Bald Eagle (Halieetus leucocephalus) status in Iowa, 2025

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ABSTRACT

The Iowa DNR coordinates two different surveys which are designed to monitor Bald Eagles in the state. The Bald Eagle Nest Monitoring Survey employs volunteer community scientists to annually monitor at least 25% of the nests in Iowa excluding those found on the Upper Mississippi Wildlife Refuge. The Bald Eagle Midwinter Survey occurs in January along most of the major rivers in Iowa. In January of 2025, a total of 5,795 Bald Eagles were counted on the Bald Eagle Midwinter survey, averaging 3.47 birds observed per mile of river surveyed. These numbers are another record high for eagles wintering in Iowa. After the 2025 nesting season, Iowa had 832 active Bald Eagle territories and approximately 73% of the active territories outside the Mississippi were monitored. Within the 549 monitored territories, 77% were active and 56% were reported as successfully producing fledglings. An average of 1.41 young were fledged per nest. Overall, the picture of the eagle population in Iowa is one that is stable and robust.

INTRODUCTION

In the last 25 years, Iowa has witnessed a dramatic increase in the number of nesting and wintering Bald Eagles. Nationally, the Bald Eagle has recovered enough from the dangerously low numbers of the 1960s and 1970s that the U.S. Fish and Wildlife Service removed it from the Threatened and Endangered species list (T&E list) in 2007 (Removing the Bald Eagle, 2007). Since that time the bald eagle population has remained on an upward or stable trajectory.

The Iowa DNR uses two different surveys to monitor Bald Eagle Populations in Iowa:

- Bald Eagle Nest Monitoring
- Bald Eagle Midwinter Survey.

The goal in monitoring Bald Eagle nesting data is to measure reproductive success while also building a robust, though not comprehensive, database of eagle nest locations. For monitored nests, data is collected on annual activity and the number of young produced and these data can then be used as indices of the resident population's health.

The Bald Eagle Midwinter Survey, focuses on the Eagles that use Iowa's rivers as winter foraging habitat. This survey is national in scope and is coordinated at that scale by the U.S. Army Corps of Engineers. Iowa's rivers hold some of the largest congregations of wintering Eagles in the lower 48 states. The same segments of river have been surveyed since the early 1990s and the survey provides a long-term trend which when combined with data from other states is a helpful index of eagle population trends at a larger scale.

This report summarizes data collected on Bald Eagles during January 2025 and the nesting season that followed.

STUDY AREA

The Iowa DNR's formal nest monitoring program focuses on monitoring nests statewide, mostly excluding nests located on the Upper Mississippi Wildlife Refuge. Opportunistic reports of new nests or existing nest activity from various sources are accepted. However, for most summary and analyses, monitoring data collected by trained volunteers and staff are used. In 2025, standardized data was collected on 549 Bald Eagle territories in 86 Iowa counties (Figure 1).

The Bald Eagle Midwinter Survey also has statewide coverage and includes survey routes along the following rivers in Iowa: Mississippi, Des Moines, Skunk, Maquoketa, Missouri, Wapsipinicon, Chariton, Iowa, Cedar, Little Sioux, South Maquoketa, Turkey, Nodaway, as well as Lakes Saylorville, Red Rock and Rathbun and a few other smaller waterbodies. Routes were not randomly mapped but were intentionally designed to cover primary Bald Eagle habitat. In 2025, 1,668.5 miles of river or lake shore were surveyed on 49 standardized routes (Figure 3). This survey is part of a larger nationwide survey currently being coordinated by the U.S. Army Corps of Engineers.

METHODS

Bald Eagle Nest Monitoring

Since eagles returned to nest in Iowa in the late 1970s, the DNR has engaged in opportunistic data collection on eagle nesting territories. Opportunistic data collection includes casual monitoring of some eagle nests by DNR personnel as well as reports of nest locations and activity from all Iowans. The public can report eagle nests they find using an electronic form on the DNR website. These data are not systematically collected so the data available for each breeding territory varies. Additionally, the territories reported on may not be representative (i.e. people may be more likely to report an active nest versus an inactive nest).

To complement the opportunistic reports received, the Iowa Department of Natural Resources (DNR) has a program to collect data on bald eagle nesting territories in a more systematic manner. This data collection method relies heavily on trained volunteers who monitor nests that are assigned to them. Summaries and analysis are done on all nests monitored by volunteers which in 2025 represented 66% of all known active territories and 73% of active "inland" territories (those not on the USFWS's Upper Mississippi Refuge). No data of refuge nests activity was received from the USFWS staff this year.

In previous years, a distinction has been made within the dataset between randomly selected nests (called "sentinel" nests) and non-randomly selected nests. As the number of territory monitors has grown and we have reached 60-70% levels of known active territories being monitored, the distinction has become less important. We will continue to maintain and encourage monitoring of these randomly selected territories but the data presented here will be a combination of all monitored territories.

Volunteer monitors visit their assigned nest site at least 3 times during the nesting season and collect data on the nest's activity, number of young and number of fledglings. Nests are observed using optics from a distance to avoid disturbance and as such, not all of the required data can be collected on each site; the number of young hatched is particularly challenging to collect. Volunteers monitor the same nests annually and they continue to monitor an inactive nest for 2-3 years of inactivity before that nest is retired from monitoring and is designated as an inactive breeding territory.

In addition, a targeted effort was made during this nesting season to track down some bald eagle territories with an "unknown" status. This status usually refers to nests that were active at last check but have not been reported on for several years. The number of unknown status nests in the database had exceeded 500. Trained monitors were provided access to locations of unknown status territories and instructed to try and locate them and record occupancy between March 1 and April 15. They were not required to revisit the nest and collect additional data after this initial foray. However, these nests are included in the overall monitoring data which may impact the percentage of nests with outcome data.

