Importance of the Chilkat Bald Eagle IBA Region to Migratory Birds

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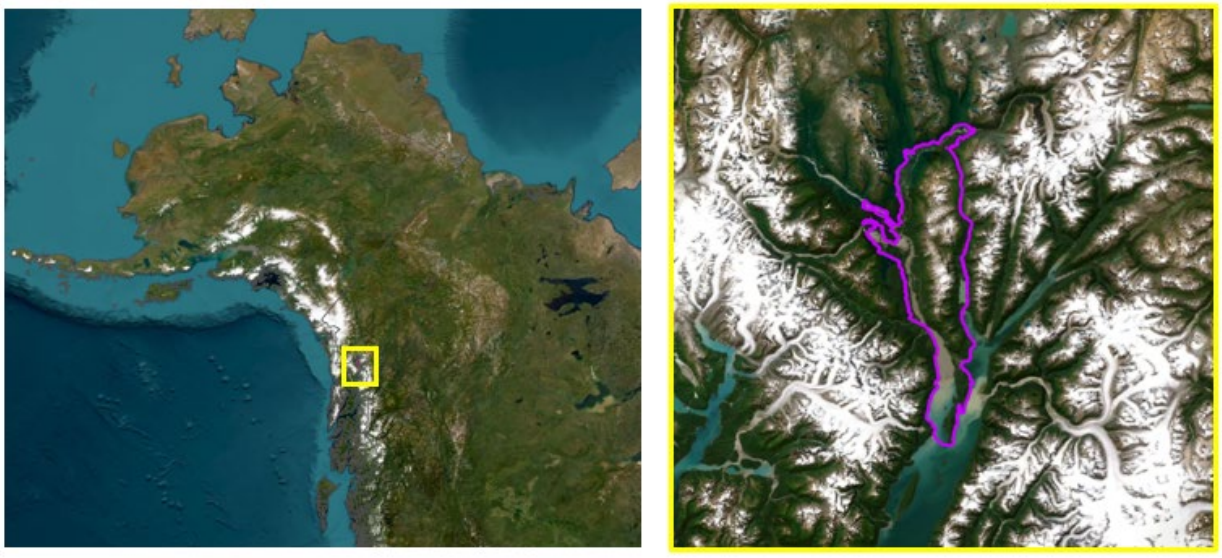
We used the Migration Passage Analysis described in DeLuca et al. (2021) to estimate the number of birds migrating through the Chilkat Bald Eagle IBA during spring and fall migration. The Migration Passage Analysis uses 2022 eBird Status weekly estimates of abundance (Fink et al. 2020) in conjunction with Partners In Flight population estimates (Stanton et al. 2019) to estimate the cumulative number of individuals and the percent of the total North American population passing through the study region during a migration season for each species included in the study.

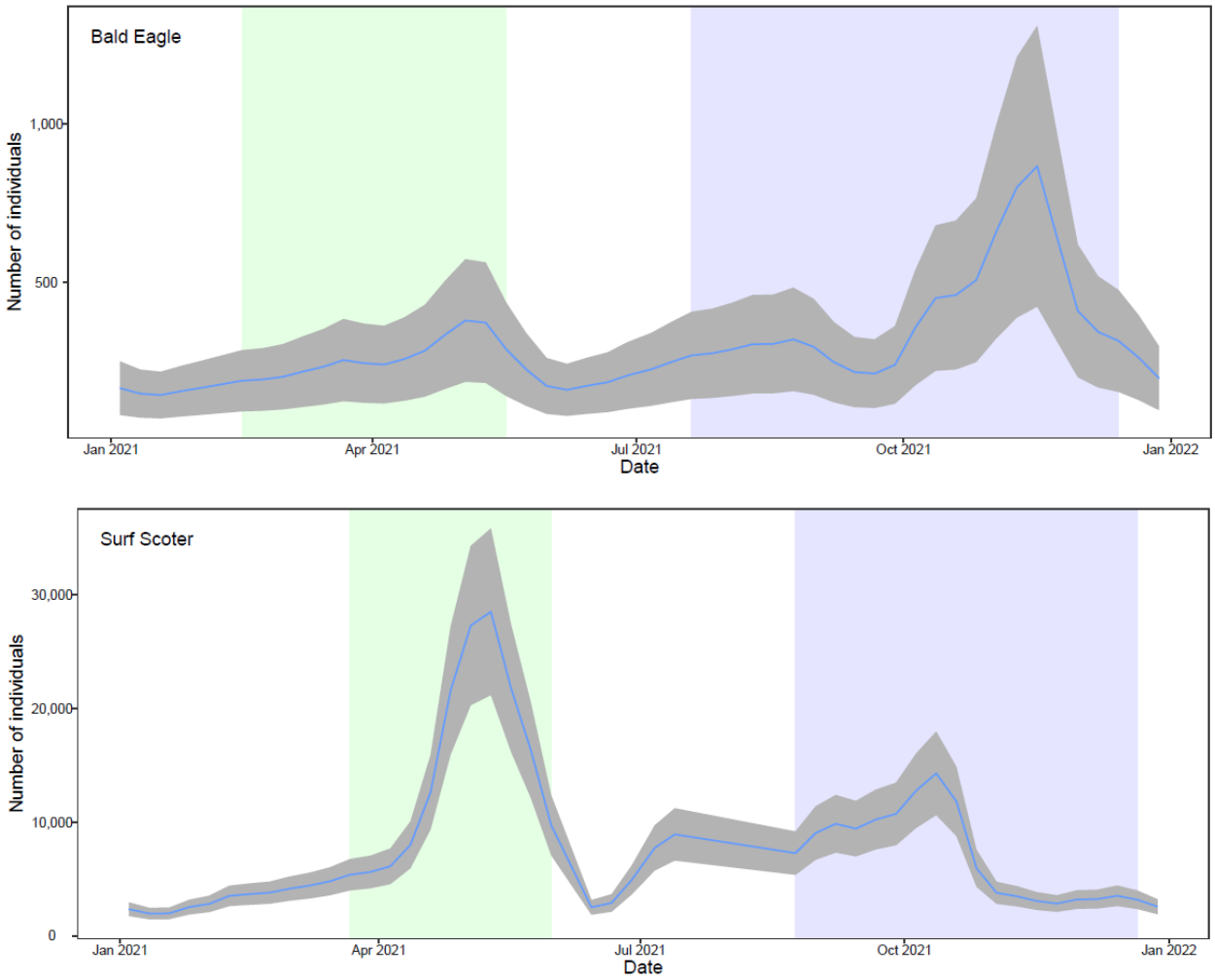
The study area associated with the estimates includes the Chilkat Bald Eagle IBA (Figure 1) and is approximately 18,100 hectares.

