



Town Planning Commission Regular Meeting  
Tuesday, September 19, 2023 – 7:00PM  
Town Hall/Virtual  
4030 95<sup>th</sup> Ave NE, Yarrow Point, WA. 98004

**Commission Chairperson:** Carl Hellings  
**Commissioners:** Chuck Hirsch, David Feller, Jeffrey Shiu, and Lee Sims  
**Town Planner:** SBN Planning  
**Town Attorney:** Emily Romanenko  
**Clerk:** Bonnie Ritter  
**Deputy Clerk:** Austen Wilcox

**Meeting Participation**

Members of the public may participate in person at Town Hall or by phone/online. Town Hall has limited seating available, up to 15 public members. Individuals who call in remotely who wish to speak live should register their request with the Deputy Clerk at 425-454-6994 or email [depclerk@yarrowpointwa.gov](mailto:depclerk@yarrowpointwa.gov) and leave a message before 7:00 PM on the day of the Planning Commission meeting. Wait for the Deputy Clerk to call on you before making your comment. If you dial in via telephone, please unmute yourself by dialing \*6 when it is your turn to speak. Speakers will be allotted 3 minutes for comments. Please state your name (and address if you wish.) You will be asked to stop when you reach the 3-minute limit.

**Join on computer, mobile app, or phone**

1-253-215-8782

<https://us02web.zoom.us/j/89495250263>

Meeting ID: 894 9525 0263#

- 1. CALL TO ORDER:** Commission Chairperson, Carl Hellings
- 2. PLEDGE OF ALLEGIANCE**
- 3. ROLL CALL:** Commissioners, Chuck Hirsch, David Feller, Jeffrey Shiu, Lee Sims
- 4. APPROVAL OF AGENDA**
- 5. APPROVAL OF THE MINUTES**  
August, 2023 special Planning Commission Meeting
- 6. STAFF REPORTS**  
**6.1 Comprehensive Plan Update** - (15 min)
- 7. PUBLIC COMMENT**  
Members of the public may speak concerning items that either are or are not on the agenda. The Planning Commission takes these matters under advisement. Please state your name (and address if you wish) and limit comments to 3 minutes. If you call in via telephone, please unmute yourself by dialing \*6 when it is your turn to speak. Comments via email may be submitted to [depclerk@yarrowpointwa.gov](mailto:depclerk@yarrowpointwa.gov) or regular mail to: Town of Yarrow Point, 4030 95<sup>th</sup> Ave NE, Yarrow Point, WA 98004.
- 8. REGULAR BUSINESS**  
**8.1 AB Eagle Protections** - (45 min)
- 9. PUBLIC COMMENT**
- 10. ADJOURNMENT**

**TOWN OF YARROW POINT  
PLANNING COMMISSION SPECIAL MEETING MINUTES  
August 29, 2023**

The following is a condensation of the proceedings and is not a verbatim transcript.

**1. CALL TO ORDER:**

Chairman Carl Hellings called the meeting to order at 7:03 p.m.

**PRESENT:**

Chairman: Carl Hellings

Commissioners: Chuck Hirsch  
Jeffrey Shiu  
David Feller  
Lee Sims

Staff: Austen Wilcox – Deputy Clerk  
James Eager – Town Planner  
Stacia Schroeder – Town Engineer

Guests: Katy Harris – Mayor  
Darryl Carver – Resident  
Pamela Pearce Carver – Resident  
Dicker Cahill – Resident  
Marian Bergey – Resident  
Jan Buchanan – Resident

**2. PLEDGE OF ALLEGIANCE**

**3. ROLL CALL**

**4. APPROVAL/AMENDMENTS TO AGENDA**

MOTION: Motion by Chairman Feller seconded by Commissioner Hirsch to approve the agenda as presented.

VOTE: 5 for, 0 against. Motion carried.

**5. MINUTES:**

- July 18, 2023 Regular Meeting

MOTION: Motion by Chairman Hellings, seconded by Commissioner Shiu to approve the July 18, 2023 regular meeting minutes as presented.

VOTE: 5 for, 0 against. Motion carried.

**6. STAFF REPORTS:**

Deputy Clerk Austen Wilcox noted that the Council did meet in the month of August.

## **7. PUBLIC COMMENT**

Resident Pamela Pearce Carver discussed a decrease of trees due to climate and construction. She encourages the tree code to be revisited and recommends a building moratorium until the tree code is further addressed for better tree protection.

Resident Darryl Carver discussed clear cutting in the town. The tree code should be revisited due to the continuation of tree cutting during land development.

Commission Chair Carl Hellings responded stating that Planning Commission direction comes from the Town Council and recommends they bring the issue up with them as well. Planning staff noted that a bond requirement was recently added to the private property tree permit application.

Resident Dicker Cahill discussed the zone identified for eagle locations within Yarrow Point. He discussed 4-month window restriction of construction activity from Fish & Wildlife Service (FWS.) He recommends that the Planning Commission review the federal eagle protection permitting restrictions in a holistic approach.

## **8. REGULAR BUSINESS:**

### **8.1 – Comprehensive Plan Update**

Planner James Eager shared that the survey received 144 responses, as of August 9, 2023. Following the close of the survey on August 11th, the Town Planner will develop a report on the survey and how the results coincide with specific policy decisions in the Comprehensive Plan. The Town Planner has received the SFY24 GMA Grant paperwork from the Department of Commerce (COM) and will submit the final adjustments to the deliverables and schedule to COM shortly.

Beginning in the fall, the Town Planner will begin presenting draft chapters to the Commission for review, alongside an explanation of required elements and those ideal for discussion and potential adjustment. These chapter reviews will set up a smooth adoption process in the Spring of 2024, ahead of the December 2024 deadline for the Comprehensive Plan. In addition to these draft chapters, the Town Planner will present analyses required as part of the Comp Plan, including the aforementioned public engagement analysis and a Housing Needs Analysis.

The Town Planner will continue work on the Comprehensive Plan as reviewed by the Planning Commission.

### **8.2 Eagle Protection**

Following a discussion with a biologist from the local DFW office, two letters were drafted for the residents of Yarrow Point and real estate agents working in the Town. The letter details the Town's position on eagle and migratory bird protections and points relevant parties in the direction of the Town's resources, including a map of the most high-risk parcels for eagle disturbances.

The Town Planner has also developed a draft code following these discussions. The purpose of the code is to give explicit notice of existing federal regulations to residents, their contractors, and developers. The code may warrant an accompanying FAQ document for the Town to detail the permit process further. The Town's website has already been updated to include the contact information of the local Migratory Bird Permit Office and a map of affected parcels. As an accompaniment to the draft code, the Town Planner also presents a flowchart from the US FWS Pacific Office outlining when certain development actions may trigger FWS outreach.

The Commission discussed:

- Eagle permit FAQs drafted by the Town Planner; and
- Letter sent from the Mayor to two sellers putting them on notice regarding activity of eagles on their property; and
- Not singling out particular properties regarding eagle protection; and
- Creating a letter or survey to residents about what the Town is doing with eagle protection; and
- Process of requirements for eagle protection permitting; and
- Measures in which the Town will know if a particular project will impact an eagle. Planning staff will get a sample of mitigation process, and list of particular project triggers from FWS that would disrupt eagles.
- 660' radius requirement for FWS eagle permitting; and
- Residents Jan Buchanan and Dicker Cahill noted that a FWS permit cost is \$500, and review can take at least 60-days, or up to 90+ days.
- Tiers/categories of FWS permitting process; and
- Create survey to get resident feedback on location of known eagle nests in the town; and
- Explore the cost and receive Council approval for funding to hire an independent wildlife expert to identify the location of eagle nests in Yarrow Point.

Engineer Schroeder shared that the code should not be unduly hard on applicants, and to review eagle protection regulations from neighboring jurisdictions.

Mayor Harris noted that she will discuss eagle protection regulations with the mayors of neighboring jurisdictions;

Public Comment:

Resident Darryl Carver discussed the need to establish a permitting process for eagle protection.

Resident Dicker Cahill said to consider the review of process from FWS.

Resident Marian Bergey discussed current eagle activity on Yarrow Point. She shared that trees are still being taken out despite the private property tree code.

Resident Pamela Carver discussed the need for a better private property tree code.

**MOTION:** Motion by Chairman Hellings, seconded by Commissioner Sims direct the Town Planner to work with the Mayor to create a letter to the citizens outlining the steps the Town is taking for eagle protection, identify the location of known eagle nests in the Town, research the cost and timing to hire a wildlife expert to identify eagle nest locations, research mitigation guidelines from FWS, and include in the draft code a requirement that an applicant must go through FWS to determine if an Incidental Take Permit is required prior to approval of their Yarrow Point permitting.

**VOTE:** 5 for, 0 against. 0 Motion carried.

### **8.3 – Short Term Rentals**

At the July meeting, the Town Planner presented an outline of existing regulations for STRs in predominantly residential jurisdictions as well as regulations for low-density residential neighborhoods in larger cities. The commission discussed possible considerations, regulations, limits on the number or intensity of STRS, and whether steps such as requiring a business license were necessary. The planning team further reviewed existing permitting processes in comparable jurisdictions and outlined a process for the commission's August meeting. Two processes are outlined based on the two predominant methods for permitting STRs. One approach, employed by Clyde Hill, is to review the permits as part of a business license application.

