

# **2016 Nebraska Bald Eagle Nesting Report**



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**Nongame Bird Program**

**Nebraska Game and Parks Commission**



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The Bald Eagle (*Haliaeetus leucocephalus*), a species once threatened with extinction, has increased throughout North America since the mid- to late 20<sup>th</sup> Century. In Nebraska, Bald Eagles bred historically, but were absent as a breeding species for most of the 20<sup>th</sup> Century. The first active successful modern Bald Eagle nest in Nebraska was near Valley, Douglas County, in 1991 (Farrar 1991). Since 1991, the number of Bald Eagle pairs nesting in Nebraska has increased (Jorgensen et al. 2010, 2011). In 2007, the Bald Eagle was removed from the federal list of threatened and endangered species. The following year it was removed from the Nebraska state list of threatened and endangered species. Even though Bald Eagle numbers have surpassed recovery goals, annual statewide nest monitoring has continued in Nebraska and is coordinated by the Nongame Bird Program at the Nebraska Game and Parks Commission (NGPC). In this report, we present results from the 2016 Bald Eagle nest monitoring in Nebraska.

## METHODS

In 2016, we collected and compiled Bald Eagle nesting data following the same methods used since 2012 (Jorgensen and Dinan 2012, 2013, 2014, 2016). Nesting data were collected in two ways: 1) we conducted targeted surveys of known nests and along river corridors and 2) we compiled information provided by others. The principal objective of nest monitoring in 2016 was to determine nest locations and whether Bald Eagle nests were active. We define an active nest as a nest in which a pair of adult Bald Eagles is engaged in breeding activity (e.g., incubating eggs, tending to young). We did not monitor active nests throughout the nesting season to determine nest productivity but chick and fledgling numbers were recorded opportunistically if and when observed.

Targeted surveys consisted primarily of driving public roads, locating known nests and searching for new nests. A small proportion of targeted surveys were conducted by kayak or airboat. We defined a known nest as one present and observed prior to 2016. We defined a new nest as a nest documented for the first time in 2016. Vehicle surveys were conducted in March and April before visibility of nests within the interior of trees was reduced by leaves. We conducted targeted surveys by vehicle in the Sandhills and along the Loup, Elkhorn, Nemaha, Republican, and a small portion of the Platte and Missouri rivers. We used ArcGIS (version 10.1) to develop maps of river corridors with locations of nests active in 2015. We also uploaded known nest locations to a handheld Global Positioning System (GPS). We used the known nest locations and maps and systematically drove public roads along rivers and streams. We navigated to known nests and also actively searched for Bald Eagles and new nests. Bald Eagle nests are large and distinctive, and are often visible from a distance (e.g., > 1 km). If a Bald Eagle was observed we scanned the area for a nest using binoculars and/or a spotting scope. If a nest was observed we used a spotting scope to search for Bald Eagles in the immediate vicinity of or on the nest. Bald Eagles sitting on nests were suspected of incubating eggs and the nest/breeding pair was considered active. If we observed adult Bald Eagles near the nest but they were not on the nest or tending to young, we recorded the nest as occupied with unknown activity. An occupied nest is defined as a nest with one or more adult Bald Eagles present during the breeding season (USFWS 1983); this includes pairs constructing practice nests. We returned to nests with unknown nest activity at a later date to determine whether they were active or not active.

Airboat and kayak surveys were conducted along the lower Platte River in June and July. We conducted airboat and kayak surveys using a similar protocol as vehicle surveys. We navigated to known Bald Eagle nests and searched for new nests. We observed all nest locations using binoculars.

Additional nests were monitored by personnel from the National Park Service-Missouri National Recreational River (NPS-MNRR), Platte River Recovery Implementation Program (PRRIP), U.S. Fish and Wildlife Service (USFWS), Virginia Tech Shorebird Program, Central Nebraska Public Power and Irrigation

District, Nebraska Army National Guard, Nebraska Department of Roads, NGPC, Nebraska Public Power District, Tern and Plover Conservation Partnership, U.S. Army Corps of Engineers, National Park Service–Niobrara Scenic River, Fontenelle Forest, Audubon’s Rowe Sanctuary, and trained volunteers. Survey methods used by others were similar to our methods, but the type of data provided varied. We evaluated the data to determine whether a nest was active. All data were recorded in a database housed at the NGPC in Lincoln.

We used ArcGIS (version 10.1) to show the spatial distribution of active Bald Eagle nests in Nebraska in 2016. We compared the number of surveyed and active nests in 2016 to previous years. We determined the number of active and new nests along each river system. We also determined the number of nests that were surveyed by each entity and the number of active nests in each county.

