Bald Eagles 2020 Population Report
Questions and Answers

What action is happening?
The U.S. Fish and Wildlife Service published a technical report titled "Bald Eagle Population Size: 2020 Update." In this technical update, the Service provided the newest estimates for the bald eagle population in the lower 48 states, totaling 316,700 individuals, which includes 71,467 occupied nests.

How does this compare to previous bald eagle population estimates?
In 2016, the Service published the bald eagle population status report as part of the Programmatic Environmental Impact Statement (PEIS) for the eagle rule revision. In that report which analyzed data from 2009, the bald eagle population in the lower 48 status was estimated to be 72,434 individuals, including 30,548 breeding pairs.

When the bald eagle was successfully recovered and removed from Endangered Species Act protection in 2007, it had 9,789 breeding pairs. This was a dramatic increase from the known all-time low of 417 breeding pairs in 1963.

How did the bald eagle population rebound?
The bald eagle first gained federal protection in 1940, under what later became the Bald and Golden Eagle Protection Act. The eagle was later given additional protection under the Migratory Bird Treaty Act (this is because avian families that include the birds of prey were not included until an amendment of the treaty with Mexico in the early 1970s). However, the eagle population fell into steep decline in later decades, due primarily to widespread use of the pesticide DDT after World War II. DDT accumulated in eagles and caused them to lay eggs with weakened shells, decimating the eagle population across the nation. Concerns about the bald eagle resulted in its protection in 1967 under the predecessor to the current Endangered Species Act (ESA). The eagle was one of the original species protected by the ESA when it was enacted in 1973.

The legal protections given the species by these statutes, along with a crucial decision by the Environmental Protection Agency to ban the general use of DDT in 1972, provided the springboard for the Service and its partners to accelerate recovery through captive breeding programs, reintroductions, law enforcement efforts, protection of habitat around nest sites and land purchase and preservation activities. The eagle population responded dramatically to these actions. From an all-time low of 417 known breeding pairs in 1963, the population in the lower 48 states grew to a high of 9,789 pairs when it was removed from ESA protection in 2007.

The recovery of the bald eagle is one of the most well-known conservation success stories of all time. The Service continues to work with partners in state and federal agencies, tribes, non-government organizations and private landowners to ensure that our nation's symbol flourishes.

What is this technical report?
This report is a technical update of the scientific information for bald eagles published in the Service's *Programmatic Environmental Impact Statement*, which was finalized in December 2016. In the PEIS, the Service committed to updating population size estimates for both bald and golden eagles no less than once every six years. This report fulfills that commitment for bald

eagles in the coterminous United States for four of six eagle management units (EMU) – the Atlantic Flyway, Mississippi Flyway, Central Flyway, and Pacific Flyway North EMUs. The population size estimate for golden eagles is not yet complete.

In addition, there will be a subsequent report using the updated bald eagle population estimates to determine what the allowable level of "take" of the eagles will be, as part of the permitting process under the Bald and Golden Eagle Protection Act.

How did you estimate the bald eagle population size?
There are three major components of this report:

Details on the aerial surveys and plot-based estimates.
Using eBird relative abundance data to estimate occupied bald eagle nest density.
Development of an integrated population model to expand the estimates of numbers of occupied bald eagle nesting territories to estimates of total population size.

In summary, Part 1 of the report is the *data* collected from the Service's Migratory Bird Program pilot biologists and observers from many Service regions, programs and contract observers during their aerial surveys over a two-year period in 2018 and 2019. The Service flew aerial surveys over high density eagle nesting areas to generate accurate estimates and get counts of occupied nesting territories. The results of those data are easily displayed in Figure 1 and Table 2 and result in 31,304 occupied nests found.

Part 2 of the report is focused on using the eBird relative abundance predictions to acquire information on the lower density nesting areas that we were not able to fly as part of the aerial surveys. When the aerial survey results are supplemented with the results obtained using eBird, the total is 71,467 occupied nesting areas, or breeding pairs, across all of the conterminous United States included in this assessment.

