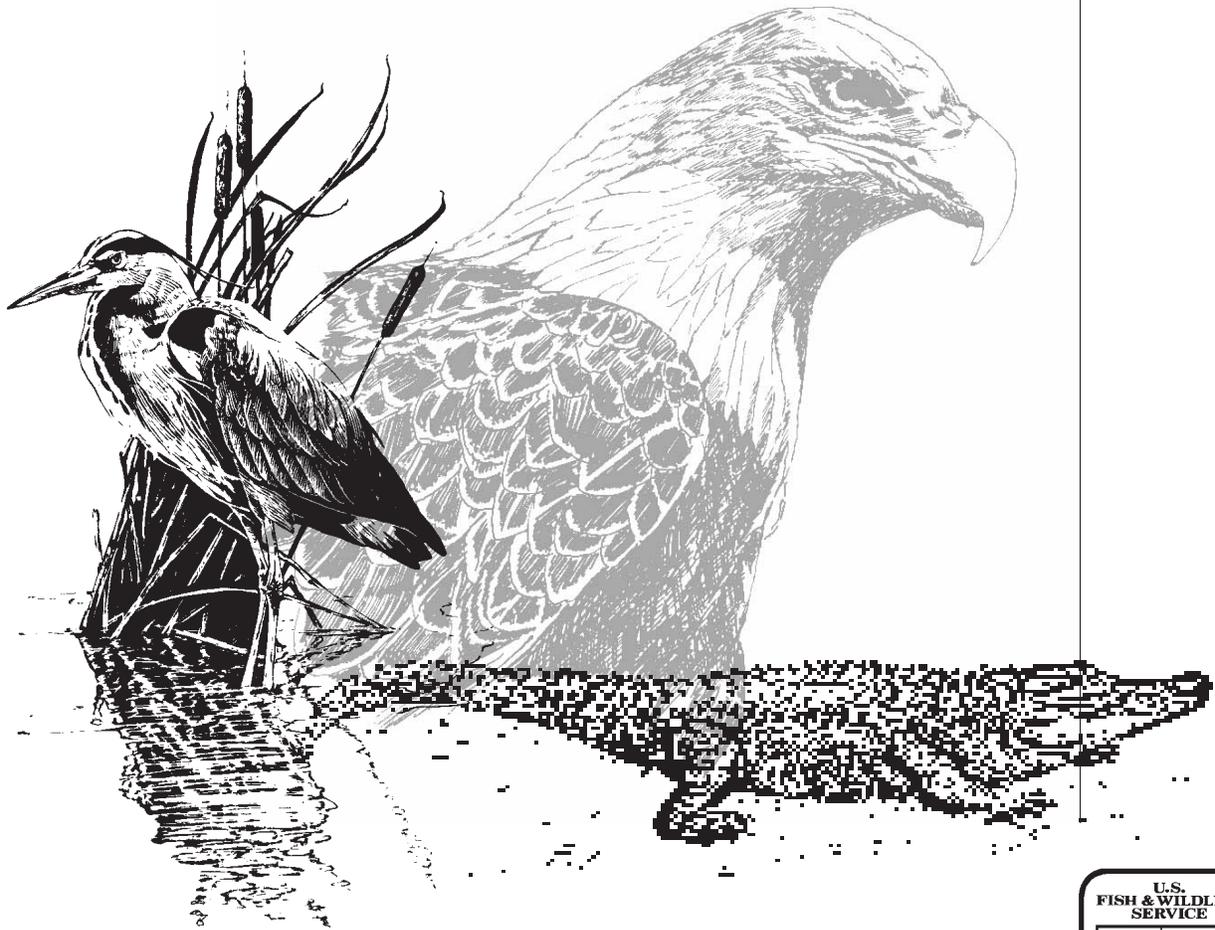


U.S. Fish & Wildlife Service

*Draft Environmental Assessment  
and Land Protection Plan*

# Proposed Expansion of J.N. "Ding" Darling National Wildlife Refuge Complex

Lee and Charlotte Counties, Florida





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

1875 Century Boulevard  
Atlanta, Georgia 30345

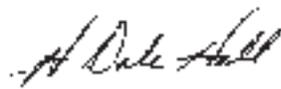
To: Recipients of the Draft Environmental Assessment and Land Protection Plan for the Proposed Expansion the J. N. "Ding" Darling National Wildlife Refuge Complex

The Fish and Wildlife Service is pleased to provide you with a copy of the Draft Environmental Assessment and Land Protection Plan for the Proposed Expansion of the J. N. "Ding" Darling National Wildlife Refuge Complex in Lee and Charlotte Counties, Florida. The assessment outlines the actions proposed by the Service to acquire, protect and manage additional wildlife habitats within Lee and Charlotte Counties. The majority of the proposed lands would be protected through management agreements with federal, state, county, and local governmental agencies and private land trusts. Other interests would be acquired through leases, conservation easements, donations, and/or fee title purchases.

The proposal was developed by the Service in coordination with the State of Florida, other Federal agencies, and private groups. In the assessment, three alternatives and their potential impacts on the environment are evaluated. The Service believes the proposed action is a positive step in preventing the loss of additional fish and wildlife habitat in this area.

Any comments or recommendations you may have concerning this proposal will be welcomed. In order to be considered in the preparation of the final environmental assessment, your comments must be received no later than January 31, 2002. Comments or requests for further information should be directed to Mr. Charles R. Danner, U.S. Fish and Wildlife Service, 1875 Century Boulevard, Suite 420, Atlanta, Georgia 30345, telephone 1-800-419-9582. Your interest and support for preserving the area of the proposal are appreciated.

Sincerely yours,

  
for Sam D. Hamilton  
Regional Director

Enclosure

*Draft Environmental Assessment  
and Land Protection Plan*

# **Proposed Expansion of J.N. "Ding" Darling National Wildlife Refuge Complex**

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**Lee and Charlotte Counties, Florida**

**U.S. Fish and Wildlife Service  
Southeast Region  
1875 Century Boulevard  
Atlanta, GA 30345  
404-679-7244**

**U.S. Fish and Wildlife Service  
1-800-419-9582  
<http://planning.southeast.fws.gov>**

**December 2001**

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## I. PURPOSE AND NEED FOR ACTION

### *A. Introduction*

The U.S. Fish and Wildlife Service (Service) proposes to protect and manage additional fish and wildlife habitats in Lee and Charlotte Counties, Florida, by expanding the boundaries of the J. N. “Ding” Darling, Pine Island, Matlacha Pass, Caloosahatchee, and Island Bay National Wildlife Refuges. These five refuges are collectively administered as the J. N. “Ding” Darling National Wildlife Refuge Complex, with its headquarters located at J. N. “Ding” Darling National Wildlife Refuge on Sanibel Island, Florida (Figures 1 and 2).

National wildlife refuges provide important habitat for native plants and many species of mammals, birds, fish, insects, amphibians, and reptiles. They also play a vital role in preserving endangered and threatened species. Refuges provide visitors with an understanding and appreciation of fish and wildlife ecology and help people understand their role in the environment. Additionally, refuges are places where high-quality, safe, and enjoyable wildlife-dependent recreational activities connect visitors to their natural resource heritage.

The mission of the National Wildlife Refuge System is “...to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (National Wildlife Refuge System Improvement Act of 1997). The Act also recognizes the importance of a close connection between fish and wildlife and the American character, and of the need to preserve America’s wildlife for the enjoyment of future generations. When compatible and appropriate, wildlife-dependent recreational uses involving hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation are allowed and encouraged.

### *B. Purpose*

This environmental assessment presents a proposal for expanding the boundaries of the J. N. “Ding” Darling Refuge Complex. No new refuges will be created by this proposal. Through this effort the Service would gain the ability to protect additional environmentally sensitive lands near or adjacent to the existing refuges. The most urgent needs for acquiring a management interest in these lands are as follows:

- **Protection of sensitive lands threatened with development.** Over the past

20 years, Southwest Florida has been rated one of the fastest-growing regions in the nation. It has consistently experienced a phenomenal rate of growth, and has ranked as one of the top 10 areas in the country for new housing starts. Between 1990 and 2000, the population growth rate in Lee County increased by 32 percent. The population of Charlotte County has also grown at a very high rate. Many of the new housing developments are oriented to the leisure, recreational, and retirement lifestyles. The islands and coastal lands are being developed at an alarming rate, causing sensitive wetlands, aquifers, and critical wildlife habitats to be fragmented or lost. Urbanization of former agricultural areas, construction of golf courses, and conversions of the native uplands to winter vegetable farms present additional threats to maintaining a functional ecosystem. In addition, the region's ground and surface waters would receive greater protection through the preservation of additional wetlands and wildlife habitats. The quality and quantity of these waters are vital to the public water supplies of several area communities.

- **Restoration of habitats threatened by the spread of exotic vegetation.** Since the 1950s, the habitat structure within the proposed boundaries has changed dramatically, leading to an invasion of exotic (non-native) vegetation. The rapid spread of invasive exotic vegetation is threatening the native plants and their associated wildlife. Exotic plants are considered one of the greatest threats to the successful restoration of the South Florida ecosystem. Every year, federal, state, county, and local agencies battle the encroachment of more than a dozen exotic species, in particular the "big three:" Brazilian pepper (*Schinus terebinthefolius*), Australian pine (*Casuarina* spp.), and melaleuca (*Melaleuca quinquenervia*). These plants have no natural enemies or controlling agents in the United States, and when left unchecked, displace the native vegetation and create monotypic vegetation stands that are low in biodiversity. Successful control of these plants must be undertaken on a cooperative basis. The vast majority of the lands within the proposed boundaries have already been preserved by the State of Florida, the County of Lee, and the City of Sanibel, as well as private land trusts such as the Calusa Land Trust and the Sanibel-Captiva Conservation Foundation. Both the state and county have requested that the Service enter into cooperative agreements with them to assist with habitat management efforts in eradicating the invasive exotics on their lands. Similar agreements with the City of Sanibel and the Sanibel-Captiva Conservation Foundation have resulted in the elimination of more than 50 percent of the exotic plants on Sanibel Island. By including these existing conservation lands within an approved refuge boundary, the Service will be able to immediately assist its partners in restoring the native habitats of the area.



Figure 2. For Page 10 of 15. Dig' Darling National Wildlife Refuge October Lee and Charlotte Counties Florida





- **Management of wildlife breeding habitats.** Wildlife surveys conducted by the staff of the “Ding” Darling refuge have shown a dramatic decline in several wildlife populations in recent years. Surveys of colonial nesting birds (long-legged wading birds and pelicans) in the “Ding” Darling, Pine Island, and Matlacha Pass refuges conducted between 1992 and 1997 have shown a greater than 50 percent decline in the birds’ overall nesting efforts since 1992. This downward trend is believed to be associated with declining habitat quality and forage availability. In addition, there is concern that human-caused disturbances close to nesting areas could have an impact on the birds’ nesting success.

Breeding populations of many other species of birds, such as the mangrove cuckoo, have also been in decline. For the mangrove cuckoo, breeding bird survey data indicate highly significant decreases in two reporting periods (annual rates of decrease: 1966-1991, 12.5%; 1989-1991, 13.7%). The greatest threat to these birds is the continued clearance of mangrove habitats for residential, agricultural, and recreational purposes. Although significant annual population declines have been noted across Florida, mangrove cuckoo numbers appear to be stable where suitable habitat has been protected.

By expanding the boundaries of the J. N. “Ding” Darling Refuge Complex, the Service would gain the ability to further protect breeding populations of colonial birds. Once the proposed lands are acquired, the Service would work with the state to create and manage buffer zones surrounding colonial nesting bird sites, if scientific studies conclude that human-caused disturbances play a significant role in the decline of successful nesting efforts. In addition, the Service would be able to acquire additional privately-owned mangrove islands to protect other species of wildlife, such as the mangrove cuckoo.

The proposed expansion boundaries identified in this document represent areas that the Service has deemed biologically important for the achievement of its long-term wildlife management objectives within the “Ding” Darling Refuge Complex. Any landowner who owns property within these proposed acquisition boundaries has the right to retain ownership of his or her land, as well as the option to willingly sell his or her land to the Service or enter into a less-than-fee interest such as a lease or conservation easement. In accordance with the Service’s land acquisition policy, all landowners within an approved acquisition boundary retain all the rights, privileges, and responsibilities of private land ownership. This includes, but is not limited to, the right to access, hunting, vehicle use, and control of trespass; the right to sell their property to any party; and the

responsibility to pay local real estate or property taxes. Additional information on the Service’s land acquisition policy is provided on page 22.

This environmental assessment is not intended to cover the development and/or implementation of detailed, specific programs for the administration and/or management of lands within the proposed boundaries. However, a Conceptual Management Plan (Appendix A), Interim Compatibility Determination (Appendix B), and Interim Recreation Act Funding Analysis (Appendix C) are included to provide the public with a general outline of the Service’s management goals and objectives. If the proposed boundaries are established and additional lands or interests in lands are acquired, the Service will develop a detailed Comprehensive Conservation Plan to incorporate the new lands and resources under its control. At that time, this Comprehensive Conservation Plan will be made available for public review and comment in accordance with the requirements of the National Environmental Policy Act (NEPA).

### *C. Background*

The Pine Island, Matlacha Pass, and Island Bay National Wildlife Refuges were each established in 1908 through separate executive orders signed by President Theodore Roosevelt. In 1920, the Caloosahatchee refuge was established through an executive order signed by President Woodrow Wilson. The J. N. “Ding” Darling refuge was originally established as the Sanibel National Wildlife Refuge in 1945 under the authority of the Migratory Bird Conservation Act of 1929. The establishing purpose of the “Ding” Darling refuge, as stated in the executive order, is “...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” The establishing purpose for each of the other refuges within the complex, as stated in their respective executive orders, is “...as a preserve and breeding ground for native birds.”

Each refuge is located along Southwest Florida’s Gulf coast. The “Ding” Darling, Pine Island, Matlacha Pass, and Caloosahatchee refuges all lie within Lee County. At the present time, the Service currently owns or manages a total of approximately 7,560 acres within these four refuges. The Island Bay refuge lies within the Cape Haze section of Charlotte County and currently covers 20.24 acres.

**J. N. “Ding” Darling National Wildlife Refuge** is located in Lee County on Sanibel Island, a subtropical barrier island connected to the mainland by a three-mile causeway (Figure 3). The refuge was originally established on December 1, 1945 as the Sanibel National Wildlife Refuge under the authority of the Migratory Bird Conservation Act of 1929. In 1967 the name of the Sanibel refuge was



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changed to J. N. “Ding” Darling National Wildlife Refuge as a lasting memorial to Jay Norwood Darling, a noted editorial cartoonist, pioneer conservationist, and the first Chief of the U.S. Biological Survey (the founding agency of the U.S. Fish and Wildlife Service).

The refuge’s current approved acquisition boundary encompasses 7,325 acres, of which approximately 6,335 acres have been acquired. Two thousand eight hundred and twenty-five (2,825) acres of the refuge have been designated by Congress as a National Wilderness Area. The refuge contains more than 6,000 contiguous acres of uplands, wetlands, impounded waterways, and open waters.

The refuge is home to the newly opened “Ding” Darling Education Center, which was built using private funds by the refuge’s non-profit friends group, The “Ding” Darling Wildlife Society. The Education Center is the starting point for residents and visitors to begin their educational experience learning about the habitats and wildlife of the refuge complex. The most popular attraction at the refuge is the Wildlife Drive, a five-mile road that is easily traversed by tram, car, bicycle or foot. This road winds through mangrove forests and open and impounded waterways. By accessing the Drive, visitors can observe and photograph a spectacular array of birds and wildlife. In addition, ample opportunities for crabbing and fresh and salt water fishing are provided along the Drive. Four hiking trails that traverse several habitat types are also easily accessed from the either the parking lot or the Wildlife Drive. Refuge staff and volunteers regularly conduct environmental education and interpretation programs along the Drive and the Cross Dike hiking trail. Visitors can also hike the trails of the nearby 100-acre Bailey Tract and fish, kayak, or canoe through more than 950 acres of open waters and trails in Tarpon Bay.

At the current time, the Pine Island, Matlacha Pass, Island Bay, and Caloosahatchee refuges (satellite refuges) receive very little public use due to their remote nature. Access to these refuges is often difficult because most of the areas are mangrove islands with no boat docking or mooring facilities. Most of these islands are closed to the public to protect various wildlife species, especially the roosting and nesting areas of colonial wading birds and pelicans. Future public use opportunities on these four refuges (described below) will be addressed during the comprehensive conservation planning process.

**Pine Island National Wildlife Refuge** is located in Lee County and lies between the western portion of Pine Island and the coastal islands of Cayo Costa, North Captiva, and Sanibel. On September 15, 1908, President Theodore Roosevelt signed Executive Order No. 939, reserving and setting aside these islands “...as a

preserve, and breeding ground for native birds.” The refuge currently includes 16 islands and covers a total of 602 acres (Figure 4).