Monitoring focuses on Bald Eagle breeding territories and not necessarily individual nests. Eagles are known to rebuild downed nests in close vicinity to the original nest and sometimes even build alternate nest sites when the original nest appears in good condition. Our working definition of a breeding territory based on evidence from the dataset and other literature (Buehler 2000): "A habitat area up to 1 mile in radius (though sometimes smaller in good habitat) that is defended by a pair of eagles and used for breeding. Meets all breeding habitat needs including appropriate trees to build nests and a nearby food source. A territory may hold more than 1 nest but may not house more than 1 pair of eagles within the same breeding season. The pair of eagles need not be the same pair across years."

The metrics used to assess the relative health of the nesting Bald Eagle population are the proportion of nests that are active but fail to produce young versus successful nests as well as the average number of young fledged per nest. If the percent of failed versus successful nests moves closer together or the average number of fledged young per nest drops below 1 for three years in a row this would trigger some additional conservation actions.

Bald Eagle Midwinter

The Bald Eagle Midwinter survey is conducted each year during the first two weeks of January. There are two dates during the two-week period that are designated as target dates, and surveyors are encouraged to run the survey on

those dates, if possible, but the survey can be run on any day during the two-week period. The survey is designed so that surveyors can also run the standardized route at the same time as conducting another national survey, the Midwinter Waterfowl Survey, which is usually scheduled on one day during the first week of January. The survey is meant to be run on clear sunny days with no fog or precipitation impairing visibility. In 2025, the dates for the survey were January 1-15th with target dates of the 3rd and 4th.

There are 51 active standard routes in Iowa, of varying lengths and this includes two fixed point routes (routes that only cover 1 mile of habitat, usually a roost site). To conduct the survey, volunteers and staff move along their assigned route at a slow speed and count all adult and immature eagles that are spotted. All of the routes in Iowa (that aren't fixed point) are driven by car or truck (Figure 4). Data is also collected on the amount of time spent surveying, the weather conditions and the percentage of ice coverage along the route. The habitat covered and route driven should be the same each year though detours are sometimes required because of winter road conditions or other road maintenance issues.

RESULTS

Bald Eagle Nest Monitoring

Since 1977, approximately 1,590 bald eagle territories have been recorded by the Iowa DNR in Iowa. In 2015, the state hit the milestone of having had at least one eagle nest reported in all of Iowa's 99 counties (Figure 5). Allamakee County, with 223 nests, has the highest number reported, followed by Clayton County with 83 (Figure 5). Following the 2025 nesting season, 832 territories have an overall designation of active, 393 are designated inactive, and 365 have an unknown status (this usually means they have not been reported on >3 years but the nest was active at last report). A territory is considered active if it has had some activity in at least one of the last three nesting seasons.

In 2025, a total of 549 nests were monitored. Within the 549 territories monitored, 423 were active (77%), 87 were inactive (16%) and 39 were reported as activity unknown (Table 1). The outcome of the nesting season for the 423 active territories broke down as follows: 236 nests successful, 62 failed and it was unknown for 125 nests (Table 1, Figure 6).

From the 219 territories that had reliable reports of young fledged, 309 young were produced: 47 nests fledged no young, 59 nests fledged 1 young, 90 nests fledged 2 young, 22 nests fledged 3, and there was one nest that fledged 4. The estimated number of fledged birds produced per nest was 1.41 (Table 1). An additional 79 nests included reports of fledglings but with some uncertainty. Usually this uncertainty is skewed towards perhaps missing a fledgling. If these records are added in, there was a minimum of 398 fledglings produced by monitored nests.

For 165 territories, monitors were able to collect solid data on the number of chicks and the number of fledglings. Sixteen young were lost before fledging from 13 nests. Overall, eaglet survival to fledging was high; 94.9% of the chicks observed in these nests reached fledging (316 total young counted, 297 fledged). It should be noted that accurately counting the number of young in the nest, right after hatching, is not always possible from the ground so the accuracy of this analysis is probably low. Survival of immature birds after fledging is not tracked but recent studies suggest that immature eagles have a 70% chance of survival in their first year and beyond that first-year annual survival is closer to 90% (Zimmerman et al. 2022).

Another component of the survey this year was a targeted effort to find and visit nests with an unknown status with the goal of determining their current activity. A total of 178 nests were surveyed and based on observations 79% of them were able to be moved into active or inactive status. Over half (54%) of the 178 nests checked were found to still be active. The total number of territories with an unknown status decreased from 520 to 365.

Bald Eagle Midwinter Survey

In 2025, 49 routes were completed, covering 1,668.5 miles of habitat. Less than half of the routes (17) were conducted on the target dates of January 3-4 but all her conducted during the two-week survey period. The average survey took 164 minutes to complete. Weather conditions during the survey were about average. The mean temperature was 19^{o} Fahrenheit, which was colder than the last two years. The average percentage of ice cover on the waterways was higher than last year and pretty close to the all year average at 59%. The survey period experienced a snap of colder weather after a warmer than average December.

A total of 5,795 Bald Eagles were recorded during the count, which is another record high beating the last high count of 5,709 in 2022. It was well above the previous 10-year average of 3,067.2 birds (Figure 8). In 2025, an average of 113.63 birds were counted per route and 3.5 eagles per mile surveyed (Figure 9). A total of 4,036 of the birds counted, or 70%, were adults and 1,625 (28%) were immatures (Figure 10). The remaining 134 birds counted could not be aged. In addition to bald eagles, 2 golden eagles were observed on the survey and there were 13 birds that could not be identified to species.

