

# Bald Eagle Management Guidelines and Conservation Measures

## Bald Eagle Natural History and Sensitivity to Human Activity Information

These pages provide basic information about the natural history of bald eagles and specific information regarding the sensitivity of bald eagles during the nesting and wintering periods.

### Natural History

Bald eagles are a North American species that historically occurred throughout the contiguous United States and Alaska. The largest North American breeding populations are in Alaska and Canada, but there are also significant bald eagle populations in the Great Lakes states, Florida, the Pacific Northwest, the Greater Yellowstone area, and the Chesapeake Bay region.

Adult bald eagles have the dark brown body and distinctive white head and tail. In contrast, juvenile bald eagles have mottled brown and white plumage. They gradually acquire the adult plumage as they mature, which takes about five years. Most bald eagles can breed at 4 or 5 years of age, but many do not start breeding until much older. Bald eagles may live 15 to 25 years in the wild.

Bald eagles are opportunistic feeders with fish comprising much of their diet. They also eat waterfowl, shorebirds, colonial waterbirds, small mammals, turtles, and carrion (often along roads or at landfills). Because they are visual hunters, eagles typically locate their prey from a conspicuous perch, or soaring flight, then swoop down and strike.

The life history of bald eagles can be broadly categorized into nesting and non-nesting periods. The nesting period varies by latitude; in the Northeast it begins with courtship and nest building in late mid-December and ends when the young fledge by late June. The non-nesting period is thus from August through January.

### Nesting Period

During the nesting period, breeding bald eagles occupy and defend “territories.” A territory includes the active nest and may include one or more alternate nests that are built or maintained but not used for nesting in a given year. Bald eagles tend to return to the same territory year after year.

Bald eagles generally nest near coastlines, rivers, and large lakes where there is an adequate food supply. They nest in mature or old-growth trees, snags (dead trees), cliffs, and rock promontories. Recently, and with increasing frequency, bald eagles are nesting on artificial structures such as power poles and communication towers. In forested areas, bald eagles often select the tallest trees with limbs strong enough to support a nest that can

weigh more than 1,000 pounds. Nest sites typically include at least one perch with a clear view of the water, where they forage. Eagle nests are constructed with large sticks, and may be lined with moss, grass, plant stalks, lichens, seaweed, or sod. Nests are usually about 4-6 feet in diameter and 3 feet deep, although larger nests exist.

Dates vary (see Table below), but generally egg-laying begins at the end February in the Northeast. Clutch sizes range from one to three eggs. Successful pairs usually raise one or two young, or occasionally three per nest. Eaglets make their first unsteady flights about 10 to 12 weeks after hatching, and fledge (leave their nests) within a few days after that first flight. The time between egg-laying and fledging is approximately four months. However, young birds usually remain in the vicinity of the nest for several weeks after fledging because they are almost completely dependent on their parents for food until they disperse from the nesting territory approximately 6 weeks later. The entire breeding cycle, from initial activity at a nest through the period of fledgling dependency, is about 6 months.

### **Bald Eagle Nesting Period Chronology within the Midwest**

<b>Nov.</b>	<b>Dec.</b>	<b>Jan.</b>	<b>Feb.</b>	<b>Mar.</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug.</b>	<b>Sept</b>	<b>Oct.</b>
Nest Building>>											
Egg Laying/Incubation>											
Hatching/Rearing Young>>>>>											
Fledging Young>>											

### **Non-Nesting Period**

In the fall, bald eagles begin moving to their wintering grounds, with the greatest numbers migrating in late October and November when prey becomes limited. Wintering bald eagles occur throughout the country but are most abundant in the West and Midwest. An abundant, readily available food supply in conjunction with one or more suitable night roost sites is the primary characteristic of winter habitat. The majority of wintering eagles are found near open water where they feed on fish and waterfowl, often taking the dead, crippled, or otherwise vulnerable animals. Mammalian carrion is an important alternate source of food at some locations. Also, many bald eagles spend a substantial portion of the non-nesting period in terrestrial habitats far from open water, relying on prey that they can easily catch, such as small mammals, or scavenge, such as big game or livestock.

At night, wintering eagles often congregate at communal roost trees, in some cases traveling 32 miles (20 km) or more from feeding areas to a roost site. The same roost trees are used for several years. Many are in locations that are protected from the wind by vegetation or terrain, providing a more favorable thermal environment. The use of these protected sites helps minimize the energy stress encountered by wintering birds. Communal roosting may also assist eagles in finding food.

### **Sensitivity of Bald Eagles to Human Activity**

## Nesting Period

The bald eagle nesting period consists of 5 phases: courtship and nest building, egg laying, incubation and hatching, early nestling period, and late nestling period. Eagle sensitivity to humans varies among these 5 phases, with eagles being most sensitive to human disturbance during the courtship and nest building phase.

Sensitivity also varies among individuals within each phase. Some pairs, for example, nest successfully near human activity, while others abandon nest sites in response to activities much farther away. This variability may be related to a number of factors, including visibility of the activity, its duration and noise level, extent of the area affected by the activity, the eagle pair's prior experiences with humans, and tolerance of the individual nesting pair.