**Matlacha Pass National Wildlife Refuge** is located in Lee County between the easterly portion of Pine Island and the westerly portion of Cape Coral and North Fort Myers. On September 26, 1908, President Theodore Roosevelt signed Executive Order No. 943, reserving and setting aside three islands located in Matlacha Pass “...as a preserve, and breeding ground for native birds.” The refuge currently includes 23 islands that total 393 acres in size (Figure 5).

**Island Bay National Wildlife Refuge** is located in the Cape Haze section of Charlotte County, approximately 20 miles northwest of Fort Myers. On October 23, 1908, President Theodore Roosevelt signed Executive Order No. 958, reserving and setting aside 11,100 acres of mangroves and other islands “...as a preserve, and breeding ground for native birds.” In a decision dated September 1, 1950, the Bureau of Land Management (BLM) determined that the lands included in this refuge were tidelands, the title to which was vested in the State of Florida upon its admission to the Union. The conclusion was that the lands were not subject to the above stated Executive Order, and therefore the area was dropped as a refuge. A more detailed and thorough study conducted by BLM in 1954 showed that 20.24 acres were, in fact, public domain lands subject to Executive Order 958. As a result, that portion of Island Bay was reinstated to national wildlife refuge status (Figure 6).

The Island Bay refuge currently consists of six undeveloped islands totaling 20.24 acres. The refuge lands include Gallagher Key, Bull Key, and two unnamed keys located between Bull and Turtle Bays. Two other tracts, the Cash and John Quiet Mounds, are also located along the edge of Turtle Bay. On October 23, 1979, President Richard Nixon signed Public Law 91-504 establishing the Island Bay refuge as a National Wilderness Area.

**Caloosahatchee National Wildlife Refuge** is located in east Fort Myers, in the general area of the I-75 Caloosahatchee Bridge. On July 1, 1920, President Woodrow Wilson signed Executive Order No. 3299, reserving and setting aside several unsurveyed mangrove islands in the Caloosahatchee River “...as preserves, and breeding grounds for native birds.” In the 1930s and again in the 1950s, the Caloosahatchee River was dredged and channelized to create the Cross-State Ship Channel, also known as the C-43 Canal. Spoil deposited on the refuge lands during this channelization resulted in alteration of the refuge’s original landscape and boundary (Figure 7). Therefore, the exact description and acreage of the refuge is unknown, but it is believed to total approximately 40 acres.

Figure 8. "M. Josa" District Political Public Storage

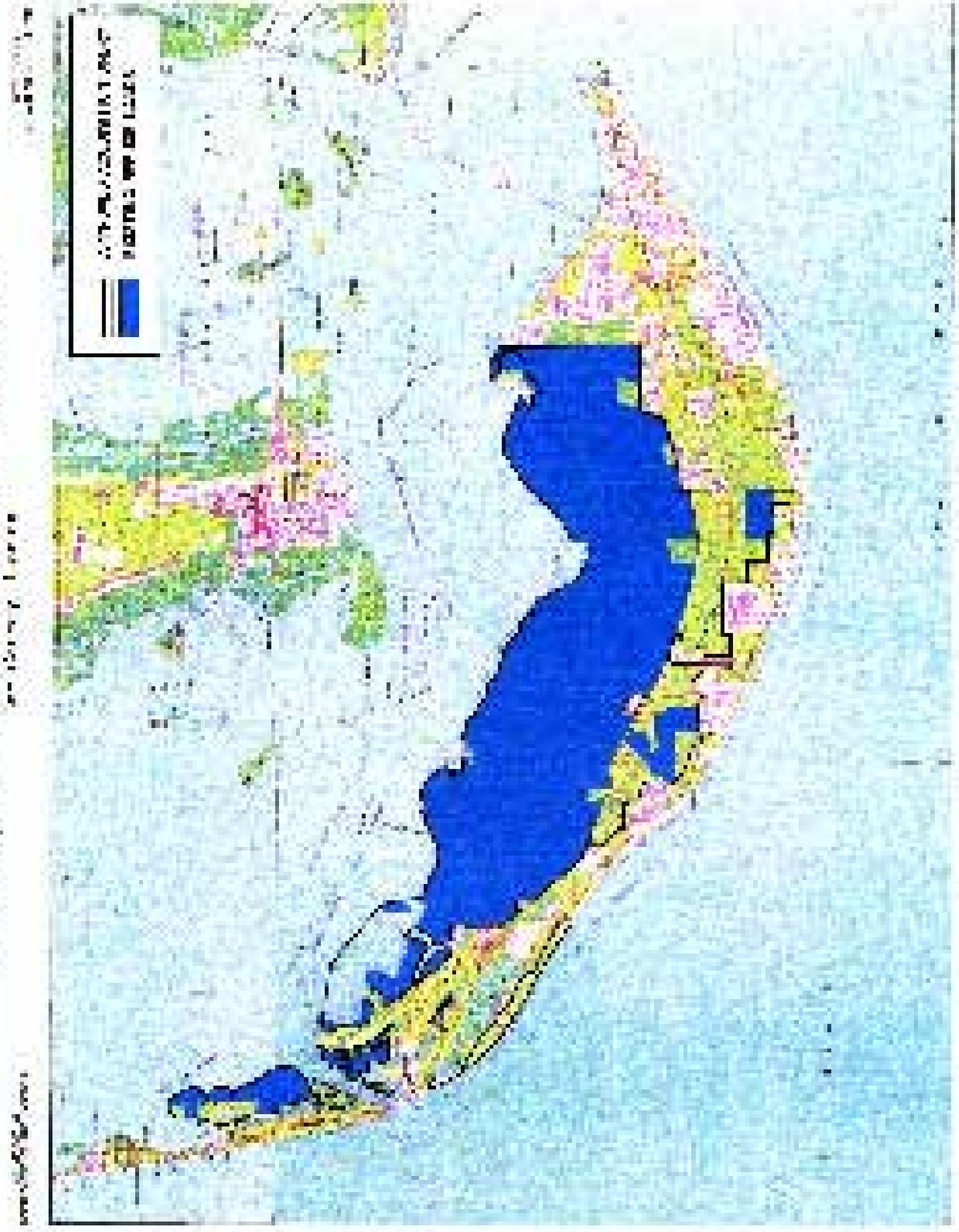
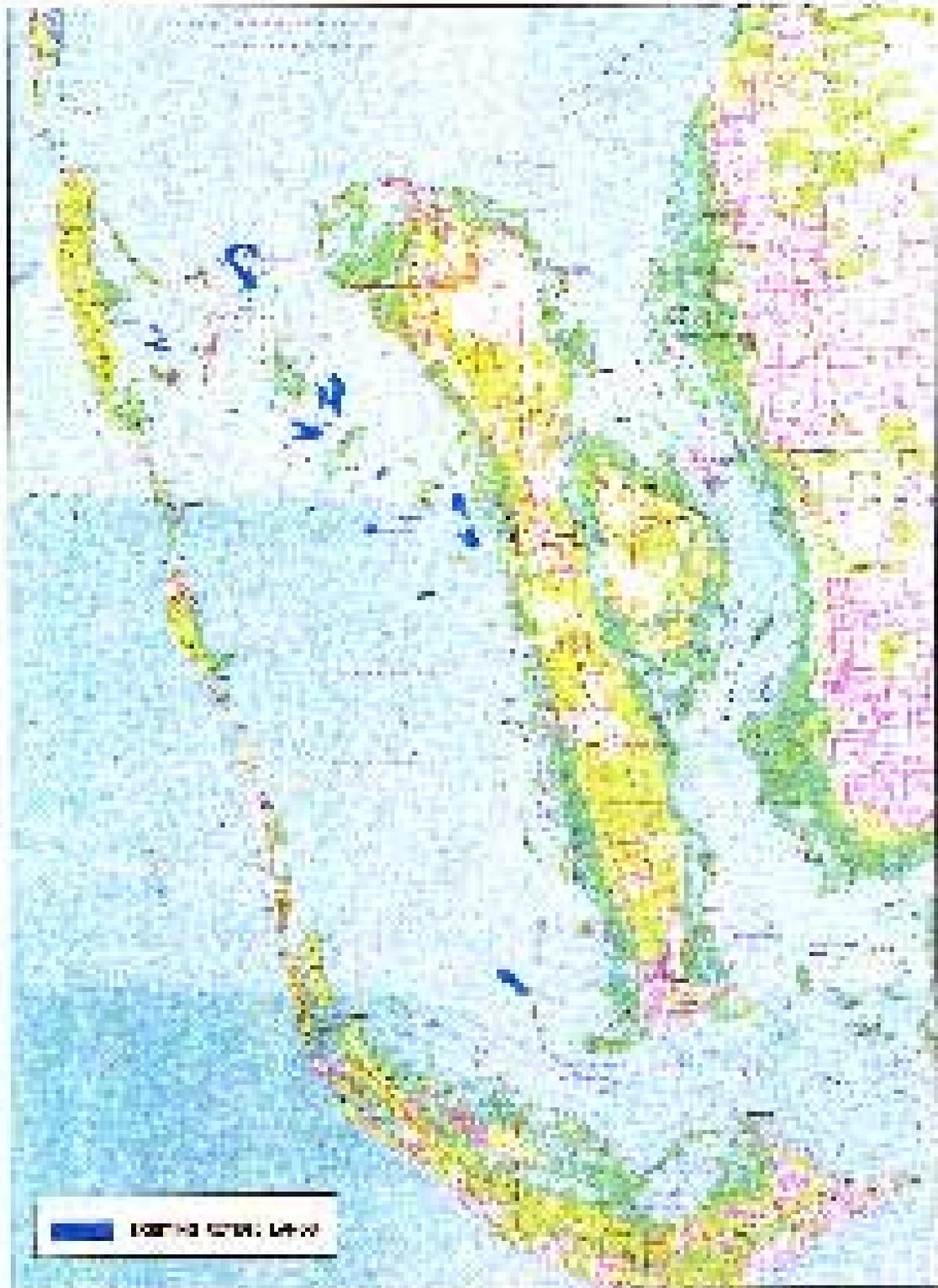


Figure 4. Early Mixed National Wetland Zoning for South Korea



Source: Ministry of Environment, Republic of Korea (2010).  
www.moe.go.kr

Table 4. Wetland Zoning in South Korea

Figure 2: Yallahia Lake National Wildlife Refuge  
Deer County, Florida



DEER COUNTY, FLORIDA

DEER COUNTY, FLORIDA

DEER COUNTY, FLORIDA

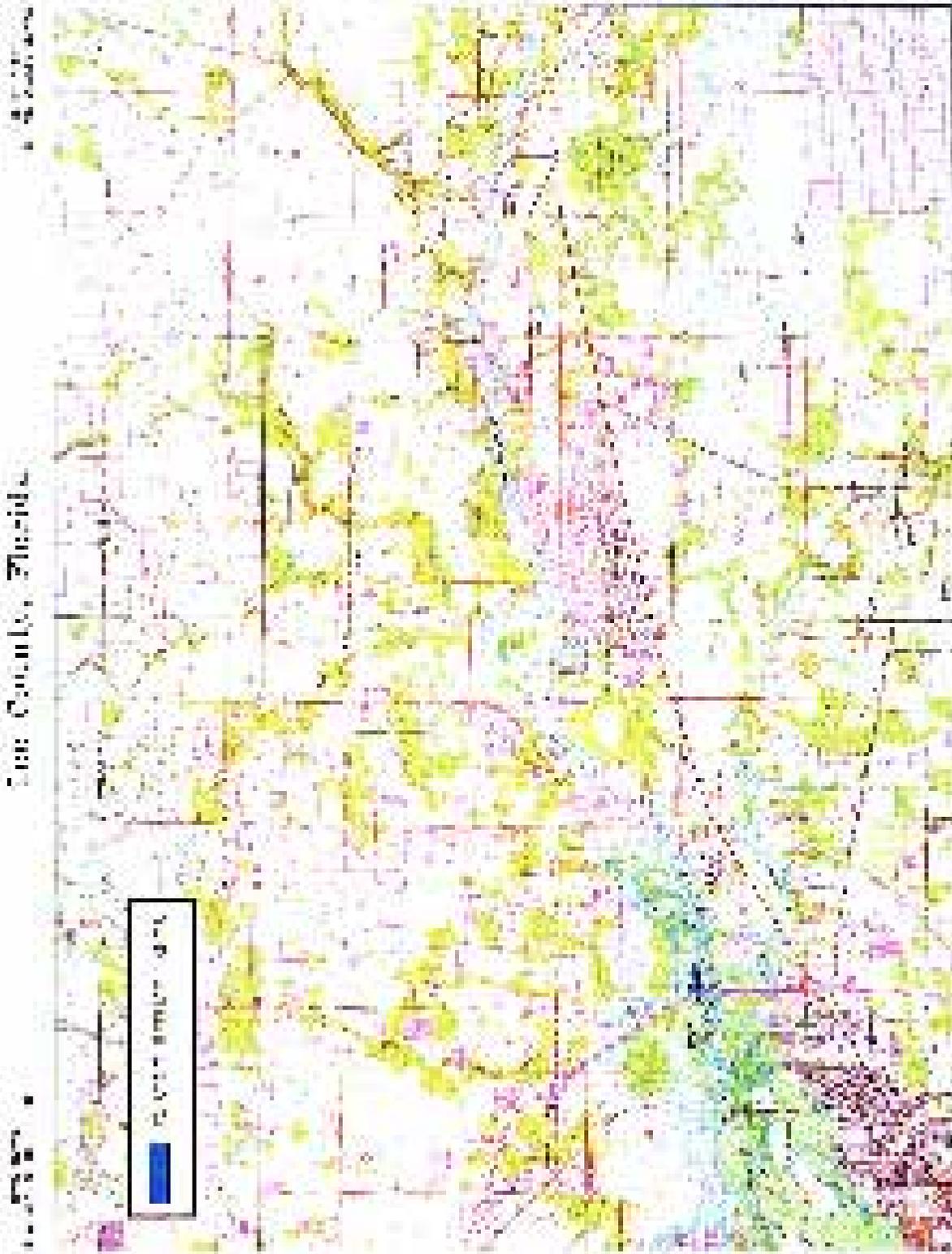
Figure 1. Location of National Wildlife Refuge  
County - County, Florida



STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Figure 2: Proposed Electric System and Distribution Refuges



Scale: 1 inch = 10 miles

PROPOSED SYSTEM

Scale: 1 inch = 10 miles

#### *D. Proposed Action*

The Service proposes to acquire, protect and manage additional wildlife habitats within Lee and Charlotte Counties. The majority of the proposed lands would be protected through management agreements with federal, state, county, and local governmental agencies and private land trusts. Other interests would be acquired through leases, conservation easements, donations, and/or fee title purchases. Any interests in lands or waters, including privately owned lands, would be acquired from willing sellers only. All land or water interests acquired would be managed by the Service as part of the National Wildlife Refuge System, specifically as part of the J. N. “Ding” Darling National Wildlife Refuge Complex. The Service has no intention of acquiring a fee title interest in all, or even most, of the lands within the proposed boundaries. Acquisition of any interest in lands would be based upon habitat protection needs, willing landowners, and availability of funds.

The management objectives of the complex and of the proposed acquisition areas are to (1) protect and enhance the unique subtropical environments for a natural diversity of wildlife; (2) manage feeding, nesting, and roosting habitats for a wide diversity of shorebirds, wading birds, waterfowl, raptors, and migratory wintering habitat for migratory birds; (3) provide protection and suitable habitat for endangered and threatened species; and (4) provide opportunities for compatible wildlife-oriented recreation and environmental education and interpretation.

Funding for the Service’s land acquisition program comes from the Land and Water Conservation Fund (LWCF), a special account in the U.S. Treasury from which Congress annually appropriates money to acquire lands for conservation and recreation by federal and state agencies. Certain federal revenues, including the proceeds of surplus federal property sales, the federal motorboat fuels tax, and a portion of the oil and gas leasing receipts from the Outer Continental Shelf, are credited to the LWCF for this purpose.

#### *E. Coordination and Consultation*

The Service has coordinated the development of this proposal and its public information and scoping meetings with officials of the U.S. Senate and U.S. House of Representatives, as well as state and local representatives. The commissioners of Lee County and the mayors of Sanibel and Fort Myers were also consulted.



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The Trust for Public Land, Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection/State Aquatic and Buffer Preserves, Sanibel-Captiva Conservation Foundation, Captiva Civic Association, Calusa Land Trust, Southwest Florida Marine Industries, Standing Watch, and Lee County Conservation 2020 were also briefed and consulted on the proposal.

