

# **PEREGRINE FALCON MANAGEMENT PLAN**

*Falco peregrinus*

**June 2009**



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

## **PEREGRINE FALCON MANAGEMENT PLAN TEAM**

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## EXECUTIVE SUMMARY

The dramatic rebound of the peregrine falcon (*Falco peregrinus*) in the past 35 years represents one of the greatest conservation success stories in our nation's history. This management plan provides the framework for the conservation and management of the peregrine falcon in Florida. This plan meets the requirements of the Florida Fish and Wildlife Conservation Commission's (FWC) listing process (Rule 68A-27.0012, *Florida Administrative Code* (F.A.C.)). The listing process was initiated in September 1999 when the FWC was petitioned to reevaluate the status of the peregrine falcon, which was considered an endangered species in Florida (Rule 68A-27.003, F.A.C.). Action on the petition was delayed due to a listing moratorium, which was lifted in April 2005.

Following the guidance of FWC's listing process, a biological review panel was approved in June 2007. The panel assessed the peregrine's population and distribution data against species-imperilment criteria (Rule 68A-1.004, F.A.C.), and determined that the peregrine no longer met the criteria for state listing at any level. As a result, the panel unanimously recommended that the peregrine be removed from Florida's list of imperiled species. The recommendation to delist the peregrine in Florida is based on the following biological data: 1) the total number of peregrines in North America is increasing (Rowell et al. 2003, Shank et al. 1993); 2) scientific estimates propose there are at least 3,800 adult pairs, and as many as 9,800 pairs in North America and there is strong evidence the Arctic peregrine population is stable (United States Fish and Wildlife Service (USFWS) 1999); 3) reproductive output increased during the last two to three decades and appears to have leveled off and has decreased in localized parts of its range due to habitat saturation from the increased number of falcons (USFWS 1999). Threats such as organochlorine and other pesticides that originally caused the species to be listed have been reduced such that all sub-species of the peregrine falcon in the United States were de-listed federally in 1999.

The goal of this management plan is to maintain a stable or increasing peregrine population in Florida. Given that peregrine falcons do not breed in Florida, and are only present as migrants or uncommon winter residents, managing the population while in Florida can be achieved through two conservation objectives: 1) maintain or increase protected habitat for the peregrine falcon; and 2) manage mortality risk of peregrine falcons while they are in Florida to maintain a stable or increasing population.

To ensure that the conservation objectives are met, this management plan recommends certain conservation actions. The conservation actions are organized into the following sections or sub-sections: Regulations and Permitting Issues, Habitat Management, Land Acquisition, Incentives, Monitoring Plan, Education and Outreach, and Research.

This plan was developed by the FWC in collaboration with a diverse group of stakeholders, and its successful implementation requires the cooperation of and coordination with other agencies, organizations, private interests, and individuals. Any significant changes to this management plan will be made with the involvement of stakeholders. Ten years following approval of this plan, the FWC and stakeholders will review and revise this plan.

The FWC formally solicited public comment and peer-review on the proposed delisting action of the peregrine falcon in Florida at several junctures of the delisting process and the writing of this management plan. Comment periods were noticed in the *Florida Administrative Weekly* and FWC's website (MyFWC.com) to solicit: 1) information on the peregrine falcon's biological status to be considered during the development of the Biological Status Report for the peregrine falcon (Rodgers et al. 2008); 2) information on the management needs of the peregrine and any economic, social, and ecological factors to consider as part of its management; and 3) public and stakeholder input on drafts of the management plan. Public comments also were received following release of the Biological Status Report for the Peregrine Falcon in June 2008 and at the April 2009 FWC Commission meeting when a draft of this Peregrine Falcon Management Plan and its associated rule changes were presented to the Commissioners for conceptual approval.

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## CHAPTER 1: BIOLOGICAL BACKGROUND

This section summarizes the biology and life history of the peregrine falcon. More detailed information on the biology of peregrines is available in the Biological Status Review (Rodgers et al. 2008) and in the account for the peregrine falcon in “The Birds of North America” online <http://bna.birds.cornell.edu/bna> (White et al. 2002).