Figure 1. The study region, Chilkat Bald Eagle IBA (purple outline).



We calculated and graphed weekly abundance estimates and associated error for each of the 116 species included in this study (e.g., Figure 2). See species_season_summary.csv for estimates of each species.

Figure 2. Weekly population estimates for Bald Eagle and Surf Scoter at the Chilkat Bald Eagle IBA.



We then estimated the cumulative total number of individuals using the study area in each season and converted it to the percent of the total North American population. To put the continental breeding population percentages into a meaningful conservation context, we used Birdlife International's criteria A4 for determining important bird areas, which allows study regions to qualify if it is "known or thought to hold congregations of ≥1% of the global population of one or more species on a regular or predictable basis" (BirdLife International 2020). Table 1 summarized each of the species that meet this criterion during fall and spring migration.

Table 1. Species whose percent of the population that uses the study area is ≥1% of the total North American population.

Spring Migration

Species	% Population Proportion	Standard Error
Surf Scoter	18%	3%
Glaucous-winged Gull	2%	1%
Barrow's Goldeneye	2%	1%
Western Sandpiper	2%	0%
Bonaparte's Gull	2%	0%
Trumpeter Swan	1%	0%
Rock Sandpiper	1%	1%
White-winged Scoter	1%	0%
Varied Thrush	1%	0%
American Pipit	1%	0%
Bald Eagle	1%	0%