The most highly surveyed rivers, which also usually host the highest numbers and density of eagles are the Mississippi and the Des Moines. The Mississippi has traditionally held the most birds but the Des Moines has been more highly used in recent years. In 2025, the total number of birds counted was slightly higher on the Des Moines River, followed by the Mississippi and then the Iowa River as a distant third (Table 2). However, the Mississippi River had the highest density of eagles with an average of 9.41 birds counted per mile compared to the Des Moines' average of 7.65 (Table 2).

DISCUSSION

Overall, 2025 started off with really big numbers of eagles using Iowa's waterways for winter foraging. The following nesting season was slightly below average.

Bald Eagle Midwinter

The long-term Midwinter Survey results suggest that the number of eagles that winter in Iowa, particularly since 2003, fluctuates widely from year to year (Figure 8). For example, the 2021 survey had the lowest count since 2002, while the 2022 results set a record for the highest number of birds; 2023 and 2024 numbers were back to average or a little below and this year broke another record high. There has also been a lot of variability in the distribution of eagles, with the Mississippi and Des Moines Rivers often switching which has the highest count of birds. This year most of the birds counted were on one of those two rivers and they held roughly similar numbers of birds. The count on other surveyed rivers was quite low.

The survey is not designed to explain the fluctuations eagle numbers so the cause of the variability is mostly speculation. The obvious culprit is weather if only because harsher winters with more ice should drive more birds south from northern stronghold states (Minnesota, Wisconsin) and also create ideal conditions for counting by concentrating birds at limited areas of open water. This winter was fairly mild and particularly warm in December and the timing of the survey coincided with colder temperatures and more freezing occurring. The elevated numbers overall and the concentration of the birds on two main rivers may suggest that the survey snapshot caught the peak of a migratory push south.

Since 2000, there is a weak to moderate correlation between the number of eagles counted and the temperature and percent ice cover on the rivers ($r=0.4$ with % ice and $r=-0.37$ to -0.4 with temperature). Weather may be playing a role but the relationship is possibly more complex and related to the timing of the freeze and temperature patterns.

The search for and availability of food is thought to be the primary motivator for Bald Eagle migration in the upper Midwest so fluctuations in the fishery may also play a role in the variability of the trend.

Despite the increasingly large fluctuations, the overall trend across the survey since 1994, is upwards. This upward trajectory is settling into a flatter trend in recent years which is to be expected as eagles may be getting close to carrying capacity in the region. This state trend mirrors the results of a recent national analysis of the first 25 years of the survey which suggests that Bald Eagle population trends may be flattening as the bird's numbers reach a level that can be supported by the existing habitat available (Eakle et al. 2015). If this is the case we would expect to see the trend to continue to become more level in future years. Another important metric is the proportion of immature eagles in the overall wintering population and while that trend has been pretty flat hovering around 30%, the trendline since 1995 is ever so slightly downward which could also signify a population getting close to carrying capacity (Figure 10).

In 2025, a mix of 82 volunteers and natural resource professionals spent over 128 collective hours surveying 1,668.5 miles of waterbody shoreline.

Bald Eagle Nesting

Over the last 5-6 years the eagle nesting season has been eventful. The 2020 and 2021 seasons were two of the most successful seasons on record with over 90% of the nests with a known outcome being successful and average number of young per nest over 1.6. The 2022 season was highly impacted by the avian flu and the average number of fledglings per nest dropped below 1 (0.88) for the first time since 2010. 2023 and 2024 were average nesting seasons. The 2025 season was a little depressed compared to the last two seasons with the percent of successful nests below 60%. Despite that, Iowa eagle nests still produced an estimated 655 fledglings because the number of nests in the state continues to grow.

Without a comprehensive survey, it is hard to estimate how many active territories there are in Iowa. However, 423 actively nesting pairs were reported by monitors, and a total of 497 were reported including opportunistic reports. Finally, 832 territories have been active at least once during the last three years. Forays searching for unknown status territories revealed that roughly 54% of those nests were still active and that percentage if applied to the current number of unknown status nests, it would mean there are an additional 197 potentially active nests. It is also likely that many nests in the state that have not be recorded. Using these data, a conservative estimate for the number of active territories in Iowa could be between 1,100 and 1,200. That equates to a breeding population of 2,200 to 2,400 bald eagles.

These numbers greatly exceed early goals set for the species in the Midwest and in Iowa. The original Northern States Bald Eagle Recovery Plan (Grier et al., 1983) set the recovery goals as 1,200 nesting pairs across 16 states with an average of 1.0 young produced per nest. Iowa's specific goal identified in the regional plan was 10 pairs by the year 2000 (over 100 nesting pairs were recorded by that time) and the birds have certainly exceeded that. In an evaluation of the country's eagles done by the U.S. Fish and Wildlife service in 2019, they estimated there are over 73,000 active eagle nests in the lower U.S. states with almost half of those being in the Mississippi Flyway which includes Iowa. This estimate was quadruple the estimate done 10 years prior (USFWS 2020).

Even though 2025 was not as successful as the previous two seasons, it was still positive and the overall trend continues to document a resilient and recovered population. A recent study by Gedir et al. (2023) found that nesting eagles have adapted to nesting in areas of high human activity with nest success not significantly different between nests in areas of high activity and areas of minimal activity. This suggests a growing population that is adapting well to changing landscapes.

As a whole, 2025 was a successful year for bald eagle nesting and continues to document a successful recovery.

MANAGEMENT IMPLICATIONS

Bald Eagles have proven to be resilient in Iowa in the face of a novel disease that impacted the population in 2022, at least in the short term. Three years later they continue to have robust breeding and winter survey results. It is clear that Bald Eagles are thriving in Iowa. Discussions are underway to change and perhaps scale back our Bald Eagle monitoring efforts starting after 2027, which is 20 years after they were delisted from the Endangered Species Act. Leading up to this milestone, it will be important to continue monitoring as robustly as possible and we will keep a close eye on how the birds are doing as we make plans for how to proceed after 2027.

