

2015 Nebraska Bald Eagle Nesting Report



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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 20th Century. In Nebraska, Bald Eagles bred historically, but were absent as a breeding species for most of the 20th 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 2015 Bald Eagle nest monitoring in Nebraska.

METHODS

In 2015, we collected and compiled Bald Eagle nesting data following the same methods used since 2012 (Jorgensen and Dinan 2012, 2013, 2014). 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 2015 was to determine nest locations and whether Bald Eagle nests were active. We define an active nest as a nest where a pair of adult Bald Eagles is engaged in breeding activity such as incubating eggs or 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 airboat. We defined a known nest as one present and observed prior to 2015. We defined a new nest as a nest documented for the first time in 2015. 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 2014. We also uploaded known nest locations to a handheld Global Positioning System (GPS). We used the known nest locations and maps, and systematically drove county 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 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.

Airboat surveys were conducted along the lower Platte River in June. We conducted airboat 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 Platte River Recovery Implementation Program (PRRIP), NGPC, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, Central Nebraska Public Power and Irrigation District, Nebraska Public Power District, Nebraska Department of Roads and trained volunteers. The National Park Service–Missouri National Recreational River (NPS–MNRR)

provided Bald Eagle nest data along the Missouri and Niobrara River in northeast Nebraska in previous years but was unable to conduct eagle nest surveys in 2015. 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 2015. We compared the number of surveyed and active nests in 2015 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 146 nests were surveyed and 118 of these nests were determined to be active in 2015 (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). Thirty-two new nests were documented for the first time in 2015; 29 of these nests were active and three were inactive. We surveyed 97 nests during our targeted surveys, PRRIP surveyed 12 nests (PRRIP 2015), USFWS surveyed 7 nests and 30 nests were surveyed by others (Table 2).

During targeted surveys we recorded 75 active nests. Targeted surveys yielded two active nests on the Niobrara River, 16 active nests along the Platte River system (lower Platte, central Platte, North Platte, and South Platte rivers), 25 active nests along the Loup River system (Loup, Cedar, North Loup, Calamus, Middle Loup, and South Loup rivers), nine active nests along the Elkhorn River, two active nests along the Nemaha and Blue rivers, and one active nests along the Republican River. We also recorded 20 active nests that were found in the Sandhill and outside of river corridors near lakes and streams throughout the state.

The PRRIP recorded nine active nests along the Central Platte River (PRRIP 2015), the USFWS recorded seven active nests in north-central Nebraska, and 27 additional nests were reported as active by other individuals. Survey effort in northeastern Nebraska along the Missouri and Niobrara rivers was greatly reduced this year compared to previous years.

Since 1991, active Bald Eagle nests have been recorded in 70 of the 93 Nebraska counties (Table 3). In 2015, active Bald Eagle nests were documented for the first time in Grant and Clay counties.

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 51 fledgling Bald Eagles in 2015. From 1991 to 2015, a minimum of 915 fledgling Bald Eagles have been produced in Nebraska.