### *F. U.S. Fish and Wildlife Service Land Acquisition Policy*

The Service acquires lands or interests in lands consistent with legislation or other Congressional guidelines and executive orders, for the conservation of fish and wildlife and to provide wildlife-dependent public uses for recreational and educational purposes. Acquisition may be through fee title purchases or donations, conservation easements, leases and/or cooperative management agreements. Lands and waters managed by the Service include national wildlife refuges, national fish hatcheries, research stations, and other areas.

The Service's policy is to acquire land or interests in land from willing sellers, and only when other protective means, such as local zoning restrictions or regulations, are not available, appropriate, or effective. When land is needed to achieve fish and wildlife conservation objectives, the Service seeks to acquire the minimum interest necessary to reach those objectives. If fee title is required, the Service gives full consideration to extended use reservations, exchanges, and other alternatives that will lessen the impact on the owner and the community. Donations of desired lands or interests in land are welcomed and encouraged.

Acquisition interests are acquired through negotiations with willing sellers only. In rare and extreme cases, the Service, like all federal agencies, has the power of eminent domain, which is the right to acquire lands and interests in lands for the public good with just compensation paid to the owner. This power, however, requires the approval of Congress and must be shown to be in the public interest. Nationwide, condemnations have been used very sparingly throughout the Service's land acquisition history, and over the past ten years less than one percent of the lands added to the National Wildlife Refuge System have been acquired through eminent domain. The Service recognizes the social and economic impacts of acquiring private property by exercising the right of eminent domain, and does its utmost to avoid using this approach. In most of the few eminent domain cases that were pursued, the Service has utilized what is commonly referred to as "friendly condemnation." This process enables the Service to work with landowners who are willing to sell their lands to the Service, but due to instances such as minor title defects or differences of opinion in the value of the property, are unable to smoothly complete the transfer.

Fee title acquisition conveys all ownership rights to the federal government and provides the best assurance of permanent resource protection. A fee title interest may be acquired by donation, exchange, transfer, or purchase. When obtaining a fee title interest in land using any method other than donation, the Service is required by law to offer 100 percent of the property's appraised market value, as set forth in an approved appraisal which meets professional standards and federal requirements.

The land acquisition methods which could be used by the Service under this alternative are described as follows:

**Leases and Cooperative Agreements.** The Service can protect and manage certain wildlife habitats through leases and cooperative agreements. Management control on privately owned lands could be obtained by entering into long-term renewable leases or cooperative agreements with willing landowners. Short-term leases can be used to protect or manage habitat until more secure land protection can be negotiated. The Service may cooperate with state of Florida by entering into leases and management agreements for state-owned lands or waters.

**Conservation Easements.** Conservation easements give the Service the opportunity to manage lands for their fish and wildlife habitat values. Such management precludes all other uses that are incompatible with the Service's management objectives. Only land uses that would have minimal or no conflicts with the management objectives are retained by the landowner. In effect, the willing landowner transfers certain development rights to the Service for management purposes as specified in the easement.

Easements would likely be useful when (1) most, but not all, of a private landowner's uses are compatible with the Service's management objectives, and (2) the current owner desires to retain ownership of the land and continue compatible uses under the terms set by the Service in the easement. Land uses that are normally restricted under the terms of a conservation easement include:

- Development rights (agricultural, residential, etc.);
- Alteration of the area's natural topography;
- Uses adversely affecting the area's floral and faunal communities;
- Private hunting and fishing leases;



- Excessive public access and use; and
- Alteration of the natural water regime.

**Fee Title Acquisition.** A fee title interest is normally acquired when (1) the area's fish and wildlife resources require permanent protection not otherwise assured, (2) land is needed for visitor use development, (3) a pending land use could adversely impact the area's resources, or (4) it is the most practical and economical way to assemble small tracts into a manageable unit.

Fee title acquisition conveys all ownership rights to the federal government and provides the best assurance of permanent resource protection. A fee title interest may be acquired by donation, exchange, transfer, or purchase.

### *G. Public Participation*

After consulting and coordinating with state and local officials, the Service held a series of three public informational meetings to inform the public about the planning effort and to solicit public comments for use in the preparation of the Draft Environmental Assessment and Land Protection Plan. The first meeting was held on May 22, 2001, at the Fishers of Men Lutheran Church in St. James City on Pine Island, Florida. The second meeting was conducted on the morning of May 23, 2001, at the J. N. "Ding" Darling National Wildlife Refuge in Sanibel, Florida. The third meeting was held during the evening of May 23 at the Ramada Inn and Suites in Fort Myers, Florida. These three public meetings were moderated by a professional facilitator (Mr. John Harrington, Office of the Solicitor, U.S. Department of the Interior) and were recorded and transcribed by a court reporter (Mrs. Gail Lawson) into written transcripts of the meetings. The transcripts of all three public meetings are available to any citizen on request to: Fort Myers Court Reporting, Inc., 2231 First Street, Fort Myers, Florida 33901 (telephone: 941-334-1411; Fax: 941-334-1476).

The oral comments presented and recorded at the meetings; written comments obtained through comment sheets provided at the meetings and through letters received by mail; and other comments and suggestions obtained via e-mail or by telephone were considered and utilized during the preparation of this draft document.

In addition to the three public information meetings, several small meetings and one workshop were held to solicit additional comments. Private citizens and representatives of local organizations such as the Sanibel-Captiva Conservation Foundation, Captiva Civic Association, Calusa Land Trust, Southwest Florida

Marine Industries, Standing Watch, the Florida Fish and Wildlife Commission, and the Florida Department of Environmental Protection were in attendance at some of these meetings. Prior to holding the preliminary public informational meetings, interviews were given to several local newspapers. Additional interviews were held with a nationally known magazine (Florida Sportsman) and a local radio talk show during the public comment period and draft environmental assessment preparation period.

Public reaction to the proposed expansion was mixed. Approximately 25 percent of the citizens stated their full support for protection of the areas as depicted on the initial study area maps. Around 35 percent were completely opposed to the expansion proposal. The remainder, approximately 40 percent, voiced their support for the land acquisition portion of the proposal, but were against the Service gaining any additional management rights over state-owned waters (sovereignty submerged lands), especially in Pine Island Sound and Matlacha Pass.

The primary concern expressed in the public meetings revolved around the inclusion of thousands of acres of water (i.e., submerged lands) within the initial study area. Much of the concern was due to the fact that the expansion meetings followed closely on the heels of various other public meetings dealing with numerous efforts to create manatee refuges and sanctuaries and boating speed zones. The proposed expansion of the refuges was seen by many citizens as just another method of the Service gaining control of local waterways for the protection of manatees through the establishment of manatee sanctuaries.

The Service's reason for including the waters within the initial study area was never to prevent the use of the waters, but to protect certain water areas surrounding known roosting and nesting sites of colonial birds (wading birds and pelicans). From a wildlife management standpoint, protection of these buffer zones was desirable because refuge wildlife surveys had documented a greater than 50 percent decline in the birds' nesting efforts over the past 10 years. Although no exact cause or causes for the decline are known, it is theorized that human disturbances may have been a contributing factor.

The comments that were made at the three public meetings, as well as those received by mail, e-mail, and telephone during the public comment period, showed that the majority of the citizens favored a modified study area with proposed boundaries that would enable the Service to acquire or manage the needed upland and wetland areas without including most of the state-owned waters.



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At the end of the public comment period, the Service carefully reviewed these comments and considered a range of alternatives on how to best meet the needs and desires of the local community while improving its ability to protect additional wildlife and their associated habitats. A variety of mapping alternatives was considered and evaluated, but no conclusions were drawn. In order to further refine the planning process and arrive at a decision, the Service once again looked to the public for help. Various members of the public were asked to assist the Service in drawing a revised study area map and developing some types of protection alternatives that would best represent a reasonable balance between the local user groups and the needs of wildlife. On August 7, 2001, the staff of the J. N. “Ding” Darling Refuge hosted a one-day workshop where representatives of state agencies, boating organizations, marine industries, and private citizens shared their ideas and concerns. The participants worked together for several hours and unanimously agreed on the development of an alternative that excluded almost all of the state-owned waters of Pine Island Sound and Matlacha Pass, which were originally shown in the initial study area map. The Service later decided to also exclude state-owned waters in the vicinity of Island Bay National Wildlife Refuge. This resulted in new maps with revised study area boundaries. Figure 8 shows the initial study area boundaries; Figure 9 shows the revised study area boundaries. The alternatives are introduced and discussed in the following section (Section II).

Figure 2. Initial results from the study of 13, 700+ benthic invertebrates, benthic fishes, corals, sponges and other biogenic structures. The map shows the distribution of these organisms across the study area, with various colored regions indicating different species or groups. The map includes a scale bar and a north arrow.

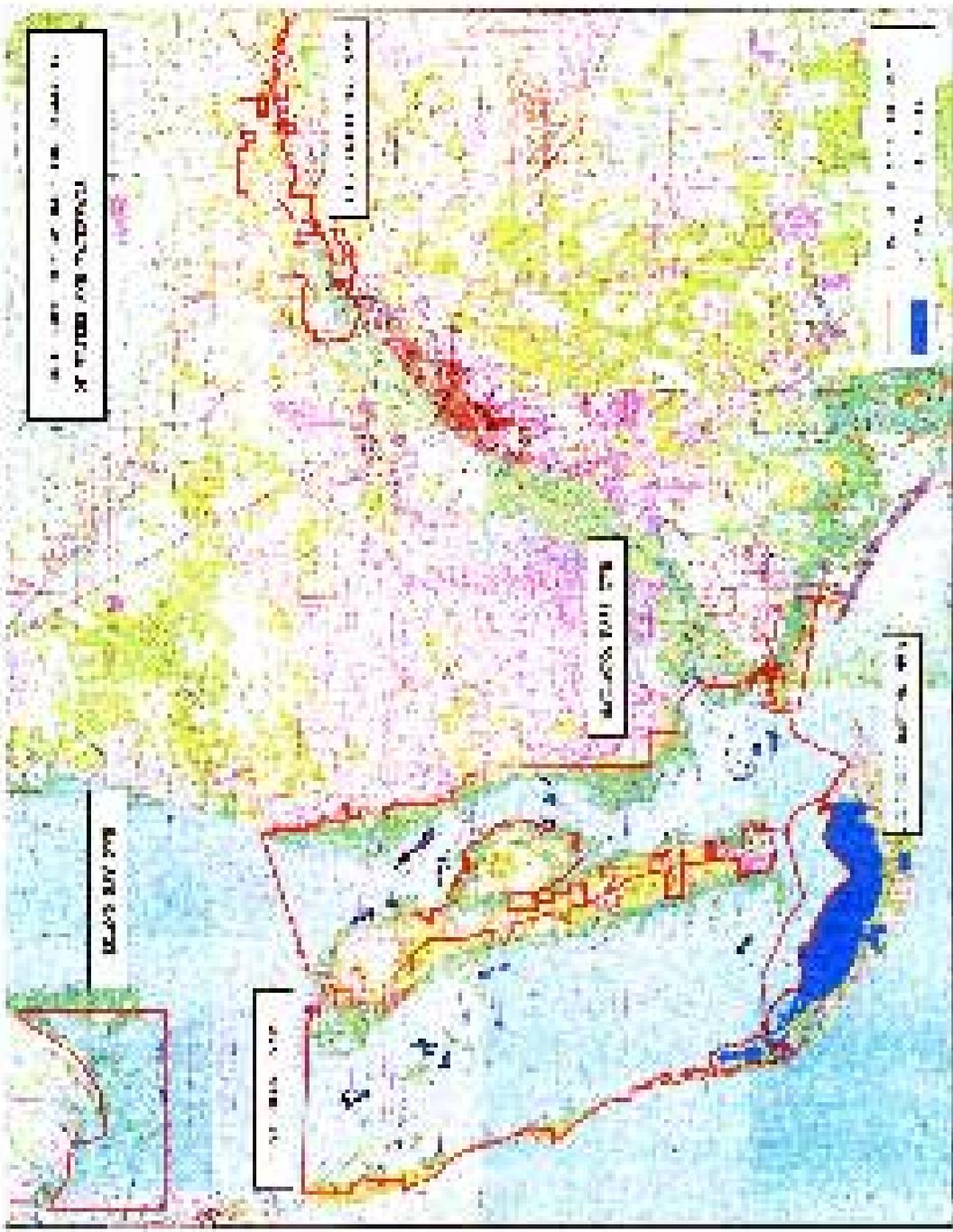
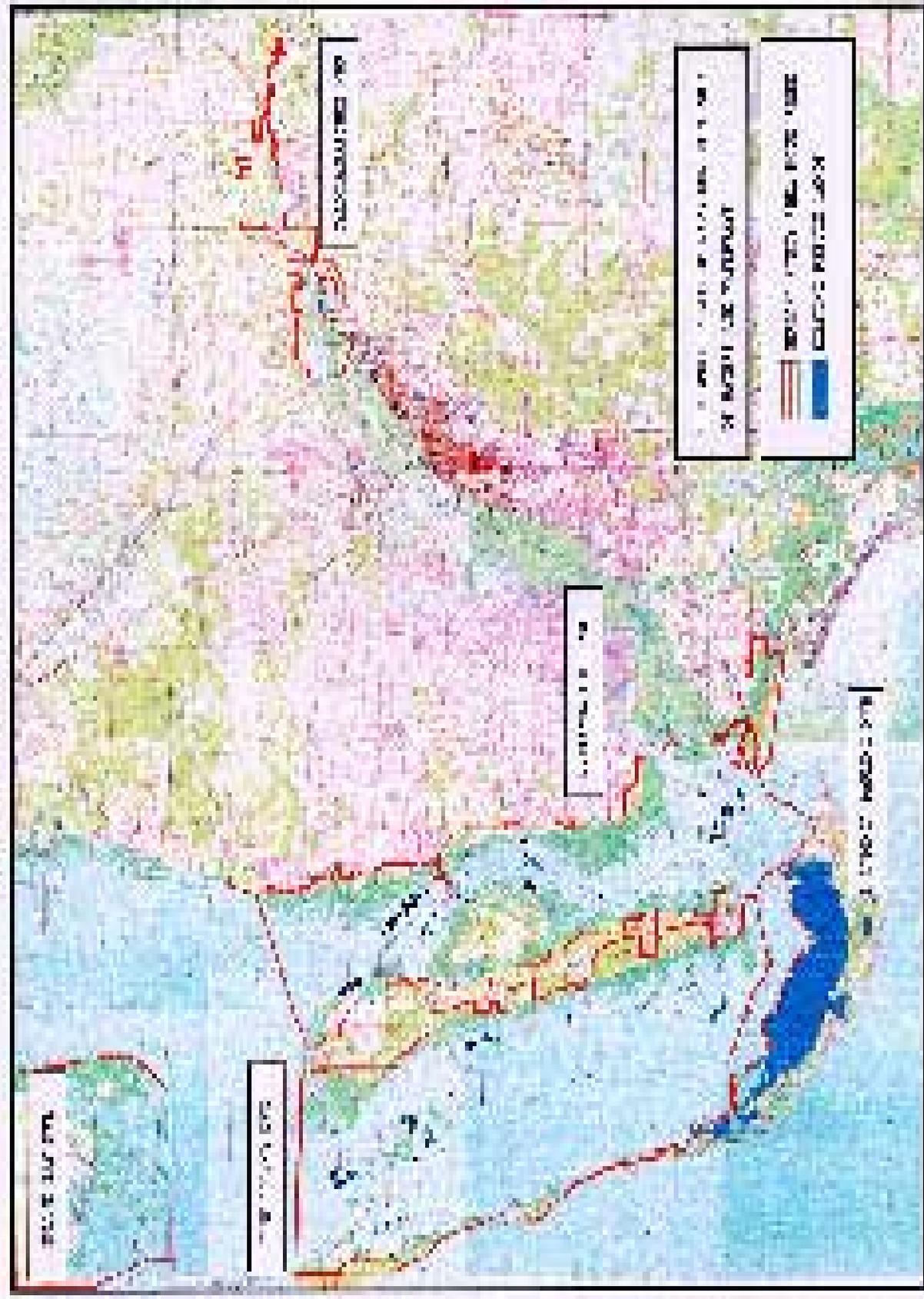


Figure 4. Revised study area boundary. The 7000' Barlowe Submontain Plateau Reduces Low and Charlotte Counties. Florida



## II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

In determining how to achieve the fish and wildlife habitat protection goals for the lands and waters identified in this document, the Service considered and evaluated three alternatives. These are:

### *A. Alternative 1: No Action*

This is the "status quo" alternative. Under this alternative, the Service would not acquire any of the lands or any interests herein proposed for the expansion of the refuge complex. The proposed areas would remain in state, local, and/or private ownership and their current land uses would continue. Protection of the fish and wildlife habitats and natural resource values of these lands would be contingent upon the enforcement of existing federal, state, and local environmental regulations (the Endangered Species Act, the Clean Water Act, state water quality and pollution laws, etc.), state and county acquisition programs, and the discretion of the private landowners.