### Taxonomic Classification

The peregrine falcon is a member of the Class Aves, Order Falconiformes, Family Falconidae. It is one of more than 35 species of the genus *Falco*. Of the 19 subspecies that occur worldwide, two occur in Florida as migrant or wintering birds, the American peregrine (*Falco peregrinus anatum*) and the tundra peregrine (*F. p. tundrius*).

### Life History and Habitat

The peregrine falcon is not known to breed in Florida but can be seen in Florida during migration typically between the months of September and October for the fall migration and again around April for the spring migration. Those birds seen in Florida originate mainly from breeding areas at high latitudes, and pass through Florida in the fall when large numbers concentrate in the Keys (Lott 2006a, 2006b). Tundra peregrines migrate as far south as Central and South America. American peregrines in the southern part of their breeding range (Midwest U.S., California, Mexico) are less migratory, if at all (Enderson pers. comm.). In the spring, many peregrines that pass through Florida in the fall return northward along the Texas coast.

Females first breed between ages 2-4 years while males first breed between 3-4 years. The number of eggs per clutch ranges from 3.0 eggs in arctic regions to 3.72 eggs in mid-latitudes, to even smaller clutches toward Mexico (White et al. 2002). Annual reproductive output ranges from 1.2 to 1.9 fledglings/pair on territory. Survival is estimated at 54% for the first year, 67% during the second year, and 80% annually for adults (Craig et al. 2004). Peregrine falcons can live as long as 16 to 20 years.

Peregrines are habitat generalists and feed mostly on smaller species of birds (77-99% of prey) but will capture larger birds including ducks. They occasionally consume mammals (especially bats and rodents) but rarely fish and invertebrates (White et al. 2002). Prey is usually captured while flying or less frequently from the surface of water. Peregrines forage from a perch or while flying at high altitudes, then dive to capture prey. The species is known for its spectacular aerial dives to knock a bird from the air. In turn, peregrines may be killed by other bird species (eagles, owls, other falcons).

### Distribution and Population Status

The peregrine falcon has almost a worldwide distribution occurring from the tundra to the tropical regions of both eastern and western hemispheres, although it breeds mainly in the

northern latitudes and winters in southern latitudes (del Hoyo et al. 1994). Historically, the species bred across most of the North American continent from the tundra south to the southern edge of the Mexican Plateau (White et al. 2002). The population of peregrines declined both in numbers and distribution between the 1950s and the early 1970s due primarily to the widespread use of dichlorodiphenyltrichloroethane (DDT). By the 1980's, populations had increased and peregrine falcons were reoccupying much of their historical range in part due to banning of persistent pesticides and to the release of captive-bred birds.

In Florida, peregrine falcons are absent during the breeding season, are rare to locally common during fall and spring migration, and are very rare to uncommon winter residents (Robertson and Woolfenden 1992). Peregrines have been observed throughout Florida during the winter, however in the fall they are most conspicuous near the coasts (Meyer and Smallwood 1996) where they frequent waterfowl and shorebird concentrations. Between 1999 and 2004, on average 1,790 peregrines were observed passing through the Keys (Lott 2006a, 2006b). Wintering peregrines can occur in urban areas where they feed on rock doves (Millsap pers. obs.).

### **Historic and Ongoing Conservation Efforts**

The use of DDT as a pesticide in the mid part of the last century resulted in a precipitous decline of peregrine falcons in North America. Pre-DDT population estimates were 3,875 nesting pairs (USFWS 1999). DDE, a metabolite of DDT, prevents the normal calcium deposition in eggshell formation, resulting in thin-shelled eggs that are susceptible to breakage during incubation (Hickey 1969, Ratcliff 1980, and Cade et al. 1988). Eggshell thinning caused widespread nesting failures, and in some areas successful reproduction was virtually eliminated. The population of peregrines dipped to below 350 known pairs by 1975 (Fyfe et al. 1976). This phenomenon was first noted by raptor enthusiasts, falconers, and concerned environmentalists (Braun et al. 1977).

