



North Dakota Bald Eagle Nest Summary

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Background

Bald eagles are a native occupant of North Dakota. In the 1800's, they were regular breeders along the Red River, Missouri River, and in the Devils Lake area (Stewart 1975). The loss of habitat, unregulated human control, and environmental contaminants were main factors which caused a decline of bald eagles throughout much of the lower 48 states in the 1900's. In 1978 the bald eagle was listed under the Endangered Species Act. There were no known nesting pairs in North Dakota at that time (Grier et al. 1983). By the 1990's, a few eagles had returned to the Missouri River. Since 2000, bald eagles have initiated more nests across the state. The bald eagle was removed from the Endangered Species list in 2007 and appears to be making a strong return in North Dakota. Due to requirements of the ESA, monitoring is still required even though the bald eagle has been delisted. The U.S. Fish and Wildlife Service (FWS) is working with state wildlife agencies to conduct this monitoring (U.S. Fish and Wildlife Service 2007). The North Dakota Game and Fish Department (NDGF) maintains a list of bald eagle nests to assist the FWS with post-delisting monitoring.

Approach

In April 2009, the NDGF issued a news release asking the public to report eagle nests. The news release was published in local newspapers, magazines, and the NDGF website. The response was excellent. The public reported 22 previously undocumented nest sites. The assistance from the public was an effective method to obtain information on many nest sites, both new and previously reported. Some individuals have voluntarily maintained contact with the NDGF throughout the summer, providing nest updates and photographs.

Eagle nest information is managed in a spatial database. Nest locations are stored as point data. Points are stacked if more than one data event exists for a nest site (e.g. multiple year information). Data collected includes but not limited to: nest ID, nest status (i.e. occupied, unoccupied), number of adults and young, and observer information. The database also contains previous nest information from the FWS.

Results

A total of 103 individual nest sites are stored in the database. For 2009, 66 nests are thought to have been occupied by bald eagles (see Figure 1). This number is an estimate as not all eagle nest sites have been verified, not all are visited annually (i.e. the last known status may be from a previous year), and because a comprehensive statewide survey has not been conducted. See Table 1 for a summary of nests. Average young per nest in 2009 was 2.0 ($n=17$). See Figure 2 for nesting chronology.

Accuracy of the mapped nest locations may vary. Forty-three sites are considered "good" (actual nest location \pm 50 meters of mapped point), 36 sites are "fair" (nest location \pm 200 meters of mapped point) and 24 are poor (nest location $>$ 200 meters from mapped point). Sites with a good rating have been ground-truthed with a GPS, or the location description allowed for very accurate digitizing. Sites with a fair rating may have been ground-truthed or digitized, but the actual location was difficult to determine from aerial photographs. Sites with a poor rating have not been ground-truthed or verified. Caution must be exercised when using the data in analysis because of the location uncertainty. The nest location is edited as more accurate information is obtained.

The majority of nests are located in live cottonwood trees. A lesser amount are located in dead trees. Many nest sites require additional investigation of the tree species. Also, multiple nests and/or nest trees have been destroyed. See Table 2 for further nest platform details. Bald eagle nests have now been reported in 29 of 53 counties in North Dakota (see Table 3).

Bald eagles are utilizing habitat in North Dakota which may be somewhat atypical. The landscape surrounding nesting sites is highly varied across the state. Some nests are very secluded and in a forested landscape. A few nests are in open, prairie habitat. Several nests are situated in a single tree or shelterbelt surrounded by cropland. See the photographs on page 5-6 for nest site variability examples.

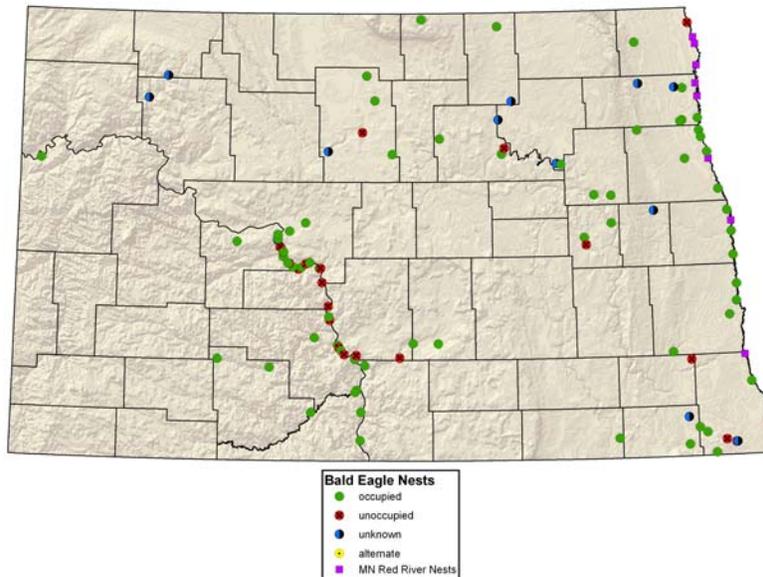


Figure 1. North Dakota bald eagle nest sites. This map includes nests on the Minnesota bank of the Red River as well. “Occupied” nests had at least one of the following activity patterns observed during the breeding season: one or two adults present on or near the nest; one adult sitting low in the nest, apparently incubating; or eggs or immature birds are present. “Unoccupied” nests had none of the activity patterns diagnostic of an occupied nest observed or the nest or nest tree was destroyed. “Unknown” nests had an undetermined status either due to the nest not having been surveyed recently (i.e. within the last 5 years), the nest location can not be found, or the nest has not yet been verified by qualified biologists or other reliable source. “Alternate” nests are one of several nest structures within a breeding area for one pair of eagles.