### *B. Alternative 2: Protection and Management of up to 124,000 Acres by the U.S. Fish and Wildlife Service*

Under this alternative, the Service would protect and manage up to 124,000 acres of habitats identified as the "Initial Study Area" (Figure 8) as part of the J. N. "Ding" Darling National Wildlife Refuge Complex. The Service would acquire sufficient interest in the identified lands and waters to prevent conflicting land uses and to manage the areas for their fish and wildlife values. The Service would have the option to negotiate with the state for permission, under a memorandum of understanding, to manage state-owned waters around nesting and roosting islands as would be necessary for protection of the habitat for colonial birds. It would also allow the Service to request permission from the state to manage fisheries, sea grass beds, and habitats for threatened and endangered species. This alternative is the original area as presented at the initial public informational meetings held on May 22 and 23, 2001.

### *C. Alternative 3: Protection and Management of up to 45,000 Acres by the U.S. Fish and Wildlife Service (Preferred Alternative)*

Under this alternative, the Service would protect and manage up to 45,000 acres of fish and wildlife habitats as part of the J. N. "Ding" Darling National Wildlife Refuge Complex. **For the Pine Island, Matlacha Pass and Island Bay refuges, all open waters and waterways are excluded from the proposed boundary, except**

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that 100-meter buffer zones may be established surrounding protected species nesting sites. For the Caloosahatchee refuge, all open waters and waterways within the Caloosahatchee River are excluded, except for those portions of the river commonly referred to as the “oxbows.”

This alternative would enable the Service to protect and manage the proposed uplands and wetlands and a very limited amount of state-owned sovereignty submerged lands. It is the Service’s preferred alternative for providing effective and adequate protection and management options for the area’s fish and wildlife resources.

The following describes the lands and waters that would be included within this preferred alternative:

**J. N. “Ding” Darling National Wildlife Refuge:** The proposed expansion areas would encompass 6 acres of upland habitat adjacent to the existing refuge lands and approximately 650 acres of water lying north of the refuge’s existing boundary in Pine Island Sound. The proposed lands and waters would bring the total approved acquisition area for this refuge to approximately 8,000 acres (Figure 10).

**Pine Island National Wildlife Refuge:** The proposed boundary for the expansion of this refuge would encompass approximately 10,200 acres of land, including the refuge’s existing 602 acres (Figure 11). **Although the boundary would follow the line indicated on Figure 11 as the “revised study area,” all open waters and waterways of Pine Island Sound are excluded, except that 100-meter buffer zones may be established around protected species nesting sites.** In situations where such buffer zones would interfere with current or future navigational channels, no buffer zones would be established.

**Matlacha Pass National Wildlife Refuge:** The proposed boundary for the expansion of this refuge would encompass approximately 18,000 acres of land, including the refuge’s existing 393 acres (Figure 12). **Although the boundary would follow the line indicated on Figure 12 as the “revised study area,” all open waters and waterways of Matlacha Pass are excluded, except that 100-meter buffer zones may be established around protected species nesting sites.** In situations where those buffer zones would interfere with current or future navigational channels, no buffer zones would be established.

**Island Bay National Wildlife Refuge:** The proposed boundary for the expansion of this refuge would encompass 10,700 acres of mangrove and uplands, including the refuge’s existing 20.24 acres (Figure 13). **Although the boundary would follow the line indicated on Figure 13 as the “revised study area,” all open waters and waterways are excluded except that 100-meter buffer zones may be**

**established around protected species nesting sites.** In situations where such buffer zones would interfere with current or future navigational channels, no buffer zones would be established. Many of these lands encompass the same areas that were originally established as the refuge by President Theodore Roosevelt in 1908. The remaining areas include other state-owned lands which are managed by the Florida Department of Environmental Protection as part of the Cape Haze Aquatic and Buffer Preserve Systems.

**Caloosahatchee National Wildlife Refuge:** The proposed boundary for the expansion of this refuge would encompass approximately 4,800 acres of land, including the refuge’s existing 40 acres of land and approximately 300 acres of state-owned sovereignty submerged lands (Figure 14). **Although the boundary would follow the line indicated on Figure 14 as the “revised study area,” all open waters and waterways of the Caloosahatchee River are excluded, except for those portions of the river commonly referred to as the “oxbows.”**

Figure 15. 24. 2007" Barling National Wildlife Refuge as proposed under alternative 1





# Figure 14. Kilauea Iki National Wildlife Refuge

As proposed under Alternative B

as of 10/19/2014

10/19/2014

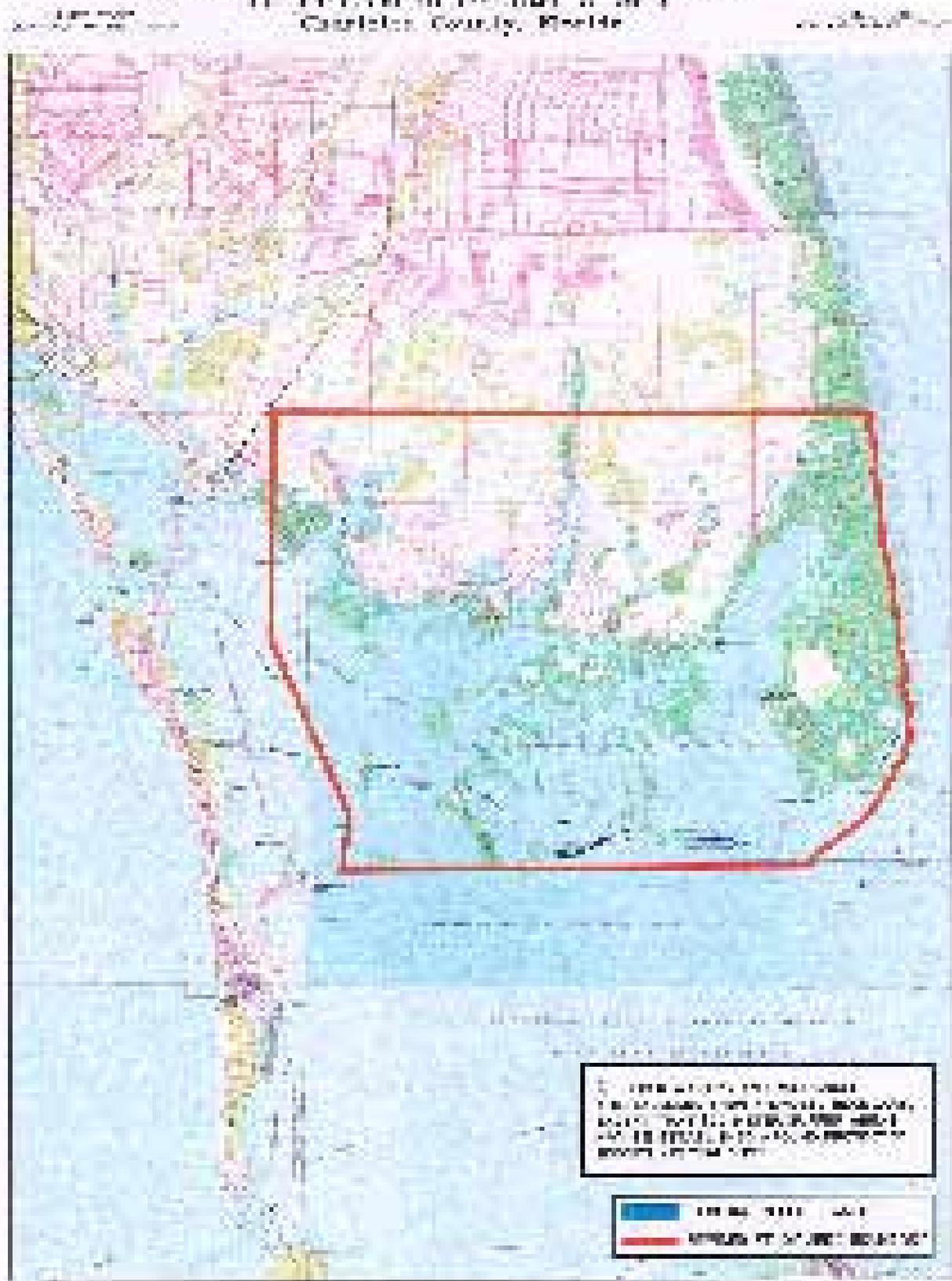
10/19/2014



10/19/2014

14-16-102-000-3-01-113

Figure 13. Groundwater Recharge Potential for the  
 1000-foot-wide Buffer around  
 Carolina County, Rhode Island



Map Date: 04/20/2011

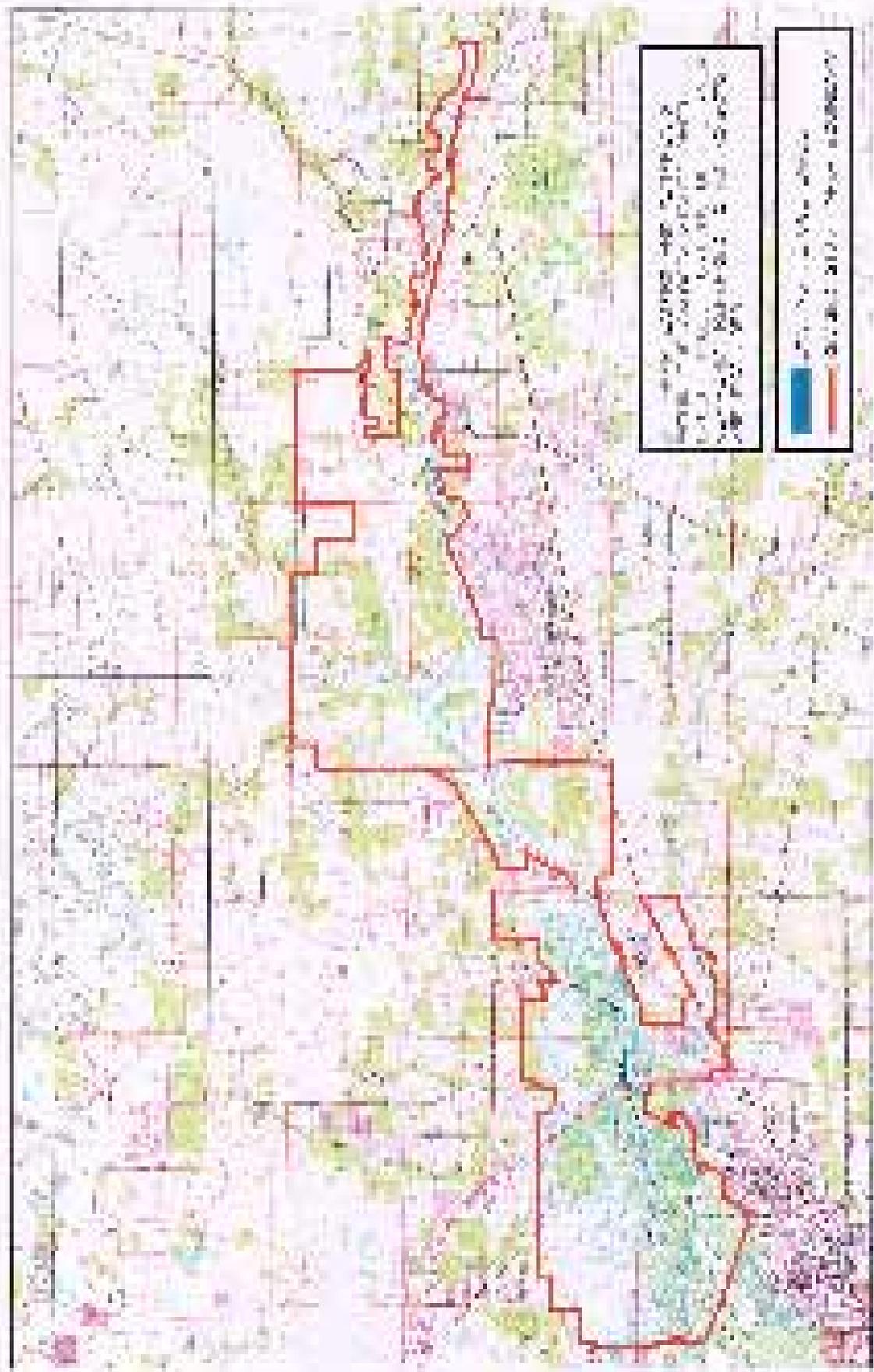
Map Author: RIB/DCG

Figure 4. Addressed and Unaddressed Wildlife Damage

0 100 200 Miles

0 100 200 Miles

0 100 200 Miles



0 100 200 Miles

0 100 200 Miles

0 100 200 Miles

### **III. AFFECTED ENVIRONMENT**

This section describes the environment that would be affected by the implementation of any of the alternatives. It is organized under the following impact topics, which include the area's vegetation, fish and wildlife resources, cultural resources, and socioeconomic and sociocultural conditions.

#### *A. General*

The project area is located in Southwest Florida, in Lee and Charlotte Counties, near or adjacent to the Gulf of Mexico. The region is subject to a moderate to hot climate, typical of tropical and subtropical conditions. The average annual temperature is 74.4 degrees Fahrenheit. January temperatures average 63.8 and the average temperature in August is 83.1. The average rainfall in southwest Florida is 53.44 inches.

#### *B. Vegetation*

The wetland and upland habitats within the proposed expansion areas are primarily composed of mangrove forests, salt marshes, beaches, dunes, estuarine areas, freshwater marshes, West Indian hardwood hammocks, pine flatwoods, scrub, and disturbed uplands. Some sea grass beds are present along the shorelines and around many of the islands.

Mangrove forests are an integral component of the estuarine communities that support a myriad of native fauna; their greatest value is that of detritus production. Mangroves provide nursery habitat for many species of aquatic life and nesting and roosting habitat for a variety of birds. The mangrove cuckoo, a poorly-known North American bird that is listed as rare in Florida, occupies this tropical deciduous habitat.

The area's saltwater and freshwater marshes provide food and shelter for many species of fish and wildlife. The high productivity of the marsh plants provide abundant food for countless invertebrates and small vertebrates, which in turn provide food for other animals higher in the food chain.

Sea grasses are submerged flowering plants that stabilize sediments, entrap silt, recycle nutrients, and provide shelter, habitat and substrate for fish and other forms of aquatic life. They are also primary producers in the food web, providing important nursery grounds for juvenile fish and shellfish. Many species of commercially important fish spend at least a part of their lives in these grassy



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beds. Sea grasses also provide important direct food sources for the endangered West Indian manatee and the threatened loggerhead sea turtle.

In the upland areas, West Indian hardwood hammocks comprise a diverse system that contains a mixture of temperate, subtropical, and tropical woody plants as well as some of the United States' most rare plants and animals. Altogether, more than 300 species of plants occur in these systems. In addition, the slash pine/saw palmetto communities located within the pine flatwood habitats of Pine Island support some of the last remnants of the endangered Beautiful paw paw plant (*Deeringothamuns pulchellus*).

### *C. Wildlife Resources*

The five refuges within the complex are in close proximity (5 to 25 miles) to each other, and the lands and waters of these refuges are interrelated by the fish and wildlife that range freely between them. Therefore, the major fish and wildlife values of these refuges should be considered holistically. These refuges provide a wide diversity of sensitive habitats for more than 300 species of birds, 88 species of reptiles and amphibians, 41 species of mammals, and more than 100 species of fish. Resident birds, reptiles, amphibians, and mammals are numerous throughout the year. A large diversity of migratory birds are also present during the winter months. Roseate spoonbills, white ibises, bald eagles, ospreys, white pelicans, wood storks, Atlantic bottle-nosed dolphins, American alligators, and West Indian manatees are among the more conspicuous species of interest to residents and visitors.

Endangered species that frequent the complex include the wood stork, green sea turtle, Kemp's ridley sea turtle, West Indian manatee and American crocodile. Threatened species include the piping plover, eastern indigo snake, Florida scrub jay, and loggerhead sea turtle. Other endangered and threatened species that occasionally occur within the boundaries of the complex include the leatherback sea turtle, hawksbill sea turtle, red-cockaded woodpecker, and snail kite.

### *D. Fishery Resources*

The estuaries and open saltwater areas of the complex support a large variety of marine organisms. These waters play an important role in the recreational boating and fishing interests of Southwest Floridians. Sportfishing for snook, tarpon, redfish, spotted seatrout, grouper, snapper, sheepshead, shark, and other species of fish is very popular within the waters of the complex. These same waters are also vital to the commercial fishing and marine industries of the area.