Several federal and state laws have directly or indirectly protected peregrines. The peregrine falcon was protected nationally in 1972 under the Migratory Bird Treaty Act which protected nearly all native birds and their nests. In 1970, *F. p. tundrius* and *F. p. anatum* were listed as endangered in the U.S. under the 1969 Endangered Species Conservation Act and their endangered status was later transferred to the Endangered Species Act (1973, 16 U.S.C. 1531 et seq.).

Florida also had state regulations that protected both peregrine falcon subspecies. The peregrine was listed as endangered under Rule 68-A-27.003 of the Florida Administrative Code (F.A.C.), which prohibited non-permitted take or harassment of peregrines. Because the American peregrine has not recovered as a nesting population in its historic range, the species is still listed as endangered or threatened in many states and in Canada. The arctic peregrine is classified as special concern in Canada.

Between 1975 and 1979, an Eastern Peregrine Falcon Recovery Team appointed by the United States Fish and Wildlife Service (USFWS) developed a federal Recovery Plan whose main objective was "to restore a new self-sustaining population of peregrine falcons in the

eastern United States.” Under this plan nesting, wintering, and migration habitat was protected and managed; environmental pollutants that originally caused most of the population declines were eliminated; peregrines were protected through law enforcement; an education program was implemented to build public support for and understanding of peregrines; and captive-produced falcons were released into the wild (USFWS 1999, Cade et al. 1988). Falconers donated many peregrine falcons, used for falconry at that time, to five peregrine recovery programs in North America including two recovery programs operated by the Peregrine Fund, the Santa Cruz Predatory Bird Research Group, the Canadian Wildlife Service’s program in Wainwright, Alberta, and the University of Minnesota’s Raptor Center (Cade 2008). Release of captive reared birds was initiated in 1975. By 1998, about 6,000 peregrines had been released in North America (White et al. 2002).

In 1998, the USFWS published a proposal to delist the American peregrine and this action was finalized in August 1999. The tundra peregrine recovered sufficiently to be delisted in 1994. Although the American and tundra peregrine are no longer protected under the federal Endangered Species Act, they are still protected under the federal Migratory Bird Treaty Act.

Beginning in 1999 and continuing until 2008, counts of migrating raptors, including peregrines have been conducted at Curry Hammock State Park in the middle Florida Keys. Between 1999 and 2004, more peregrines were counted at this site than at any other hawk watch location in North America (Lott 2006a). A second count has been conducted at the Guana River in St. John’s County from 1998 through 2008.

## **CHAPTER 2: THREAT ASSESMENT**

### **Reason for Delisting**

In response to a petition filed in September 1999, the FWC convened a review panel in 2007 to conduct the Biological Status Review (BSR) by evaluating species-specific data against imperilment criteria found in Rule 68A-1.004 F.A.C. The panel concluded from the status review that the peregrine no longer met criteria for listing at any level, has not met the criteria for listing within the past 5 years, and unanimously recommended removing the species from the FWC list of endangered species. The recommendation was based on the following biological data: 1) the total number of peregrines in North America are increasing (Rowell et al 2003, Shank et al 1993); 2) scientific estimates propose there are at least 3,800 adult pairs, and as many as 9,800 pairs, in North America and there is strong evidence the Arctic peregrine population is stable (USFWS 1999) (note: these numbers have been revised since the status review, see Conservation Objectives section); 3) reproductive output increased during the last two to three decades and appears to have leveled off and has decreased in localized parts of its range due to habitat saturation from the increased number of falcons (USFWS 1999).

### **Present and Anticipated Threats**

By 1999 all subspecies of the peregrine falcon in the United States were officially removed from the federal list of Endangered Species (USFWS 1999). Current threats include hazards experienced during migration such as collisions while chasing prey or electrocutions. Late season hurricanes in south Florida are a potential concern for the migrant population, however, because of their wide distribution across most of Florida at any one time, the migrant population as a whole is not vulnerable to adverse localized weather events. Direct persecution by illegal shooting removes some individuals from the population but overall, the effect on the population is negligible (Meyer and Smallwood 1992). Pesticide contamination is an ongoing threat throughout much of the winter range of peregrine because many south and central American countries lack the pesticide regulations that have been enacted in the U.S.