Fall Migration

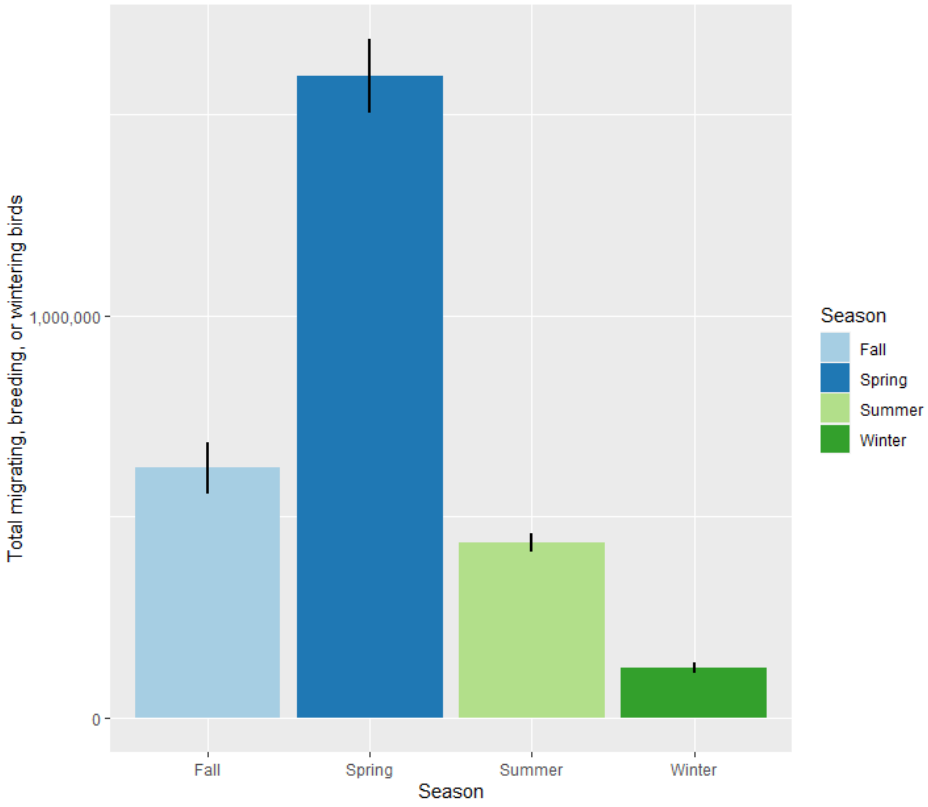
Species	Population Proportion	Standard Error
Surf Scoter	9%	1%
Glaucous-winged Gull	6%	2%
Sharp-shinned Hawk	3%	0%
Bald Eagle	2%	1%
Trumpeter Swan	1%	0%
Bonaparte's Gull	1%	0%
Horned Grebe	1%	0%
Northern Goshawk	1%	0%
Dunlin	1%	0%
Golden Eagle	1%	0%
Harlequin Duck	1%	0%
American Wigeon	1%	0%

Finally, we report the number of total individual birds across all 116 species using the study area across all four seasons, along with standard errors (Table 1, Figure 3).

Table 2. Total numbers of birds across the 116 species estimated to use the study area in each of the four seasons.

Season	Total type	Estimated number	Standard error
Spring	Migrants only	1,594,986	46,268
Fall	Migrants only	621,109	32,474
Summer	Breeding birds	436,068	11,469
Winter	Wintering birds	125,830	6,734

Figure 2. Total numbers of birds across the 116 species estimated to use the study area in each of the four seasons.



How to use this material

Graphs and results from this report and the accompanying results folder can be used for presentations, other reports, public reviews/comments, white papers, etc. Please contact Bill DeLuca (william.deluca@audubon.org) or Tim Meehan (tim.meehan@audubon.org) to advise on the use of these data if needed.

Although the specific results can be cited to this report, the process used to calculate the results should be cited as DeLuca et al. 2021 (See below for the full citation). The Cornell Lab of Ornithology should be given credit for data used in the analysis by citing eBird Status abundance data using Fink et al. 2020 and linking to the Status and Trends website (https://science.ebird.org/en/status-and-trends/). Partners in Flight and The Bird Conservancy of the Rockies should also be given credit for population estimates data by using Stanton et al. 2019 and linking to their website (https://pif.birdconservancy.org/). For example: "*The findings were based on analyses by the National Audubon Society, using data from eBird Status & Trends from the Cornell Lab of Ornithology and Partners in Flight Population Estimates Database from Bird Conservancy of the Rockies.*"

Accompanying this report is a folder containing species graphs and a spreadsheet (species_season_summary.csv). The species graphs folder contains a figure plotting weekly species abundance for each species in the study, similar to those in Figure 2. The species_season_summary.csv contains a row for each species in the study with columns for a variety of summary statistics. See the "Summary stat definition" tab in the spreadsheet for a definition of each summary statistic.

Finally, keep in mind that these summaries are only estimates and should not be considered perfectly precise or accurate. When referring to the summaries, it is recommended to be conservative and use terms such as "approximately" or "up to" to convey to the reader that our estimates include error. For example, "The Chilkat Bald Eagle IBA hosts up to 2% of North America's Bald Eagle population during fall migration".

Acknowledgments

This material uses data from the eBird Status Project at the Cornell Lab of Ornithology, eBird.org. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Cornell Lab of Ornithology.

Citations

BirdLife International (2020). BirdLife Data Zone. http://datazone.birdlife.org/site/ibacritglob

DeLuca, W.V., Meehan, T., Seavy, N., Jones, A., Pitt, J., Deppe, J.L. and Wilsey, C.B., 2021. The Colorado River Delta and California's Central Valley are critical regions for many migrating North American landbirds. Ornithological Applications, 123(1).

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, O. Robinson, S. Ligocki, B. Petersen, C. Wood, I. Davies, B. Sullivan, et al. 2020. eBird Status and Trends. https://registry.opendata.aws/ebirdst/

Stanton, J., P. Blancher, K. Rosenberg, A. Panjabi, and W. Thogmartin. 2019. Estimating uncertainty of North American landbird population sizes. Avian Conservation and Ecology 14:4.