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 - 2023

We provide species assessments based on trend analyses through 2023 from 80 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 over time, 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).*

American Kestrel (*Falco sparverius*)

In the recent decade, 51% of American Kestrel migration counts across North America suggest stable numbers while 22% of sites show declining counts. The majority of sites that reported kestrel declines are Eastern sites, but kestrel counts also declined at one site in the Central Region, and four sites in the West. Cape May, New Jersey, observed the highest seasonal average at 4,901 migrants. The increasing and stable trends in this analysis appears to be a recent occurrence, given widespread concern about this species based on past declines in

migration count trends. Migration count results from 1999-2019 and 1989-2009 indicate much broader declines, with 59% of sites declining.

Winter survey data from the Christmas Bird Count (CBC) also show declining 10-year trends continent-wide with the annual percent change in population reported to be -0.81% from 2009-2021. Lastly, the relative abundance of American Kestrels throughout North America seems to be declining, as reflected by eBird trend data from 2012-2022. The eBird data reports an annual decline in abundance of -22.5% for all of North America, but with some localized increases, such as in New Brunswick (19.9% increase). A 2023 publication by Oleyar et al. evaluated long-term kestrel population trends and found widespread declines. In both the central and eastern regions of North America, kestrel counts declined during the fall and winter over the last 20- and 30-year periods. Declines were also observed in western North America, but these declines were explained by increasing wintering counts in northern regions. This suggests a change in migratory tendencies, such as migrating shorter distances or kestrels electing not to migrate (Oleyar et al. 2023).

There are many ongoing research efforts to understand the cause for widespread long-term declines in this species. The American Kestrel is listed as a Species of Least Concern globally by the IUCN Red List, but is listed as a Species of Concern in 21 State Wildlife Action Plans and are listed as a Bird of Conservation Concern by the USFWS (McClure et al 2021, U.S. Fish and Wildlife Service 2021). Pesticides and other environmental contaminants associated with agriculture, along with habitat loss and cavity competitors are some proposed major threats to the species.

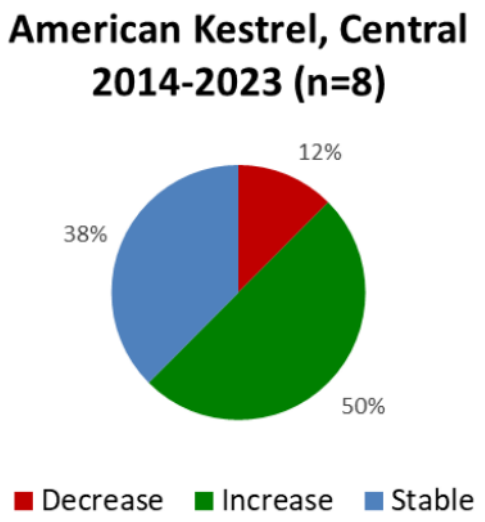
Citations

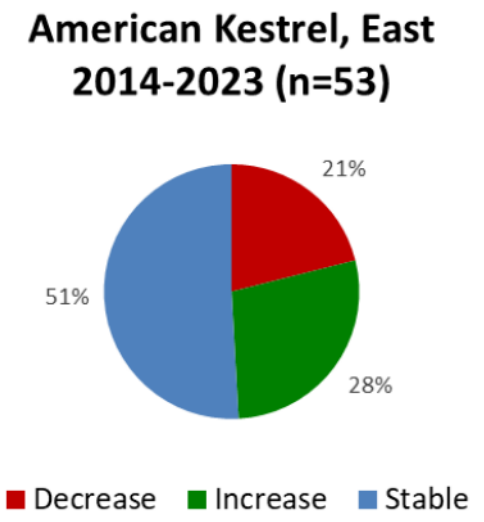
McClure, C., Brown, J., Schulwitz, S., Smallwood, J., Farley, K., Therrien, J.-F., Karl, M., Karen, S., & Julie, H. (2021). Demography of a widespread raptor across disparate regions. Ibis.

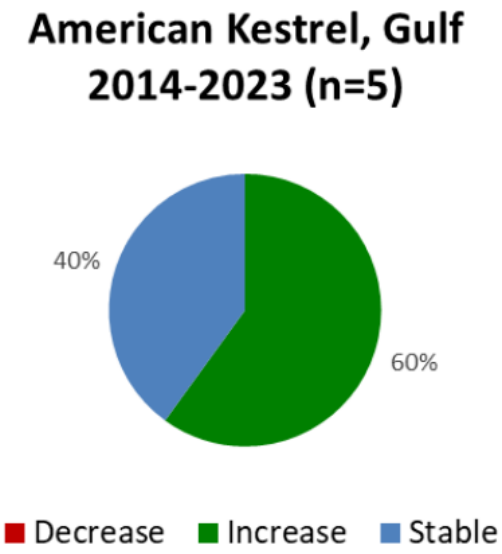
Oleyar, D., Goodrich, L. J., Ethier, D., Brandes, D., Smith, R., Brown, J., & Sodergren, J. (2023). Thirty years of migration and winter count data indicate regional differences in population trajectories for american kestrels in north america. Journal of Raptor Research, 57(2). https://doi.org/10.3356/JRR-22-17

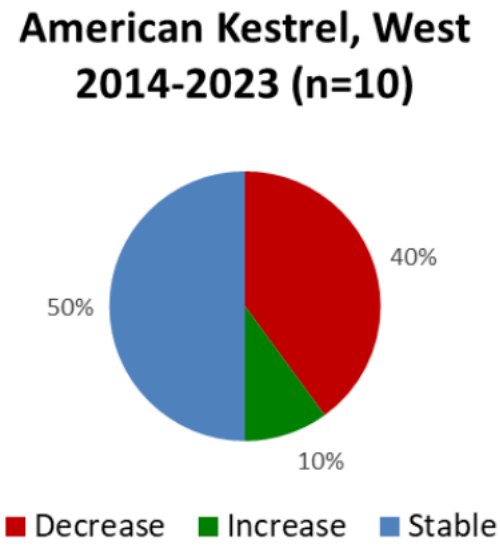
M. Carson, D. Oleyar, D. Ethier, L. Goodrich, D. Brandes, J. Brown, and J. Sodergren. 2025. *The Raptor Population Index: 2023 Species Assessments*. Available at http://rpi-project.org/2023/assessments2023.php

U.S. Fish and Wildlife Service. (2021). Birds of Conservation Concern 2021. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php









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