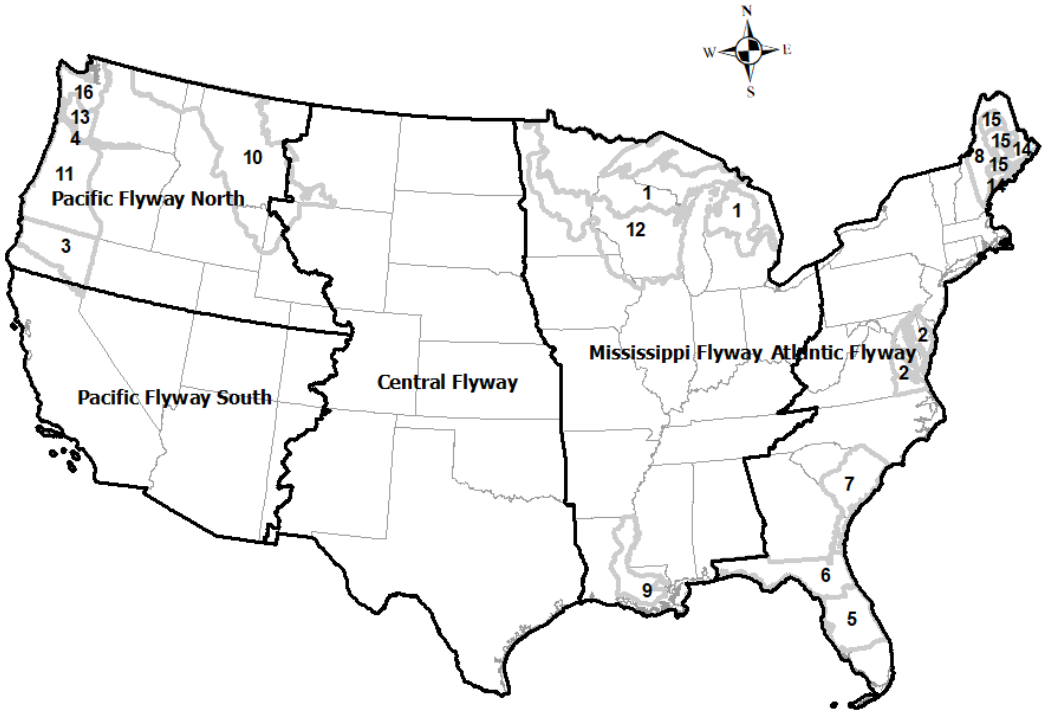
Based on those two major sets of information for this population estimate, the Service created an integrated population model to calibrate the estimates of the number of occupied nests to estimates of the total population size (only breeding adults are counted at nests, excluding sub-adult eagles and nonbreeding adult eagles). Information on survival rates, productivity, breeding rates, etc., provides the data needed to make this extrapolation. This third part of the technical report gives us a total estimate of 316,700 individuals in the population.

Do you have estimates for how many eagles are in each state?
No, the Service does not have data for each individual state. When the bald eagle was listed under the ESA, we relied on data from state fish and wildlife agencies to contribute to population estimates. After the eagle was recovered and removed from ESA protection, many state agencies pivoted their limited resources and time to other higher priority species. Contact your individual *state fish and wildlife agency* to see if state-specific estimates are available.

The Cornell Lab of Ornithology is currently working with the Service to describe eagle populations at finer scales, such as state-by-state eagle estimates, but that work is not yet completed.

Instead, we now estimate bald eagle nesting pairs based on 16 survey areas that feed into estimates of the total numbers of bald eagles for the Service's Eagle Management Units (a

modification of the four North American migratory bird Flyways). The 16 survey areas are defined by the numbered gray areas, and the Bald Eagle Management Units are delineated by black lines.



Results from the aerial surveys over the 16 eagle management units.

Survey Area	Number of occupied nests
1 = Boreal Hardwood Transition	8,228
2 = Chesapeake Bay	2,474
3 = California Highlands	914
4 = Columbia River	255
5 = Central Florida	1,284
6 = Northern Florida	1,285
7 = South Carolina – Georgia Lowlands	937
8 = Maine Lowlands	568
9 = Mississippi Alluvial Valley in Louisiana	2,978
10 = Northern Rockies	3,498
11 = Oregon Pacific Rainforest	1,448
12 = Prairie Hardwood Transition	5,005
13= Washington Southern Cascades	162
14 = Maine Down East	761
15= Maine Upper Middle Coast and Highlands	298
16 = Olympic Puget Sound and NE Cascades	1,209
TOTAL	31,304

Next, we added the aerial surveys results to that of the eBird relative abundance data across the entire flyway.

Region	Occupied Nesting Territories
Atlantic Flyway	19,074
Central Flyway	6,867

Mississippi Flyway	36,038
Pacific Flyway North	9,488
TOTAL	71,467

It is that number of 71,467 occupied nests (breeding pairs) that is then extrapolated with an integrated population model. The population size estimates bald eagles by eagle management unit and total for the United States (excluding the southwestern United States and Alaska).

Region	Total Population Size
Atlantic Flyway	84,541
Central Flyway	30,427
Mississippi Flyway	159,772
Pacific Flyway North	42,068
TOTAL	316,708

Why are there no numbers for the Pacific Flyway South area in the southwestern United States?
The bald eagle population in the southwestern United States is comparatively small and patchily distributed. That population is carefully monitored by the Arizona Game and Fish Department and partners annually, and those monitoring data provide the best information on the status of this population. The broader surveys we conducted elsewhere across the coterminous United States are not practical in the southwest.

What laws protect bald eagles?
Bald eagles are protected by two major federal laws: the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. In addition, state governments can enact state laws that afford more protection than federal laws to conserve wildlife species. Bald eagles may be protected by a state law such as a state endangered species law. Please contact your state fish and wildlife agency to see if your state has laws or management guidelines applicable to eagles. For more information on the Service's state or territorial wildlife agencies' contact information, please visit: http://www.fws.gov/offices/statelinks.html.

Where can I get more information?
This technical report is the second in a series of reports that have been published on bald and golden eagles. For more information on bald eagle management and additional background, please visit: https://www.fws.gov/birds/management/managed-species/eagle-management.php.