ACKNOWLEDGMENTS

Monitoring the eagle population in Iowa is not a small task and it would not be possible without the help of an army of caring community scientists who volunteer their time. A huge thanks goes out to all the volunteers who generously make such important yearly contributions of time and energy to the knowledge about this species! You are invaluable and we cannot appreciate you enough! Thanks also goes out to DNR, U.S. Fish and Wildlife Service, County Conservation Board and Army Corps of Engineers staff which also help with both these surveys.

We'd also like to acknowledge Iowa's private landowners. The vast majority of Iowa's eagle nests are on private property and these landowners are supporting habitat for these amazing birds as well as in some cases, developing relationships with our nest monitors and allowing access to their land. Long-time monitors David and Dorothy Raymond reached out with a desire to honor one such landowner who recently passed away. James Todd Fatland owned farmland

in Jasper County and according to the Raymond's was thrilled to have eagles move in and made many efforts to accommodate the pair of birds. He also actively created wildlife habitat on his land not just for Bald Eagles but also pollinators and much other wildlife. We thank all the landowners, like Todd, who see themselves as stewards of the land and who welcome wildlife.

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FIGURES

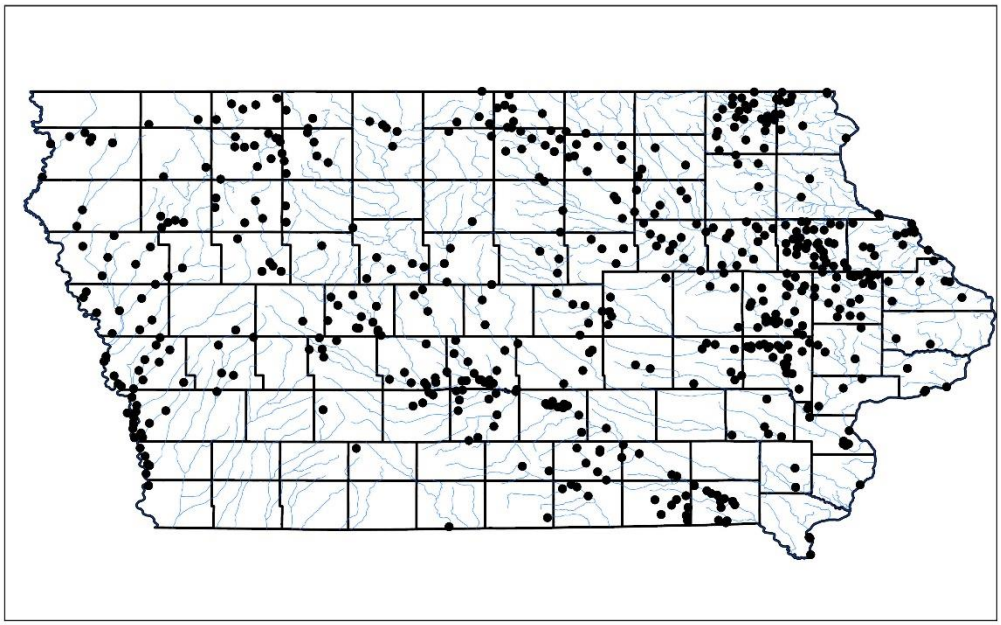

Figure 1. Data was collected on 549 nests in 86 Iowa Counties in 2025.

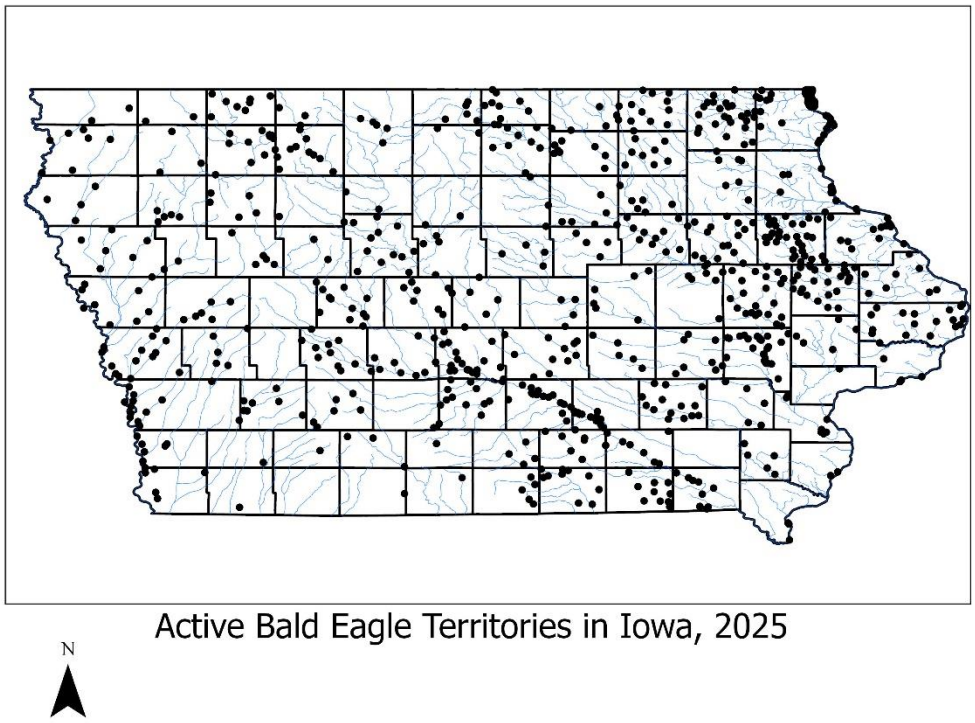

Figure 2. Active Bald Eagle Nests in Iowa after 2025 nesting season (832 nests).