The second, employed by Chelan County, is to review applications as a land use permit, meeting the requirements of the standards outlines by their STR code. The latter approach appears more flexible if the Town does not intend to employ a business license requirement. Requirements imposed by both jurisdictions include occupancy limits, parking requirements, limits on specific activities, submission of a property management plan, and specific contact information for someone who is able to quickly respond to concerns as they may arise.

Planner James Eager stated that background checks cannot be made a requirement.

- Notification process for notifying Town of a rental property for 30-day rentals; and
- Define "short term"; and
- Identify locations of short term rentals; and
- Enforcement; and
- Contact short term rental companies to inform them of new Town regulations.

**MOTION:** Motion by Chairman Hellings, seconded by Commissioner Hirsch direct staff to create a draft code for a 30-day short term rental policy to review at their next meeting.

**VOTE:** 5 for, 0 against. 0 Motion carried.

### **9. PUBLIC COMMENT:**

**10. ADJOURNMENT:**

MOTION: Motion by Chairman Hellings, seconded by Commissioner Feller to adjourn the meeting at 9:06 p.m.

VOTE: 5 for, 0 against. Motion carried.

APPROVED:

ATTEST:

\_\_\_\_\_  
Carl Hellings, Chairman

\_\_\_\_\_  
Austen Wilcox, Deputy Clerk

DRAFT

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<b>Comprehensive Plan Update</b>	<b>STAFF REPORT</b>
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<b>Presented by:</b>	Town Planner
<b>Exhibits:</b>	Town Hall Open House Proposal

**Background:**

The Comprehensive Plan of Yarrow Point is a strategic policy framework that sets out the community's vision for future growth and development. It serves as a collective vision for the type of town that Yarrow Point residents and visitors aspire to create. The plan outlines how the town will handle population growth, environmental factors, and ensure essential services and facilities are provided to meet the community's needs for the next 20 years. The update is a mandatory process which occurs every 10 years.

For a more detailed overview please visit: <https://yarrowpointwa.gov/comprehensive-plan/>

**Summary:**

The survey closed on August 11th, 2023 and received 156 responses. The Town Planner is developing a report on the survey and how the results coincide with specific policy decisions in the Comprehensive Plan, to be presented to the Planning Commission at the October meeting. The Town Planner has received and submitted the SFY24 GMA Grant paperwork from the Department of Commerce (COM) and is awaiting final execution of the grant.

As detailed in the Public Participation Plan – previously presented to the Planning Commission during the January meeting – the Town Planner is proposing an Open House for the public and elected officials of Yarrow Point to learn more about the Comprehensive Plan. This event would ideally be held in the hour and a half preceding the October Commission meeting. The proposal attached briefly outlines the goals, planned materials, and expected attendees of the open house. Generally, the concept is for an open house with boards on display for residents to learn more about the Comprehensive Plan process, its requirements, and summaries of resident feedback. The planning staff will be available to respond to questions, concerns, and comments from the public and Town officials.

Following the presentation of survey results, the Town Planner will begin presenting draft chapters to the Commission for review, alongside an explanation of required elements and those ideal for discussion and potential adjustment. These chapter reviews will set up a smooth adoption process in the Spring of 2024, ahead of the December 2024 deadline for the Comprehensive Plan. In addition to these draft chapters, the Town Planner will present analyses required as part of the Comp Plan, including the aforementioned public engagement analysis and a Housing Needs Analysis.

## **Resources**

- WA Department of Commerce: [Short Course on Local Planning](#)
- TYP: [Comprehensive Plan Page](#)

## **Action Items**

- Staff Presentation on the Comprehensive Plan Status (15 min)



# Town of Yarrow Point

## Comprehensive Plan Open House

The comprehensive plan open house is meant to be an introduction to early findings, assumptions, and implications of the update process. The open house will be held on October 17th at 5:30-7:00pm prior to a regular Planning Commission meeting at 7:00pm. Refreshments will be provided. Materials will also be available on the Yarrow Point comprehensive plan website for those who cannot attend the event.

### Goals

- Present results and analysis from the Yarrow Point community survey.
- Inform the public of the Comprehensive Plan Update process and its requirements.
- Discuss policy and community-driven approaches to planning.

### Materials and Methods

- Printed boards will be displayed with community survey outcomes and planning requirements that impact the comprehensive plan update.
- Town planners will be available to answer questions on comprehensive plan elements.
- A roadmap of required changes for the comprehensive plan to achieve compliance will be available to review.

### Attendees

This event is open to the general public and elected officials.

Notice of a public meeting will be made.

Planning Staff will attend the meeting to present materials and answer questions.

<b>Eagle Protection</b>	<b>Proposed Planning Commission Action: Discussion</b>
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<b>Presented by:</b>	Town Planner
<b>Exhibits:</b>	Draft Eagle Protection Code National bald eagle management guidelines

**Background:**

The Town is home to several known eagle nests and other eagle habitat. While Federal protections are in place for eagles, the Town has the ability to do more in the way of protecting specific sites. The goal in developing Town regulations to protect eagles is two fold. First it is to inform and facilitate compliance for property owners and persons doing work in the Town, with the existing federal regulations. This is done through the development of Maps of Eagle habitat and FAQs. Second is to create code which incorporates the federal permitting process into the Town’s permitting process. If desired the Town may adopt code and guidelines which are as restrictive or more restrictive than federal and state regulations for the protection of eagles. Even with no action taken, the federal and state protections, their enforcement, and permitting still applies.

**Summary:**

In April, the subject of Eagle protections was brought to the Planning Commission by commissioner Sims and Council member Smith. General background materials were presented. The commission voted to ask the council to consider adding Eagle Protection to the commission’s work plan.

At the May council meeting, the topic of Eagle Protection was considered. Council voted to add the topic to the Planning Commissions 2023 work plan, with work commencing at the next meeting.

During the May meeting, the planning commission discussed, and then directed staff to have experts on enforcement present on the matter. Staff Invited Special Agent Alec Crook with the U.S. Fish and Wildlife Service Office of Law Enforcement to present on the enforcement elements at the June meeting.

Staff met on site with commissioner Sims and documented the locations of one known nest and two known roosting trees. Two maps were prepared which show their locations, along with the 330’ and 660’ radiuses, and highlight properties which are

affected. This document has been consolidated into one map which shows which properties are within the two radiuses of the known habitat.

At the June meeting, a thorough presentation on enforcement was given by Special Agent Alec Crook, Commission directed staff to prepare questions with input from them for the U.S. Fish and Wildlife Service.

Following the responses and discussion with a biologist from the regional USFWS Migratory Bird Permit Office, the commission directed staff at the July meeting to draft two letters. One to the residents of Yarrow Point, and one to the real estate agents working in the Town. The letter details the Town's position on eagle and migratory bird protections, resources with further detail, and includes the map developed by staff which shows affected properties. Commission also directed staff to draft a preliminary code outline and accompanying FAQ document. The Town's website was updated to include the contact information of the local Migratory Bird Permit Office and the map of affected parcels.

At the August special meeting, staff presented the FAQ, draft code, and public comment was heard. The commission discussed the continued need to develop better guidance for the residents of the Town. Staff was directed to develop the draft code further, finish the FAQs, confirm with USFWS which Town permits should be considered as being associated with work which may adversely impact Eagle habitat, and to contact environmental consultants for eagle habitat identification and documentation quotes and.

For the September meeting staff has updated the draft code, and have provided a copy of the National bald eagle management guidelines for review and discussion. Because the August special meeting and regular September meeting are only two weeks apart, the final FAQs are still being worked on and input from USFWS on applicable Town permits has not yet been received.

**Action Items:**

- Staff Presentation (15min)
- Discussion (25min)
- Vote (5min)

**Commission Options:**

- Continue discussion with no staff action
- Direct staff to revise the draft code

**Recommended Motion:**

- I move to continue discussion at our next meeting without any additional staff action or research.
- I move to direct staff to revise the draft code as discussed at this meeting.

Yarrow Point Municipal Code  
Title 19 Draft Amendments

**New: Chapter 19.06 Eagle Protection**

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**19.06.010 Purpose, and intent**

The purpose of this chapter is to protect eagles within the Town of Yarrow Point, which are seen as a community resource by requiring property owners to comply with the U.S. Bald & Golden Eagle Protection Act and the U.S. Migratory Bird Treaty Act.

**19.06.020 Definitions**

“Applicant” means a person who applies for any permit or approval to do anything governed by Yarrow Point Municipal Code chapter [insert development chapter codes] and who is the owner of the subject property, the authorized agent of the owner, or the Town.

“Development” means [insert definition from YPMC].

“Disturb” means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, one or more of the following to occur:

- (1) injury to an eagle,
- (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or
- (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

“Eagle Habitat” means an eagle nest, foraging area, or communal roost site that eagles rely on for breeding, sheltering, or feeding, and the landscape features surrounding such nest, foraging area, or roost site that are essential for the continued viability of the site for breeding, feeding, or sheltering eagles. .

