EXHIBIT 24

FWC Bald Eagle (*Haliaeetus leucocephalus*) Management Plan Handbook

June 2010

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
620 South Meridian Street
Tallahassee, Florida 32399-1600

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FWC Management Plan Definitions

For more definitions please see the FWC Bald Eagle Management Plan (2008). Visit FWC's bald eagle Web site to obtain a copy of the management plan.

Active nest- a nest that shows or showed evidence of breeding by bald eagles, such as an adult attending the nest or in incubating position, a clutch of eggs, or a brood of nestlings, at any time during the current or most recent nesting season.

Alternate Nest: a bald eagle nest that is intact or partially intact and has been used by bald eagles at any time during the past five nesting seasons, but was not used during the current or most recent nesting season.

Abandoned Nest: a bald eagle nest that is intact or partially intact, but it has been inactive through six or more consecutive nesting seasons. While the buffer zone surrounding the nest is no longer protected, the nest itself may not be altered.

Lost Nest: a nest that is no longer present or intact due to natural causes (*e.g.*, fell apart or was blown out of a tree). In some cases, the nest tree itself may be lost. The FWC recommendations in the section entitled Permitting Framework April 2008 apply to lost nests through two complete, consecutive nesting seasons.

*Nesting Season: 1 Oct- 15 May

*Non-nesting Season 16 May- 30 Sep

***Eagles may begin nesting prior to 1 Oct or may nest after 15 May. It is the responsibility of the interested party to determine if eagles are present.**

Bald Eagle (*Haliaeetus leucocephalus*) Biology

BIOLOGICAL BACKGROUND

The bald eagle (*Haliaeetus leucocephalus*) is the symbol of the United States and one of North America's most spectacular birds. It is also one of the most thoroughly studied birds, with perhaps 2,500 articles published on its biology or management (Buehler 2000). Detailed information on the biology of bald eagles throughout their range is found in Stalmaster (1987), Gerrard and Bortolotti (1988), and Buehler (2000). For more information regarding bald eagle biology visit FWC's bald eagle Web site.

Life History and Habitat

Breeding Behavior

Bald eagles in Florida begin nest building or nest maintenance activities in late September or early October. The nesting season is prolonged, with egg-laying beginning as early as October or as late as April (later nests are mostly renesting attempts; Millsap *et al.* 2004). For purposes of the FWC management plan (2008), the bald eagle nesting season is defined as the period 1 October–15 May. Nest sites tend to be built near habitat edges (McEwan and Hirth 1980) in a living tree that offers a view of the surrounding area and that can support the eagle's often sizeable nest. Substrates used in Florida vary according to local conditions, and include pines (*Pinus palustris* and *P. elliottii*), cypress (*Taxodium* spp.), mangroves (*Avicennia germinans* and *Rhizophora mangle*), great blue heron (*Ardea herodia*) nests, artificial structures such as communication towers, transmission towers, and raptor nesting platforms, and even—very rarely—on the ground (Broley 1947, Shea *et al.* 1979, Curnutt and Robertson 1994, Curnutt 1996, Millsap *et al.* 2004). However, bald eagles in Florida strongly prefer living native pines to all other substrates; 75% of all eagle nests surveyed during 2006 were built in living native pines (FWC unpublished data).

Eagle pairs often build more than one nest, which allows them to move to an alternate nest while remaining in their territory. Throughout their range, eagles maintain an average of 1.5 nests per territory, ranging from one nest to five nests (Stalmaster 1987, Buehler 2000).

Most clutches of eggs in Florida are laid between December and early January. Mean clutch size throughout the bald eagle's range is 1.87 eggs, with most nests containing two eggs. Incubation lasts about 35 days. Average brood size in Florida is 1.56 nestlings per nest (FWC unpublished data). Nestlings in Florida fledge at around 11 weeks of age and remain with their parents near the nest for an additional 4–11 weeks (Wood 1992, Wood *et al.* 1998). Fledglings begin widespread local movements before initial dispersal, which occurs from April to July (Millsap *et al.* 2004).

Habitat

The quality of foraging habitat is characterized by the diversity, abundance, and vulnerability of eagle prey, the structure of the aquatic habitat (*e.g.*, presence of shallow water), and the extent of human disturbance (Buehler 2000). Bald eagle nesting habitats are protected by law, but little or no emphasis has yet been placed on the preservation of roosting or foraging habitats (Mojica 2006). The greatest numbers of bald eagle nesting territories in Florida are found along the Gulf coast and around some of the larger inland lakes and river systems in the peninsula (Figure 1).