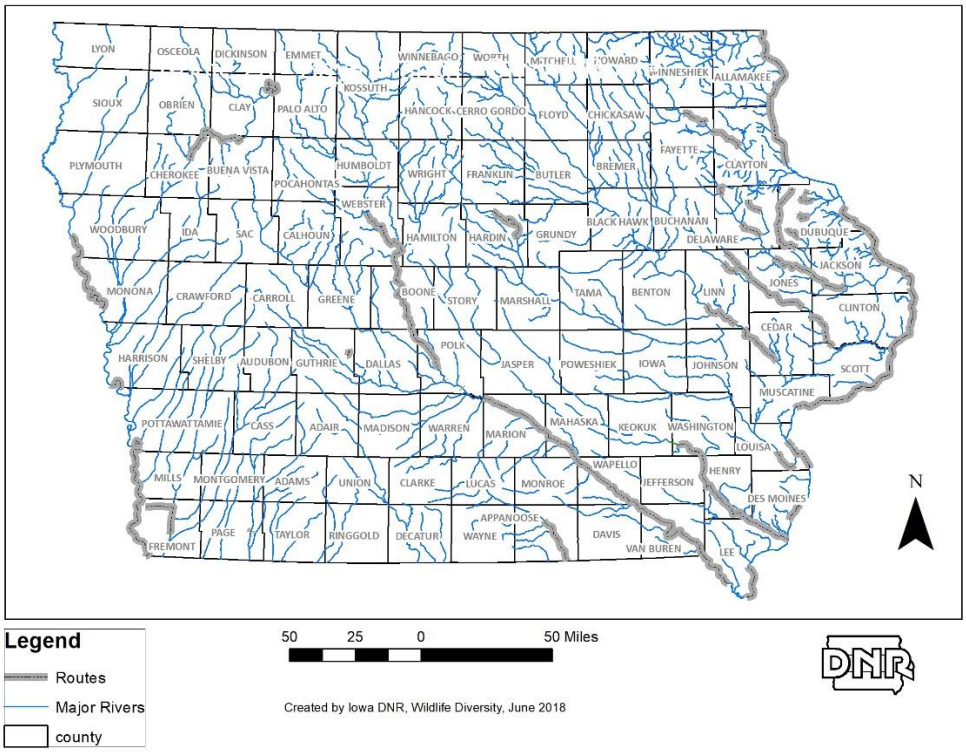

Figure 3. Bald Eagle Midwinter Routes in Iowa.

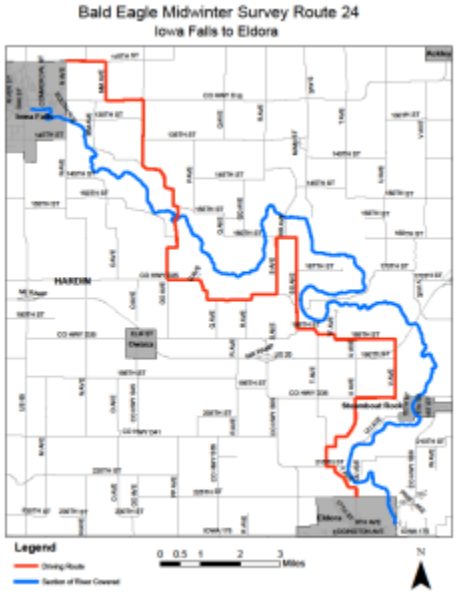

Figure 4. Example of a Midwinter Survey Route (in red) - Route 24 - The portion of river (eagle habitat covered) and the driving route.

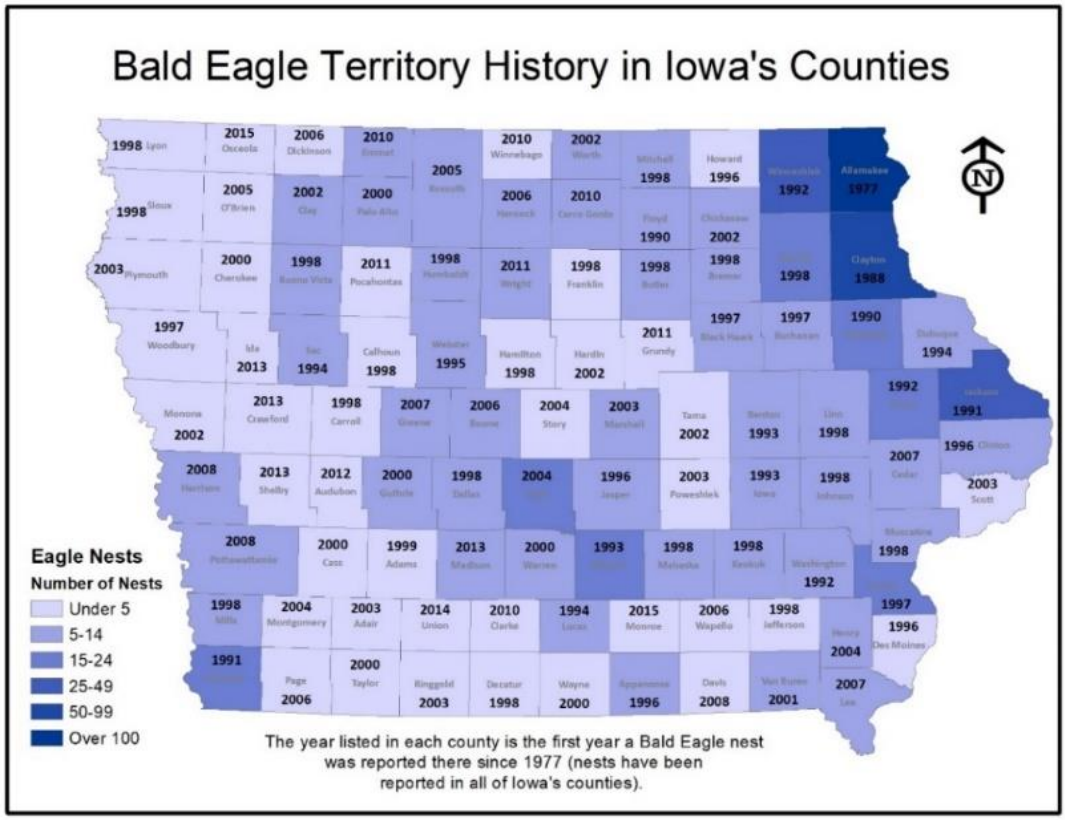

Figure 5. Number of eagle nests and first year reported for each county in Iowa.