A Fishery Management Plan for the J. N. "Ding" Darling refuge was approved in 1986. A Sportfishing Plan for the refuge was subsequently approved in 1994. The plans outline the goals and objectives for managing the fishery resources in relation to the refuge's management objectives. The primary objective of the plans is to maintain native fish populations at levels adequate to supply food sources for all types of wildlife and, in addition, be capable of supporting a recreational sport fishery. At the "Ding" Darling refuge, boat and bank recreational sportfishing is permitted within the 2,900-acre mangrove estuary system on the north side of the refuge. Boat fishing is also allowed in Tarpon Bay, a 960-acre body of water that is owned by the State of Florida but managed by the Service as part of the "Ding" Darling refuge.

At the current time, fishery management plans and sportfishing plans have not been prepared for the other four refuges within the complex. Commercial fishing and recreational sportfishing are allowed and encouraged within the waters and waterways of each refuge, subject to federal, state and local regulations. The proposed refuge complex expansion would not alter commercial and recreational fishing, with the possible exception of those areas within the 100-meter buffer zones which may be created to protect colonial bird nesting sites in Pine Island Sound, Matlacha Pass and Island Bay, as stated in the descriptions for Alternative 3 (Preferred Alternative).

### *E. Socioeconomic and Sociocultural Conditions*

Over 99 percent of the existing refuge lands within the complex lie in Lee County. The remaining 20.24 acres (at Island Bay National Wildlife Refuge) is located in Charlotte County. Lee County covers a total of 804 square miles and is located along the Gulf Coast of Southwest Florida. The county, with its cities of Fort Myers, Cape Coral, Sanibel, Fort Myers Beach and Bonita Springs, was the fourth-fastest growing metro area in the United States during the 1980s. Today, Lee County remains one of the 50 fastest-growing areas in the nation, as residents, visitors, and companies continue to be attracted by the area's mild climate, white sand beaches, and abundant business opportunities (2000 Demographic Profile, Economic Development Office, Lee County, Florida).

Close to 10 million people-- three-quarters of the State of Florida's population--live within a 150-mile radius of Lee County. That number is expected to increase to more than 13 million by the year 2010. The population of Lee County is 417,114. Charlotte County, which adjoins Lee County to the north, has a population of 136,773 (University of Florida, BEBR, 1999). Once a retirement haven, Lee County is now dominated by working-age people, with the 18-24 age group--those



people just entering the workforce--growing 30 percent faster in Lee County than in the State of Florida and 130 percent faster than the average for the United States (University of Florida BEBR; U.S. Census Bureau, 1998).

The economy of Lee County is large and diversified. The service industry (28%), retail trade (22%), and government (federal, state and local, 15%) are the three largest employment sectors. The construction trades (7%); finance, insurance and real estate (5%); manufacturing (4%); transportation and public utilities (4%); wholesale trade (3%); agriculture, forestry and fishing (3%); and unassigned (8%) comprise the remaining employment sectors (Florida Department of Labor and Employment Security, 1999).

While the overall employment statistics for Lee County show a low percentage of its residents being employed in the commercial fishing industry and no figures are available for the number of commercial guides in the recreational sportfishing business, these two occupations play a significant role in the economy of the project area. The commercial fishing and sportfishing industries directly and indirectly affect other employment sectors of the county and have a positive impact on the area's tourism, thereby increasing employment rates and profitability levels in the service, retail, and transportation sectors. Table 1 shows the growth rates and industry employment projections for Lee County from 1997 to 2007.

Two airports in Lee County also contribute significantly to the area's economy. Southwest Florida International Airport (commercial aviation) and Page Field Airport (general aviation) are transportation hubs. Southwest Florida International Airport, located off Interstate 75, serves both domestic and international markets and offers a full array of air cargo services. Page Field, located just south of downtown Fort Myers, is one of the busiest general aviation airports in the United States. It serves both business and recreational flyers (2000 Demographic Profile, Economic Development Office, Lee County, Florida).

*Proposed Expansion of J.N. “Ding” Darling National Wildlife Refuge Complex*

Table 1. Lee County industry employment projections, 1997-2007.

Industry	1997 Employment	2007 Employment	Annual Growth Rate	National Average
Agriculture, Forestry, and Fishing	6,337	7,206	13.7%	24.5%
Construction	12,427	13,685	10.2%	6.7%
Manufacturing	6,782	7,391	9.0%	3.8%
Transportation and Public Utilities	7,019	8,606	22.6%	43.0%
Wholesale Trade	5,372	6,863	27.8%	9.0%
Retail Trade	37,528	49,181	31.1%	n/a
Finance, Insurance, and Real Estate	8,814	11,019	25.0%	n/a
Services	46,643	68,280	46.4%	31.5%
Government	24,648	32,644	32.4%	10.7%
Self-Employed	14,261	17,260	21.0%	7.3%
Totals	169,831	222,135	30.8%	14.4%

Source: Florida Department of Labor and Employment Security; U.S. Bureau of Labor Statistics, 2000.

Public access throughout Lee County and the entire Southwest Florida region is excellent. Interstate 75 provides direct access to points south (Naples), east (Miami), and north (Tampa). Other principal highways that network throughout the area include U.S. Highway 41 and Florida State Routes 78, 82, 31, and 80.

Lee County draws more than 1.8 million visitors a year who come for its white sand beaches, eco-tourism attractions, and laid-back lifestyle. The county offers a wide variety of cultural and recreational activities for residents and visitors, including a thriving arts community, the Thomas Edison-Henry Ford Winter Estates in Fort Myers, the J. N. “Ding” Darling National Wildlife Refuge on Sanibel Island, and spring training camps for the Boston Red Sox and Minnesota Twins baseball teams. In addition, Lee County has 50 miles of sandy beaches and 97 local, county, and state parks, which are complimented by some of the finest inshore and offshore saltwater fishing in the world. The county also has more



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than 60 golf courses, which ranks 11<sup>th</sup> in the nation in the number of courses in the community (2000 Demographic Profile, Economic Development Office, Lee County).

### *F. Cultural Resources*

Southwest Florida has had a long, rich, and colorful history. As many as 6,000 years ago, Native Americans inhabited this coastal region. The shell mounds that occur along the coast of Lee and Charlotte Counties were once utilized by pre-Columbian people, the forebearers of one of the most powerful and complex Native American societies. The Calusa inhabited this area at the time of European exploration and settlement. They used the wetlands and uplands of many islands within Pine Island Sound, Matlacha Pass, and Charlotte Harbor as places to live and find shelter, food and water. Evidence of Calusa shell middens, burial mounds, and canal systems have been located on Pine Island and other islands within the proposed expansion areas. It is possible that intact prehistoric as well as historic-period archeological sites are present within the proposed expansion lands. Several prehistoric and historic sites have experienced unauthorized excavation and removal of materials. It is known that significant archeological materials are being collected, removed and sold on the black market. If the new boundaries of the refuges are approved as proposed, these archeological sites would be afforded additional protection under federal laws and regulations.

Section 106 of the National Historic Preservation Act of 1966, as amended, and Section 14 of the Archeological Resources Protection Act require the Service to evaluate the effects of any of its actions on cultural resources (historic, architectural and archeological) that are listed or eligible for listing in the National Register of Historic Places (NRHP). In accordance with these regulations, the Service has coordinated the review of this draft environmental assessment with the State Historic Preservation Office.

The Service believes that the proposed acquisition of lands will have no adverse effect on any known or yet-to-be identified NRHP-eligible cultural resources. However, in the future, if the Service plans or permits any actions that might affect eligible cultural resources, it will carry out appropriate site identifications, evaluations and protection measures as specified in the regulations and in Service directives and manuals.

#### **IV. ENVIRONMENTAL CONSEQUENCES**

This section analyzes and discusses the potential environmental impacts of the three habitat protection alternatives described in Section II.

##### *A. Alternative 1: No Action*

Under this alternative, the Service would take no action to acquire, protect, or manage any of the lands that are identified within the proposed acquisition boundary for the J. N. “Ding” Darling National Wildlife Refuge Complex. The existing refuge lands as depicted in Figures 3, 4, 5, 6, and 7 would be the only lands administered by the Service in Lee and Charlotte Counties.

Future habitat protection under existing laws and regulations may be insufficient to prevent significant degradation of the area’s fish and wildlife resource values. Federal executive orders involving the protection of wetlands and floodplains only apply to federal agencies. They do not apply to habitat alterations by non-federal entities which receive no federal funds.

The primary deterrent against the loss of resource values is the U.S. Army Corps of Engineers’ Section 404 permit program, which is administered under the authority of the Clean Water Act. This program requires permits for most types of work in wetlands. Most of the wetlands in the project area qualify for protection under this program. In addition, the State of Florida has regulatory authority over the area and will not permit any developments that would violate the state’s water quality standards.

However, there is no assurance that these regulations would be consistent with the protection needs of the area’s fish, wildlife, and habitat resources. The regulatory programs as stated above are designed to accomplish different objectives. In addition, these programs are subject to changes in the law and to varying definitions and interpretations, often to the detriment of wetlands. The Corps of Engineers’ regulatory authority provides for the issuance of Section 10 and/or Section 404 permits when it is not contrary to the public interest to do so, and provided other conditions are met. Fish and wildlife conservation is only one of several public interest factors that are considered during the permit issuance process. If fish and wildlife conservation needs are outweighed by other factors, permits could be issued that would alter the wetlands in the complex proposal areas.

The desired fish and wildlife protection objectives, therefore, would not be achieved under this alternative. Specifically, implementation of “No Action”



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would adversely impact the Service's ability to work with others to preserve, protect and enhance the area's valuable fish and wildlife habitats.

This alternative does not allow for the future protection needs of the area's fish and wildlife habitats. In addition, it precludes the Service from entering into cooperative agreements with its partners (state, county, and local agencies and private land trusts) to assist in the conservation, management, and/or restoration of native habitats vital to the area's fish and wildlife resources.

*B. Alternative 2: Protection and Management of up to 124,000 Acres by the U.S. Fish and Wildlife Service*

This alternative would enable the Service to protect and manage up to 124,000 acres of lands and waters within the initial study area boundaries of the J. N. "Ding" Darling National Wildlife Refuge Complex (Figure 8). Any fee title acquisition or other type of acquisition interest would be obtained from willing landowners only. No landowner of any of the proposed areas would be obligated to sell his or her land to the Service, or unwillingly enter into any form of a lease, conservation easement, or management agreement. Likewise, no state, county, or local governmental agency or private land trust would be obligated to enter into a cooperative management agreement with the Service.

This alternative would allow the Service to work with willing landowners and willing state, county, and local government agencies and private land trusts to preserve, manage, and restore native habitats vital to many species of fish and wildlife resources, including several threatened and endangered species.

Through various methods of acquisition, the Service would help protect, manage, and restore additional natural resources that are not only beneficial to fish and wildlife, but also crucial to the region's ground and surface water supplies. The quality and quantity of these waters are vital to the public water supplies in the region. Due to the rapid population growth of the area, increased human activities in the uplands and wetlands have adversely affected the quality and quantity of the natural systems. The islands and lands which abut the rivers, bays, and estuaries are subject to impending agricultural, residential, and commercial developments. Further development along these waterways would seriously impact the natural sheetflow and increase fertilizer and pesticide runoff into the waterways.

The rapid spread of invasive exotic vegetation throughout the region continues to threaten the native plants and their associated wildlife. Acquisition of the proposed lands and interests in lands under this alternative would enable the

Service to work with others to immediately begin the process of eradicating the invasive exotics and preventing their further spread. A coordinated invasive exotic species control program that involves various partners will enhance landscape-level native habitat restoration efforts. Benefits would accrue to endangered and threatened species and resident and migratory birds by providing additional nesting, roosting, and foraging habitat. Such efforts could also provide for expansion of rare and endangered plant populations as potential habitat is opened up.

The majority of the lands within the proposed boundaries have already been preserved by the State of Florida, the County of Lee, and the City of Sanibel, as well as private land trusts such as the Calusa Land Trust and the Sanibel-Captiva Conservation Foundation. Both the state and county have requested that the Service enter into cooperative agreements with them to assist with their habitat management efforts to eradicate the invasive exotics from their lands. Similar agreements with the City of Sanibel and the Sanibel-Captiva Conservation Foundation have resulted in the elimination of more than 60% of the exotic plants on Sanibel Island. By including the existing conservation lands within an approved refuge boundary, the Service would be able to immediately assist its partners in restoring the native habitats of the area.

Many islands within the proposed boundaries of the complex were once inhabited by Native Americans. Pre-Columbian and Calusa midden mounds and burial mounds are present within the existing and proposed boundaries. As stated previously, many archeological materials have been collected, removed and sold on the black market. Acquisition of several of the proposed sites in the expansion areas would enable the Service to protect these valuable cultural resources.

Wildlife surveys conducted at the “Ding” Darling refuge have shown a dramatic decline in certain wildlife populations in recent years. Colonial nesting bird surveys have shown a greater than 50 percent decline in the birds’ overall nesting efforts. There is concern that human-caused disturbances may have a negative impact on nesting success. If this trend continues, the Service could work with the State of Florida to evaluate the causes, and if necessary, create and manage 100-meter buffer zones surrounding the protected species nesting sites. The Service could also work with the state to create buffer zones surrounding protected species roosting sites to afford greater protection for a variety of colonial birds.

Breeding populations of other species of birds throughout South Florida, such as the mangrove cuckoo, have also declined. The greatest threat to these birds is



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the continued clearance of mangrove habitats. Acquisition of additional mangrove areas will enable the Service to better manage habitat for mangrove cuckoos and other bird species. In addition, by protecting mangrove areas, the Service would also gain the ability to protect greater amounts of nursery habitat for a variety of fin-fish, shellfish, and other aquatic life that are vital to the commercial and recreational boating and fishing interests of the community.

This alternative includes more than 94,000 acres of state-owned sovereignty submerged lands which is significantly greater than the amount needed to fulfill the goals and objectives of the Service, the South Florida Ecosystem Team, and the J. N. “Ding” Darling National Wildlife Refuge Complex. While the Service believes that buffer or no entry zones surrounding protected species nesting sites may be necessary in the foreseeable future, it realizes that restrictive zones surrounding roosting sites is unnecessary, because human disturbance during those times when birds are normally roosting is significantly lower.

Furthermore, this alternative is not supported by the majority of the area’s concerned citizens. Comments made at the three public informational meetings, as well as those received by mail, e-mail, or telephone, indicated that up to 75 percent of the public is not in favor of additional federal management or jurisdiction over the state-owned waters of Pine Island Sound and Matlacha Pass. The comments also reflected a deep concern that the inclusion of almost all of the waterways might have a negative impact on the economic stability of the region, in particular the fishing communities of Pine Island and Matlacha. While this alternative would have had little or no adverse economic effect on the recreational sport and commercial fishing and boating industries, or their associated marine and service industries, the perception that the Service would limit, prevent, or over-regulate the use of the local waterways fueled this concern.

The Service paid particularly close attention to the comments received, and continued to work with the public to strike a balance between the habitat requirements of the “Ding” Darling Refuge Complex and the needs and interests of the public. This resulted in the development of the following alternative:

*C. Alternative 3: Protection and Management of up to 45,000 Acres by the U.S. Fish and Wildlife Service (Preferred Alternative)*

This alternative, the Service’s preferred alternative, would allow the Service to protect and manage up to 45,000 acres, including 44,050 acres of land and approximately 950 acres of water within the revised study area boundary of the J. N. “Ding” Darling National Wildlife Refuge Complex (Figure 9). Alternative 3

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would allow the Service to work with willing landowners and willing state, county, and local governmental agencies and private land trusts to preserve, manage, and restore the native habitats vital to several threatened and endangered species and many other species of native fish and wildlife.

The preferred alternative is very similar to Alternative 2, with the main difference being the deletion of more than 93,000 acres, approximately 99 percent, of the waters and waterways within the initial study area. As stated in Alternative 2, the Service believes that the majority of the state-owned, sovereignty submerged lands is significantly greater than the amount actually needed to fulfill its goals and objectives, as well as the goals and objectives of the South Florida Ecosystem Team and the J. N. “Ding” Darling National Wildlife Refuge Complex. Therefore, almost all of the waters are excluded from Alternative 3.

Other differences include the deletion of several tracts within the initial study areas of the Pine Island, Matlacha Pass and Caloosahatchee refuges, and the inclusion of mangrove and wetland parcels in the Pine Island, Matlacha Pass and Island Bay refuges. Additional lands in the Pine Island and Matlacha Pass refuges include several parcels shown on the Environmentally Sensitive Habitats “Wish List” of the Calusa Land Trust, and Little Pine Island, a state-owned, privately managed mitigation bank. The lands included in Island Bay are state-owned and managed by the Florida Department of Environmental Protection as part of the Cape Haze Aquatic and Buffer Preserve.