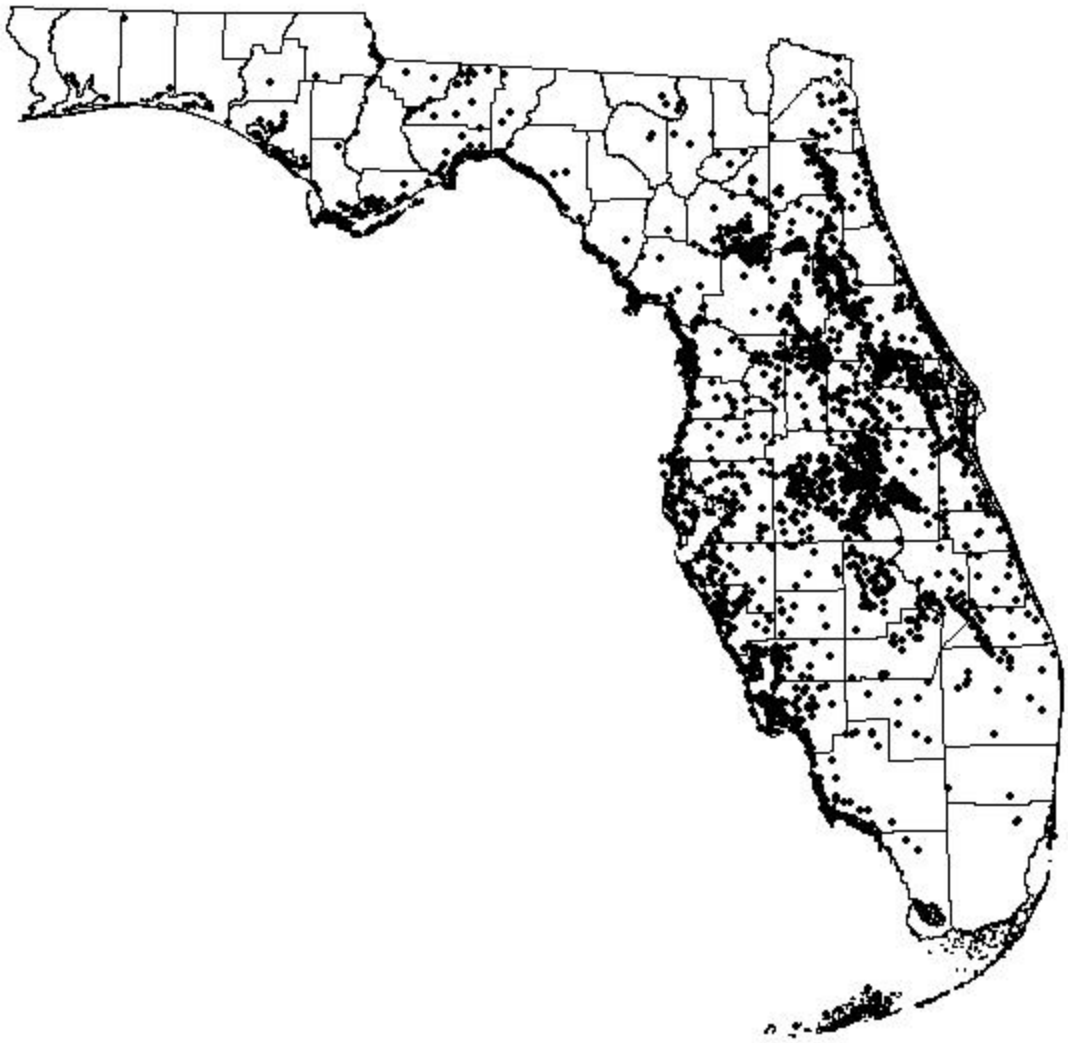

Figure 1. The Distribution of active bald eagle nesting territories in Florida, 2008-2009.

Distribution and Population Status

Current Distribution

Bald eagles reclaimed their entire historic range by the late 1990s (Buehler 2000). Recovery in the Lower 48 states has been dramatic, increasing from an estimated 417 pairs in 1963 to an estimated 9,789 pairs by 2007 (USFWS 2007a). Bald eagles have met or exceeded the population goals established in all five regional recovery plans, and on 8 August 2007, the USFWS removed the species from the list of federally endangered and threatened species.

Bald eagles were known to breed in 59 of Florida's 67 counties by 2005, the exceptions being Baker, Broward, Calhoun, Gilchrist, Holmes, Lafayette, Madison, and Nassau (Nesbitt 2005; Figure 1). Most nests are found on privately-owned lands (67% in 2003;

Nesbitt *et al.* in review; unpublished GIS data), underscoring the importance of private lands in the conservation of eagles in Florida.

Concentrations of nesting territories are clustered around several significant wetland systems. The FWC has identified 16 areas of concentrated bald eagle nesting activity that contain a majority of the known nesting territories in Florida (Figure 2). Many of these ―core nesting areas" have persisted for decades, suggesting the presence of high-quality breeding and foraging habitats (Nesbitt *et al.* in review). These core nesting areas are located along the Gulf coast from St. Vincent Island to Lee County, and inland from the lower St. Johns River to Lake Okeechobee (Figure 2). Changes in the size, configuration, and location of these core nesting areas are monitored, and their importance to the overall population of bald eagles in Florida will be determined as new data become available. The most current list of active territories by county is available below (Table 1).

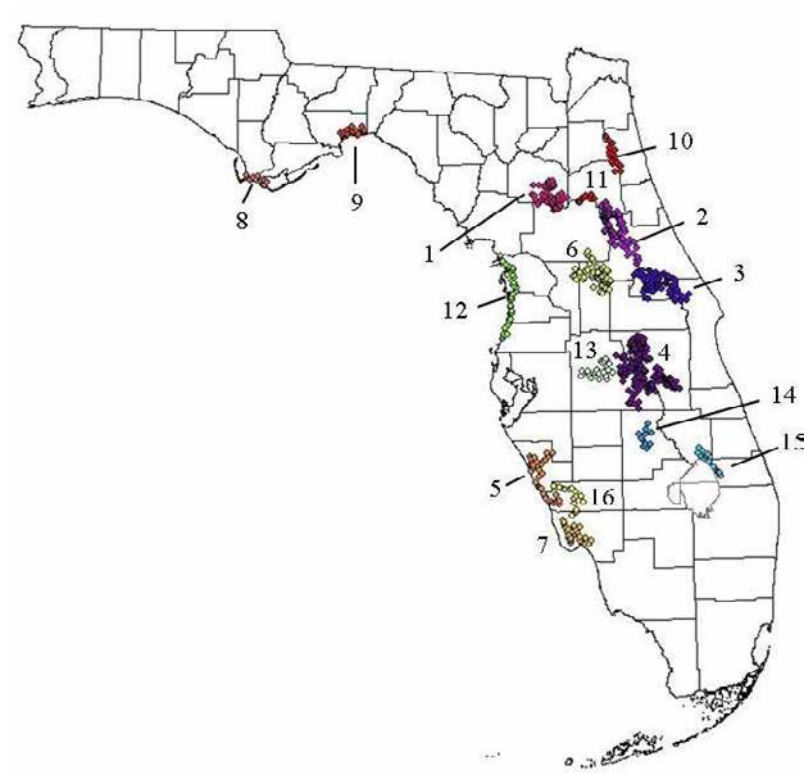

Figure 2. Location of bald eagle core nesting areas in Florida, 2005–2006. These core nesting areas, which are numbered chronologically from their discovery, are found in the following sites: (1) lakes Lochloosa, Newnans, and Orange; (2) Lake George; (3) the middle St. Johns River; (4) the Kissimmee chain of lakes; (5) the Placida Peninsula; (6) the Harris chain of lakes; (7) the Lee County coast; (8) St. Vincent National Wildlife Refuge; (9) St. Marks National Wildlife Refuge; (10) the lower St. Johns River; (11) Rodman Reservoir; (12) the central Gulf coast; (13) central Polk County; (14) Lake Istokpoga; (15) northeast Lake Okeechobee; and (16) coastal Charlotte County.

Table 1. Partial list of active territories by county, 2004-2009. Data source is Brush and Nesbitt (2009).