The destruction of habitat poses the greatest threat to the peregrine falcon in Florida (Meyer and Smallwood 1992). The preference to forage along coastal and barrier island shorelines, coastal ponds, sloughs, and marshes during migration make them particularly vulnerable to changes in those habitats. Successful migration is dependent on the ability of the peregrine to find prey along the migratory route. Coastal wetlands in Florida incur a high rate of development and urbanization. Although peregrines sometimes adapt to urban environments (White et al. 2002), loss of natural habitats may limit prey availability for migrating raptors.

Construction of wind generation facilities is likely to increase in Florida. Currently, there is limited information on which to base decisions in regard to wind energy and the potential effects on peregrine falcons. This is partially because wind turbines have not yet been constructed in Florida or near the shoreline along the Atlantic Flyway, so the effects have not been evaluated. Most research concerning impacts of wind turbines on wildlife has been short-term with little follow-up to determine if predictions generated from the research are

accurate. Based on the prior studies, wind turbine technology and siting have been modified to reduce impacts to birds. It will be important to avoid siting wind facilities in high risk areas in the future to minimize potential significant threats to peregrine falcons and other wildlife.

As the Florida peninsula narrows into the Keys, the peregrine migration becomes concentrated especially in the middle keys where the land mass is less than a mile wide in some places. Future development of the area may affect the availability of roosting habitat, foraging habitat, and prey availability. It is unknown how peregrines will adapt to those changes and if they will alter their migratory behavior and be able to arrive at their wintering grounds.

## **CHAPTER 3: CONSERVATION GOAL AND OBJECTIVES**

### **Conservation Goal**

The goal of this management plan is to maintain a stable or increasing peregrine population in Florida. Given that peregrine falcons do not breed in Florida, and are only present as migrants or uncommon winter residents, managing the population while in Florida can be achieved through the two conservation objectives below.

### **Conservation Objectives**

Conservation objectives are used to measure progress toward the conservation goal. The recovery of the peregrine falcon has been successful. It was delisted from the USFWS list of Endangered Species in 1999. In 1975, there were only about 350 known pairs of peregrine falcons (Fyfe et al. 1976) compared to approximately 3,875 pairs earlier in the century (USFWS 1999). During this time there were no known nesting pairs located east of the Mississippi River. At present, there are between 4,543 and 10,368 peregrine falcon breeding pairs in North America (USFWS 2008). The conservation objectives below provide the means by which the conservation goal can be addressed in Florida.

1. Maintain or increase protected habitat for the peregrine falcon.
2. Manage mortality risk of peregrine falcons while they are in Florida to maintain a stable or increasing population.

## CHAPTER 4: CONSERVATION AND MANAGEMENT ACTIONS

### Strategies to Achieve the Conservation Objectives

This section describes the strategies to be undertaken to maintain the peregrine falcon populations as they migrate through the state of Florida as well as the occasional birds that over winter. The strategies below will help achieve the conservation objectives.

### Regulations and Permitting Issues

The FWC proposes to remove the peregrine falcon from the state's list of endangered species under Rule 68A-27.003, F.A.C., however, the species is still protected under the Migratory Bird Treaty Act.

The following rule change will remove the peregrine falcon from the list of endangered species in Florida.

68A-27.003(1)(m) - Remove the peregrine falcon from the list of endangered species.

The types of permits that may be issued by FWC for peregrine falcons are those that may be issued for all other birds and include scientific collecting, rehabilitation, and educational display.

1. Peregrine falcons are no longer federally listed.
2. The USFWS legalized take of peregrine for falconry in 2008.
3. Three Flyway Councils will decide how to allocate peregrine take for falconry.

The USFWS authorized harvest of peregrine falcons for falconry and allocated annual take of 36 birds east of 100 degrees west longitude in their Final Environmental Assessment and Management Plan (USFWS 2008). The Environmental Assessment addresses in detail the rationale for allowing falconry take of peregrine at the prescribed levels. Peregrine falcons are a resource shared among states and Canadian provinces, therefore they are managed at the population level. The USFWS designated the Flyway Councils (Atlantic, Mississippi, Central) to allocate peregrine take for falconry among those states that allow it. Once delisted, the FWC could issue permits for capture of peregrine for falconry and staff will work with stakeholders to develop a draft peregrine rule for consideration by the FWC Commission.