The environmental consequences for Alternative 3, the preferred alternative, would be similar to those discussed in Alternative 2, with the following exceptions:

- The Service would not seek to work with the state to create or manage buffer zones surrounding colonial bird roosting sites. Therefore, these birds and their roosting sites would not gain any additional protection. However, as previously stated, human disturbance to colonial birds while roosting is considered minimal. The Service would retain the option to seek buffer zones surrounding colonial bird nesting sites.
- The Service would gain the ability to assist the State of Florida with habitat management efforts on Little Pine Island and in the Cape Haze Aquatic and Buffer Preserve, including exotic pest plants.

Based on the nature of the proposal, the location of the sites and the current land uses, the preferred alternative would not have any significant negative effects on the quality of the human environment including public health, safety or the

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economy. Further, because the purpose of the proposal is to protect, maintain, and where possible, enhance the natural habitats of the lands within the proposed acquisition areas, the proposal is not expected to have any significant adverse effects on the area's wetlands and floodplains, pursuant to Executive Orders 11990 and 11988.

Implementation of the preferred alternative will not involve any highly uncertain, unique, unknown, or controversial effects on the human environment. The proposed action will not establish a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration. No cumulatively significant impacts on the environment are anticipated.

In addition, the proposal will not significantly affect any unique characteristic of the geographic area, such as historical or cultural resources, wild and scenic rivers, or ecologically critical areas. Nor will the proposal significantly affect any site listed in or eligible for listing in the National Register of Historic Places, and neither will it cause loss or destruction of significant scientific, cultural, or historic resources. The area's cultural resources would be protected under the regulations of the National Historic Preservation Act of 1966, as amended, the Archeological Resources Protection Act, and the Advisory Council on Historic Preservation (36 CFR 800). The State of Florida's Historic Preservation Office would be contacted whenever any future management activities have the potential to affect cultural resource sites.

All tracts acquired by the Service in fee title will be removed from local real estate tax rolls because federal government agencies are not required to pay state or local taxes. However, the Service makes annual payments to local governments in lieu of real estate taxes, as required by the Refuge Revenue Sharing Act (Public Law 95-469). Payment for acquired land is computed on whichever of the following formulas is greatest: (1) three-fourths of one percent of the fair market value of the lands acquired in fee title; (2) 25 percent of the net refuge receipts collected; or (3) 75 cents per acre of the lands acquired in fee title within the counties. Annual revenue-sharing payments to Lee and Charlotte Counties would be made on all of the lands acquired in fee title.

Finally, under this preferred alternative, no actions will be taken that would lead to a violation of federal, state, or local laws imposed for the protection of the environment.

## **V. SUMMARY OF PROPOSED ACTION AND LAND PROTECTION PLAN**

The Service’s preferred alternative (Alternative C) would result in the acquisition of up to 45,000 acres of wildlife habitat as an expansion of the J. N. “Ding” Darling National Wildlife Refuge Complex. The land acquisition methods that would be used include a combination of fee title purchases from willing sellers and less-than-fee interests (conservation easements, leases, and cooperative agreements) from willing landowners. The Service believes these are the minimum interests necessary to preserve and protect the fish and wildlife resources in the proposal areas.

The lands have been prioritized for acquisition using the following criteria:

Biological significance, such as the existence of threatened or endangered species, nationally or regionally significant habitat, roosting or nesting habitats for native or resident or migratory birds, and areas that provide corridors for threatened or endangered species;

Existing and potential threats;

Significance of the area to refuge management and administration; and

Existing commitments to purchase or protect land.

Three categories of land acquisition have been established, with the highest priority being the Priority I lands. A description of the lands within each of the three priority groups is given below.

### *Priority Group I*

Priority I lands (covering a total of approximately 4,500 acres) include all areas shown in Figures 15-25 in green and represent those lands which the Service would immediately attempt to acquire to help meet the goals, objectives, and mission of the U.S. Fish and Wildlife Service, the South Florida Ecosystem Team, and the J. N. “Ding” Darling National Wildlife Refuge Complex.

All Priority I lands are currently in private ownership with the exception of a 730-acre parcel in the Bunche Beach area of Matlacha Pass National Wildlife Refuge, which was recently acquired for conservation by Lee County (Figure 21.) The Service is interested in entering into negotiations with the county to purchase approximately one-half of this parcel. It may also consider entering into a cooperative management agreement to assist the county in habitat management efforts on the remaining parcel.



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Other lands in this category include the following:

- Manatee Island, located in the Caloosahatchee River, approximately one mile north of the existing Caloosahatchee National Wildlife Refuge. This parcel was recently donated by Florida Power and Light Company to the “Ding” Darling Wildlife Society to be held in conservation until the time when the land could be added to the National Wildlife Refuge System. No cost will be involved in the acquisition of this parcel;
- All other privately owned lands in the Bunche Beach area;
- All privately owned islands in Pine Island Sound and Matlacha Pass;
- Privately owned parcels on Pine Island and Matlacha, many of which are included on the Environmentally Sensitive Habitats “Wish List” of the Calusa Land Trust; and
- The Old Island Bay Water Plant located in the City of Sanibel, adjacent to the existing “Ding” Darling refuge.

### *Priority Group II*

Priority II lands include all areas designated in yellow (approximately 2,200 acres). The majority of these lands are privately-owned mangrove wetlands on Pine Island and Matlacha which are also included on the Environmentally Sensitive Habitats “Wish List” of the Calusa Land Trust.

Other lands in this Priority II category include the following:

- Parcels located on Beautiful Island in the Caloosahatchee River; and
- A one-acre parcel located on Tarpon Bay Road, abutting the “Ding” Darling refuge.

### *Priority Group III*

Priority III lands include all other lands not identified as Priority I or Priority II.

Many of the parcels included as Priority III (covering a total of about 38,300 acres) have already been acquired by state, county or local agencies or private

land trusts and therefore are protected. If those agencies or land trusts involved request management assistance, the Service would consider entering into cooperative management agreements. The Service may be interested in pursuing conservation easements or leases from private landowners, especially on the lands within the proposed expansion boundary of the Caloosahatchee refuge, lying north of the river and east of State Road 31. Other privately owned areas within this designation are not perceived as lands which would require immediate protection to fulfill the goals, objectives and mission of the U.S. Fish and Wildlife Service, the South Florida Ecosystem Team and the J. N. “Ding” Darling National Wildlife Refuge Complex.

Table 2 shows the current sizes and ownerships of all of the proposed expansion lands. Table 3 summarizes the Service’s land protection priorities and proposed methods of acquisition. Figures 15-25 show the locations of the project areas and their respective priority groups.

Table 2. Current sizes and ownerships of the lands and waters within the proposed expansion areas, J. N. “Ding” Darling National Wildlife Refuge Complex.

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	County Lands	State Lands and Waters	Private Lands
J. N. “Ding” Darling NWR	0 acres	0 acres of land 650 acres of water	6 acres of land
Pine Island NWR	400 acres of land	2,300 acres of land	7,500 acres of land
Matlacha Pass NWR	700 acres of land	10,000 acres of land	7,300 acres of land
Island Bay NWR	0 acres of land	10,500 acres of land	200 acres of land
Caloosahatchee NWR	1,500 acres of land	500 acres of land 300 acres of water	2,800 acres of land

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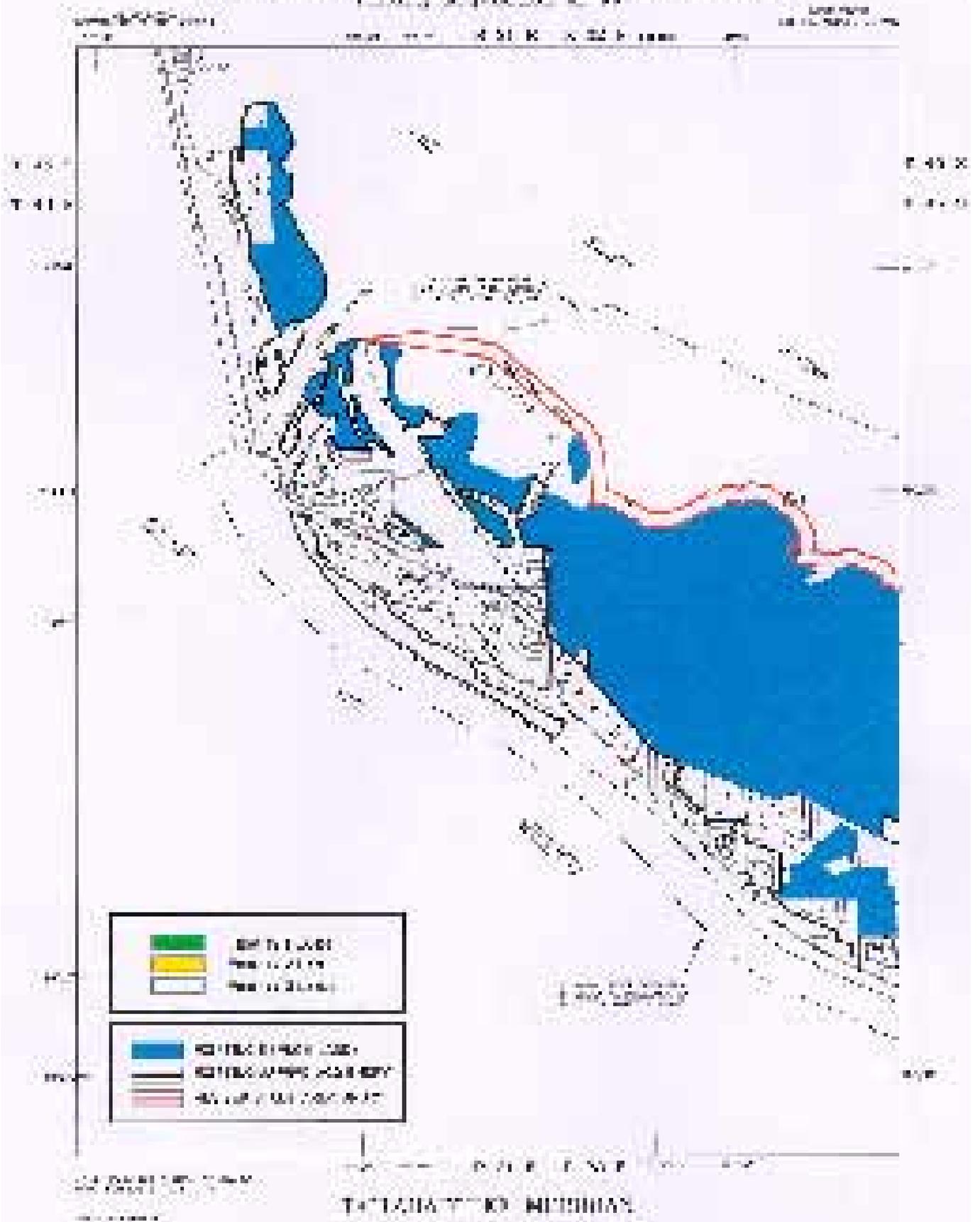
Table 3. Land protection priorities for the proposed acquisition areas and recommended methods of acquisition.

Priority Group	Approx. No. of Landowners	Approx. Acreage	Type of Acquisition
I	21 (Private)	4,500	Lease, conservation easement, cooperative agreement, or fee title
II	15 (Private)	2,200	Fee title, lease, conservation easement, or cooperative agreement
III	400 (Private landowners and conservation agencies)	38,300	Conservation easement, cooperative agreement, lease, or fee title

## VI. INFORMATION ON PREPARERS

This document was prepared by Susan Trokey, Realty Specialist, J. N. “Ding” Darling National Wildlife Refuge, Sanibel, Florida; Patricia Podriznik, Wildlife Biologist, Division of Planning, U.S. Fish and Wildlife Service, Atlanta, Georgia; and Jim Wood, Writer/Editor, Division of Planning, U.S. Fish and Wildlife Service, Atlanta, Georgia.

Figure 15. 10. Tides during National Tides Day  
 (Thursday, September 24, 2009)