COUNTY	YEAR						
	2009	2008	2007	2006	2005	2004	Average
Polk	116*	119	113	121	122	118	118
Osceola	125	116	112	107	118	116	116
Lake	66*	70	69	75	65	68	69
Volusia	70	73	60	66	70	67	68
Putnam	77*	67	50	41	57	46	56
Seminole	49*	49	51	52	47	46	49
Lee	47	51	50	47	42	43	47
Marion	58*	51	46	38	36	34	44
Alachua	53*	51	42	43	40	33	44
Brevard	30	39	42	43	42	41	40
Sarasota	45*	41	37	33	34	31	37
Orange	40*	38	35	34	29	30	34
Highlands	35*	37	32	37	30	25	33
Charlotte	43*	38	29	26	26	25	31
Franklin	33*	28	40	25	34	20	30

* Designates estimates based on statistical analyses

Effects of Development on Eagles

Some bald eagle pairs in Florida tolerate disturbance much closer than 660 feet from the nest, and the behavior of eagles nesting close to or within developed areas seems to be increasing in Florida. Bald eagle use of urban areas is a relatively new event, and the long-term stability of urban eagle territories has not been documented fully. Although some eagles have demonstrated tolerance for intensive human activity, this does not mean that all eagles will do so (Millsap *et al.* 2004). A minimum of five years of post-impact data is needed to study the long-term effects of development within regulated nest buffer zones (Nesbitt *et al*. 1993). Both studies described above (Nesbitt *et al.* 1993, Millsap *et al.* 2004) recommended retaining buffer zones around bald eagle nests. Therefore, the conservation of active or alternate bald eagle nests and the retention of

recommended buffer zones (USFWS 2007b) are recommended to sustain the bald eagle population in Florida at or above its current level.

Bald Eagle Recovery Status

Historic and Ongoing Conservation Efforts

Substantial monitoring, management, and research activities have been conducted on Florida's bald eagles for more than 60 years, and many journal articles and reports have been produced. Since the 1972–1973 nesting season, all known nesting territories were monitored annually by use of aircraft to determine reproductive parameters such as territory occupancy, brood size, breeding productivity, and reproductive success. Beginning in the 2008-2009 breeding season, the FWC began using a new survey protocol based on a stratified sampling method with coverage of 1/3 of the known nests each year. A subset of the known active nests was revisited to get a statewide production estimate. Using these data, an extrapolated population estimate was derived with the use of an algorithm based on data collected during the preceding 35 years of activity and production surveys (Brush and Nesbitt 2009; Appendix 1).

Several federal and state laws have directly or indirectly protected bald eagles. The most important laws include the federal Migratory Bird Treaty Act, the federal Bald and Golden Eagle Protection Act, and the federal Endangered Species Act, as well as state regulations noted in this document. The bald eagle was first protected nationally in 1918 under the Migratory Bird Treaty Act (16 U.S.C. 703–711), which protected nearly all native birds and their nests. The Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668a–668c) offered additional protection against take and disturbance of bald eagles and their nests. In 1972, the U.S. Environmental Protection Agency banned all domestic use of DDT, and this prohibition allowed bald eagle populations to recover from pesticide poisoning. The following year, the Endangered Species Act of 1973 (16 U.S.C. 1531–1544) was passed, and the bald eagle was added to the list of federally endangered and threatened species in 1978.

Bald eagle nesting habitats in Florida have been protected primarily through the Endangered Species Act in accordance with habitat management guidelines in the southeastern United States (USFWS 1987). These federal guidelines created buffers around eagle nests in which activities such as development or logging were restricted. Two buffer zones were recommended: a primary zone (0 to 750–1500 feet from the nest) and a secondary zone (1,500 feet to one mile beyond the end of the primary zone). The USFWS (2007b) published federal guidelines that recommend a buffer zone that extends up to 660 feet from the nest depending upon whether a visual screen of vegetation exists around the nest, and the presence of existing activities in the vicinity of the nest, with additional recommendations for proposed activities occurring during the nesting season.

Florida also had state regulations that protected the bald eagle. The eagle was listed as threatened and therefore received protections afforded it by Rule 68A-27.004 of the Florida Administrative Code (F.A.C.), which prohibited the non-permitted take or harassment of eagles or their nests. There are local and state regulations tied to the listing

category of a species. The Florida Land and Water Management Act of 1972 indirectly protected some eagle habitats by establishing two state programs: Development of Regional Impact and Area of Critical State Concern. The Area of Critical State Concern Program regulates development in areas of regional or statewide natural significance, such as Apalachicola Bay, the Green Swamp, Big Cypress Swamp, and the Florida Keys. The bald eagle is listed as a species of ―greatest conservation need" in the Florida Comprehensive Wildlife Conservation Strategy (FWC 2005). This is not a legal designation but rather makes conservation work on the bald eagle eligible to receive State Wildlife Grant funds to address the need for continued management and monitoring activities.

State water management districts and local governments provided additional layers of protection for bald eagles. Local regulations emphasize listed species (endangered, threatened, or species of special concern) and their habitats when considering comprehensive planning, zoning, development review, and permitting activities. Prioritization of listed species, requirements for surveys and documentation, increased buffer zones, protection of upland habitats, additional mitigation requirements, more intensive levels of review, and coordination and compliance with appropriate federal and state wildlife agencies are some of the procedures that local governments and state wildlife agencies apply to listed species.

Bald Eagle Rules and Regulations

During 2006, the USFWS proposed removing the bald eagle from the list of federally endangered and threatened species, and this action was finalized in August 2007. Although the bald eagle is no longer protected under the Endangered Species Act, it is still protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The USFWS (2007b) has redefined some of the terminology included in the Bald and Golden Eagle Protection Act, which prohibits the unpermitted ―take" of bald eagles, including their nests or eggs. The act defines ―take" to mean to ―pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" an eagle. The new definition of ―disturb" is to ―agitate or bother a bald or golden eagle to the 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" (USFWS 2007b). The FWC management plan (2008) adopted the federal definition of ―disturb" in 50 C.F.R. § part 22.3 and Florida's definition of ―take" in Rule 68A-1.004, F.A.C.

To better organize existing rules and to provide a location for eagle-specific rules, the FWC proposed to establish a new section within F.A.C. Chapter 68A for nongame birds (Rules Relating to Birds. F.A.C. 68A-16). Currently there are specific sections of Chapter 68A that regulate the ―take" of game species, freshwater fish, fur-bearing animals, reptiles, amphibians, and many saltwater species. F.A.C. 68A-16 will create one location for existing rules pertaining to all non-listed, nongame birds. The FWC proposed moving F.A.C. 68A-13.002, ―Migratory Birds; Adoption of Federal Statutes and Regulations," to this new section (Rules Relating to Birds. F.A.C. 68A-16.001). A review of current FWC

rules will likely identify other rules that should be moved to this new section. Other than the eagle specific rule proposed below, the FWC is not proposing any new rules, only the reorganization of existing rules.