## RESULTS

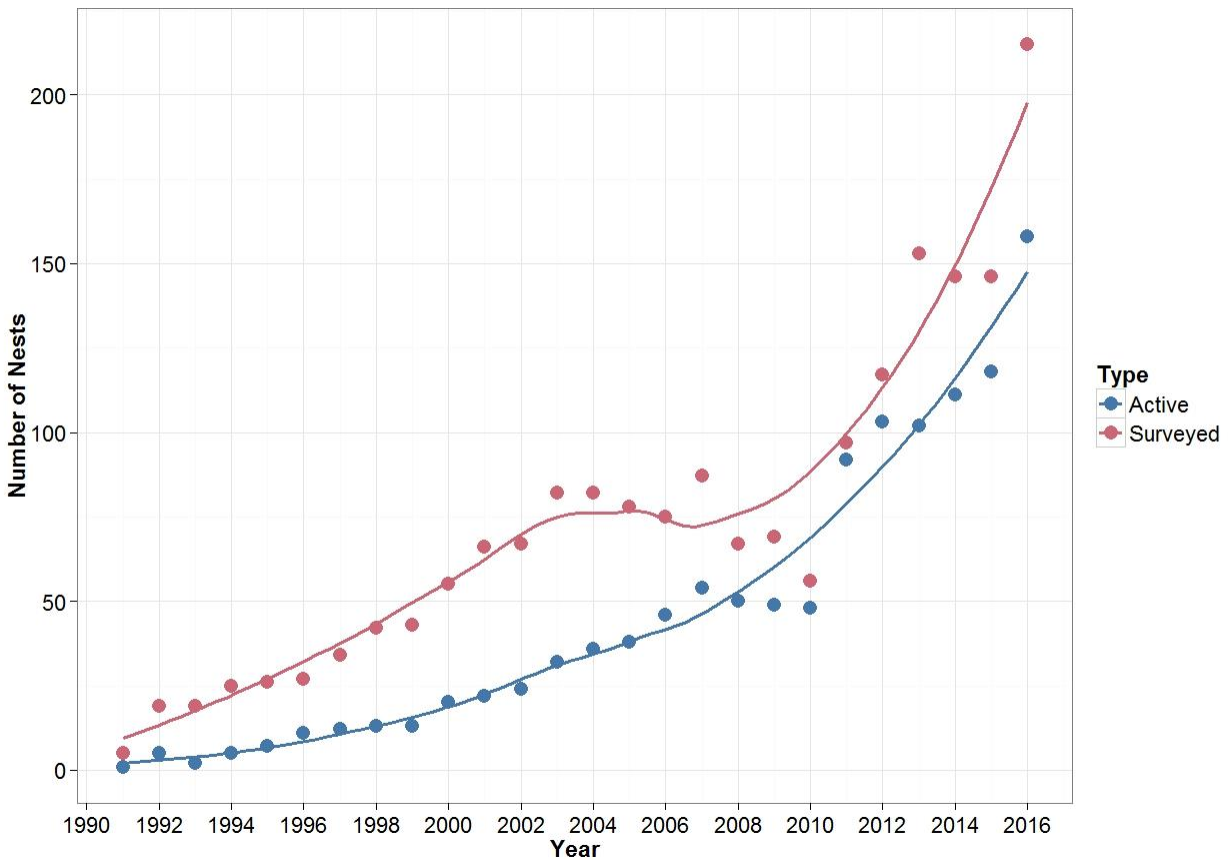
A total of 220 nests were surveyed and 162 of these nests were determined to be active in 2016 (Figure 1). Active nests were distributed across the state with highest numbers observed in eastern and central Nebraska. A large proportion of nests were located along river corridors (Figure 2, Table 1). Fifty-three new nests were documented for the first time in 2016; 47 of these nests were active, three were inactive, and three had unknown activity. We (Nongame Bird Program) surveyed 131 nests during our targeted surveys, NPS–MNRR surveyed 16 nests (NPS–MNRR, unpublished data), PRRIP surveyed 20 nests (PRRIP 2016), USFWS surveyed eight nests, Virginia Tech Shorebird Program surveyed seven nests (Virginia Tech Shorebird Program, unpublished data), and 38 nests were surveyed by others (Table 2).

