

## 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](http://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).

### Northern Harrier (*Circus hudsonius*)

The 10-year migration count trends for Northern Harrier suggest stable or decreasing populations across North America as 56% of sites recorded no statistically significant changes and 43% recorded decreases in counts during this period. The decreasing counts with only one exception were in the East Region (see pie charts and trend maps below). The 20-year count trends (not shown) similarly suggest stable populations except in the East where 13 of 18 trends are decreasing (Central Region: 2 stable; East Region: 7 stable, 19 decrease; Gulf Region: 5 stable; West Region: 5 stable, 1 increase). Both the 10-year and 20-year trends are decreasing at Cape May, New Jersey, the site with the highest counts of Northern Harrier. Conversely, winter survey data from the Christmas Bird Count (CBC) show mostly stable 10-year trends

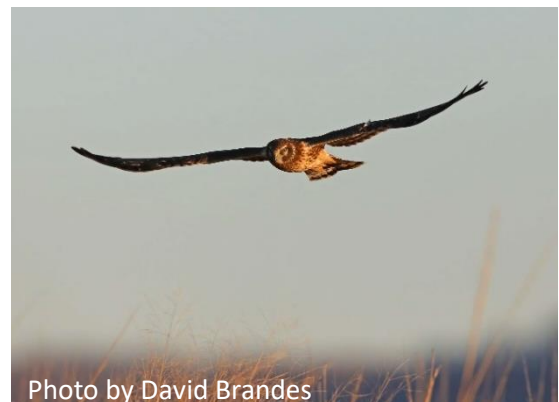


Photo by David Brandes

continent-wide and in the Eastern Region, as 46 of 64 states and provinces, including 23 of 30 in the Eastern Region, show no statistically significant changes. The Northern Harrier is listed as Threatened or Endangered in New England and is a species of conservation concern in Pennsylvania, Oregon, The Great Plains, Southwest, and the Intermountain West primarily due to loss of grassland habitat. It is listed as a species of Least Concern by the IUCN Red List. More research is needed to understand the observed declines in migration counts in the East.