One rule change was necessary to implement the removal of the bald eagle from the list of threatened species (68A-27.004 F.A.C.). The FWC management plan (2008) recommended that 68A-27.004 F.A.C. be amended by removing the bald eagle from the list simultaneously with the addition of the bald eagle rule language proposed below.

F.A.C. 68A-16.002 Bald Eagle (*Haliaeetus leucocephalus*).

(1) No person shall take, feed, disturb, possess, sell, purchase or barter, or attempt to engage in any such conduct, any bald eagle or parts thereof, or their nests or eggs, except:

(a) As authorized from the executive director by specific permit, which will be issued based upon whether the permit would advance the management plan goal and objectives;

(b) When such conduct is consistent with the FWC Eagle Management Guidelines;

(c) When such conduct is consistent with a previously issued permit, exemption, or authorization issued by the FWC under imperiled species regulations (Chapter 68A-27, F.A.C.) or by the USFWS under the Endangered Species Act (U.S.C. 1531 et seq.)

(2) For purposes of this section, the term ―disturb" is defined as, ―To agitate or bother a bald eagle to the degree that causes, or is likely to cause (a) injury to an eagle, (b) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (c) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

(3) On public land, it is unlawful for any person to knowingly enter any area posted as closed for the protection of bald eagles, their nests, or their nest trees, except the staff or authorized agents of the managing public entity for that area, or as authorized pursuant to subsection 1.

(4) The section of the Bald Eagle Management Plan (2008) entitled ―Permitting Framework April 2008," which includes the FWC Eagle Management Guidelines, is incorporated herein by reference.

FWC Bald Eagle Management Plan Guidelines

Permitting Options

Permitting Process Map

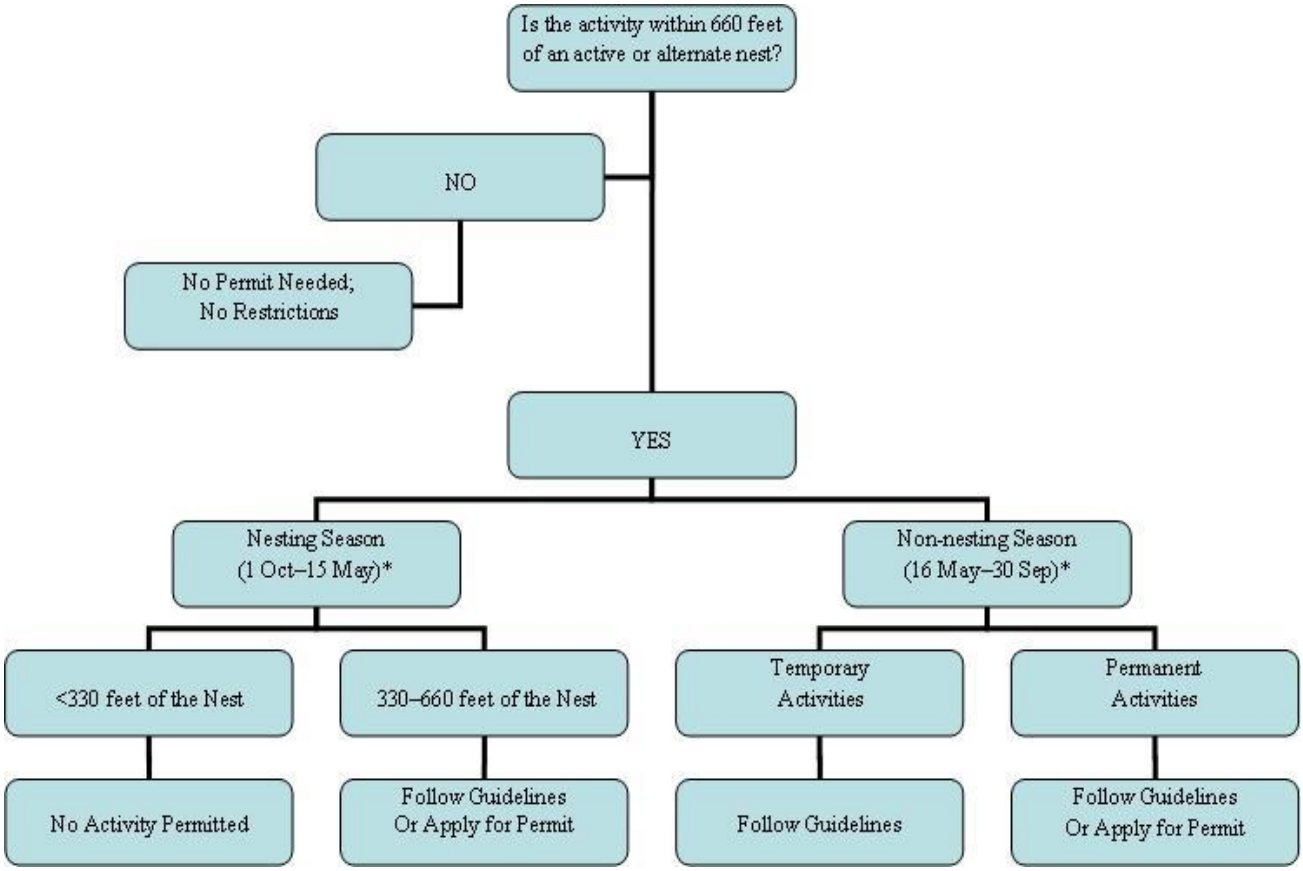

Figure 3. Process map for determining whether or not a FWC Eagle Permit would be recommended for a proposed activity near a bald eagle nest. For ongoing activities that are conducted at a historic rate, or for activities that may fall under similar scope to existing activities, refer to the FWC Eagle Management Plan (2008) guidelines for more detail.
* Unless nestlings fledge before or after these dates.

Actions That Do Not Require a FWC Eagle Permit:

No Permit is Recommended/Required for Activities:

1) Outside of the 660′ nest tree buffer
2) Any temporary activity outside of the nesting season (see guidelines definition of temporary)

3) Any activity that complies with the guidelines

- Maintenance of artificial structures with no substantial impacts to the nest—Any artificial structure that contains a bald eagle nest may be maintained, repaired, or upgraded if: (1) the work will not remove or substantially alter the nest to the extent that further use for nesting may be affected; and (2) the work is conducted outside the nesting season or when nest monitoring in accordance with the USFWS Nest Monitoring Guidelines (2007c) documents that the nest is not being used by eagles when the work occurs.