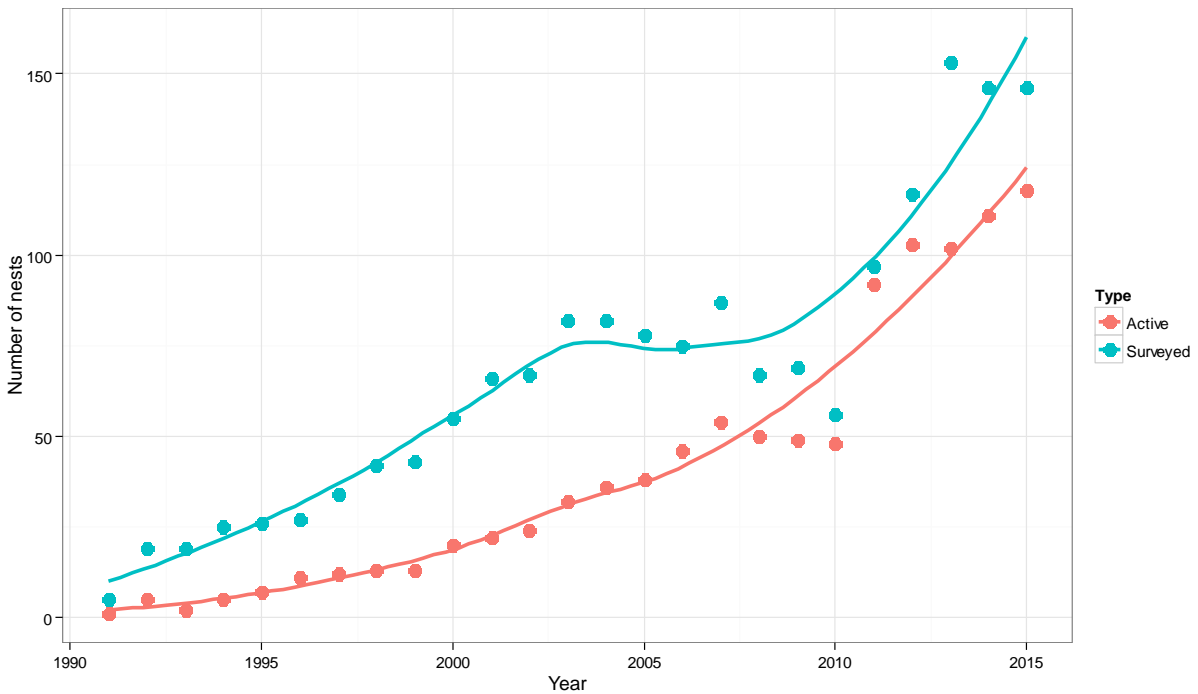


Figure 1. Number of Bald Eagle nests surveyed (blue points) and number of active nests (red points) in Nebraska from 1991 - 2015. Trend lines created using locally weighted scatterplot smoothing (LOESS) using `stat_smooth` function in package `ggplot2` in Program R (R Development Core Team 2014).

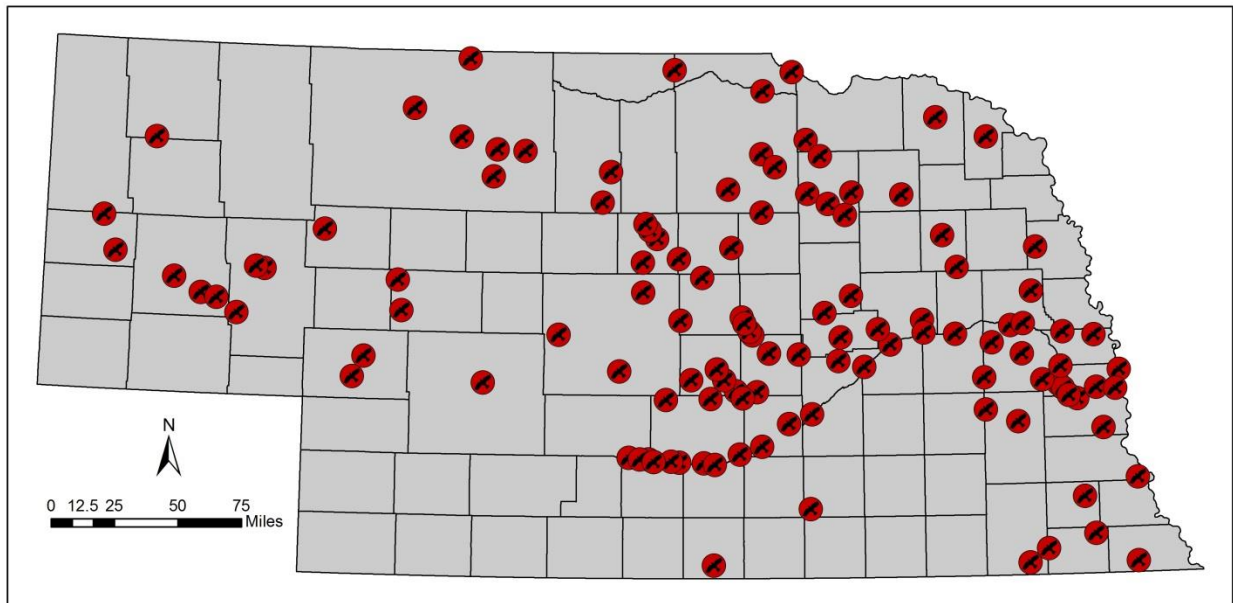


Figure 2. Spatial distribution of active Bald Eagle nests in Nebraska in 2015. Red icons are 2015 active nest locations.

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Table 1. Number of Bald Eagle nests located along river corridors and other locations throughout the state in 2015. The first number represents the number of nests surveyed and the second number represents the number of active nests.