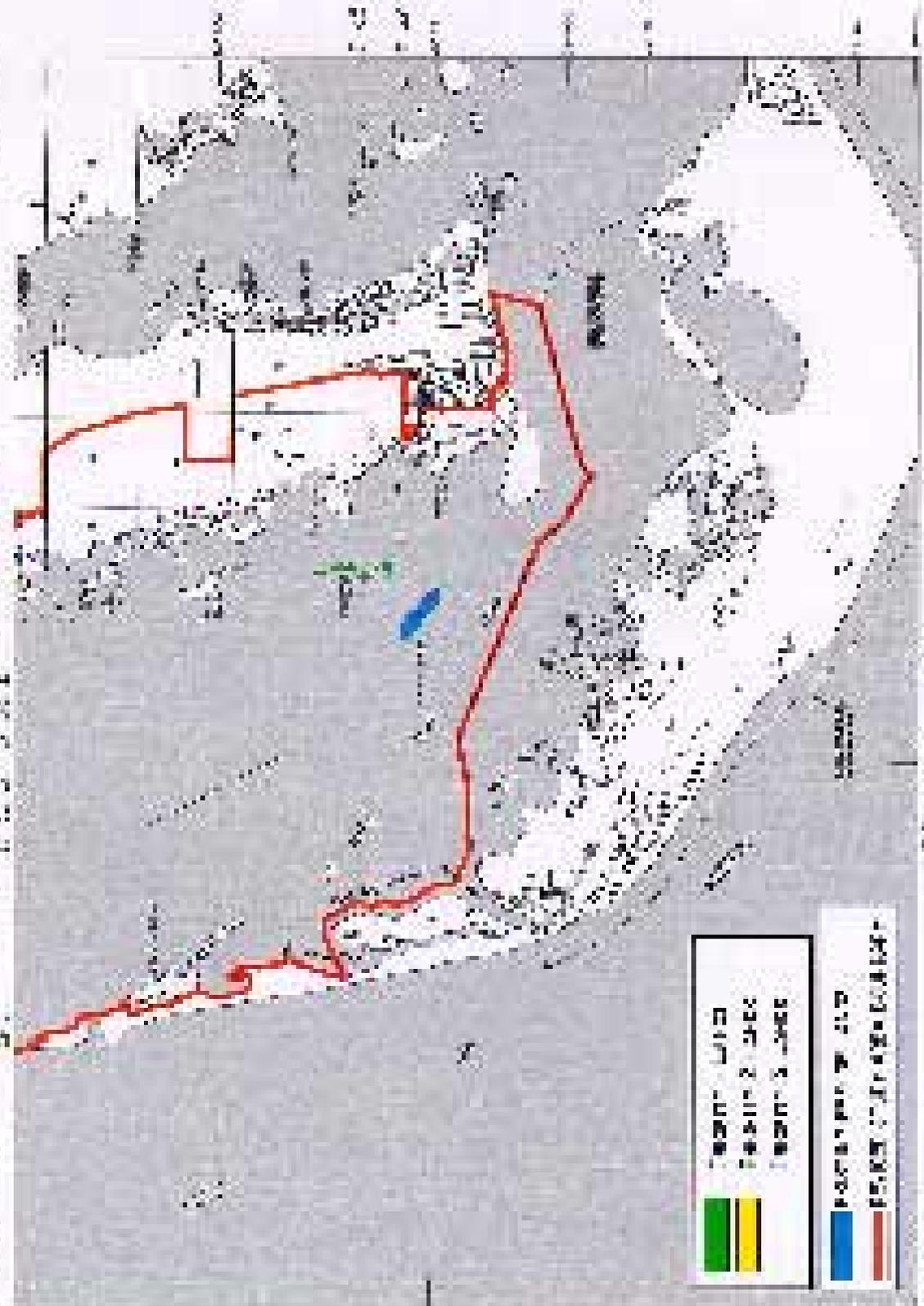






# Map 18 - Proposed 2010-2011 Budget

Priority Allocation Area  
11.3.3.01



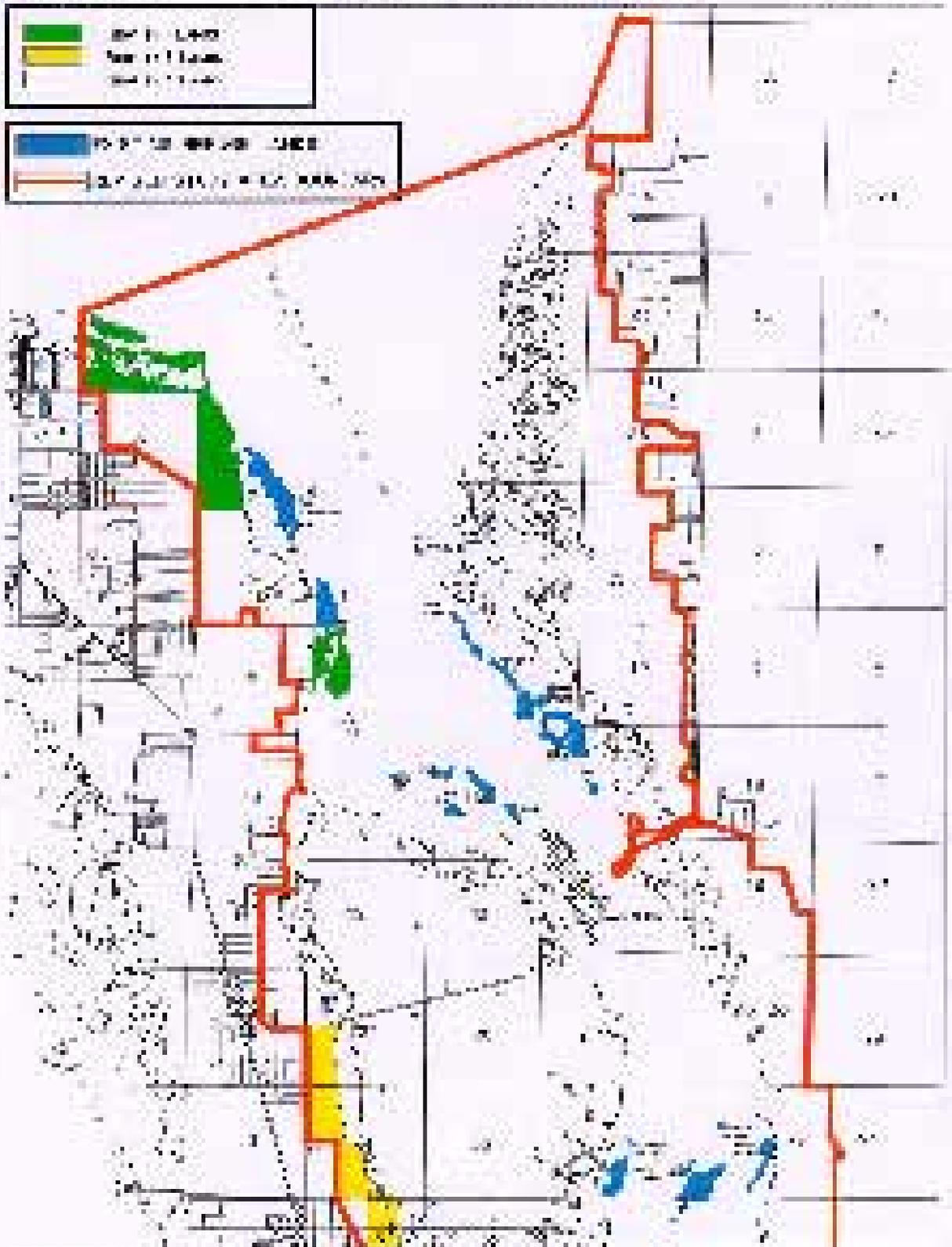
Map 18 - Proposed 2010-2011 Budget  
11.3.3.01

# Figure 10. Houlacks Post National Wildlife Refuge

2008-2014

## Priority Acquisition Areas

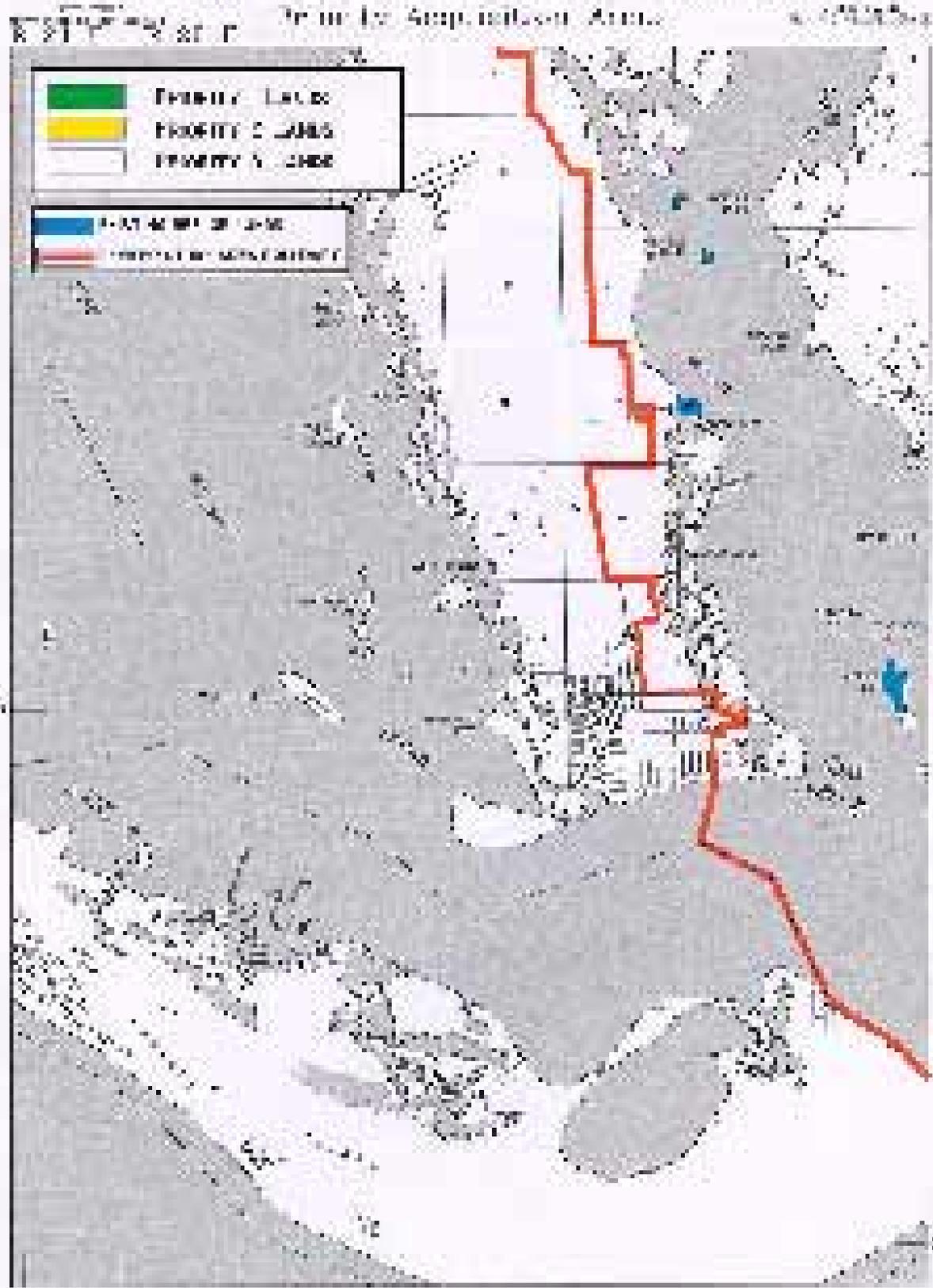
10/1/2014



U.S. Fish and Wildlife Service  
Bureau of Land Management  
10/1/2014

THE STATE OF TEXAS

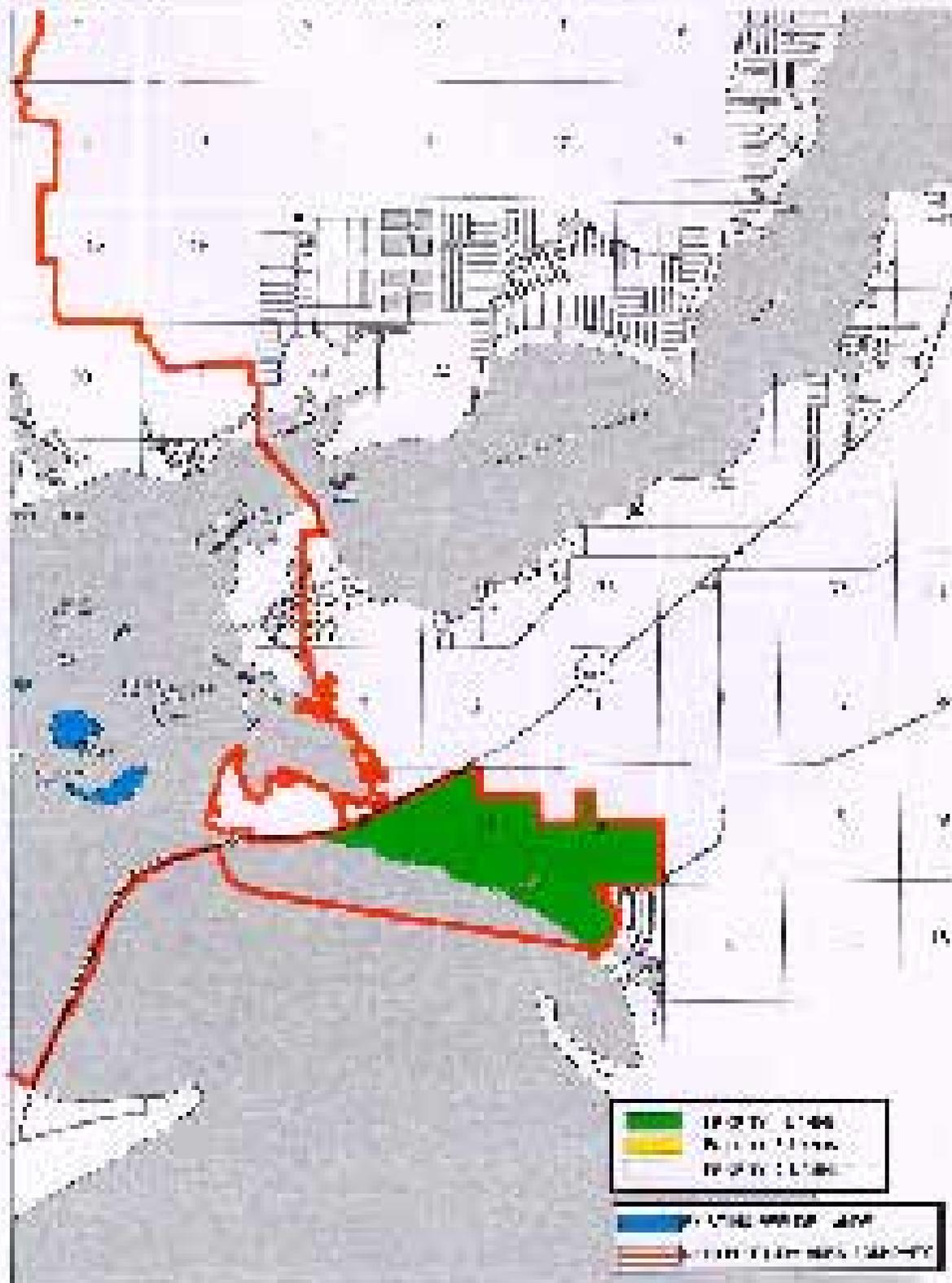
Figure 41. Wetland Use National Wetlands Inventory