- Existing activities of similar scope (see definition) within 660′ of an eagle nest—**In most cases**, existing activities of the same degree (“similar scope”) may continue with little risk of disturbing nesting bald eagles. See the FWC eagle plan for further details.

Actions That Do Not Require a FWC Eagle Permit (if Federally Authorized):

The following actions permitted by USFWS will not need a FWC bald eagle permit provided that the federal permit is available for inspection while the permitted activity is being conducted (i.e. the authorized individual carries a copy of the federal authorization).

- Modifications within the buffer zone of a lost nest—The FWC eagle guidelines prescribe protection buffers for lost nests for two consecutive nesting seasons. If federal authorization in the form of a “take” permit/statement or a formal technical assistance letter is obtained to perform an activity within the recommended buffer of a naturally-destroyed bald eagle nest prior to the nest being declared lost (*i.e.,* prior to two nesting seasons post-destruction), then no state permit will be required. Once a nest meets the definition of lost (*i.e.*, has been missing for >2 consecutive nesting seasons), then the buffer zone no longer applies, and therefore no eagle permit is necessary.

- Destruction of an abandoned bald eagle nest—No state permit is needed if a federal ~~"~~take" permit is obtained to destroy an abandoned nest.

- Previously permitted project—The FWC will not refer the ~~"~~take" of a bald eagle or parts thereof, or its nests or eggs, for prosecution if such ~~"~~take" is in compliance with the terms and conditions of a USFWS bald eagle Technical Assistance Letter or any Biological Opinion or Incidental Take Permit issued under Sections 7 or 10 of the E.S.A as amended. Such letters and permits shall serve as state authorization provided that the authorizations are issued prior to the effective date of the proposed state bald eagle rule, and that the FWC is provided with a copy of the federal authorization.

- Salvage—Federal authorization to handle bald eagle carcasses or parts for salvage purposes functions as state authorization.

- Possession for religious or cultural purposes—Federal authorization for the possession of bald eagles or their parts for religious or cultural purposes functions as state authorization.

- Possession of eagle parts for educational purpose—Federal authorization for the possession of bald eagle parts, nests, or eggs for educational purposes functions as state authorization.

Activities That May Require a FWC Eagle Permit

- The USFWS Bald Eagle Monitoring Guidelines should be followed if any activities, other than those of similar scope, are conducted <660' from the nest tree during the nesting season.

The USFWS and FWC **recommend** biological monitoring of the nesting territory if new activities which include construction of buildings, roads, trails, canals, power lines, and other linear utilities; new or expanded operations of agriculture and aquaculture,

alteration of shorelines or wetlands, installation of docks or moorings, marinas, water impoundment, and mining and associated activities is proposed to occur within 660′ of the nest tree during the nesting season (October 1 - May 15), or when nesting eagles are present. The USFWS also recommends that monitoring be conducted where an eagle's nest is located on or adjacent to, or in close proximity of, electrical transmission towers, communication towers, airport runways, or other locations where they may create hazards to themselves or humans.

- New activities proposed within 660' of an eagle nest− see the permitting process map or the web-based technical assistance section.

- Intermittent, occasional or irregular activities- activities associated with auctions, field dog trials, or other sporting events may disturb a pair of bald eagles. In such situations, the activity should be adjusted or relocated to minimize potential disturbance to the eagles.

- The activities that may disturb eagles are divided into nine categories based on their nature and magnitude of potential disturbance (A-I).
    - Category A
        i. Building construction of one or two stories, and with a project footprint of ≤ 0.5 acre;
        ii. Construction of roads, trails, canals, power lines, or other linear utilities;
        iii. New or expanded agriculture or aquaculture operations;
        iv. Alteration of shorelines, aquatic habitat, or other wetlands;
        v. Installation of docks or moorings;
        vi. Water impoundment.

    - Category B
        i. Building construction of one or two stories, and with a project footprint of > 0.5 acre;

ii. Building construction of three or more stories,
iii. Installation or expansion of marinas with a capacity of six or more boats;
iv. Mining;
v. Oil or natural gas drilling or refining.

The minimum allowed distances from an active or alternate bald eagle nest that a Category A or Category B activity can occur *without* the need for a FWC bald eagle permit. Activities proposed to occur closer to an eagle nest than the distances designated here should apply for a FWC Eagle Permit.

	No similar activity within 1,500 feet of the nest	***Similar activity closer than 1,500 feet from the nest***
There is no visual buffer between the nest and the activity	Categories A and B: 660 feet.	Categories A and B: 660 feet, or as close as existing activities of similar scope.
There is a visual buffer between the nest and the activity	Category A: 300 feet. Site work and exterior construction between 330-660 feet should be conducted outside the nesting season unless the Bald Eagle Monitoring Guidelines (USFWS 2007d) are followed. Category B: 660 feet.	Categories A and B: 330 feet, or as close as existing activity of similar scope. Site work and exterior construction between 330-660 feet should be performed outside the nesting season.

The use of dump trucks within 660′ of an eagle nest should occur only when the USFWS Nest Monitoring Guidelines (2007c) are followed. Minimize noise and human activity associated with interior construction during the nesting season.

Construction activities may occur during the nesting season (1 Oct-15 May) if nest monitoring, following the USFWS Nest Monitoring Guidelines (2007c) confirms that eagles have not returned to the nest by 1 October, or that nestlings have fledged before 15 May. In either situation, the regional FWC nongame biologist should be notified.

Any project that follows these guidelines and uses nest monitoring to allow construction within 660′ during the nest season must provide monitoring reports to the permitting staff of FWC (Attn: Bald Eagle Plan Coordinator 1239 SW 10th Street, Ocala, FL 34471). This

requirement will allow for data to be collected that can be analyzed to evaluate the appropriateness of the protective measures.