“Eagle nest” means any assemblage of materials built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction.

“Highlighted Parcel” means a parcel which has been highlighted on the Eagle Habitat Map as being within 660 feet of Eagle Habitat.

“Known Eagle Habitat” means Eagle Habitat which is open and notorious in the community

“Take” means pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb.

**19.06.030 Statutes Incorporated by Reference**

The following federal statutes are incorporated by reference:

[Additional legal review and review for definition continuity is still in progress]

50 CFR Part 21

50 CFR Part 22

**19.06.040 Applicability**

- A. This Chapter applies to all parcels within the Town of Yarrow Point.
- B. Parcels highlighted on the Eagle Habitat Map are those which have been confirmed as being within the 660 foot radius of known or verified Eagle Habitat and shall comply with YPMC Section 19.06.060 of this chapter.

#### **19.06.050 Location of Eagle Habitat**

- A. The Town shall prepare an Eagle Habitat Map.
  - 1. The Eagle Habitat Map shall include the entire Town and contain the following information: jurisdictional boundaries of the Town, roads, parcels, waterways, locations of known or verified eagle habitat, highlighted parcels.
  - 2. The Eagle Habitat Map may be maintained and updated by the Town on an annual basis to modify or update known or verified Eagle Habitat Locations.
- B. Eagle habitat locations not included on the Eagle Habitat Map may be reported to the Town by residents and members of the public. Reports may be submitted to the Town in writing. Reports shall include sufficient detail for the Town to verify the Eagle Habitat from a vantage point located within the public right of way or from private land if permission is granted. [Staff is exploring other verification methods]
- C. Upon receipt of the report, the Town may verify the Eagle Habitat by conducting a visual inspection of the reported site to confirm whether the site is an Eagle Habitat. If the Town determines that the site is an Eagle Habitat, the Town shall update the Eagle Habitat Map in accordance with YPMC 19.06.050(A).
- D. Prior to undertaking any development, the applicant shall review the Eagle Habitat Map to determine if the property includes an Eagle Habitat within 660' of anywhere on the property. If the property is not shown to have Eagle Habitat within 660', the applicant shall contact the Town to determine if there are known or verified Eagle Habitats not yet added to the Eagle Habitat Map.

#### **19.06.060 Permit requirements**

- A. Any development which may disturb Eagle Habitat, including but not limited to work which requires a building permit, site development permit, ROW permit, shoreline permit, or tree permit, and is within the 660 foot radius of an Eagle Habitat shall consult the regional U.S. Fish and Wildlife Service Migratory Bird Permit Office to determine if an Incidental Take permit is necessary.
  - 1. If an Incidental Take permit is deemed necessary, the applicant shall provide the approved Incidental take permit to the Town before the Town issues any required permits.
  - 2. If an Incidental Take permit is not deemed necessary by the USFWS, the applicant shall submit to the Town such a determination from the USFWS prior to the Town issuing any Town permits.
- B. Pursuant to 50 CFR § 22.80 (c), USFWS permit holders shall comply with all avoidance, minimization, or other mitigation measures specified in the terms of the Incidental Take permit to mitigate detrimental effects on eagles, including indirect and cumulative effects, of the permitted take. Annual reports and mitigation plans, if required by USFWS, will also be sent to the Town for its records.

#### **19.06.070 Enforcement**

- A. It shall be unlawful for any person to build, erect, construct, alter, rebuild, renovate, enlarge or expand any building, structure or use within the 660 foot radius of Eagle Habitat in violation of the provisions of this chapter. Any violation of this chapter may result in a fine not to exceed \$1,000.00 and may be subject to enforcement actions set forth in YPMC chapter 1.08.

# **NATIONAL BALD EAGLE MANAGEMENT GUIDELINES**

**U.S. Fish and Wildlife Service**

**May 2007**

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## INTRODUCTION

The bald eagle (*Haliaeetus leucocephalus*) is protected by the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act (MBTA). The MBTA and the Eagle Act protect bald eagles from a variety of harmful actions and impacts. The U.S. Fish and Wildlife Service (Service) developed these National Bald Eagle Management Guidelines to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of the Eagle Act may apply to their activities. A variety of human activities can potentially interfere with bald eagles, affecting their ability to forage, nest, roost, breed, or raise young. The Guidelines are intended to help people minimize such impacts to bald eagles, particularly where they may constitute “disturbance,” which is prohibited by the Eagle Act.

The Guidelines are intended to:

- (1) Publicize the provisions of the Eagle Act that continue to protect bald eagles, in order to reduce the possibility that people will violate the law,
- (2) Advise landowners, land managers and the general public of the potential for various human activities to disturb bald eagles, and
- (3) Encourage additional nonbinding land management practices that benefit bald eagles (see Additional Recommendations section).

While the Guidelines include general recommendations for land management practices that will benefit bald eagles, the document is intended primarily as a tool for landowners and planners who seek information and recommendations regarding how to avoid disturbing bald eagles. Many States and some tribal entities have developed state-specific management plans, regulations, and/or guidance for landowners and land managers to protect and enhance bald eagle habitat, and we encourage the continued development and use of these planning tools to benefit bald eagles.

Adherence to the Guidelines herein will benefit individuals, agencies, organizations, and companies by helping them avoid violations of the law. However, the Guidelines themselves are not law. Rather, they are recommendations based on several decades of behavioral observations, science, and conservation measures to avoid or minimize adverse impacts to bald eagles.

The U.S. Fish and Wildlife Service strongly encourages adherence to these guidelines to ensure that bald and golden eagle populations will continue to be sustained. The Service realizes there may be impacts to some birds even if all reasonable measures are taken to avoid such impacts. Although it is not possible to absolve individuals and entities from liability under the Eagle Act or the MBTA, the Service exercises enforcement discretion to focus on those individuals, companies, or agencies that take migratory birds without regard for the consequences of their actions and the law, especially when conservation measures, such as these Guidelines, are available, but have not been implemented. The Service will prioritize its enforcement efforts to focus on those individuals or entities who take bald eagles or their parts, eggs, or nests without implementing appropriate measures recommended by the Guidelines.



The Service intends to pursue the development of regulations that would authorize, under limited circumstances, the use of permits if “take” of an eagle is anticipated but unavoidable. Additionally, if the bald eagle is delisted, the Service intends to provide a regulatory mechanism to honor existing (take) authorizations under the Endangered Species Act (ESA).

During the interim period until the Service completes a rulemaking for permits under the Eagle Act, the Service does not intend to refer for prosecution the incidental “take” of any bald eagle under the MBTA or Eagle Act, if such take is in full compliance with the terms and conditions of an incidental take statement issued to the action agency or applicant under the authority of section 7(b)(4) of the ESA or a permit issued under the authority of section 10(a)(1)(B) of the ESA.

The Guidelines are applicable throughout the United States, including Alaska. The primary purpose of these Guidelines is to provide information that will minimize or prevent violations only of *Federal* laws governing bald eagles. In addition to Federal laws, many states and some smaller jurisdictions and tribes have additional laws and regulations protecting bald eagles. In some cases those laws and regulations may be more protective (restrictive) than these Federal guidelines. If you are planning activities that may affect bald eagles, we therefore recommend that you contact both your nearest U.S. Fish and Wildlife Service Field Office (see the contact information on p.16) and your state wildlife agency for assistance.

## LEGAL PROTECTIONS FOR THE BALD EAGLE

### **The Bald and Golden Eagle Protection Act**

The Eagle Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs. The Act provides criminal and civil penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” “Disturb” means:

"Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle=s return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

A violation of the Act can result in a criminal fine of \$100,000 (\$200,000 for organizations), imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony.

### **The Migratory Bird Treaty Act**

The MBTA (16 U.S.C. 703-712), prohibits the taking of any migratory bird or any part, nest, or egg, except as permitted by regulation. The MBTA was enacted in 1918; a 1972 agreement supplementing one of the bilateral treaties underlying the MBTA had the effect of expanding the scope of the Act to cover bald eagles and other raptors. Implementing regulations define “take” under the MBTA as “pursue, hunt, shoot, wound, kill, trap, capture, possess, or collect.”

Copies of the Eagle Act and the MBTA are available at: <http://permits.fws.gov/ltr/ltr.shtml>.

### **State laws and regulations**

Most states have their own regulations and/or guidelines for bald eagle management. Some states may continue to list the bald eagle as endangered, threatened, or of special concern. If you plan activities that may affect bald eagles, we urge you to familiarize yourself with the regulations and/or guidelines that apply to bald eagles in your state. Your adherence to the Guidelines herein does not ensure that you are in compliance with state laws and regulations because state regulations can be more specific and/or restrictive than these Guidelines.