Despite this variability, the sensitivity of bald eagles can be generally described within each nesting phase.

### Relative Sensitivity of Nesting Bald Eagle to Human Activities

Phase	Activity	Sensitivity to Human Activity	Comments
I	Courtship and Nest Building	Most sensitive period; likely to respond negatively	Most critical time period. Disturbance is manifested in nest abandonment. Bald eagles in newly established territories are more prone to abandon nest sites.
II	Egg laying	Very sensitive period	Human activity of even limited duration may cause nest desertion and abandonment of territory for the nesting season.
III	Incubation and Hatching	Very sensitive period	Adults are less likely to abandon the nest near and after hatching. However, flushed adults leave eggs and young unattended; eggs are susceptible to cooling, loss of moisture, overheating, and predation; young are vulnerable to elements.
IV	Nestling period, 4 to 8 weeks	Moderately sensitive period	Likelihood of nest abandonment and vulnerability of the nestlings to elements gradually decreases. However, nestlings may miss feedings, which may affect their survival, or may prematurely leave the nest due to disruption,
V	Nestlings 8 weeks through fledging	Very sensitive period	Gaining flight capability, nestlings 8 weeks and older may flush from the nest prematurely due to disruption and die.

Bald eagles may respond in a variety ways when they are disturbed by human activities. During the nest building period, for example, eagles may inadequately construct or repair their nest, or may abandon the nest, both of which can lead to failed nesting attempts.

During the incubation and hatching period, human activities may startle adults or cause them to flush from the nest. Startling can damage eggs or injure young when the adults abruptly leave the nest.

Prolonged absences of adults from their nests can jeopardize eggs or young. Depending on weather conditions, eggs may overheat or cool and fail to hatch. Young nestlings rely on their parents to provide warmth or shade, and may die from hypothermia or heat stress if adults are forced away from the nest for an extended period of time. Eggs and juveniles are subject to greater predation risk while they are unattended.

If human activities disrupt the adults' foraging and feeding schedule, the young may not develop healthy plumage, which can affect their ability to survive.

Older nestlings may be startled by loud or intrusive human activities and prematurely jump from the nest before they are able to fly or care for themselves.

Human activities that cause any of these responses and lead to injury, a decrease in productivity, or nest abandonment could be, considered disturbance under the Eagle Act and thus a violation of the Act.

#### **Avoiding Bald Eagle Disturbance at Nest Sites**

To avoid disturbing nesting bald eagles, we recommend that you (1) maintain natural forested (or vegetative) buffers around nest trees, and (2) avoid certain activities during the nesting season. The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites.

The impact that a new human activity has on a pair of nesting eagles depends on whether the eagles can see the activity from their nest and on how tolerant the birds are to human activity, which may be evidenced by the presence of ongoing human activity near the nest. Visibility is a factor because eagles are more prone to disturbance when an activity occurs in full view. For this reason, we recommend that people locate activities farther from the nest in areas with open vistas than in areas where the view is shielded by rolling topography, trees, or other screening factors. Also, vegetative buffers should be large enough to protect existing nest trees and provide for alternative or replacement nest trees. The size and shape of effective buffers depends on topography and other characteristics surrounding the nest site. For example, in open areas where there are little or no natural forested buffers, the distance alone will serve as the buffer. Consequently, the buffers in open areas may need to be larger than for areas with denser vegetation or other natural screening.

In addition to the physical features of the landscape, appropriate buffer size may vary according to the historical tolerances of eagles to human activities in particular localities, and may also depend on the location of the nest in relation to feeding and roosting areas used by the eagles. The continued presence of nesting bald eagles in the vicinity of the existing activities indicates that eagles in that area can tolerate a greater degree of human

activity than we expect from eagles in areas that experience fewer human impacts.

We recommend seasonal restriction for many temporary activities that do not involve habitat alterations (e.g. fireworks, outdoor concerts). Potential negative impacts can be avoided by restricting these kinds of activities to the non-nesting period.

For activities that include both temporary and permanent habitat disturbance (e.g., building construction), we recommend a combination of landscape buffers and seasonal restrictions.

For specific guidance on establishing appropriate buffers and seasonal restrictions, go to the [Avoid Disturbing Nesting Bald Eagles pages](#).

### **Non-nesting Period**

Bald eagles are not as sensitive to human disturbance during migration and the winter period as they are during the nesting period. However, wintering bald eagles congregate at specific sites year-after-year for purposes of feeding and sheltering. Bald eagles rely on these established roost sites because of their proximity to sufficient food sources. Permanent landscape changes may eliminate these relied upon areas and force bald eagles to seek out other wintering roost and foraging areas. Depending on the proximity of other suitable roost or foraging areas and the condition of the affected eagles, loss of these areas can harm bald eagles. In addition, human activities near or within communal roost sites may—although not physically alter the habitat—prevent eagles from feeding or taking shelter.

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