### Habitat Management

This management plan relies in part on the ability of public lands to support peregrine falcons during their migration through Florida. This species largely avoids developed sites when roosting or hunting during migration. Public lands provide a high level of security for wildlife because of statutory provisions for long-term management funding and for guiding habitat management on those lands (Florida Statutes 259.105 and 259.032). Undeveloped private lands can also provide stopover and foraging habitat for migrating peregrine falcons.

When private lands are developed and significant impacts to sensitive wildlife are anticipated, FWC staff review the development proposals to minimize negative impacts. FWC staff will provide comments on development proposals to minimize or avoid risks to peregrine falcons.

Ongoing land management practices that benefit other species of wildlife also likely benefit peregrine falcons by decreasing the risk of catastrophic wildfire, by maintaining healthy forests, and by providing suitable roost trees and foraging habitat. These management practices include the use of prescribed fire, removal of exotic species, reduction of excess fuel loads, thinning of overstocked stands, replanting with native species, uneven-aged timber management, and preserving snags.

Coastal and inland wetlands, especially barrier islands and lagoons that support waterfowl and other species are important to maintaining healthy prey populations for peregrine falcons. The FWC monitors and manages waterfowl habitats in Florida and provides funding to restore and enhance these habitats. There are several federal and state agencies in Florida that work together to maintain quality aquatic habitats. The U.S. Environmental Protection Agency, Florida Department of Environmental Protection (DEP) and the five water management districts monitor and regulate water quality and quantity (e.g., minimum flows and levels) to maintain healthy conditions for aquatic plants, fish, and other wildlife. The FWC Invasive Plant Management and Aquatic Habitat Enhancement and Restoration Sections work to monitor, restore, and control aquatic plants through permit reviews, chemical, mechanical, or biological control of invasive species, and through enhancement projects to improve habitats for fish and other wildlife. These combined habitat management efforts are expected to provide suitable peregrine falcon foraging habitats in Florida in perpetuity.

### **Land Acquisition**

Continued acquisition of public lands is a key strategy for preserving peregrine falcon habitats in Florida. Approximately 28% of Florida's land area is publicly owned or protected under perpetual conservation easements. Coastal communities are among the most highly developed regions in Florida and are also critical to the successful migration of the peregrine falcon. At this time, we have no indication that there is a shortage of migratory habitat along Florida's coasts. However, by the year 2060 it is estimated that Florida's coastal population will double from 12.3 million residents to 26 million residents (FWC 2008). It is possible that suitable migration habitat will be heavily impacted which may result in a deficiency of habitat in the future.

While acquisition of coastal habitat is important in general, perhaps the most critical migratory habitat for peregrine falcons is located in the Florida Keys. In many locations, the landmass of the middle Florida Keys is less than 1 mile wide and natural habitat has been replaced with infrastructure and development. The narrowness of the middle keys serves to concentrate migrating peregrine falcons and therefore, preservation of roosting and foraging habitat in this area is essential. Important parcels have been identified for acquisition under the Florida Forever project "Florida Keys Ecosystem" which is categorized as one of the highest priority projects for acquisition. Some of the most important parcels include Boot

Key, Lower Matecumbe, and other large, relatively undeveloped parcels in the Middle Keys (Casey Lott, pers. comm.). These acquisitions will help to limit further habitat loss and fragmentation within this migratory flyway. Acquiring, managing, and restoring additional lands that support peregrine falcon migratory habitats should remain a state priority so long as the acquisitions are compatible with priorities for imperiled species.

### **Incentives**

To assure that sufficient lands are available for peregrine falcons as they migrate through Florida, FWC will utilize programs that are designed to assist interested landowners with incentives for managing their lands for wildlife conservation. These incentive programs include the Forest Stewardship Program, Wildlife Habitat Incentives Program, Environmental Quality Incentives Program, Landowners Incentives Program, Partners for Fish and Wildlife Program, Common Species Common, and the Conservation Reserves Program. Together, these programs make several million dollars available each year to landowners as cost share for specified expenditures associated with their voluntary participation in wildlife conservation and management on private lands.