## **NATURAL HISTORY OF THE BALD EAGLE**

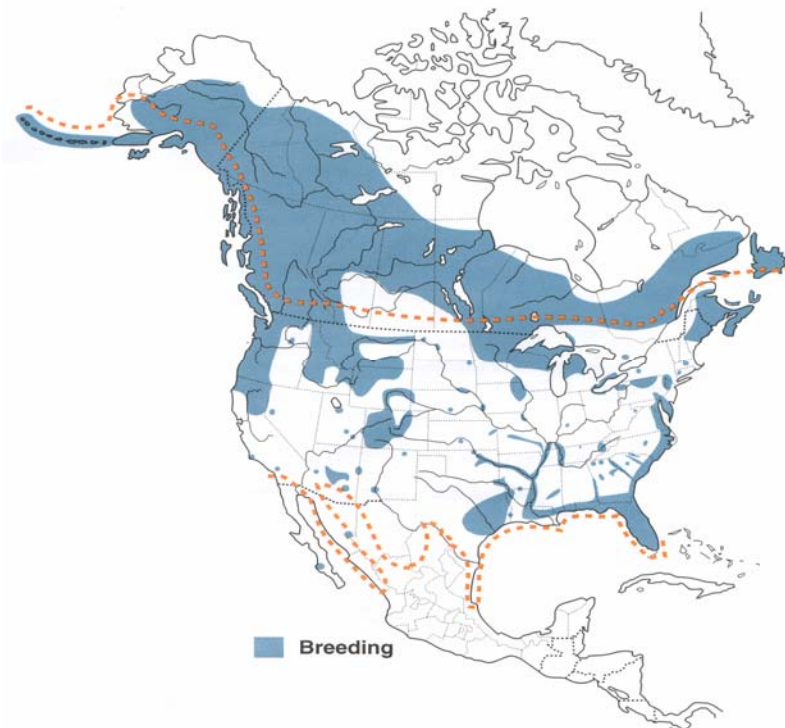
Bald eagles are a North American species that historically occurred throughout the contiguous United States and Alaska. After severely declining in the lower 48 States between the 1870s and the 1970s, bald eagles have rebounded and re-established breeding territories in each of the lower 48 states. The largest North American breeding populations are in Alaska and Canada, but there are also significant bald eagle populations in Florida, the Pacific Northwest, the Greater Yellowstone area, the Great Lakes states, and the Chesapeake Bay region. Bald eagle distribution varies seasonally. Bald eagles that nest in southern latitudes frequently move northward in late spring and early summer, often summering as far north as Canada. Most eagles that breed at northern latitudes migrate southward during winter, or to coastal areas where waters remain unfrozen. Migrants frequently concentrate in large numbers at sites where food is abundant and they often roost together communally. In some cases, concentration areas are used year-round: in summer by southern eagles and in winter by northern eagles.

Juvenile bald eagles have mottled brown and white plumage, gradually acquiring their dark brown body and distinctive white head and tail as they mature. Bald eagles generally attain adult plumage by 5 years of age. Most are capable of breeding at 4 or 5 years of age, but in healthy populations they may not start breeding until much older. Bald eagles may live 15 to 25 years in the wild. Adults weigh 8 to 14 pounds (occasionally reaching 16 pounds in Alaska) and have wingspans of 5 to 8 feet. Those in the northern range are larger than those in the south, and females are larger than males.

### Where do bald eagles nest?

Breeding bald eagles occupy “territories,” areas they will typically defend against intrusion by other eagles. In addition to the active nest, a territory may include one or more alternate nests (nests built or maintained by the eagles but not used for nesting in a given year). The Eagle Act prohibits removal or destruction of both active and alternate bald eagle nests. Bald eagles exhibit high nest site fidelity and nesting territories are often used year after year. Some territories are known to have been used continually for over half a century.

Bald eagles generally nest near coastlines, rivers, large lakes or streams that support an adequate food supply. They often nest in mature or old-growth trees; snags (dead trees); cliffs; rock promontories; rarely on the ground; and with increasing frequency on human-made 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 the eagles usually forage. Shoreline trees or snags located in reservoirs provide the visibility and accessibility needed to locate aquatic prey. 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.



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**The range of breeding bald eagles in 2000 (shaded areas). This map shows only the larger concentrations of nests; eagles have continued to expand into additional nesting territories in many states. The dotted line represents the bald eagle’s wintering range.**

**When do bald eagles nest?**

Nesting activity begins several months before egg-laying. Egg-laying dates vary throughout the U.S., ranging from October in Florida, to late April or even early May in the northern United States. Incubation typically lasts 33-35 days, but can be as long as 40 days. 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. 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 bald eagle breeding season tends to be longer in the southern U.S., and re-nesting following an unsuccessful first nesting attempt is more common there as well. The following table shows the timing of bald eagle breeding seasons in different regions of the country. The table represents the range of time within which the majority of nesting activities occur in each region and does not apply to any specific nesting pair. Because the timing of nesting activities may vary within a given region, you should contact the nearest U.S. Fish and Wildlife Service Field Office (see page 16) and/or your state wildlife conservation agency for more specific information on nesting chronology in your area.

Chronology of typical reproductive activities of bald eagles in the United States.

Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.
<b>SOUTHEASTERN U.S. (FL, GA, SC, NC, AL, MS, LA, TN, KY, AR, eastern 2 of TX)</b>											
Nest Building											
		Egg Laying/Incubation									
				Hatching/Rearing Young							
					Fledging Young						
<b>CHESAPEAKE BAY REGION (NC, VA, MD, DE, southern 2 of NJ, eastern 2 of PA, panhandle of WV)</b>											
				Nest Building							
					Egg Laying/Incubation						
						Hatching/Rearing Young					
								Fledging Young			
<b>NORTHERN U.S. (ME, NH, MA, RI, CT, NY, northern 2 of NJ, western 2 of PA, OH, WV exc. panhandle, IN, IL, MI, WI, MN, IA, MO, ND, SD, NB, KS, CO, UT)</b>											
				Nest Building							
					Egg Laying/Incubation						
						Hatching/Rearing Young					
								Fledging Young			
<b>PACIFIC REGION (WA, OR, CA, ID, MT, WY, NV)</b>											
				Nest Building							
					Egg Laying/Incubation						
						Hatching/Rearing Young					
								Fledging Young			
<b>SOUTHWESTERN U.S. (AZ, NM, OK panhandle, western 2 of TX)</b>											
				Nest Building							
					Egg Laying/Incubation						
						Hatching/Rearing Young					
								Fledging Young			
<b>ALASKA</b>											
					Nest Building						
							Egg Laying/Incubation				
								Hatching/Rearing Young			
Ing Young											Fledg-
Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.

**How many chicks do bald eagles raise?**

The number of eagle eggs laid will vary from 1-3, with 1-2 eggs being the most common. Only one eagle egg is laid per day, although not always on successive days. Hatching of young occurs on different days with the result that chicks in the same nest are sometimes of unequal size. The overall national fledging rate is approximately one chick per nest, annually, which results in a healthy expanding population.

**What do bald eagles eat?**

Bald eagles are opportunistic feeders. Fish comprise much of their diet, but they also eat waterfowl, shorebirds/colonial waterbirds, small mammals, turtles, and carrion. Because they are visual hunters, eagles typically locate their prey from a conspicuous perch, or soaring flight, then swoop down and strike. Wintering bald eagles often congregate in large numbers along streams to feed on spawning salmon or other fish species, and often gather in large numbers in areas below reservoirs, especially hydropower dams, where fish are abundant. Wintering eagles also take birds from rafts of ducks at reservoirs and rivers, and congregate on melting ice shelves to scavenge dead fish from the current or the soft melting ice. Bald eagles will also feed on carcasses along roads, in landfills, and at feedlots.

During the breeding season, adults carry prey to the nest to feed the young. Adults feed their chicks by tearing off pieces of food and holding them to the beaks of the eaglets. After fledging, immature eagles are slow to develop hunting skills, and must learn to locate reliable food sources and master feeding techniques. Young eagles will congregate together, often feeding upon easily acquired food such as carrion and fish found in abundance at the mouths of streams and shallow bays and at landfills.

**The impact of human activity on nesting bald eagles**

During the breeding season, bald eagles are sensitive to a variety of human activities. However, not all bald eagle pairs react to human activities in the same way. Some pairs nest successfully just dozens of yards from 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, duration, noise levels, extent of the area affected by the activity, prior experiences with humans, and tolerance of the individual nesting pair. The relative sensitivity of bald eagles during various stages of the breeding season is outlined in the following table.

**Nesting Bald Eagle Sensitivity 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 breeding season.
III	Incubation and early nestling period (up to 4 weeks)	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 somewhat decreases. However, nestlings may miss feedings, affecting their survival.
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.

If agitated by human activities, eagles may inadequately construct or repair their nest, may expend energy defending the nest rather than tending to their young, or may abandon the nest altogether. Activities that cause prolonged absences of adults from their nests can jeopardize eggs or young. Depending on weather conditions, eggs may overheat or cool too much and fail to hatch. Unattended eggs and nestlings are subject to predation. Young nestlings are particularly vulnerable because they rely on their parents to provide warmth or shade, without which they may die as a result of hypothermia or heat stress. If food delivery schedules are interrupted, the young may not develop healthy plumage, which can affect their survival. In addition, adults startled while incubating or brooding young may damage eggs or injure their young as they abruptly leave the nest. Older nestlings no longer require constant attention from the adults, but they 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. Once fledged, juveniles range up to ¼ mile from the nest site, often to a site with minimal human activity. During this period, until about six weeks after departure from the nest, the juveniles still depend on the adults to feed them.