- Category C- Land Management Practices, including Forestry
    i. Avoid clear-cutting within 330' of the nest at any time. Restrictions may be lifted under emergency circumstances- contact the Avian Coordinator;
    ii. Avoid construction of log transfer facilities and in-water log storage areas within 330' of the nest. Avoid routing logging traffic within 330' of any active nest during the nesting season;
    iii. Avoid timber harvesting, replanting, or other silvicultural operations, including road construction, chain saw and yarding operations, within 660' of the nest during nesting season- if the USFWS nest monitoring guidelines are applied then activities between 330' and 660' may be allowed during the nesting season. If nest monitoring confirms the nest is inactive then seasonal restrictions would not apply;
    iv. Selectively thin to retain at least 50% of the total canopy and the largest native pines within 660' of the nest and take precautions to protect the nest tree;
    v. Prescribed burning (*outside of the nesting season*) - prescribed burning is permitted within 330' of the nest tree and fireline installation or maintenance is permitted within 660' of the nest tree. Protect the nest tree by raking around the trunk's perimeter- only when eagles are not present. Burning is permitted during the nesting season only if the eagles are not present at the nest. Mechanical treatments outside of the nesting season are permitted within 330'. Avoid smoking out the nest.

- Category D- Agricultural and Linear Utilities (Existing Operations)
    i. No buffer necessary outside of the nesting season. If the activities are consistent with the guidelines then routine vegetation management

during the nesting season within the 660' buffer does not necessitate a permit. New or expanded operations see category A above.

- Category E- Off-road Vehicles
    i. No buffer necessary outside of the nesting season. During the nesting season- vehicles should not be operated within 330' or within 660' if noise and visibility from the tree are increased (open area).

- Category F- Motorized Watercraft
    i. No buffer necessary outside of the nesting season. During the nesting season- load vessels or concentrations of vessels are not permitted within 660'. Minimize other motorized boat traffic and avoid stopping within 330'.

- Category G- Non-motorized Recreation (hiking, camping, birding, fishing, hunting or canoeing)
    i. No buffer necessary outside of the nesting season. During the nesting season- activities that are highly visible or audible should be avoided within 330'.

- Category H- Aircraft (Including Helicopters)
    i. No buffer necessary outside of the nesting season. During the nesting season- aircraft should not be operated within 1,000' (vertical or horizontal) of the nest, unless there are trained biologists conducting a survey or the eagles have demonstrated a tolerance for such activity.

- Category I- Blasting or Other Loud, Intermittent Noises
    i. No buffer necessary outside of the nesting season for blasting activities that do not alter the landscape. During the nesting season- no blasting within 660' of an active nest. No loud noises (including class B fireworks) or blasting activities that alter the landscape within 660' of

the nest, unless the eagles have demonstrated a tolerance. Any new land-altering activity- follow distance rules in the above table (category B).

Actions That Require a FWC Eagle Permit

Except for the federally-authorized actions listed above, any action that cannot be undertaken consistent with the FWC Eagle Management Plan (2008) guidelines may require a FWC Eagle Permit to avoid a violation. As such, any action that results in the taking, feeding, disturbing, possessing, selling, purchasing, or bartering of eagles or eagle parts requires a permit (see the FWC eagle plan definitions for take and disturb). Under the appropriate conditions the FWC will issue the following types of permits for bald eagles: disturbance, scientific collection, and nest removal. Other, more general permits may be issued for certain activities listed below. The FWC will issue an eagle permit where the applicant provides minimization and/or conservation measures that will advance the goal and objectives of the management plan. See minimization measures below.

- Eagle Depredation at Agricultural or Aquacultural Facilities—any non-injurious disturbance of bald eagles that are depredating agricultural or aquacultural resources requires a FWC Eagle Permit. These permits will be issued solely in accordance with appropriate federal law. No conservation measures are required, as these permits authorize solely non-injurious harassment. Permits should be issued solely for persistent depredations rather than occasional events. See the FWC eagle plan for further details.

- Activities That Involve Possession

Federal permits for these actions are required unless federal rules or a FWC/USFWS agreement defers the need for a federal permit when the action is authorized by the state. No conservation measures are necessary for educational display, rehabilitation, or scientific collection because these activities provide a conservation benefit to eagles

i. Educational Display—Any facility that wishes to possess live bald eagles for educational purposes must abide by caging requirements (Rule 68A-6, F.A.C.) and obtain a license for exhibition/public sale (372.921 Florida Statutes). Federal authorization for the possession of bald eagle parts, nests, or eggs for educational purposes functions as state authorization, provided that the authorized individual carries a copy of the federal authorization, and that all requirements of the federal authorization are met.

ii. Rehabilitation—Wildlife rehabilitators who possess a FWC Wildlife Rehabilitation permit (Rules 68-A-6 and 68A-9, F.A.C.) and federal authorization to possess migratory birds may possess bald eagles for rehabilitation purposes. No eagle nestling or fledgling that is attended by adult eagles should be handled for rehabilitation without first consulting the FWC regional nongame biologist.

iii. Scientific Collection—Research that might result in disturbance to bald eagles requires a Scientific Collection permit (Rule 68A-9.002, F.A.C.). Scientific Collection permits will be issued solely for projects with a sound scientific design and those that demonstrate scientific or educational benefits to the bald eagle.

iv. Falconry—Rules pertaining to the use of birds of prey in Florida for falconry purposes are found in 68A-9, F.A.C. While the bald eagle currently may not be used in falconry, its status in falconry may change upon delisting. Please see the FWC eagle plan guidelines for further details.

- Activities That Require Emergency Authorization

Declared emergency—Emergency activities associated with recovery from a federal- or state-declared disaster will require an after-the-fact FWC Eagle Permit if the activities cannot be undertaken consistent with the FWC Eagle Management Guidelines. See the FWC eagle plan guidelines for further details.

- Activities That Require Nest Removal

Except for the federally-authorized activities listed above, a FWC nest removal permit is required to remove or destroy any bald eagle nest, even when eagles are not present. Minimization and conservation measures for these permits will be based on the extent of the emergency and the impacts to eagles. See the guidelines for further details.

An abandoned nest as defined in the FWC eagle plan guidelines is still considered a nest by FWC for the purposes of state rule and it also remains protected under the Bald and Golden Eagle Protection Act.

- Airports—Bald eagle nests on or adjacent to airports could increase the risk of an aircraft/avian strike, and are therefore considered hazardous to human safety and to nesting bald eagles and their young. Federal law requires airports to develop and implement a Wildlife Hazard Management Plan (WHMP) to manage and control wildlife that presents a risk to public safety from aircraft collisions. Both a FWC nest removal permit and federal authorization are required for the removal of eagle nests on or adjacent to airports.