During targeted surveys we recorded 102 active nests. Targeted surveys yielded one active nest on the Missouri River, 27 active nests along the Platte River system (lower Platte, central Platte, North Platte, and South Platte rivers), 35 active nests along the Loup River system (Loup, Cedar, North Loup, Calamus, Middle Loup, and South Loup rivers), 13 active nests along the Elkhorn River, six active nests along the Nemaha River, two active nests along the Big and Little Blue rivers, and one active nests along the Republican River. We also recorded 17 active nests that were found in the Sandhill and areas outside of river corridors near lakes and small streams throughout the state.

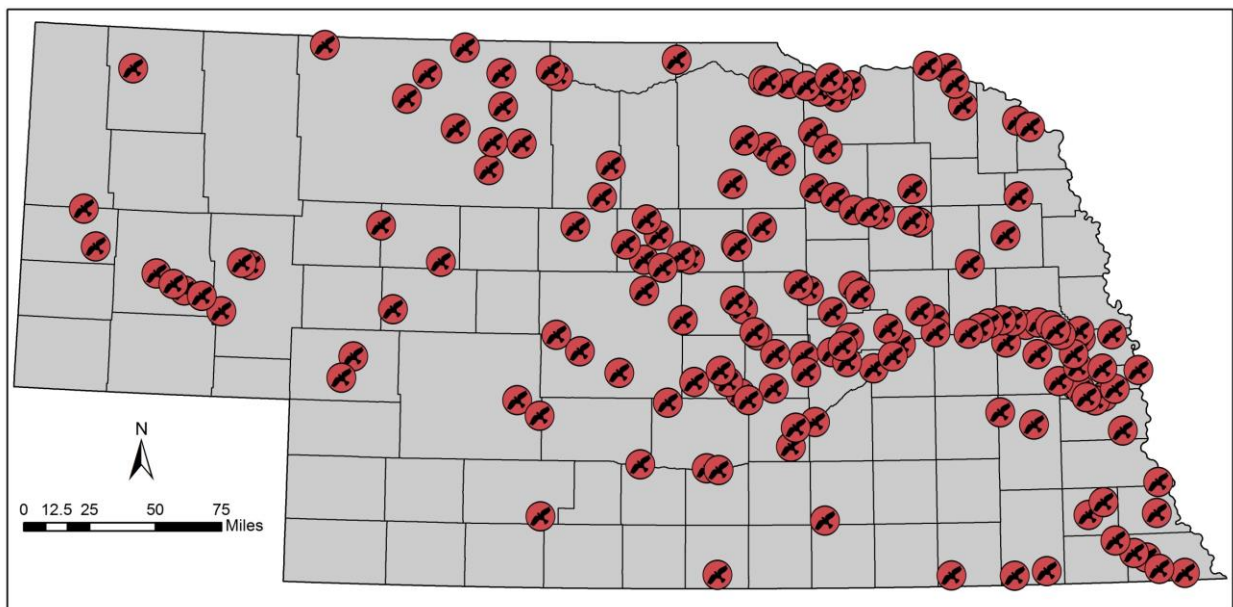
The PRRIP recorded four active nests along the Central Platte River (PRRIP 2016), the USFWS recorded eight active nests throughout the state, NPS–MNRR recorded ten active nests along the Missouri and Niobrara rivers (NPS–MNRR, unpublished data), and the Virginia Tech Shorebird Program recorded six active nests along the Niobrara River (Virginia Tech Shorebird Program, unpublished data). Thirty-two additional nests were reported as active by other individuals.

Since 1991, active Bald Eagle nests have been recorded in 72 of the 93 Nebraska counties (Table 3). In 2016, an active Bald Eagle nest was documented for the first time in Jefferson and Frontier County.

Nests have not been monitored for reproductive success for several years, but chick and fledgling numbers were recorded opportunistically if and when they were observed. We recorded 83 fledgling Bald Eagles in 2016. From 1991 to 2016, a minimum of 1013 fledgling Bald Eagles have been produced in Nebraska.



**Figure 1.** Number of Bald Eagle nests surveyed (red points) and number of active nests (blue points) in Nebraska from 1991 - 2016. Trend lines created using locally weighted scatterplot smoothing (LOESS) in Program R (R Development Core Team 2014).



**Figure 2.** Spatial distribution of active Bald Eagle nests in Nebraska in 2016. Red icons are 2016 active nest locations.

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**Table 1.** Number of Bald Eagle nests located along river corridors and other locations throughout the state in 2016. The first number represents the number of nests surveyed and the second number represents the number of active nests.