**The impact of human activity on foraging and roosting bald eagles**

Disruption, destruction, or obstruction of roosting and foraging areas can also negatively affect bald eagles. Disruptive activities in or near eagle foraging areas can interfere with feeding, reducing chances of survival. Interference with feeding can also result in reduced productivity (number of young successfully fledged). Migrating and wintering bald eagles often congregate at specific sites for purposes of feeding and sheltering. Bald eagles rely on established roost sites because of their proximity to sufficient food sources. Roost sites are usually in mature trees where the eagles are somewhat sheltered from the wind and weather. Human activities near or within communal roost sites may prevent eagles

from feeding or taking shelter, especially if there are not other undisturbed and productive feeding and roosting sites available. Activities that permanently alter communal roost sites and important foraging areas can altogether eliminate the elements that are essential for feeding and sheltering eagles.

Where a human activity agitates or bothers roosting or foraging bald eagles to the degree that causes injury or substantially interferes with breeding, feeding, or sheltering behavior and causes, or is likely to cause, a loss of productivity or nest abandonment, the conduct of the activity constitutes a violation of the Eagle Act's prohibition against disturbing eagles. The circumstances that might result in such an outcome are difficult to predict without detailed site-specific information. If your activities may disturb roosting or foraging bald eagles, you should contact your local Fish and Wildlife Service Field Office (see page 16) for advice and recommendations for how to avoid such disturbance.

### **RECOMMENDATIONS FOR AVOIDING DISTURBANCE AT NEST SITES**

In developing these Guidelines, we relied on existing state and regional bald eagle guidelines, scientific literature on bald eagle disturbance, and recommendations of state and Federal biologists who monitor the impacts of human activity on eagles. Despite these resources, uncertainties remain regarding the effects of many activities on eagles and how eagles in different situations may or may not respond to certain human activities. The Service recognizes this uncertainty and views the collection of better biological data on the response of eagles to disturbance as a high priority. To the extent that resources allow, the Service will continue to collect data on responses of bald eagles to human activities conducted according to the recommendations within these Guidelines to ensure that adequate protection from disturbance is being afforded, and to identify circumstances where the Guidelines might be modified. These data will be used to make future adjustments to the Guidelines.

To avoid disturbing nesting bald eagles, we recommend (1) keeping a distance between the activity and the nest (distance buffers), (2) maintaining preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) avoiding certain activities during the breeding season. The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest trees and provide for alternative or replacement nest trees.

The size and shape of effective buffers vary depending on the topography and other ecological characteristics surrounding the nest site. In open areas where there are little or no forested or topographical buffers, such as in many western states, distance alone must serve as the buffer. Consequently, in open areas, the distance between the activity and the nest may need to be larger than the distances recommended under Categories A and B of these guidelines (pg. 12) if no landscape buffers are present. The height of the nest above the ground may also ameliorate effects of human activities; eagles at higher nests may be less prone to disturbance.

In addition to the physical features of the landscape and nest site, the appropriate size for the distance buffer 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. Increased competition for nest sites may lead bald eagles to nest closer to human activity (and other eagles).

Seasonal restrictions can prevent the potential impacts of many shorter-term, obtrusive activities that do not entail landscape alterations (e.g. fireworks, outdoor concerts). In proximity to the nest, these kinds of activities should be conducted only outside the breeding season. For activities that entail both short-term, obtrusive characteristics and more permanent impacts (e.g., building construction), we recommend a combination of both approaches: retaining a landscape buffer *and* observing seasonal restrictions.

For assistance in determining the appropriate size and configuration of buffers or the timing of activities in the vicinity of a bald eagle nest, we encourage you to contact the nearest U.S. Fish and Wildlife Service Field Office (see page 16).

### **Existing Uses**

Eagles are unlikely to be disturbed by routine use of roads, homes, and other facilities where such use pre-dates the eagles' successful nesting activity in a given area. Therefore, in most cases *ongoing* existing uses may proceed with the same intensity with little risk of disturbing bald eagles. However, some *intermittent, occasional, or irregular* uses that pre-date eagle nesting in an area may disturb bald eagles. For example: a pair of eagles may begin nesting in an area and subsequently be disturbed by activities associated with an annual outdoor flea market, even though the flea market has been held annually at the same location. In such situations, human activity should be adjusted or relocated to minimize potential impacts on the nesting pair.

## **ACTIVITY-SPECIFIC GUIDELINES**

The following section provides the Service's management recommendations for avoiding bald eagle disturbance as a result of new or intermittent activities proposed in the vicinity of bald eagle nests. Activities are separated into 8 categories (A – H) based on the nature and magnitude of impacts to bald eagles that usually result from the type of activity. Activities with similar or comparable impacts are grouped together.

In most cases, impacts will vary based on the visibility of the activity from the eagle nest and the degree to which similar activities are already occurring in proximity to the nest site. Visibility is a factor because, in general, 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 structure in areas with open vistas, in contrast to areas where the view is shielded by rolling topography, trees, or other screening factors. The recommendations also take into account the existence of similar activities in the area because the continued presence of nesting bald eagles in the vicinity of the existing activities indicates that the eagles in that area can tolerate a greater degree of human activity than we can generally expect from eagles in areas that experience fewer human impacts. To illustrate how these factors affect the likelihood of disturbing eagles, we have incorporated the recommendations for some activities into a table (categories A and B).

First, determine which category your activity falls into (between categories A – H). If the activity you plan to undertake is not specifically addressed in these guidelines, follow the recommendations for the most similar activity represented.

If your activity is under A or B, our recommendations are in table form. The vertical axis shows the degree of visibility of the activity from the nest. The horizontal axis (header row) represents the degree to which similar activities are ongoing in the vicinity of the nest. Locate the row that best describes how visible your activity will be from the eagle nest. Then, choose the column that best describes the degree to which similar activities are ongoing in the vicinity of the eagle nest. The box where the column and row come together contains our management recommendations for how far you should locate your activity from the nest to avoid disturbing the eagles. The numerical distances shown in the tables are the closest the activity should be conducted relative to the nest. In some cases we have included additional recommendations (other than recommended *distance* from the nest) you should follow to help ensure that your activity will not disturb the eagles.

### **Alternate nests**

For activities that entail permanent landscape alterations that may result in bald eagle disturbance, these recommendations apply to both active and alternate bald eagle nests. Disturbance becomes an issue with regard to alternate nests if eagles return for breeding purposes and react to land use changes that occurred while the nest was inactive. The likelihood that an alternate nest will again become active decreases the longer it goes unused. If you plan activities in the vicinity of an alternate bald eagle nest and have information to show that the nest has not been active during the preceding 5 breeding seasons, the recommendations provided in these guidelines for avoiding disturbance around the nest site may no longer be warranted. The nest itself remains protected by other provisions of the Eagle Act, however, and may not be destroyed.

If special circumstances exist that make it unlikely an inactive nest will be reused before 5 years of disuse have passed, and you believe that the probability of reuse is low enough to warrant disregarding the recommendations for avoiding disturbance, you should be prepared to provide all the reasons for your conclusion, including information regarding past use of the nest site. Without sufficient documentation, you should continue to follow these guidelines when conducting activities around the nest site. If we are able to determine that it is unlikely the nest will be reused, we may advise you that the recommendations provided in these guidelines for avoiding disturbance are no longer necessary around that nest site.

This guidance is intended to minimize disturbance, as defined by Federal regulation. In addition to Federal laws, most states and some tribes and smaller jurisdictions have additional laws and regulations protecting bald eagles. In some cases those laws and regulations may be more protective (restrictive) than these Federal guidelines.

### **Temporary Impacts**

For activities that have temporary impacts, such as the use of loud machinery, fireworks displays, or summer boating activities, we recommend seasonal restrictions. These types of activities can generally be carried out outside of the breeding season without causing disturbance. The recommended restrictions for these types of activities can be lifted for alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, after eggs laid in another nest within the territory have hatched (depending on the distance between the alternate nest and the active nest).

In general, activities should be kept as far away from nest trees as possible; loud and disruptive activities should be conducted when eagles are not nesting; and activity between the nest and the nearest foraging area should be minimized. If the activity you plan to undertake is not specifically addressed in these guidelines, follow the recommendations for the most similar activity addressed, or contact your local U.S. Fish and Wildlife Service Field Office for additional guidance.

If you believe that special circumstances apply to your situation that increase or diminish the likelihood of bald eagle disturbance, or if it is not possible to adhere to the guidelines, you should contact your local Service Field Office for further guidance.

**Category A:**

- Building construction, 1 or 2 story, with project footprint of ½ acre or less.
- Construction of roads, trails, canals, power lines, and other linear utilities.
- Agriculture and aquaculture – new or expanded operations.
- Alteration of shorelines or wetlands.
- Installation of docks or moorings.
- Water impoundment.

**Category B:**

- Building construction, 3 or more stories.
- Building construction, 1 or 2 story, with project footprint of more than ½ acre.
- Installation or expansion of marinas with a capacity of 6 or more boats.
- Mining and associated activities.
- Oil and natural gas drilling and refining and associated activities.

