

Iowa Bald Eagle Nest Monitoring

Introduction

For a little over 70 years (1905-1977) the Bald Eagle (*Haliaeetus leucocephalus*) did not nest in Iowa. The enactment of a series of federal laws (Endangered Species Act, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act) which protected the eagle went a long way to ensure the recovery of this species. This recovery has been especially visible in Iowa as eagle nesting has grown from one nesting territory in one county in 1977 to a total of 401 nesting territories in 84 counties since 1977.

The Iowa Department of Natural Resources (IDNR) has worked, with limited resources, to document the recovery of the eagle primarily through opportunistic nest-checking by personnel as well as gathering reports from other natural resource agencies and volunteer reporting by Iowa's citizens. Nest report details range from nest location with no indication of activity, to yearly activity, to nest success and productivity. All of these reports over the years have been gathered together and organized into a Microsoft Access database. In addition the DNR has collected information on wintering eagles by participating in the yearly Midwinter Count and has helped foster awareness and appreciation of eagles through supporting and actively sponsoring Bald Eagle Day events in many locations throughout the state.

An effort is underway to take a more systematic and comprehensive approach to monitoring Bald Eagle nesting in Iowa. As some protection is lifted and threats both old and new continue to affect this species, it is important for the IDNR to have a firm understanding of the bald eagle's status in the state. However, the time and resources available to devote to these efforts is still very limited so a plan is needed that will provide professionals with the required information but will be efficient and when possible utilize volunteers. The monitoring plan is divided into two phases, which are described in detail in this document.

Phase 1: Procedures for the 2009 Nesting Season

The IDNR currently has a bald eagle nest database, which holds all the information collected on eagle nests since the 1970's. However the data has been collected mostly opportunistically and has resulted in some of the nest information being uncertain. The first task, therefore in starting a monitoring program is to clean this dataset as much as possible so that we have a clean and certain list of nests to work with.

There are currently 89 bald eagle territories (pair of eagles) with status unknown, excluding territories tracked by the U.S. Fish and Wildlife Service. Unknown status usually means that we have had no reports on the territory in 3 or more years. There are a few reasons why we may not have received a report in recent years: 1) the original reporter may not have realized we wished for yearly data and has not contacted with follow-up data, 2) the report was from a citizen at an event or some other venue where

contact information was not exchanged 3) the nest observed was inactive and the reporter assumed that this was a permanent state but there is ample evidence to suggest eagles do return to a nesting site after leaving it inactive for a year or two (they may have another nest in the area that is not visible). In all of these scenarios some follow-up contact or visit to the nesting area is needed.

Main Objective

The main task for the 2009 nesting season is to clean the bald eagle nest dataset which primarily involves getting updates on as many of the targeted 121 territories as possible. This will be done using a two-step approach. We are currently engaged on the first step which is to contact as many of the people who reported on the territories in question and see if follow up activity information can be collected. If this information cannot be ascertained in this way either because the reporter has no information or there is no reliable reporter to contact, a visit to survey the territories must be made.

Surveys

Surveys of territories were initiated at the beginning in March and will continue until leaf-out makes it difficult to find and observe nests (~ mid-April). The purpose of the visits is to discover if the nest can be re-located and if so whether it is currently being used by an eagle pair. Observers will be provided with binoculars and a spotting scope, a detailed map and location description (if available) and the observation history for each territory. The observers will primarily be Wildlife Diversity Program staff. The main obstacle to these surveys will be the inability in some cases to locate the nest which could be attributed to a number of causes: 1) the nest can only be viewed from private land or from the river on which it is located, 2) the location stored in the database is incorrect, 3) the nest is gone. Determining which of these three reasons it might be will very difficult if not impossible and a decision will have to be made on how to designate a territory's status based on the slim evidence gathered.

Survey Procedures:

1) Using the aerial photo provided as well as the Sportsman's Atlas the observer will drive to the location that appears to provide the best view of the nesting site. The nest site will be scanned using binoculars and spotting scope.

2) If nest is found:

- a) Observe the nest for at least 15 minutes if eagle activity is not immediately detected. Surveys will be conducted during the incubation period, so if the territory is occupied, eagles will be on or around the nest. It can sometimes be difficult to observe a bird sitting in the nest and the 15 minute observation should give enough time for the second bird to appear or for movement on the nest to be detected. If activity is immediately detected, take notes of the activity and then move one to the next nest –15 minutes observation will not be needed.
- b) The observer may also want to try another vantage point if no activity is detected.