Nest Locations		
Missouri River (15,8)	Loup River (10,8)	Elkhorn River (20,15)
Niobrara River (15,12)	Cedar River (6,6)	Nemaha River (10,8)
Lower Platte River (19,18)	North Loup River (15,10)	Little & Big Blue Rivers (5,4)
Central Platte River (29,11)	Calamus River (7,4)	Republican River (1,1)
North Platte River (8,7)	Middle Loup River (6,6)	Sandhills (17,13)
South Platte River (1,1)	South Loup River (7,6)	Other Location (29,24)

**Table 2.** Number of Bald Eagle nests surveyed and active in 2016.

Surveyor	Nests - Surveyed	Nests - Active
Nongame Bird Program	131	102
National Park Service-Missouri National Recreational River	16	10
Platte River Recovery Implementation Program	20	4
U.S. Fish and Wildlife Service	8	8
Virginia Tech Shorebird Program	7	6
Others	38	32
<b>TOTAL</b>	<b>220</b>	<b>162</b>

**Table 3.** Bald Eagle nest activity by county. The number in parentheses is the number of active nests in 2016. Counties in red are those where an active Bald Eagle nest has never been documented. Counties in blue are those that had their first active Bald Eagle nest in 2016.

Panhandle	Sandhills	Southwest	South Central	Northeast	Southeast
Banner	Arthur	Chase	Adams	Antelope (4)	Butler (1)
Box Butte	Blaine (1)	Dundy	Buffalo (3)	Boone (4)	Cass (2)
Cheyenne	Boyd (3)	Frontier (1)	Clay (1)	Butler (1)	Douglas (3)
Dawes (1)	Brown (2)	Hayes	Custer (2)	Cedar (4)	Gage (2)
Deuel	Cherry (10)	Hitchcock	Dawson (1)	Colfax (1)	Jefferson (1)
Garden (3)	Custer (2)	Keith (2)	Fillmore	Cuming (1)	Johnson (2)
Kimball	Garfield (4)	Lincoln (2)	Franklin (1)	Dakota (1)	Lancaster (2)
Morrill (4)	Grant (1)	Perkins	Furnas	Dixon (1)	Nemaha (1)
Scotts Bluff (2)	Greeley (2)	Red Willow	Gosper	Dodge (5)	Otoe (1)
Sheridan	Holt (5)		Hall (2)	Knox (9)	Pawnee (1)
Sioux	Hooker (1)		Hamilton	Madison (4)	Richardson (4)
	Keya (2)		Harlan	Merrick (4)	Saline
	Logan		Howard (5)	Nance (3)	Sarpy (7)
	Loup (5)		Kearney (1)	Pierce (1)	Saunders (7)
	McPherson (1)		Nuckolls	Platte (4)	Seward
	Rock		Phelps	Stanton (1)	
	Thomas		Polk (1)	Thurston (1)	
	Valley (3)		Sherman (4)	Washington	
	Wheeler (1)		Thayer	Wayne	
			Webster		
			York		



## DISCUSSION

Within the last 25 years, increases in the number of Bald Eagle breeding pairs in Nebraska have been remarkable. Nebraska, as part of the Northern States Bald Eagle Recovery Plan, had an original recovery goal of ten active breeding pairs (USFWS 1983). The first active successful modern Bald Eagle nest was recorded in the state in 1991 (Farrar 1991). The recovery goal of ten active breeding pairs was met in 1996 and has been surpassed every year since (Jorgensen et al. 2010). In less than a quarter century the Bald Eagle has gone from a nonexistent breeding species in Nebraska to one that is relatively numerous. In 2007, the number of nests had grown to 54 active nests. Less than a decade later, the number of known active nests has nearly tripled with 162 active Bald Eagle nests recorded in 2016.

The 162 active Bald Eagle nests recorded in Nebraska in 2016 is a record high number. It is the fifth consecutive year in which more than 100 active Bald Eagle nests were recorded in Nebraska (Jorgensen and Dinan 2012, 2013, 2014, 2016). The 2016 total exceeds 2015's record of 118 active nests and represents a notable increase of 37%. Some of the increase is due to increased survey effort in certain areas. As noted in the 2015 report (Jorgensen and Dinan 2016), surveys were not conducted along the Missouri and Niobrara rivers in northeast Nebraska in 2015. In 2016, surveys in along the Missouri and Niobrara rivers yielded a total of 20 active nests. Even though some of the increase is attributable to increased survey effort, the overall increase reflects a real increase in the state's Bald Eagle breeding numbers. Although our survey methods limit our ability to make inferences, results from 2016, and the last several years of surveys, show the general long-term pattern of increase in the number of nesting Bald Eagles in Nebraska is continuing and even accelerating.



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