	<i><b>If there is no similar activity within 1 mile of the nest</b></i>	<i><b>If there is similar activity closer than 1 mile from the nest</b></i>
<i><b>If the activity will be visible from the nest</b></i>	660 feet. Landscape buffers are recommended.	660 feet, or as close as existing tolerated activity of similar scope. Landscape buffers are recommended.
<i><b>If the activity will not be visible from the nest</b></i>	Category A: 330 feet. Clearing, external construction, and landscaping between 330 feet and 660 feet should be done outside breeding season.  Category B: 660 feet.	330 feet, or as close as existing tolerated activity of similar scope. Clearing, external construction and landscaping within 660 feet should be done outside breeding season.

The numerical distances shown in the table are the closest the activity should be conducted relative to the nest.

**Category C. Timber Operations and Forestry Practices**

- Avoid clear cutting or removal of overstory trees within 330 feet of the nest at any time.
- Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the breeding season within 660 feet of the nest. The distance may be decreased to 330 feet around alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, after eggs laid in another nest within the territory have hatched.
- Selective thinning and other silviculture management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, should be undertaken outside the breeding season. Precautions such as raking leaves and woody debris from around the nest tree should be taken to prevent crown fire or fire climbing the nest tree. If it is determined that a burn during the breeding season would be beneficial, then, to ensure that no take or disturbance will occur, these activities should be conducted only when neither adult eagles nor young are present at the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest). Appropriate Federal and state biologists should be consulted before any prescribed burning is conducted during the breeding season.
- Avoid construction of log transfer facilities and in-water log storage areas within 330 feet of the nest.

**Category D. Off-road vehicle use** (including snowmobiles). No buffer is necessary around nest sites outside the breeding season. During the breeding season, do not operate off-road vehicles within 330 feet of the nest. In open areas, where there is increased visibility and exposure to noise, this distance should be extended to 660 feet.

**Category E. Motorized Watercraft use** (including jet skis/personal watercraft). No buffer is necessary around nest sites outside the breeding season. During the breeding season, within 330 feet of the nest, (1) do not operate jet skis (personal watercraft), and (2) avoid concentrations of noisy vessels (e.g., commercial fishing boats and tour boats), except where eagles have demonstrated tolerance for such activity. Other motorized boat traffic passing within 330 feet of the nest should attempt to minimize trips and avoid stopping in the area where feasible, particularly where eagles are unaccustomed to boat traffic. Buffers for airboats should be larger than 330 feet due to the increased noise they generate, combined with their speed, maneuverability, and visibility.

**Category F. Non-motorized recreation and human entry** (e.g., hiking, camping, fishing, hunting, birdwatching, kayaking, canoeing). No buffer is necessary around nest sites outside the breeding season. If the activity will be visible or highly audible from the nest, maintain a 330-foot buffer during the breeding season, particularly where eagles are unaccustomed to such activity.

**Category G. Helicopters and fixed-wing aircraft.**

Except for authorized biologists trained in survey techniques, avoid operating aircraft within 1,000 feet of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity.

**Category H. Blasting and other loud, intermittent noises.**

Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. This recommendation applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks that are intended for licensed public display.

**RECOMMENDATIONS FOR AVOIDING DISTURBANCE AT FORAGING AREAS AND COMMUNAL ROOST SITES**

1. Minimize potentially disruptive activities and development in the eagles' direct flight path between their nest and roost sites and important foraging areas.
2. Locate long-term and permanent water-dependent facilities, such as boat ramps and marinas, away from important eagle foraging areas.
3. Avoid recreational and commercial boating and fishing near critical eagle foraging areas during peak feeding times (usually early to mid-morning and late afternoon), except where eagles have demonstrated tolerance to such activity.
4. Do not use explosives within ½ mile (or within 1 mile in open areas) of communal roosts when eagles are congregating, without prior coordination with the U.S. Fish and Wildlife Service and your state wildlife agency.
5. Locate aircraft corridors no closer than 1,000 feet vertical or horizontal distance from communal roost sites.

## **ADDITIONAL RECOMMENDATIONS TO BENEFIT BALD EAGLES**

The following are additional management practices that landowners and planners can exercise for added benefit to bald eagles.

1. Protect and preserve potential roost and nest sites by retaining mature trees and old growth stands, particularly within ½ mile from water.
2. Where nests are blown from trees during storms or are otherwise destroyed by the elements, continue to protect the site in the absence of the nest for up to three (3) complete breeding seasons. Many eagles will rebuild the nest and reoccupy the site.
3. To avoid collisions, site wind turbines, communication towers, and high voltage transmission power lines away from nests, foraging areas, and communal roost sites.
4. Employ industry-accepted best management practices to prevent birds from colliding with or being electrocuted by utility lines, towers, and poles. If possible, bury utility lines in important eagle areas.
5. Where bald eagles are likely to nest in human-made structures (e.g., cell phone towers) and such use could impede operation or maintenance of the structures or jeopardize the safety of the eagles, equip the structures with either (1) devices engineered to discourage bald eagles from building nests, or (2) nesting platforms that will safely accommodate bald eagle nests without interfering with structure performance.
6. Immediately cover carcasses of euthanized animals at landfills to protect eagles from being poisoned.
7. Do not intentionally feed bald eagles. Artificially feeding bald eagles can disrupt their essential behavioral patterns and put them at increased risk from power lines, collision with windows and cars, and other mortality factors.
8. Use pesticides, herbicides, fertilizers, and other chemicals only in accordance with Federal and state laws.
9. Monitor and minimize dispersal of contaminants associated with hazardous waste sites (legal or illegal), permitted releases, and runoff from agricultural areas, especially within watersheds where eagles have shown poor reproduction or where bioaccumulating contaminants have been documented. These factors present a risk of contamination to eagles and their food sources.

## CONTACTS

The following U.S. Fish and Wildlife Service Field Offices provide technical assistance on bald eagle management:

<u>Alabama</u>	Daphne	(251) 441-5181	<u>New Hampshire</u>	Concord	(603) 223-2541
<u>Alaska</u>	Anchorage	(907) 271-2888	<u>New Jersey</u>	Pleasantville	(609) 646-9310
	Fairbanks	(907) 456-0203	<u>New Mexico</u>	Albuquerque	(505) 346-2525
	Juneau	(907) 780-1160	<u>New York</u>	Cortland	(607) 753-9334
<u>Arizona</u>	Phoenix	(602) 242-0210		Long Island	(631) 776-1401
<u>Arkansas</u>	Conway	(501) 513-4470	<u>North Carolina</u>	Raleigh	(919) 856-4520
<u>California</u>	Arcata	(707) 822-7201		Asheville	(828) 258-3939
	Barstow	(760) 255-8852	<u>North Dakota</u>	Bismarck	(701) 250-4481
	Carlsbad	(760) 431-9440	<u>Ohio</u>	Reynoldsburg	(614) 469-6923
	Red Bluff	(530) 527-3043	<u>Oklahoma</u>	Tulsa	(918) 581-7458
	Sacramento	(916) 414-6000	<u>Oregon</u>	Bend	(541) 383-7146
	Stockton	(209) 946-6400		Klamath Falls	(541) 885-8481
	Ventura	(805) 644-1766		La Grande	(541) 962-8584
	Yreka	(530) 842-5763		Newport	(541) 867-4558
<u>Colorado</u>	Lakewood	(303) 275-2370		Portland	(503) 231-6179
	Grand Junction	(970) 243-2778		Roseburg	(541) 957-3474
<u>Connecticut</u>	(See New Hampshire)		<u>Pennsylvania</u>	State College	(814) 234-4090
<u>Delaware</u>	(See Maryland)		<u>Rhode Island</u>	(See New Hampshire)	
<u>Florida</u>	Panama City	(850) 769-0552	<u>South Carolina</u>	Charleston	(843) 727-4707
	Vero Beach	(772) 562-3909	<u>South Dakota</u>	Pierre	(605) 224-8693
	Jacksonville	(904) 232-2580	<u>Tennessee</u>	Cookeville	(931) 528-6481
<u>Georgia</u>	Athens	(706) 613-9493	<u>Texas</u>	Clear Lake	(281) 286-8282
	Brunswick	(912) 265-9336	<u>Utah</u>	West Valley City	(801) 975-3330
	Columbus	(706) 544-6428	<u>Vermont</u>	(See New Hampshire)	
<u>Idaho</u>	Boise	(208) 378-5243	<u>Virginia</u>	Gloucester	(804) 693-6694
	Chubbuck	(208) 237-6975	<u>Washington</u>	Lacey	(306) 753-9440
<u>Illinois/Iowa</u>	Rock Island	(309) 757-5800		Spokane	(509) 891-6839
<u>Indiana</u>	Bloomington	(812) 334-4261		Wenatchee	(509) 665-3508
<u>Kansas</u>	Manhattan	(785) 539-3474	<u>West Virginia</u>	Elkins	(304) 636-6586
<u>Kentucky</u>	Frankfort	(502) 695-0468	<u>Wisconsin</u>	New Franken	(920) 866-1725
<u>Louisiana</u>	Lafayette	(337) 291-3100	<u>Wyoming</u>	Cheyenne	(307) 772-2374
<u>Maine</u>	Old Town	(207) 827-5938		Cody	(307) 578-5939
<u>Maryland</u>	Annapolis	(410) 573-4573			
<u>Massachusetts</u>	(See New Hampshire)				
<u>Michigan</u>	East Lansing	(517) 351-2555			
<u>Minnesota</u>	Bloomington	(612) 725-3548			
<u>Mississippi</u>	Jackson	(601) 965-4900			
<u>Missouri</u>	Columbia	(573) 234-2132			
<u>Montana</u>	Helena	(405) 449-5225			
<u>Nebraska</u>	Grand Island	(308) 382-6468			
<u>Nevada</u>	Las Vegas	(702) 515-5230			
	Reno	(775) 861-6300			