Nest Locations		
Missouri River (2,2)	Loup River (5,3)	Elkhorn River (12,10)
Niobrara River (2,2)	Cedar River (7,3)	Nemaha and Blue Rivers (6,4)
Lower Platte River (11,10)	North Loup River (9,8)	Republican River (1,1)
Central Platte River (18,14)	Calamus River (8,5)	Sandhills (12,11)
North Platte River (8,6)	Middle Loup River (6,6)	Other Location (33,27)
South Platte River (2,2)	South Loup River (4,4)	

Table 2. Number of Bald Eagle nests surveyed and active in 2015.

Surveyor	Nests Surveyed	Active Nests
Nongame Bird Program	97	75
Platte River Recovery Implementation Program	12	9
U.S. Fish and Wildlife Service	7	7
Others	30	27
TOTAL	146	118

Table 3. Bald Eagle nest activity by county. Counties in bold type are those with active Bald Eagle nests in 2015. The number in parentheses is the number of active nests in 2015. Counties in red are those where an active Bald Eagle nest has not been documented. Counties in blue are those that had their first active Bald Eagle nest in 2015.

Panhandle	Sandhills	Southwest	South Central	Northeast	Southeast
Banner	Arthur	Chase	Adams	Antelope (5)	Butler (1)
Box Butte	Blaine (1)	Dundy	Buffalo (7)	Boone (2)	Cass (3)
Cheyenne	Boyd (2)	Frontier	Clay (1)	Burt (1)	Douglas (2)
Dawes (1)	Brown (2)	Hayes	Dawson (3)	Cedar (1)	Gage (1)
Deuel	Cherry (6)	Hitchcock	Fillmore	Colfax	Jefferson
Garden (3)	Custer (3)	Keith (2)	Franklin (1)	Cuming	Johnson (1)
Kimball	Garfield (2)	Lincoln (2)	Furnas	Dakota	Lancaster (2)
Morrill (3)	Grant (1)	Perkins	Gosper	Dixon (1)	Nemaha
Scotts Bluff (2)	Greeley (3)	Red Willow	Hall (2)	Dodge (3)	Otoe (1)
Sheridan	Hooker		Hamilton	Holt (4)	Pawnee (2)
Sioux	Keya Paha		Harlan	Knox (1)	Richardson (1)
	Logan		Howard (4)	Madison	Saline
	Loup (4)		Kearney (1)	Merrick (4)	Sarpy (5)
	McPherson (2)		Nuckolls	Nance (1)	Saunders (5)
	Rock (2)		Phelps (1)	Pierce (1)	Seward
	Thomas		Polk	Platte (3)	
	Valley (2)		Sherman (4)	Stanton (2)	
	Wheeler		Thayer	Thurston	
			Webster	Washington	
			York	Wayne	

DISCUSSION

The number of Bald Eagle breeding pairs in Nebraska has increased substantially since 1991, the year the first active successful modern Bald Eagle nest was recorded in the state. There has been an average annual increase of 4.9 active nests per year since 1991. The original recovery goal for Nebraska was 10 active breeding pairs (USFWS 1983). This goal was met in 1996 and has been surpassed every year since (Jorgensen et al. 2010). In 2001 the Bald Eagle was described as a “locally rare regular breeder (resident?) statewide” and “rare casual summer visitor statewide” (Sharpe et al. 2001). Bald Eagles are currently considered an uncommon breeder and summer visitor statewide (Jorgensen et al. 2010). Prior to 2011, the record number of active Bald Eagle nests recorded in Nebraska was 54 in 2007. This record of 54 active nests was easily surpassed in 2011 with 90 active nests recorded. This substantial increase in 2011 was believed to be due, in part, to increased survey effort (Jorgensen et al. 2011). Nest numbers have continued to increase since 2011.

The 118 active Bald Eagle nests recorded in Nebraska in 2015 is a record high number. It is also the fourth consecutive year in which more than 100 active Bald Eagle nests were recorded in Nebraska (Jorgensen and Dinan 2012, 2013, 2014). In 2015, we observed an increase in the number of active nests even though survey effort decreased in some areas. Notably, surveys were not conducted along the Missouri and Niobrara rivers in northeast Nebraska. In previous years, nests in this region were surveyed by the NPS–MNR and an average of seven active nests were recorded per year from 2011–2015. Based on this information, it is reasonable to assume the minimum number of active nests in Nebraska exceeded 125 in 2015. Even though our survey methods limit our ability to make inferences, results from the 2015 survey suggest the general long-term pattern of increase in the number of nesting Bald Eagles in Nebraska is continuing. Future iterations of this survey and report will determine whether this is indeed the case.



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