Nest removal from artificial structures—when maintenance of an artificial structure requires the removal of an active or alternate bald eagle nest that is not an immediate threat to human safety, then the nest may be removed only outside the nesting season and only after a FWC nest removal permit has been issued. Federal authorization may also be required. Minimization and conservation measures will be assessed on a project-by-project basis, but in general, activities that take place outside the bald eagle nesting season may not require conservation measures.

Minimization and Conservation Measures

Minimization Measures for Actions Requiring a Permit:

The following minimization measures are intended to reduce the potential for disturbing eagles, and may be required as part of a FWC Eagle Permit. These actions are recommended, regardless of whether or not a permit is obtained.

- Construction-related Activities Within 660′ of an Eagle Nest

For projects that receive a FWC Eagle Permit, the following minimization efforts may be required:

i. Implement the USFWS Nest Monitoring Guidelines (2007c) for all site work or exterior construction activities. Avoid exterior construction activities within 330′ of the nest during the nesting season.
ii. Avoid construction activity (except those related to emergencies) within 100′ of an eagle nest during any time of the year except for nests built on artificial structures, or when similar scope may allow construction activities to occur closer than 100′.
iii. Avoid the use or placement of heavy equipment within 50′ of the nest tree at any time to avoid potential impacts to the tree roots. This minimization does not apply to existing roads, trails, or other linear facilities near an eagle nest or to nests built on artificial structures.
iv. Schedule construction activities so that construction farther from the nest occurs before construction closer to the nest.
v. Shield new exterior lighting so that lights do not shine directly onto the nest.
vi. Create, enhance, or expand the vegetative buffer between construction activities and the nest by planting appropriate native pines or hardwoods.
vii. Site stormwater ponds no closer than 100′ from the eagle nest, and construct them outside the nesting season. Consider planting native

pines or hardwoods around the pond to create, enhance, or expand the visual buffer.

viii. Incorporate industry-approved avian-safe features for all new utility construction- see the web site for further details.

ix. Retain the largest native pines for use as potential roost or nest sites.

- Land-Management Activities Within 660′ of an Eagle Nest

For land management activities that receive a FWC Eagle Permit, the following minimization efforts are recommended:

i. Avoid the use or placement of heavy equipment within 50′ of the nest tree to avoid potential impacts to tree roots. Equipment such as mowers may used so long as they are not heavy enough to cause root damage. This minimization does not apply to existing roads, trails, or other linear facilities near an eagle nest or to nests built on artificial structures.

ii. Plan the activity to avoid the nesting season to the greatest extent possible. Avoid disruptive activities when eagles are incubating eggs or when nestlings are close to fledging.

iii. Schedule activities so that activities farther from the nest occur before activities closer to the nest.

iv. Maintain the greatest possible vegetative buffer between land management activities and the nest to provide a visual buffer between the activity and the nest tree.

v. Retain the largest native pines for use as potential roost or nest trees.

Conservation Measures for Actions Requiring a Permit:

When an activity cannot be undertaken consistent with the FWC Eagle Management Guidelines (e.g., when disturbance or take may occur), then a FWC Eagle Permit is recommended to avoid a violation of the FWC eagle rule.

When construction activities are planned inside the recommended buffer zone of an active or alternate bald eagle nest, then issuance of a FWC Eagle Permit **may** require

one or more of the following conservation measures. The number of conservation measures will depend upon the distance that the activity will occur from a bald eagle nest. For activities between 330′ and 660′, only one conservation measure should be provided. For activities within 330′ of a nest, two conservation measures should be provided; a $35,000* contribution to the Bald Eagle Management Fund (#iii below) and any other additional conservation measure. When activities would likely cause disturbance during only one nesting season (temporary activities), conservation measures need not be provided if they would only affect an alternate nest, but should be provided if they will affect an active nest.

i. Grant a conservation easement over the 330′ foot buffer zone of an active or alternate bald eagle nest within the same or an adjacent county, or within the same core nesting area (see figure 3 in the FWC eagle guidelines). When the buffer is only partially owned by the applicant: contribute an onsite easement over the portion of the 330-foot buffer zone to which the applicant holds title;
ii. Grant a conservation easement over suitable bald eagle nesting habitat onsite or offsite;
iii. Contribute $35,000 to the Bald Eagle Conservation Fund to support bald eagle monitoring and research;
iv. Provide a financial assurance (such as a surety bond) in the amount of $50,000. The FWC is not currently accepting letters of credit;
v. Propose an alternate conservation measure that provides conservation value similar to the options listed above, unless unusual circumstances preclude such measures.

* The monetary contribution to the Bald Eagle Management Fund will be updated annually (March 1st) based on the All-Urban Consumer Price Index (CPI-U). Please see the FWC eagle Web site for the latest donation total.

Conservation Measure Guidelines:

i. Conservation easements and financial assurances will be terminated, released, or returned if the nest for which an activity is permitted is active for at least one of the three years after the permitted activity is completed; the burden of proof is upon the applicant. Financial assurances not terminated or returned will be provided to the Bald Eagle Management Fund.

ii. Fee structure is based on the likelihood of disturbance to eagles; activities closer to a nest provide more conservation measures than activities farther away. Activities permitted within 330′ of an active or alternate bald eagle nest should contribute $35,000 to the Bald Eagle Conservation Fund **and** provide an additional conservation measure.

iii. The amounts of fees paid outright are lower than fees paid as a bond because costs for FWC administration (including site visits) are less.

iv. The fee amount is for calendar year 2010; the fee will be adjusted in subsequent years as specified below in the Monetary Contribution section. The donation total will be updated and posted to the FWC eagle Web site every March.

v. Suitable habitat for bald eagles will be evaluated based upon the following characteristics: within 3 km of a permanent water body ≥ 0.2 square miles in size; contain a canopy of mature native pines or cypresses with several perch trees and an unimpaired line of sight (habitat in southern Florida may include mangrove or other native species); few land-use features (low density housing, industrial, etc.) and linear and point features (roads, powerlines, railroads, etc.) within ½ mile; ideally should be located in a previously identified bald eagle core nesting area.

vi. Conservation easements must include at least the 330′ buffer around an active or alternate eagle nest. Where the buffer is only partially owned by the applicant, an onsite easement may be placed over that portion of the property to which the applicant holds title. Easements may be placed only around nests that are in suitable habitat as described above.

vii. Conservation easements must include provision of funds for management practices for the life of the easement. Management practices should include all activities listed under ―Category C: Land Management Practices, including Forestry" and must be conducted by the landowner or other entity. The FWC will hold all easements and will ensure compliance with minimization and conservation measures.

viii. Bald eagles often build multiple nests that are used alternately. Projects that either avoid potential take by avoiding impacts within the buffer zone or that receive a permit to conduct activities within the buffer zone may later be affected if an eagle pair initiates construction of a new nest within the project boundary. Projects that follow proper procedures for bald eagles should not have to provide additional conservation measures for any new eagle nest built on the site after the planning and permitting procedures have been completed. Such projects will not be expected to provide further conservation measures if bald eagles choose to move their nest location within the project site. The nest itself cannot be destroyed at any time unless authorized.