<p><u>National Office</u>            U.S. Fish and Wildlife Service            Division of Migratory Bird Management            4401 North Fairfax Drive, MBSP-4107            Arlington, VA 22203-1610            (703) 358-1714  <a href="http://www.fws.gov/migratorybirds">http://www.fws.gov/migratorybirds</a></p>
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### State Agencies

To contact a state wildlife agency, visit the Association of Fish & Wildlife Agencies' website at [http://www.fishwildlife.org/where\\_us.html](http://www.fishwildlife.org/where_us.html)

## GLOSSARY

The definitions below apply to these National Bald Eagle Management Guidelines:

**Communal roost sites** – Areas where bald eagles gather and perch overnight – and sometimes during the day in the event of inclement weather. Communal roost sites are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. These roosts may also serve a social purpose for pair bond formation and communication among eagles. Many roost sites are used year after year.

**Disturb** – To agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle=s return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

**Fledge** – To leave the nest and begin flying. For bald eagles, this normally occurs at 10-12 weeks of age.

**Fledgling** – A juvenile bald eagle that has taken the first flight from the nest but is not yet independent.

**Foraging area** – An area where eagles feed, typically near open water such as rivers, lakes, reservoirs, and bays where fish and waterfowl are abundant, or in areas with little or no water (i.e., rangelands, barren land, tundra, suburban areas, etc.) where other prey species (e.g., rabbit, rodents) or carrion (such as at landfills) are abundant.

**Landscape buffer** – A natural or human-made landscape feature that screens eagles from human activity (e.g., strip of trees, hill, cliff, berm, sound wall).

**Nest** – A structure built, maintained, or used by bald eagles for the purpose of reproduction. An **active** nest is a nest that is attended (built, maintained or used) by a pair of bald eagles during a given breeding season, whether or not eggs are laid. An **alternate** nest is a nest that is not used for breeding by eagles during a given breeding season.

**Nest abandonment** – Nest abandonment occurs when adult eagles desert or stop attending a nest and do not subsequently return and successfully raise young in that nest for the duration of a breeding season. Nest abandonment can be caused by altering habitat near a nest, even if the alteration occurs prior to the breeding season. Whether the eagles migrate during the non-breeding season, or remain in the area throughout the non-breeding season, nest abandonment can occur at any point between the time the eagles return to the nesting site for the breeding season and the time when all progeny from the breeding season have



dispersed.

**Project footprint** – The area of land (and water) that will be permanently altered for a development project, including access roads.

**Similar scope** – In the vicinity of a bald eagle nest, an existing activity is of similar scope to a new activity where the types of impacts to bald eagles are similar in nature, and the impacts of the existing activity are of the same or greater magnitude than the impacts of the potential new activity. Examples: (1) An existing single-story home 200 feet from a nest is similar in scope to an additional single-story home 200 feet from the nest; (2) An existing multi-story, multi-family dwelling 150 feet from a nest has impacts of a greater magnitude than a potential new single-family home 200 feet from the nest; (3) One existing single-family home 200 feet from the nest has impacts of a lesser magnitude than three single-family homes 200 feet from the nest; (4) an existing single-family home 200 feet from a communal roost has impacts of a lesser magnitude than a single-family home 300 feet from the roost but 40 feet from the eagles' foraging area. The existing activities in examples (1) and (2) are of similar scope, while the existing activities in example (3) and (4) are not.

**Vegetative buffer** – An area surrounding a bald eagle nest that is wholly or largely covered by forest, vegetation, or other natural ecological characteristics, and separates the nest from human activities.

## RELATED LITERATURE

Andrew, J.M. and J.A. Mosher. 1981. Bald eagle nest site selection and nesting habitat in Maryland. *Journal of Wildlife Management* 46:382-390.

Anonymous. 1977. Bald Eagle Habitat Management Guidelines, Forest Service – California Region. U.S Forest Service, San Francisco, CA.

Anthony, R.G. 2001. Low productivity of bald eagles on Prince of Wales Island, southeast Alaska. *Journal of Raptor Research* 35:1-8.

Anthony, R.G., R.W. Frenzel, F.B. Isaacs, and M.G. Garrett. 1994. Probable causes of nesting failures in Oregon's bald eagle population. *Wildlife Society Bulletin* 22:576-582.

Anthony, R.G. and F.B. Isaacs. 1989. Characteristics of bald eagle nest sites in Oregon. *Journal of Wildlife Management* 53:148-158.

Arizona Game and Fish Department. 1999. Bald Eagle Conservation Assessment and Strategy (draft).

Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996. Edison Electric Institute, Raptor Research Foundation, Washington, D.C.

Bangs, E.E., T.N. Bailey and V.D. Berns. Ecology of nesting bald eagles on the Kenai National Wildlife Refuge, Alaska. (USFWS staff)

Becker, J.M. 2002. Response of wintering bald eagles to industrial construction in southeastern Washington. *Wildlife Society Bulletin* 30:875-878.

Brauning, D.W. and J.D. Hassinger. 2000. Pennsylvania Recovery and Management Plan for the Bald Eagle (draft). Pennsylvania Game Commission. Harrisburg, PA.

Brown, B.T., G.S. Mills, C. Powels, W.A. Russell, G.D. Therres and J.J. Pottie. 1999. The influence of weapons-testing noise on bald eagle behavior. *Journal of Raptor Research* 33:227-232.

Brown, B.T. and L.E. Stevens. 1997. Winter bald eagle distribution is inversely correlated with human activity along the Colorado River, Arizona. *Journal of Raptor Research* 31:7-10.

Buehler, D.A. 2000. Bald Eagle (*Haliaeetus leucocephalus*). In *The Birds of North America*, No. 506 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Buehler, D.A., T.J. Mersmann, J.D. Fraser, and J.K.D. Seegar. 1991. Effects of human activity on bald eagle distribution on the northern Chesapeake Bay. *Journal of Wildlife Management* 55:282-290.

Buehler, D.A., T.J. Mersmann, J.D. Fraser, and J.K.D. Seegar. 1991. Nonbreeding bald eagle communal and solitary roosting behavior and roost habitat on the northern Chesapeake Bay. *Journal of Wildlife Management* 55:273-281.

- Chandler, SK., J.D. Fraser, D.A. Buehler and J.K.D. Seegar. 1995. Perch trees and shoreline development as predictors of bald eagle distribution on the Chesapeake Bay. *Journal of Wildlife Management* 59:325-332.
- Cline, K. 1985. *Bald Eagles in the Chesapeake: A Management Guide for Landowners*. National Wildlife Federation. Washington, D.C.
- Dell, D.D. and P.J. Zwank. 1986. Impact of a high-voltage transmission line on a nesting pair of southern bald eagles in southeast Louisiana. *Journal of Raptor Research* 20(3/4):117-119.
- Dunwiddie, P.W. and R.C. Kuntz. 2001. Long-term trends of bald eagles in winter on the Skagit River, Washington. *Journal of Wildlife Management* 65(2):290-299.
- Fletcher, R.J. et. al. 1999. Effects of recreational trails on wintering diurnal raptors along riparian corridors in a Colorado grassland. *Journal of Raptor Research* 33(3):233-239.
- Fraser, J.D. 1981. *The breeding biology and status of the bald eagle on the Chippewa National Forest*. PhD. Dissertation, University of Minnesota.
- Fraser, J.D., LD. Frenzel and J.E. Mathisen. 1985. The impact of human activities on breeding bald eagles in north-central Minnesota. *Journal of Wildlife Management* 49(3):585-592.
- Garrett, M.G., J.W. Watson, and R.G. Anthony. 1993. Bald eagle home range and habitat use in the Columbia River Estuary. *Journal of Wildlife Management* 57(1):19-27.
- Gerrard J.M. and G.R. Bortolotti. 1988. *The Bald Eagle: Haunts and Habits of a Wilderness Monarch*. Smithsonian Institution Press. Washington, D.C.
- Grier, J.W. 1969. Bald eagle behavior and productivity responses to climbing to nests. *Journal of Wildlife Management* 33:961-966.
- Grier, J.W. and J.E. Guinn. 2003. *Bald eagle habitats and responses to human disturbance in Minnesota*. Report to the Minnesota Department of Natural Resources.
- Grubb, T.G. 1976. *Survey and analysis of bald eagle nesting in western Washington*. M.S. thesis, Univ. of Washington, Seattle.
- Grubb, T.G. and R.M. King. 1991. Assessing human disturbance of breeding bald eagles with classification tree models. *Journal of Wildlife Management* 55:500-511.
- Grubb, T.G., W.L. Robinson and W.W. Bowerman. 2002. Effects of watercraft on bald eagles nesting in Voyagers National Park, Minnesota. *Wildlife Society Bulletin* 30:156-161.
- Grubb, T.G. and W.W. Bowerman. 1997. Variations in breeding bald eagle response to jets, light planes and helicopters. *Journal of Raptor Research* 31:213-222.