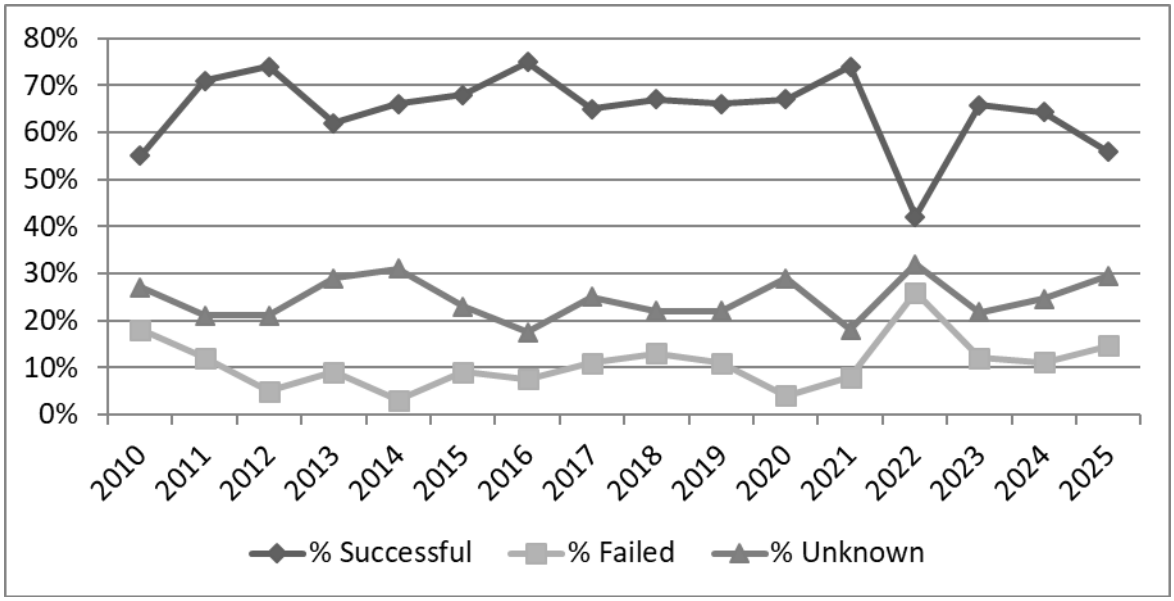

Figure 6. Percent of monitored Eagle nests that were successful versus failed, 2010 to present.

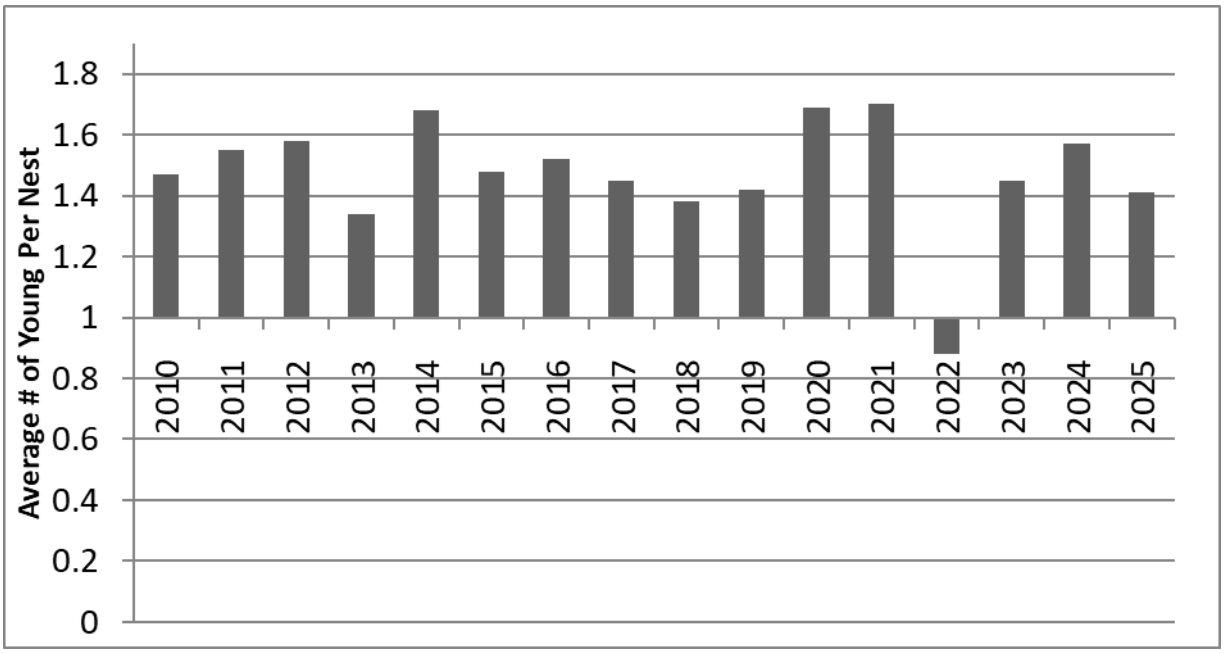

Figure 7. Average number of young produced per nest by monitored Bald Eagle nests.