- c) If after 15 minutes observation and viewing the nest from a different vantage point produces no activity the territory will be marked as inactive.
- 3) If the nest is not found in the location indicated on the map:
 - a) The surrounding section should be searched with a focus on appropriate eagle habitat (i.e. concentrate on the timbered waterways). All roads around and within the section should be driven. Occasionally an examination of the aerial photo map will clearly show that the nest is likely mapped in the wrong location (the nest falls in the middle of a crop field) – use this to determine if there is a more likely location nearby.
 - b) If a local landowner is available (working outside etc...) or there are any other local folks that might have heard something of the nest, they should be interviewed.
 - c) If it still cannot be found mark as “Not Found” and detail efforts made to find it. The territory will be marked for exclusion from the dataset.

Other Objectives

There are some secondary objectives for the 2009 nesting season. Opportunistic reports on nests will continue to be collected with as much detail as possible. This will likely add several new nests to the dataset as well as provide activity updates on existing nests. A larger effort will also be made to solicit these reports. Outreach to the County Conservation Boards has already been made and has resulted in several reports. Throughout this, an effort will be made to start identifying reliable volunteers who can be recruited as yearly nest monitors once the official nest monitoring program is put into place.

Phase 2 – Procedures for the 2010 Nesting Season and Beyond

The purpose of the official nest monitoring program will be to collect the following data on Bald Eagle nests: 1) Territory number and distribution; 2) Nest Activity (active or not); 3) Success – whether a nest produces fledglings or not; 3) Productivity or number of young fledged. From these data we hope to be able to attain an estimate of the number of territories in the state as well as the turnover rate of territories and an estimate of productivity. Our aim is to complement what the U.S. Fish and Wildlife Service is doing with their nationwide monitoring plan and our focus will be on nests away from the Upper Mississippi Wildlife Refuge hereafter referred to as inland nests.

Flight Surveys

Selected 10 or 15 mile sections of rivers will be flown each year and each section will be revisited every 5 years. Problems with detectability have proven to be a source of error as it is assumed all territories within each sampled subarea are detected. To overcome this there will be two observers in addition to the pilot. Flights will take place after March 10 and continue until early April or until leaf out.

As the pilot flies a systematic path making sure to cover all the area, observers will record each eagle nest seen. Data to be recorded will be the exact location of the nest using a map of the area provided, and whether the nest is occupied or not. An occupied nest is one that has at least 1 eagle on the nest or a pair of eagles within 50 yards of a nest that looks to be in repair.

The data collected using the flights will be used in conjunction with the data collected by the U.S. Fish and Wildlife Service to get an estimate of the number of territories and also get a better idea of distribution. It will also give us an estimate of the amount of turnover of nests, calculating the probability of nest that is active this year will become inactive next year as well as determine the rate of additions.

Repeated Nest Monitoring

For a percentage of nests we would like to get more detailed information about the success of the pair and its productivity yearly and over time. In order to do this a random sample of nests will be chosen from the clean dataset of known nests produced in 2009 (excluding Upper Mississippi River Refuge nests). This will require mobilizing IDNR staff as well as select reliable volunteers to make multiple yearly visits to a nest every year.

Initially 25% from the known active nests away from the Mississippi River will be selected to monitor for productivity. The exact selection method has not yet been determined but will probably be a stratified random sample. The percentage of nests will be adjusted if analysis of this initial data indicates too much variability. An observer will be chosen to visit one or more assigned nest 3 times during the nesting season. Each visit will be 20 minutes long and the nest will be examined using binoculars and a spotting scope.

The initial visit will be done in March and will be used to determine occupancy of the nest. Occupancy means that there is at least one eagle on a nest or a pair within 50 yards of a repaired nest. Since incubation begins in March these criteria should definitely be met by this time. Should a nest prove to be inactive one year the observer must still continue to visit the nest site for two more years, as eagles have been known to re-occupy a nest. If a nest is knocked down a systematic and thorough search of the surrounding area, particularly along the same water body, within a mile of the original nest site to try and determine if they have built a replacement nest. Once a territory has been designated inactive for 3 years another nest will be randomly chosen to replace it for monitoring.

The second visit will take place in May and will have the objective of counting the number of young in the nest. This will be the most difficult task because if the young are hunkered down and/or the vantage point is not right they are very difficult to view. Careful and constant viewing through the spotting scope is required. If it is determined that 3 visits is too arduous and/or we are not getting reliable information on young, this survey period may be dropped.

The third visit will be in June with the purpose of determining whether the nest was successful or not and how many young were fledged. A successful territory is one that produces at least one young. Determining fledging can be difficult and for our purposes if there are adult or almost adult-sized young in or within 50 yards of the nest during the survey period they should be counted as fledglings. At the end of this third survey period, data sheets should be returned to the wildlife diversity program.

The data collected in with the individual nest monitoring should provide data to help determine the yearly rate of success as well as an estimate of the number of young fledged in the state especially when combined with data collected on the Upper Mississippi River Refuge. It will also provide us with trend data of the estimated success and productivity rate of bald eagle nests in Iowa.