Landowner Stewardship Incentives

Landowners seeking assistance with habitat management will likely find it offered within FWC's Landowner Assistance Program (LAP). There are many forms of assistance that include technical, financial, educational, and various forms of recognition that seek to award landowners who manage their habitat properly for wildlife. Please visit the FWC LAP Web site for more information.

Literature Cited

AOU [American Ornithologists' Union]. 1998. Check-list of North American Birds. 7th edition. American Ornithologists' Union, Washington, D.C.

Bailey, H.H. 1925. The Birds of Florida. Williams and Wilkins, Baltimore, MD.

Broley, C.L. 1947. Migration and nesting of Florida bald eagles. Wilson Bulletin 59:3–20.

Broley, C.L. 1950. The plight of the Florida bald eagle. Audubon 52(1): 42–49.

Brush, J. M. and Nesbitt, S.A. 2009. Bald eagle annual report 2009. Florida Fish and Wildlife Conservation, Tallahassee, FL.

Buehler, D.A. 2000. Bald eagle (Haliaeetus leucocephalus). Number 506 in The Birds of North America (A. Poole, P. Stettenheim, and F. Gill, editors). The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, D.C.

Cruickshank, A.D. 1980. The Birds of Brevard County, Florida. Florida Press. Orlando, FL.

Curnutt, J.L. 1996. Southern bald eagle (Haliaeetus leucocephalus leucocephalus). Pages 179–187 in Rare and Endangered Biota of Florida, Volume V. Birds (J.A. Rodgers, H.W. Kale, and H.T. Smith, editors). University Press of Florida, Gainesville, FL.

Curnutt, J.L., and W.B. Robertson. 1994. Bald eagle nest site characteristics in south Florida. Journal of Wildlife Management 58: 218–221.

FWC [Florida Fish and Wildlife Conservation Commission]. 2005. Wildlife legacy initiative: Comprehensive wildlife conservation strategy. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL.

FWC [Florida Fish and Wildlife Conservation Commission]. 2008. Bald Eagle Management Plan *Haliaeetus leucocephalus*. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL.

Gerrard, J.M., and G.R. Bortolotti. 1988. The Bald Eagle: Haunts and Habits of a Wilderness Monarch. Smithsonian Institution Press, Washington, D.C.

Howell, A.H. 1932. Florida Bird Life. Coward-McCann, New York, NY.

McEwan, L.C., and D.H. Hirth. 1980. Food habits of the bald eagle in north-central Florida. Condor 82: 229–231.

Millsap, B., T. Breen, E. McConnell, T. Steffer, L. Phillips, N. Douglass, and S. Taylor. 2004. Comparative fecundity and survival of bald eagles fledged from suburban and rural natal areas in Florida. Journal of Wildlife Management 68: 1,018–1,031.

Mojica, E.K. 2006. Migration, home range, and important use areas of Florida sub-adult bald eagles. Master's thesis, University of Georgia, Athens, GA.

Nesbitt, S.A. 2005. Bald eagle annual report 2005. Florida Fish and Wildlife Conservation, Tallahassee, FL.

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 Southeastern Associated Fish and Wildlife Agencies 47: 333–338.

Nesbitt, S.A., J.L. Hatchitt, T.H. Logan, J.H. White, and P.S. Kubilis. In review. Geographic Information System used to score Florida bald eagle nest sites. Submitted to Journal of Wildlife Management.

Peterson, D.W., and W.B. Robertson. 1978. Southern bald eagle. Pages 27–30 in Rare and Endangered Biota of Florida, Volume 2, Birds (H.W. Kale, editor). University Presses of Florida, Gainesville, FL.

Shea, D.S., R.E. Shea, and W.B. Robertson. 1979. Unusual observations of nesting bald eagles in south Florida. Florida Field Naturalist 7: 3–5.

Stalmaster, M.V. 1987. The Bald Eagle. Universe Books, New York, NY.

Stevenson, H.M., and B.H. Anderson. 1994. The Birdlife of Florida. University Press of Florida, Gainesville, FL.

Sullivan, D., T.H. Logan, C.M. Martino, S.[A.] Nesbitt, and T. Steffer. 2006. Biological Status Report for the Bald Eagle. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL.

USFWS [United States Fish and Wildlife Service]. 1987. Habitat management guidelines for the bald eagle in the southeast region. United States Fish and Wildlife Service, Washington, D.C.

USFWS. 1989. Southeastern states bald eagle recovery plan. United States Fish and Wildlife Service, Washington, D.C.

USFWS. 2007a. Questions and answers for Bald and Golden Eagle Protection Act actions. United States Fish and Wildlife Service, Washington, D.C.

USFWS. 2007b. National Bald Eagle Management Guidelines. United States Fish and Wildlife Service, Washington, D.C.

USFWS. 2007c. Draft post-delisting monitoring plan for the bald eagle (Haliaeetus leucocephalus). United States Fish and Wildlife Service, Washington, D.C.

USFWS. 2007d. Bald Eagle Monitoring Guidelines. United States Fish and Wildlife Service, Washington, D.C.

Wood, P.B. 1992. Habitat use, movements, migration patterns, and survival rates of sub-adult bald eagles in north Florida. Ph.D. dissertation. University of Florida, Gainesville, FL.

Wood, P.B., and M.W. Collopy. 1995. Population ecology of sub-adult southern bald eagles in Florida: Post-fledging ecology, migration patterns, habitat use, and survival. Nongame Wildlife Program. Florida Game and Fresh Water Fish Commission, Tallahassee, FL.

Wood, P.B., M.W. Collopy, and C.M. Sekerak. 1998. Postfledging nest dependence period for bald eagles in Florida. Journal of Wildlife Management 62: 333–339.

Wood, P.B., T.C. Edwards, and M.W. Collopy. 1989. Characteristics of bald eagle nesting habitat in Florida. Journal of Wildlife Management 53: 441–449.