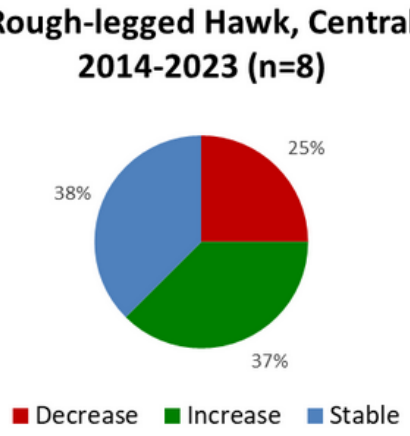
The 10-year migration count trends for the Rough-legged Hawk suggest a mix of declining and stable counts across North America, as 43.5% of 23 total sites reported a declining count during this span. Stable counts were reported at 39.1% of sites, and increased counts were reported at 17.4% of the sites. Regionally, observations in the Eastern and Western regions are a mix of stable and declined reports with >50% of sites in both regions reporting declines. The Central Region reported stable and increasing counts (see pie charts and trend maps below). Additionally, the 20-year count trends similarly reflect a mix of stable and declined counts. The East Region contains the majority of decreasing counts for the twenty-year period, while the West Region showed stable counts (Central Region: 1 decrease, 1 stable; East Region: 8 decrease; West Region: 2 stable).

Winter survey data from the Christmas Bird Count (CBC) show stable 10-year trends continent-wide, with decreases in winter populations in northeastern provinces and states, and increases in northwestern states from the period of 2009-2022. Southwestern states, such as Texas, Arizona, and New Mexico, have documented declining winter populations. Additionally, 10-year abundance data from eBird has documented declining population trends for this species. Between 2011-2021, eBird has documented a 17.1% decline in Rough-Legged Hawk abundance across North America. Short-stopping during winter has been documented for this species (Paprocki et al. 2014) and may be influencing some of the decreases observed in migration and abundance, but other factors also may be affecting this species.

The Rough-legged Hawk is listed as a *Species of Least Concern* globally by the IUCN Red List. However, nesting birds are increasingly vulnerable to the impacts of climate change on Arctic ecosystems, as they breed in the northernmost latitudes where changes in climate are most severe. The species is vulnerable to habitat loss, shooting, collision, and electrocution during the non-breeding season.







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