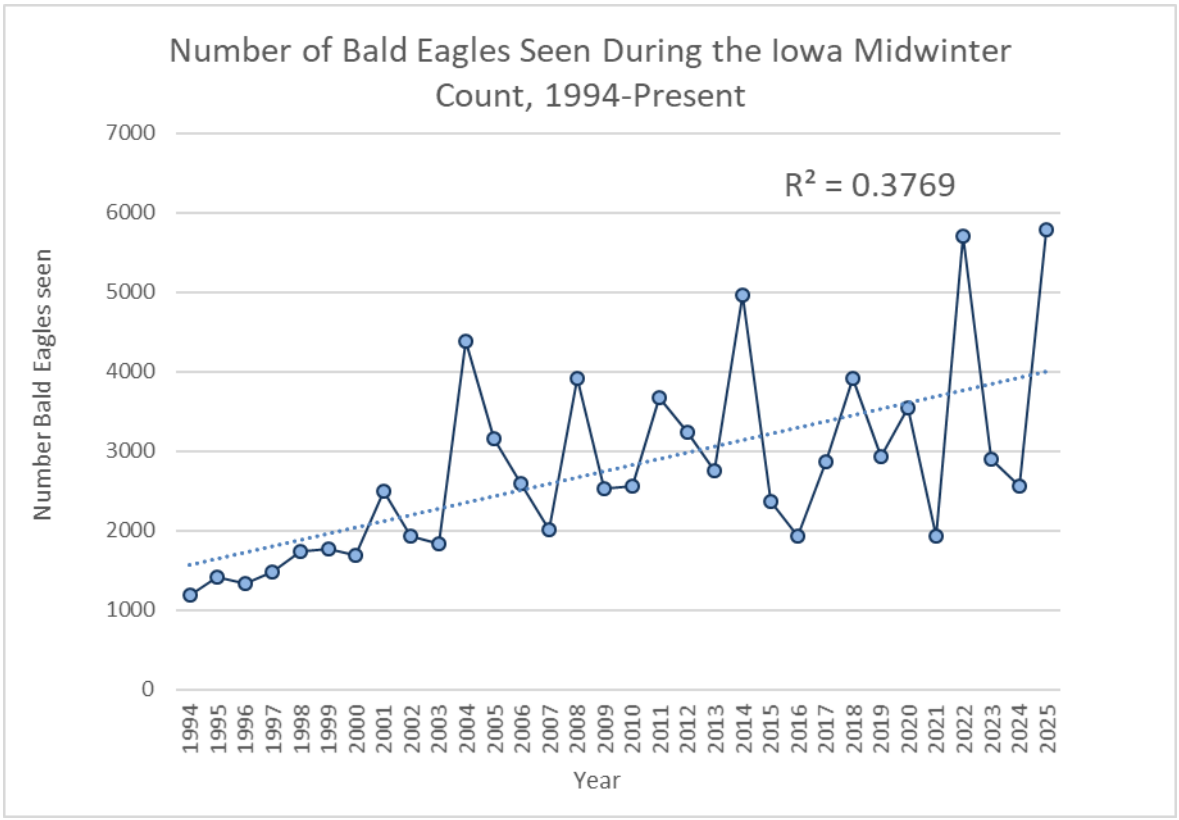

Figure 8. Total Bald Eagles counted during the Bald Eagle Midwinter survey, 1994 to present.

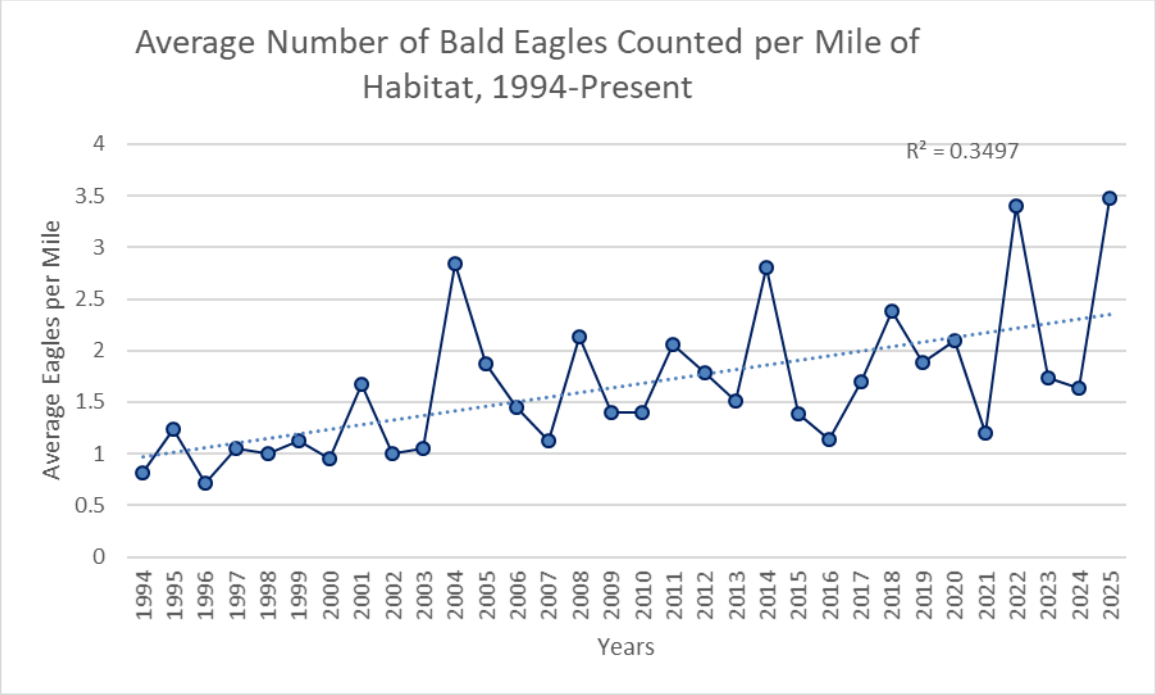

Figure 9. Average number of Bald Eagles per survey mile counted during the Bald Eagle Midwinter survey, 1994 to present.

