

Introduction to North American Raptor Conservation Species Assessments

We provide species assessments based on trend analyses through 2019 from 76 raptor migration count sites across North America spanning from Canada to Panama. Synthesis of trends at the continental and regional scales can highlight species and/or regions that warrant a closer look in the case of widespread declines or highlight conservation successes in the case of widespread increases. It is important to note that the intent of long-term monitoring efforts like RPI is to identify changes overtime, not necessarily to explain them—that is where focused research efforts come into play. RPI shines a light on species and places in need of closer looks and focused efforts.

In these assessments, we provide a summary of the continental and regional migration count trends for each species and highlight species of concern. 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 and/or wintering ranges in response to climate change and other factors (Bolgiano, 2013; Paprocki, et al, 2017).

Another factor to consider in viewing the trends is that some species (e.g., Golden Eagle, Peregrine Falcon) have resident populations that may not be well-represented in the migration count data. Therefore, considering 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/>), can provide a more complete picture of the population status of many raptor species. In these assessments, we also briefly examine CBC trends, especially where those data inform 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).

Rough-legged Hawk (*Buteo lagopus*)

The 10-year migration count trends for the Rough-legged Hawk suggest a mix of stable and declining counts across North America with 57% of 21 total sites showing statistically significant stable counts during this span. There have also been decreasing observations at 43% of the sites and no sites have reported an increase. Regionally, observations are a mix of stable and declining reports with 50% of count sites in the East Region showing declines and 50% of sites in the Central Region decreasing. The West Region shows stable trends at the five sites analyzed (see pie charts and trend maps below). The 20-year count trends also reflect a mix of stable and declining 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



Photo by Ilyah Sukhov

decrease; West Region: 2 stable). The two sites recording the highest counts of migrating Rough-legged Hawks in the past decade, Hawk Ridge, Minnesota and Whitefish Point, Michigan counted on average 551 and 345 per year. Hawk Ridge counts show a 7.32% decline per year for the recent decade whereas Whitefish Point counts are stable. Derby Hill, New York, averaging 164 roughlegs per year also shows a steep decline of 9.7% per year for the recent decade.

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. Short-stopping during winter may be influencing some of the decreases observed in migration and winter, 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 the Arctic ecosystems. The species also is vulnerable to habitat loss, shooting, collision, and electrocution during the non-breeding season.