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.
Nest Building						—————						
Egg Laying/Incubation							—————					
Hatching/Rearing Young								—————				
Fledging Young											—————	
Migration Peaks		■ ■ ■ ■ ■ ■ ■ ■					■ ■ ■ ■ ■ ■ ■ ■					

Figure 2. Chronology of reproductive activities at nest sites in North Dakota and migration peaks.

Several eagle nests are located in areas of elevated human activity, including recreational, vehicle, or heavy equipment use. The bald eagle is protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. “Disturbing” eagles is prohibited by the Eagle Act. Some disturbance issues and observations are discussed:

- In 2008 a pair of eagles built a nest in a small undisturbed woody draw in a coal mine in western North Dakota. This draw is surrounded by mining activities. The eagles deserted the site in 2008 and it was utilized by great horned owls that year. In 2009, the eagles returned to the same nest at the mine and nested successfully, fledging three young.
- Several nests along the Missouri River and one in Devils Lake are subject to nearby boating activities. To our knowledge, despite the close human contact from boat traffic the eagles appear to be fledging young successfully.
- An eagle pair has resided along the Sheyenne River near the West Fargo sewage lagoons for at least two years. Although currently on the edge of town, a new housing area is being developed adjacent to the river and in close proximity to the nest.
- Numerous nests in the Red River valley are directly adjacent or even completely surrounded by cropland. Farm equipment must travel very close to the nests but it appears the eagles are habituated to this large vehicle disturbance and are not abandoning nests because of it.

- A nest east of Harwood may have been subjected to disturbance from flood protection activities (i.e. bulldozer activities near the nest) in the spring of 2009. Several individuals reported seeing eagles present at the nest during the flood, but during the nesting season eagles were not observed in the nest. The eagle pair was seen again in the fall but no young were observed.

Table 1. Bald eagle nest status by platform type.

Nest Platform	Total Number	Occupied	Unoccupied	Unknown	Alternate
Tree	101	66	18	15	2
Artificial	2		2		
<i>Total</i>	<i>103</i>	<i>66</i>	<i>20</i>	<i>15</i>	<i>2</i>

Table 2. Nest site details.

Platform Details	Total Number	Live	Dead	Destroyed	Unknown
Cottonwood	39	29	4	4	2
Aspen	3	3			
Osprey Platform ¹	1				
Power Line Tower	1				
Unknown	59	4	5	12	38
<i>Total</i>	<i>103</i>	<i>36</i>	<i>9</i>	<i>16</i>	<i>40</i>

Table 3. Number of bald eagle nests per county.

County	Number Nest Sites	County	Number Nest Sites
Benson	3	Mountrail	1
Burke	1	Nelson	2
Burleigh	5	Oliver	6
Cass	4	Pembina	2
Dickey	1	Ramsey	3
Emmons	2	Ransom	2
Grand Forks	6	Richland	7
Grant	2	Rolette	1
Griggs	3	Sargeant	2
Kidder	2	Sioux	2
McHenry	5	Steele	1
McKenzie	1	Towner	2
McLean	15	Traill	3
Mercer	6	Walsh	6
Morton	7	<i>Total Counties</i>	<i>29</i>

Summary

The North Dakota landscape has been altered greatly over the last 100 years. Historically, eagles likely had few nesting options other than along the few wooded rivers and forests scattered across the open prairie. The construction of Garrison Dam along the Missouri River in 1954 inundated 180 miles of cottonwood gallery forest, destroying key nesting habitat of the time. However, bald eagles are now utilizing the abundant shelterbelts planted across the prairie landscape since European settlement. North Dakota has seen a dramatic increase of nesting bald eagles over the past several years. Anecdotally, migrating and wintering eagles have also increased. It is not uncommon to see groups of 10 or more eagles throughout late fall/early winter. A primary winter roost continues to be the Garrison Dam area.

Bald eagles are moving into areas subject to disturbance potential or choosing nesting sites near human development. The NDGF and FWS staff in North Dakota will coordinate to implement measures as possible to avoid nesting disturbance. The NDGF will continue to maintain an active database of bald eagle nest sites. Biologists will continue to visit nest sites to verify and accurately map locations. Future work may include aerial surveys for new and existing nests. Another option may be a GIS habitat analysis to describe surrounding landscapes of nest sites and to predict potential nesting areas.

¹ Osprey platform included as a nest site because of its potential for an eagle to utilize and because it was recorded in an earlier nest survey.



Cannonball Creek nest in floodwaters, Morton County. 3/31/2009



Cannonball Creek nest with two young. 5/27/2009



Heart River nest, Morton County. 5/11/2009



Richland County nest, 6/2009. Photo by Dan Mason.



A Trail County nest surrounded by cropland. Photo by Dan Mason. 5/3/2009



A Trail County nest surrounded by cropland. Photo by Dan Mason. 5/11/2009



Harwood nest, Cass County. 4/29/2007



Harwood nest, Cass County, in floodwaters. 4/19/2009. Photo by Dan Mason.



Carpenter Lake nest, in Turtle Mountains. Photo by Randy Hiltner. 6/24/2009



Devils Lake nest, anglers fishing near nest tree. Photo by Jennifer Kunz. 7/18/2009.



Red River nest, Walsh County. Photo by Dan Mason. 6/1/2009



Griggs County nest. Site less than 100 yards of well-traveled gravel road. 4/22/2008. Note: the tree the nest was in was found gone/destroyed in Sept. 2009.

Literature Cited:

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- Stewart, R. E. 1975. Breeding Birds of North Dakota. Tri-College Center for Environmental Studies, Fargo, North Dakota. 295 pp.
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<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/PostDelistingMonPlan.pdf>