Grubb, T.G., W.W. Bowerman, A.J. Bath, J.P. Giesy, D.V.C. Weseloh. 2003. Evaluating Great Lakes bald eagle nesting habitat with Bayesian inference. RMRS-RP-45. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, CO, 10 pp.

Hansen, J.A. 1977. Population dynamics and night roost requirements of bald eagles wintering in the Nooksack River Valley, WA. Huxley College of Environmental Studies, Western Washington State College, Bellingham, WA. (Problem Series)

Hansen, J.A., M.V. Stalmaster and J.R. Newman. 1980. Habitat characteristics, function, and destruction of bald eagle communal roosts in western Washington. Huxley college of Environmental Studies, Western Washington University.

Hunt, W.G., D.E. Driscoll, E.W. Bianchi, and R.E. Jackman. 1992. Ecology of bald eagles in Arizona. Report to U.S. Bureau of Reclamation, Contract 6-CS-30-04470. BioSystems Analysis Inc., Santa Cruz, California.

Isaacs, F.B and R.G. Anthony. 1987. Abundance, foraging, and roosting of bald eagles wintering in the Harney Basin, Oregon. Northwest Science 61(2), pp. 114-121.

Juenemann, B.G. 1973. Habitat evaluations of selected bald eagle nest sites on the Chippewa National Forest. M.S. thesis, University of Minnesota, Minneapolis.

Keister, G.P., R.G. Anthony and E.J. O'Neill. 1987. Use of communal roosts and foraging area by bald eagles wintering in the Klamath Basin. Journal of Wildlife Management 51(2):415-420.

Knight, R. and S.K. Knight. 1984. Responses of wintering bald eagles to boating activity. Journal of Wildlife Management 48:999-1004.

Linscombe, J.T., T.J. Hess, Jr., and V.L. Wright. 1999. Effects of seismic operations on Louisiana's nesting bald eagles. Proceedings of the Southeastern Association of Fish and Wildlife Agencies. 54:235-242.

Maine (State of) Inland Fisheries and Wildlife Rules. Chapter 8.05 Essential Habitat for Species Listed as Threatened or Endangered.

Mathisen, J.E. 1968. Effects of human disturbance on nesting bald eagles. Journal of Wildlife Management 32(1): 1-6.

McGarigal, K., R.G. Anthony and F.B. Isaacs. 1991. Interactions of humans and bald eagles on the Columbia River estuary. Wildlife Monographs 115:1-47.

McKay, K.J., J.W. Stravers, B.R. Conklin, U. Konig, S. Hawks, C.J. Kohrt, J.S. Lundh and G.V. Swenson. 2001. Potential human impacts on bald eagle reproductive success along the Upper Mississippi River.

McKewan, L.C. and D.H. Hirth. 1979. Southern bald eagle productivity and nest site selection. Journal of Wildlife Management 43:585-594.

- Millsap, B.A. Status of wintering bald eagles in the conterminous 48 States. 1986. *Wildlife Society Bulletin* 14:433-440.
- Millsap, B.A, T. Breen, E. McConnell, T. Steffer, L. Phillips, N. Douglass, and S. Taylor. In Press. Comparative fecundity and survival of bald eagles fledged from suburban and rural natal areas in Florida. *Journal of Wildlife Management* 68(4).
- Montana Bald Eagle Working Group. 1986. Montana Bald Eagle Management Plan. Department of the Interior, Bureau of Land Management. Billings, MT.
- Nesbitt, S.A., M.J. Folk and D.A. Wood. 1993. Effectiveness of bald eagle habitat protection guidelines in Florida. *Proceedings of the Annual Conference of the Southeast Association of Fish and Wildlife Agencies*.
- Newman, J.R., W.H. Brennan and L.M. Smith. 1977. Twelve-year changes in nesting patterns of bald eagles on San Juan Island, Washington. *The Murrelet* 58(2)37-39.
- Postapulsky, S. 1974. Raptor reproductive success: some problems with methods, criteria, and terminology. Pages 21-31 *in* F.N. Hammerstrom, Jr., B.E. Harrell, and R.R. Olendorff, eds. *Management of raptors*. Raptor Res. Found., Vermillion, S.D.
- Rodgers, J.A. and Schwikert, S.T. 2003. Buffer zone distances to protect foraging and loafing waterbirds from disturbance by airboats in Florida. *Waterbirds* 26(4): 437-443.
- Russell, D. 1980. Occurrence and human disturbance sensitivity of wintering bald eagles on the Sauk and Suiattle Rivers, Washington. In R.L. Knight, G.T. Allen, M.V. Stalmaster and C.W. Servheen [eds.]. *Proceedings of the Washington Bald Eagle Symposium*. Nature Conservancy, Seattle, Washington, pp. 165-174.
- Shapiro, A.E., F. Montalbano, and D. Mager. 1982. Implications of construction of a flood control project upon bald eagle nesting activity. *Wilson Bulletin* 94(1), pp. 55-63.
- Skagen, S.K. 1980. Behavioral responses of wintering bald eagles to human activity on the Skagit River, Washington. In R.L. Knight, G.T. Allen, M.V. Stalmaster and C.W. Servheen [eds.]. *Proceedings of the Washington Bald Eagle Symposium*. Nature Conservancy, Seattle, Washington, pp. 231-241.
- Skagen, S.K., R.L. Knight and G.J.H. Orians. 1991. Human disturbance of an avian scavenging guild. *Ecological Applications* 1:215-225. (Internet)
- Stalmaster, M.V. 1976. Winter ecology and effects of human activity on bald eagles in the Nooksack River Valley, Washington. MS Thesis, Western Washington State College, Bellingham.
- Stalmaster, M.V. 1980. Management strategies for wintering bald eagles in the Pacific Northwest. *Proceedings of the Washington Bald Eagle Symposium*, pp 49-67.
- Stalmaster, M.V. and J.L. Kaiser. 1998. Effects of recreational activity on wintering bald eagles. *Wildlife Monographs* 137:1-46.

- Stalmaster, M.V. and J.L. Kaiser. 1997. Flushing responses of wintering bald eagles to military activity. *Journal of Wildlife Management* 61:1307-1313.
- Stalmaster, M.V. and J.R. Newman. 1978. Behavioral responses of wintering bald eagles to human activity. *Journal of Wildlife Management* 42:506-513.
- Steenhof, K. 1978. Management of Wintering Bald Eagles. FWS/OBS-78/79. U.S. Fish and Wildlife Service, Department of the Interior, Washington D.C.
- Steidl, R.J. and R.G. Anthony. 2000. Experimental Effects of Human Activity on Breeding Bald Eagles. *Ecological Applications* 10(1), pp. 258-268.
- Therres, G.D., M.A. Byrd and D.S. Bradshaw. 1993. Effects of development on nesting bald eagles: case studies from Chesapeake Bay. *Transactions of the North American Wildlife and Natural Resources Conference* 58:62-69.
- U.S. Fish and Wildlife Service. 1979. Bald Eagle Management Guidelines: Oregon – Washington. Portland. OR.
- U.S. Fish and Wildlife Service. 1983. Northern States bald eagle recovery plan. Appendices E, F, and G. U.S. Fish and Wildlife Service, Region 6, Denver, CO.
- U.S. Fish and Wildlife Service. 1987. Habitat Management Guidelines for the Bald Eagle in the Southeast Region. U.S Fish and Wildlife Service, Region 4. Atlanta, GA.
- U.S. Fish and Wildlife Service. 1993. Bald Eagle Basics. Anchorage, AK.
- U.S. Fish and Wildlife Service. 1993. Habitat Management Guidelines for Bald Eagles in Texas. Austin, TX.
- U.S. Fish and Wildlife Service and Virginia Department of Game and Inland Fisheries. 2001. Bald Eagle Protection Guidelines for Virginia. Gloucester and Richmond, VA.
- Watson, J.W. 1993. Responses of nesting bald eagles to helicopter surveys. *Wildlife Society Bulletin* 21:171-178.
- Watson, J.W. 2004. Responses of nesting bald eagles to experimental pedestrian activity. *Journal of Raptor Research* 38:295-305.
- Wood, P.B. 1999. Bald eagle response to boating activity in northcentral Florida. *Journal of Raptor Research* 33:97-101.
- Wood, P.B., T.C. Edwards Jr. and M.W. Collopy. 1989. Characteristics of bald eagle nesting habitat in Florida. *Journal of Wildlife Management* 53(2):441-449.
- Young, L.S. 1980. A quantitative evaluation of human disturbance impacts on breeding eagle ecology of bald eagles in the San Juan Islands, Washington. Washington Department of Game, Olympia.