An additional incentive to protect lands for peregrine and other wildlife was enacted in 2008. The Florida legislature approved an amendment to the Florida Constitution that allows property tax exemptions for lands under perpetual conservation easements. This option will be available to landowners beginning in 2010.

### **Monitoring Plan**

The USFWS developed a plan for monitoring peregrine falcons when it delisted the species. The USFWS's "Monitoring Plan for the American Peregrine Falcon" (USFWS 2003) outlines a program that includes monitoring randomly selected breeding territories for occupancy, nest success, and productivity every three years starting in 2003 and ending in 2015. At the end of the 13-year monitoring, the USFWS will evaluate the data and determine if continued monitoring is warranted. This monitoring plan is designed to detect a decline of 12.5% after one sampling, and smaller declines will be detectable over the following sampling periods. Monitoring of territory occupancy and productivity data in Canada is conducted by the Canadian Wildlife Service and these data are included in the USFWS's evaluation of the status of peregrines. This monitoring program does not include sites in Florida.

Other monitoring programs for peregrine falcons and other raptors exist with an important migration count monitoring site occurring in Florida. Grants administered by FWC have funded a migration count for peregrine falcons and other raptor species at Curry Hammock State Park in the Florida Keys for the past ten years. Raptor migration counts at bottlenecks such as the Keys provide data that contribute to continental-scale efforts to assess population status and trends of peregrine falcons and other raptors. One such effort, the Raptor Population Index, conducts assessments of population status of peregrine and other raptors based on data from migration count sites throughout North America. The Curry Hammock count site provides critical data to the peregrine falcon population assessment because it is

the largest known concentration of migrating peregrine falcons in North America. Additional migration counts have been conducted by the St. Johns Audubon Society at Guana River State Park between 1998 and 2008.

The grant programs that funded the Keys migration count in the past are not intended to fund long term projects. Although FWC places a high value on migration count monitoring programs, continued funding has not been secured and therefore we will work with partners including the USFWS to look for opportunities for a dedicated, secure funding source to support this monitoring. Funding should be a shared responsibility of all of the states and the USFWS.

### **Education and Outreach**

An active conservation education and outreach program will help ensure that the public understands the improved status of the peregrine falcon, and what protections continue to help maintain the population.

Key messages for education and outreach efforts include:

- The peregrine falcon is a federal Endangered Species Act success story and is no longer threatened with extinction;
- Delisting does not mean that the peregrine falcon is no longer protected—state and federal regulations will continue to protect peregrine falcons; and
- The peregrine falcon’s successful comeback is a result of protection and management. Monitoring should continue in order to ensure that the species does not decline.

This education and outreach plan includes an emphasis on the following audiences:

#### All Audiences:

- Develop and maintain a web page that contains popular, scientific, legal, falconry and permitting information on peregrine falcon.

#### Land Managers and Land-Acquisition Agents:

- Provide information on the need for continued acquisition of peregrine falcon migratory habitat, particularly parcels in the Florida Keys.

#### Airport managers, Federal Aviation Administration Officials

- FWC will work with airport managers and with USDA Wildlife Services to prevent unnecessary take of migratory peregrines due to human safety concerns at airports. In most cases in Florida, peregrine falcons are only passing through the area and rarely remain in one place for more than a day or two and are therefore not likely to cause sustained problems at airports.

**Research**

Much information concerning the life history and habitat requirements of the peregrine falcon is known from previous studies conducted throughout the range of the species. A summary of this information is contained in White et al. (2002). Research priorities identified by White in his summary are focused on the breeding range of the peregrine and therefore do not include Florida. Because peregrine falcons migrate through Florida and winter here only occasionally, very little research has been conducted on the species in Florida. A banding project was conducted in Florida as part of the monitoring program in the Florida Keys in an effort to determine the origins of these birds and other raptors that migrate through Florida. Initial results of this banding effort were inconclusive; however, further analysis is ongoing (Lott 2006b). The de-listing of the peregrine falcon and its status as a non-breeding species makes it a lower priority for research, but this species remains a priority for monitoring.