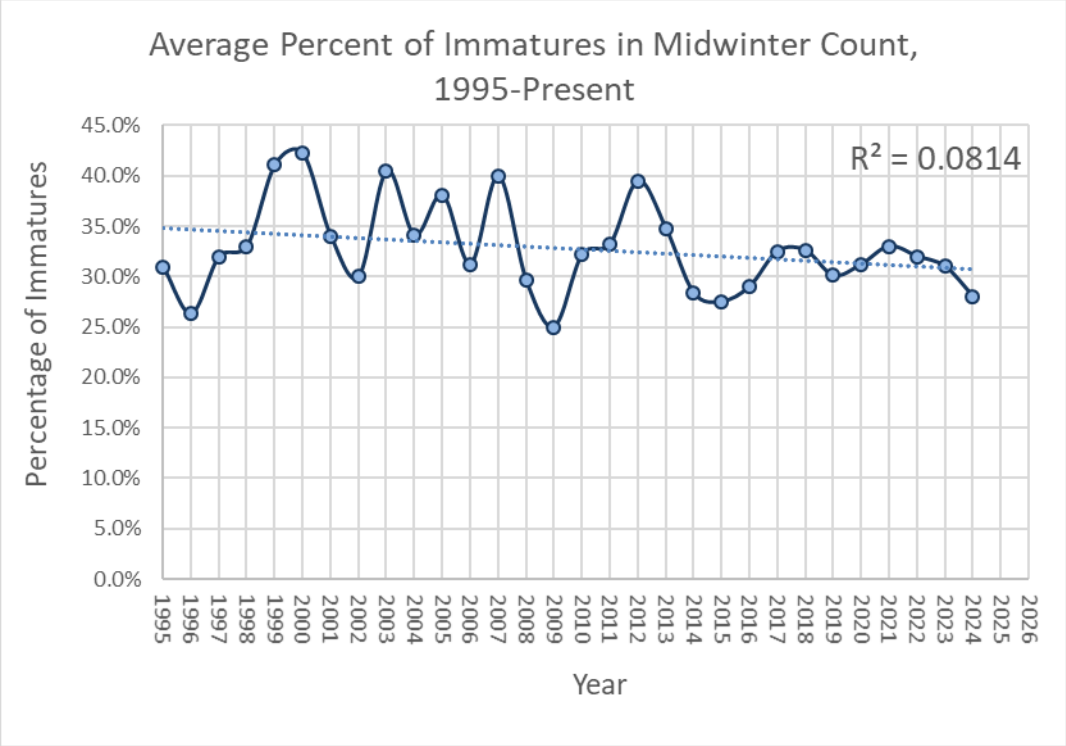

Figure 10. Percentage of immature bald eagles counted during the Bald Eagle Midwinter survey 1995 to present.

TABLES

Table 1. Summary of data collected by volunteer monitors on Bald eagle nests, 2018 to 2025.

	2018	2019	2020	2021	2022	2023	2024	2025
# of Monitored Territories	182	262	286	354	292	329	389	549
Active Territories	165	227	254	291	245	281	333	423
Successful	111(67%)	149(66%)	170(67%)	216(74%)	103(42%)	185(66%)	214(64%)	236(56%)
Failed	17(13%)	26(11%)	10(4%)	22(8%)	63(26%)	34(12%)	37(11%)	62(15%)
Outcome Unknown	37(22%)	52(23%)	74(29%)	53(18%)	79(32%)	61(22%)	82(25%)	125(30%)
Number of Young	170	240	253	282	104	242	308	309
Avg. # of Young/Nest	1.38	1.40	1.69	1.7	0.88	1.45	1.57	1.41
Inactive Territories	15	28	25	59	43	47	47	87
Unknown Territories	2	7	7	4	4	2	9	39

Table 2. Summary of data collected during the 2025 Bald Eagle (BE) Midwinter Survey by waterbody.

Water Body*	% of Total BE	Total BE	Adult BE	Imm BE	Unk Age BE	Total GE	Un-ID Eagle	Miles Surveyed	Average Bald Eagles Per Mile
State Total	**100**	**5795**	**4036**	**1625**	**134**	**2**	**13**	**1668.5**	**3.47**
Des Moines River	42.3	2451	1778	604	69	0	0	320.5	7.65
Mississippi River	41.9	2427	1572	824	31	0	0	258	9.41
Iowa River	6.5	377	317	51	9	1	0	68	5.54
Cedar River	1.6	91	66	19	6	0	0	68	1.34
Maquoketa	1.5	86	41	37	8	0	0	133	0.65
Wapsipinicon River	1.3	73	49	19	5	0	4	106	0.81
Missouri River	1.2	69	53	16	0	1	0	182	0.38
South Maquoketa River	1.8	53	39	11	3	0	3	105	0.50
Skunk River	0.71	41	31	10	0	0	0	72	0.57
Turkey River	0.67	39	31	6	2	0	2	40	0.98
Unknown	0.66	38	33	5	0	0	4	170	0.22
Lake Rathbun	0.53	31	11	19	1	0	0	85	0.36
Chariton River	0.28	16	12	4	0	0	0	45	0.36
Little Sioux River	0.05	3	3	0	0	0	0	15	0.2
Nodaway River	0.0	0	0	0	0	0	0	1	0
Age Composition		100%	70%	28%	2%	NA	NA	NA	NA