## CHAPTER 5: IMPLEMENTATION STRATEGY

### Priority Actions

- Remove the peregrine falcon from the list of endangered species
- Continue to restore and maintain terrestrial and aquatic habitat
- Coordinate with the Department of Environmental Protection's Acquisition and Restoration Council (ARC) to acquire important stopover habitat for peregrines in the middle Keys
- Encourage habitat management that benefits peregrine falcons and other wildlife by working with private landowners
- Work with partners to support efforts to find funding to continue to monitor peregrines and other raptors at Curry Hammock State Park
- Develop and maintain a peregrine falcon web page with popular, scientific, legal, and falconry information

### Required Resources and Other Costs Associated with Implementation

Many of the conservation actions identified in this management plan have been in place for years. Ongoing conservation actions include restoring and maintaining terrestrial and aquatic habitat for peregrines on public lands, working with ARC staff to prioritize acquisition of lands that will benefit protected species including peregrines, and working with private landowners to assist them in managing their lands to benefit wildlife. The FWC will continue these activities upon delisting of the peregrine falcon. New activities include developing and maintaining a peregrine falcon web page. Monitoring of peregrines at Curry Hammock State Park is an ongoing activity but funding to continue the project has not been secured.

Expected annual cost to FWC to implement the plan (in 2009 dollars) is as follows:

\$3,475 – salary and benefits for Avian Taxa Coordinator for 5% time

**\$3,475 – Total Annual Recurring Cost**

### Management Plan Review and Revision

To ensure that the conservation goal of this management plan continues to be achieved, the FWC will review the status of the peregrine falcon population based upon available monitoring data. This management plan will be reviewed and revised after ten years (i.e. in 2019) or sooner if changes in the population status warrant earlier review. Significant changes to the management plan between now and 2019 can be made with public input and Commission approval.

## **CHAPTER 6: ECONOMIC, SOCIAL, AND ECOLOGICAL IMPACTS**

### **Economic Impacts**

This preliminary assessment of economic impacts of delisting the peregrine falcon in Florida was based on the conservation actions proposed in this management plan.

#### ***Estimated cost to the FWC of implementing proposed conservation actions.***

Resources required to implement this management plan are described in Chapter 5. The conservation actions proposed in the management plan will require staff to work with private landowner incentive programs, work with ARC staff to prioritize acquisition of lands that will benefit peregrines, support partner efforts to seek funding to continue monitoring peregrines, and develop and implement appropriate education and outreach programs. Most of these activities are part of ongoing programs of the FWC and will not require additional staff time. Annual costs for staff to implement the management plan are estimated to be \$3,475.

#### ***Estimated cost to potentially affected parties of implementing the proposed conservation actions.***

Non-governmental organizations and others interested in monitoring and outreach will have to secure funding to meet those needs. These costs will be dependent on the scope of monitoring activities and outreach efforts.

### **Social Impacts**

Conservationists, falconers, and many others assisted actively in the comeback of the peregrine falcon. Citizen participation in captive rearing and release programs and monitoring efforts were instrumental in the success of the species. Consequently many citizens are invested in the continued success of this species. Although the USFWS has established a very conservative harvest limit of peregrine falcons for falconry (USFWS 2008), some citizens are opposed to the transition of the species from its former endangered status to that of being available for any level of harvest. Many people value peregrine falcons as an iconic wild species, and value seeing them in the wild and some want assurances these wild birds will not be kept in captivity. In addition, many falconers highly value peregrine because of its adaptability to falconry and its historic use in the sport. Falconers feel that because they were instrumental in the recovery of peregrine, they should be given the opportunity to once again use wild peregrine for falconry. The FWC will continue to work with stakeholders to develop a rule to regulate capture of peregrine for falconry.

### **Ecological Impacts**

The justification to pursue the purchase of lands in critical areas can partly be driven by the need to provide suitable foraging habitat for peregrine falcons during their migration. This is particularly important for highly developed areas, such as the Florida Keys, where habitat is

becoming scarce. The protection of these lands will benefit many other species that rely on coastal habitats.

Peregrine falcons are also a success story for single species management techniques. The lessons that were learned during the resurgence of the peregrine can be applied to conservation of other imperiled species.

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