U.S. Fish and Wildlife Service  
National Wetlands Inventory  
2001

WETLAND USE NATIONAL WETLANDS INVENTORY

Figure 21. Meliabo Pass National Wildlife Refuge Priority Acquisition areas



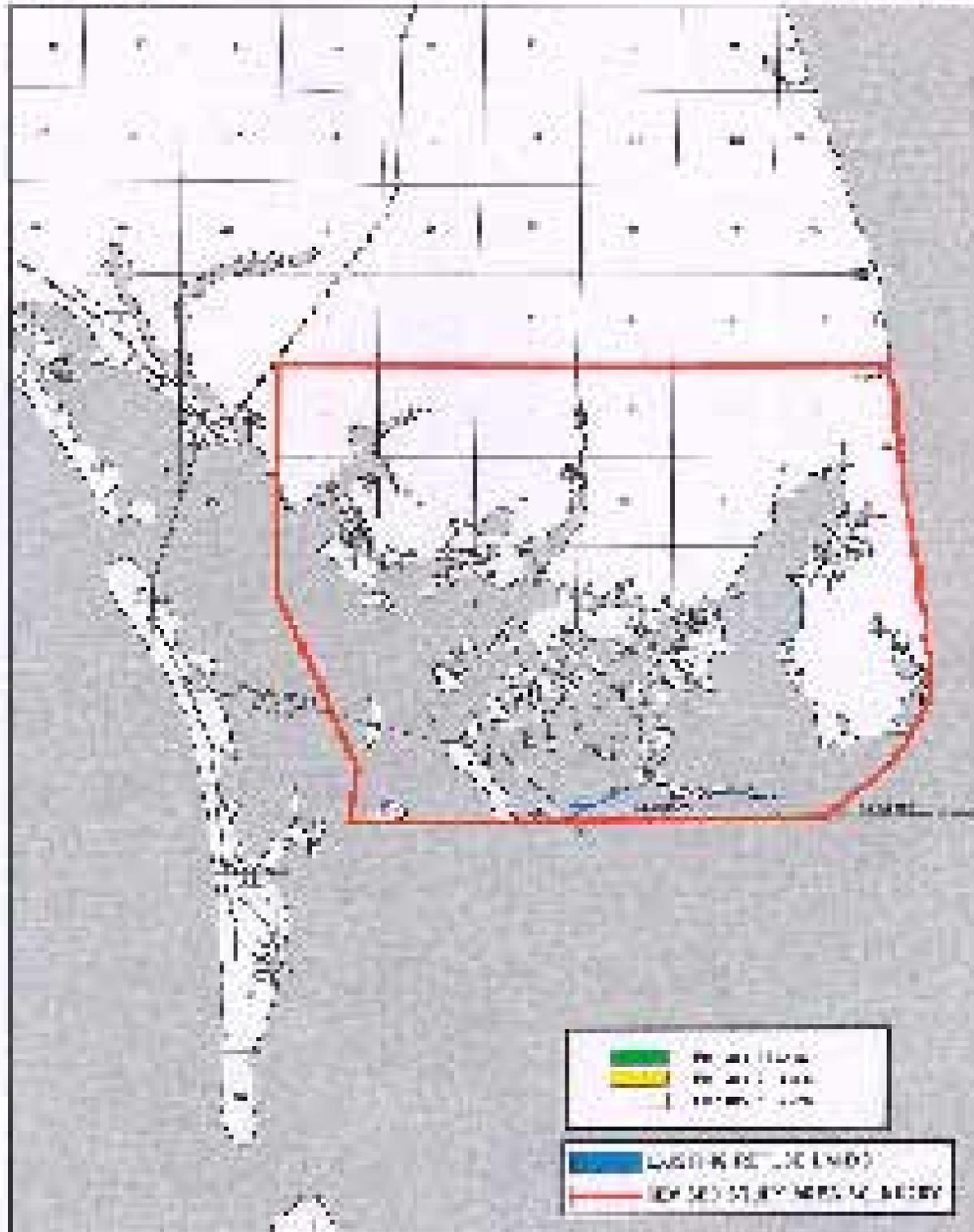
DATE: 10/10/2010  
 TIME: 10:10:10

MELIABO PASS NATIONAL WILDLIFE REFUGE

Figure 22. Inland Bay National Wildlife Refuge  
 For 2005 Acquisition 40000

DATE: 01/10/07  
 TIME: 10:00 AM

DATE: 01/10/07  
 TIME: 10:00 AM



DATE: 01/10/07  
 TIME: 10:00 AM

1000 FEET

DATE: 01/10/07

Figure 3. Calculated Watershed Priority Index

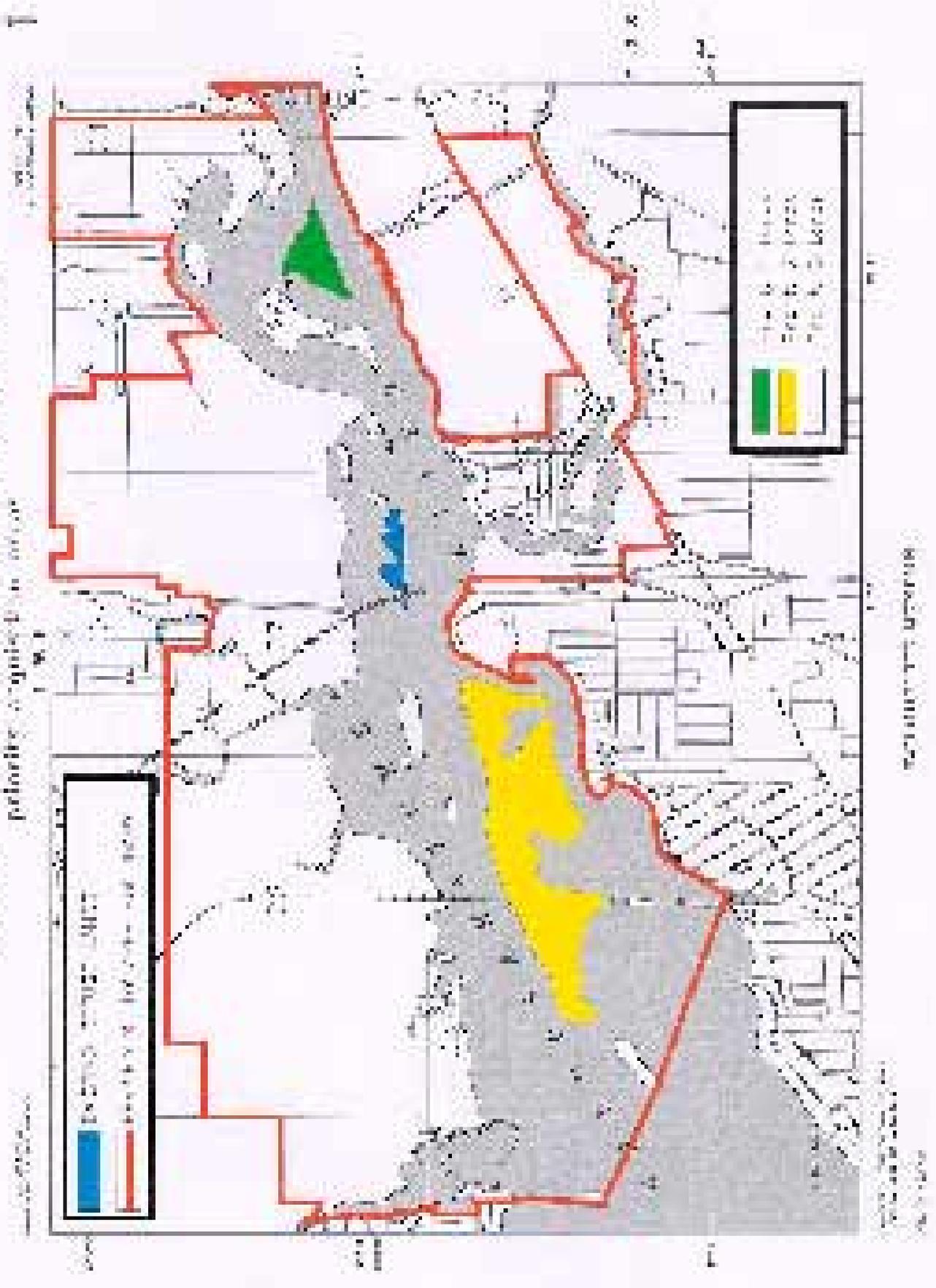
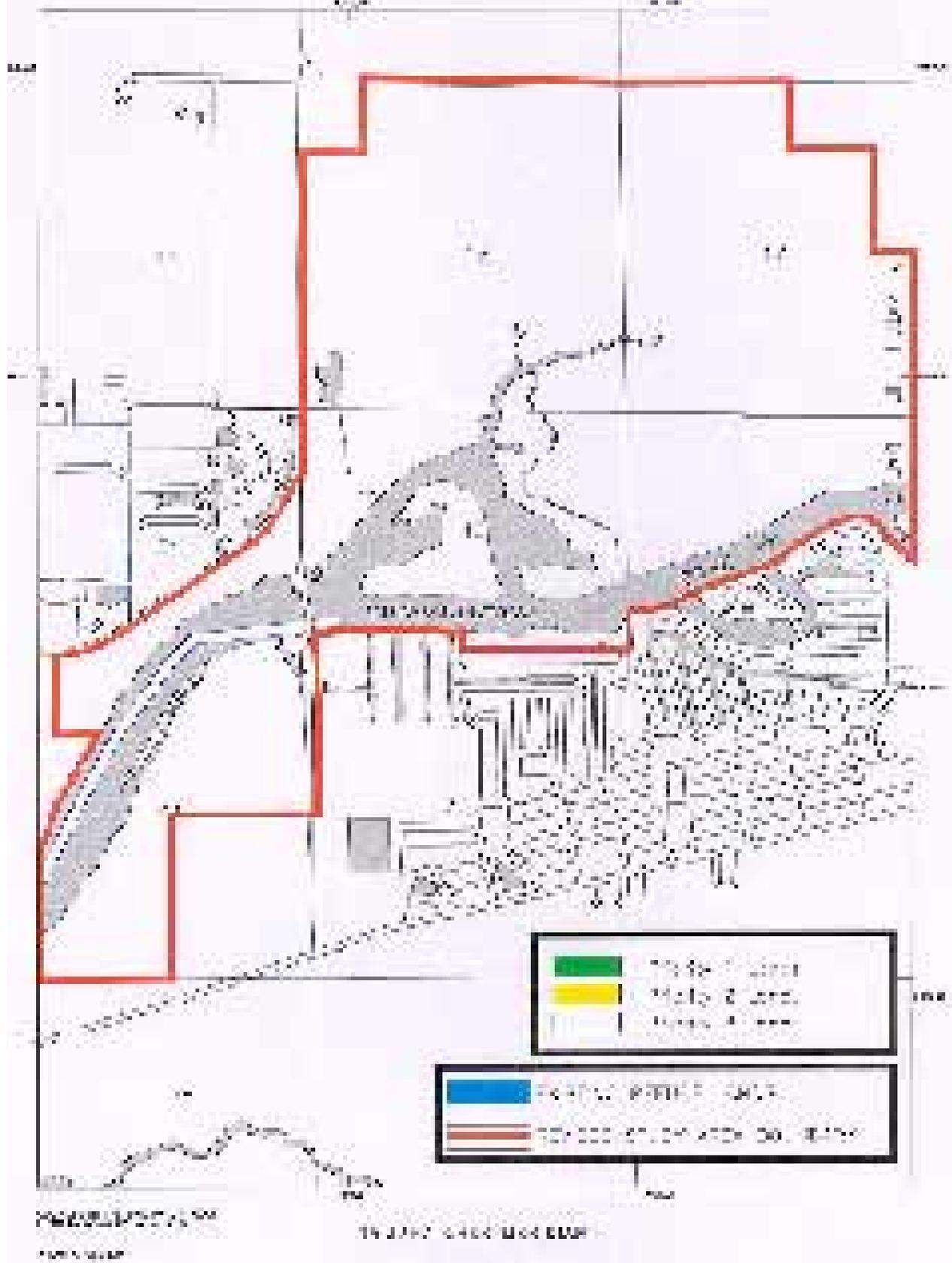
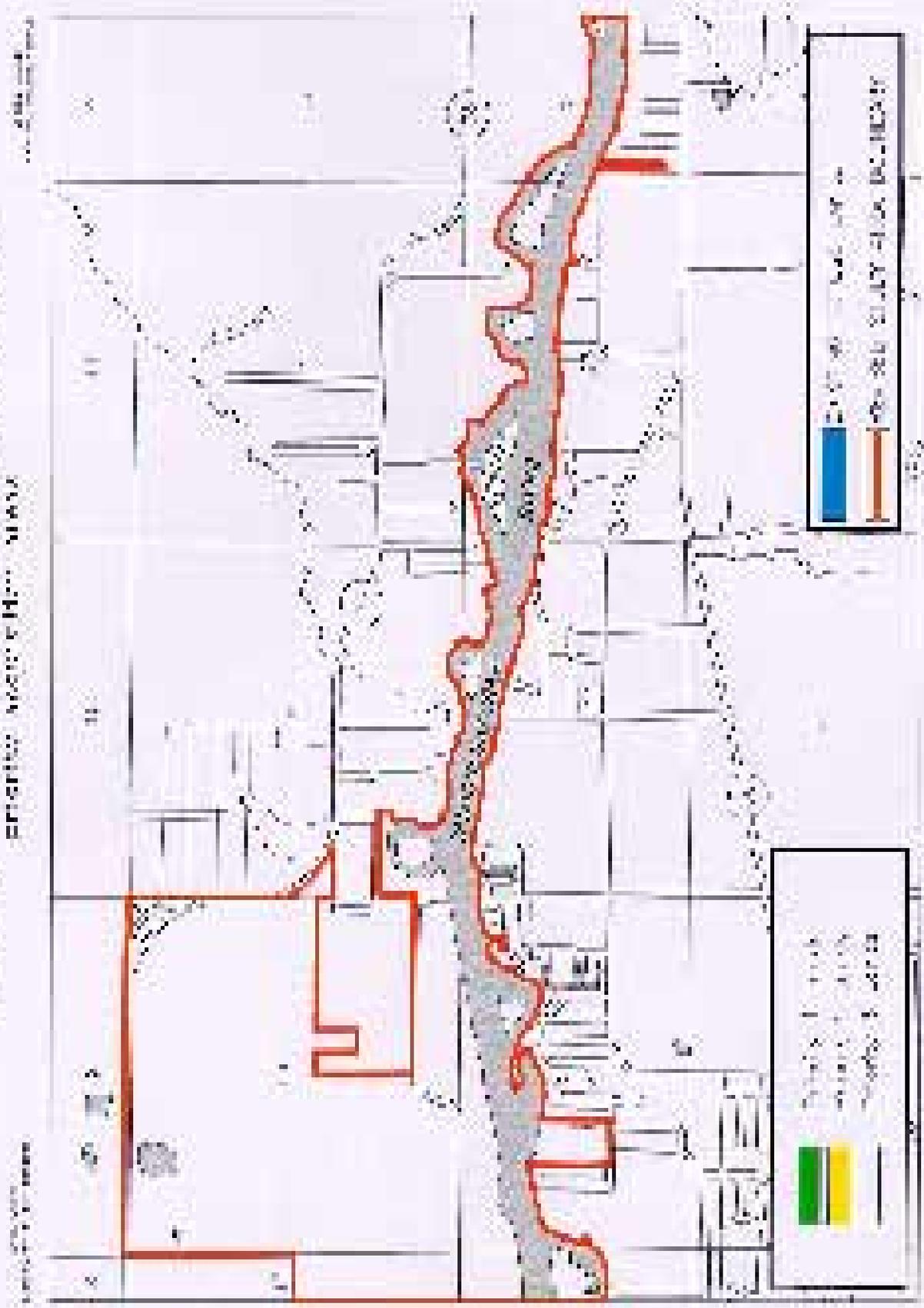


Figure 24. International National MOU Relief

2010/2011 2011/2012 2012/2013



# Figure 10: Subwatershed Boundaries (Source: American Rivers, 2013)



Source: American Rivers, 2013



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## Appendix A

### **DRAFT CONCEPTUAL MANAGEMENT PLAN FOR THE PROPOSED EXPANSION OF THE J. N. "DING" DARLING NATIONAL WILDLIFE REFUGE COMPLEX, LEE AND CHARLOTTE COUNTIES, FLORIDA**

#### INTRODUCTION

This Conceptual Management Plan for the proposed expansion of the J. N. "Ding" Darling National Wildlife Refuge Complex is an overview of how the lands would be managed until a Comprehensive Conservation Plan (CCP) for the refuge has been completed. A Conceptual Management Plan does not detail where facilities would be located or show where public use would be allowed. Those details will be included within a CCP, for which public input will be solicited. The CCP process for the complex is expected to begin during calendar year 2002.

The J. N. "Ding" Darling Refuge Complex is comprised of five national wildlife refuges (NWRs): J.N. "Ding" Darling NWR (Lee County); Matlacha Pass NWR (Lee County); Pine Island NWR (Lee County); Caloosahatchee NWR (Lee County) and Island Bay NWR (Charlotte County). Currently, the complex includes 8,360 acres in Lee County and 20 acres in Charlotte County. The proposed expansion will encompass an additional 33,300 acres in Lee County and 11,700 acres in Charlotte Counties, Florida within the boundaries of the complex.

#### MANAGEMENT GOALS

Management goals must be compatible with the purposes for which each refuge was established.

##### **J. N. "Ding" Darling NWR**

The management goals for J. N. "Ding" Darling NWR are:

1. To protect and provide suitable habitat for endangered and threatened species including the American crocodile, West Indian manatee, sea turtles, wood stork, eastern indigo snake and bald eagle;
2. To implement sound wildlife management techniques to provide feeding, nesting, and roosting habitat for a wide diversity of shorebirds, wading birds, waterfowl, raptors and neotropical migratory species;

3. To provide high quality interpretive and environmental education programs in order to develop greater visitor appreciation of fish and wildlife ecology and to provide quality wildlife-oriented recreation compatible with the purposes for which the refuge was established;
4. To maintain native fish populations to provide a food source to sustain wildlife foraging opportunities and to support a recreational sport fishery; and
5. To maintain healthy and diverse natural habitats through protection, restoration, exotic plant control, and fire management.

### **Matlacha Pass, Pine Island, Caloosahatchee and Island Bay NWRs**

The above stated management goals for the "Ding" Darling refuge also apply to the satellite refuges within the complex. Additional management goals include:

1. To consider opportunities for sport hunting for waterfowl, feral hogs, and small game within designated areas of the proposed acquisition during state-designated hunting seasons; and
2. To establish management agreements with the State of Florida for those areas of sovereign submerged lands within the proposed acquisition boundary (boating and saltwater fishing regulations are under the jurisdiction of the state and are not within the jurisdiction of the U.S. Fish and Wildlife Service).

### REFUGE ADMINISTRATION

Interests acquired within the proposed expansion areas will be administered and managed by personnel assigned to J. N. "Ding" Darling NWR. Until the time when the CCP is developed, the proposed refuge expansion lands will be managed in much the same manner as existing refuge lands. The Service's Southeast Regional Office in Atlanta, Georgia, will provide technical support on such matters as scientific studies, comprehensive conservation planning, public use planning, and migratory bird management.

### HABITAT MANAGEMENT

The habitats of the proposed expansion areas consist primarily of mangrove forests, salt

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marshes, beaches, dunes, estuarine areas, freshwater marshes, open water, sea grass beds, West Indian hardwood hammocks and disturbed uplands. Small acreages of pine flatwoods and scrub are also included in the proposed acquisition boundary.

### **Fire Management**

Fire is an integral part of the ecology of South Florida. Most plant communities are not only susceptible to fire, but in fact depend on periodic burning for their perpetuation. Historically, periodic wildfires were one of several natural factors which maintained native habitats and the wildlife populations these habitats supported. On the complex, prescribed fire is not only used to maintain certain fire-adapted plant communities, but also to reduce hazardous fuel loads. The fire program is guided by the complex's Fire Management Plan and Prescribed Burn Plans for individual burn units.

The general and specific objectives of the Fire Management Program for the J. N. "Ding" Darling National Wildlife Refuge Complex are as follows:

1. To protect life, property and other resources from wildfire.
2. To use fire as a viable ecological process.
3. To use fire to accomplish resource management objectives.
4. To develop and implement procedures to adequately monitor and analyze data on fire effects and apply this knowledge to the management of the refuge's resources.

Wildfires will be aggressively suppressed. The refuge complex has a staff trained in fire management and an array of equipment for fire suppression. To supplement these capabilities, cooperative agreements with state and county agencies and local fire departments are currently used and will continue to be used on acquired lands.

### **Pest Management**

Many portions of the proposed expansion areas have been threatened with the invasion of exotic (non-native) vegetation. Exotic plants are considered one of the greatest threats to the successful restoration of the South Florida Ecosystem. These plants have no natural enemies or controlling agents, and when left unchecked, displace the native vegetation and create monotypic vegetation stands that are low in biodiversity. Successful control of these plants must be undertaken on an ecosystem-wide basis.

The "big three" exotic plants in South Florida are melaleuca (*Melaleuca quinquenervia*), Brazilian pepper tree (*Schinus terebinthifolius*), and Australian pine (*Casuarina* spp.).

These three highly invasive exotic species and approximately a dozen less invasive exotic plant species have invaded a significant portion of the refuge complex. Exotic plants out-compete many of the native plants that are part of the unique West Indian hardwood hammocks and pine flatwoods of the complex. Infestations of invasive exotic plants degrade native habitat, thereby reducing its value to wildlife.

The staff of the refuge complex uses a variety of chemical and mechanical means to control exotic vegetation on refuge lands. Once a fee title or management interest in the proposed lands is acquired, the Service will immediately begin the process of eradicating the invasive exotic plants and preventing their further spread within the proposed boundaries.

In addition to the exotic pest plants, some species of non-native animals (feral hogs, exotic reptiles, etc.) may have to be removed to accomplish refuge goals.

### **Habitat Management Partnerships**

The Service will work with partners such as the Florida Department of Environmental Protection, Lee County Conservation 2020, and private land trusts including the Sanibel-Captiva Conservation Foundation and Calusa Land Trust to develop a fire management plan to mimic the natural life cycle of fire-adapted habitats within the expansion area.

Cooperative management plans with other agencies and organizations will be similar to those already in existence on Sanibel Island between the Service and the State of Florida, the City of Sanibel, and the Sanibel-Captiva Conservation Foundation. Through these types of partnership efforts, more than 60% of the exotic invasive plants have been eradicated from Sanibel Island over the past five years. It is anticipated that the same level of success will be achieved within the four satellite refuges.

The Service may seek a management agreement with the State of Florida over sovereignty submerged lands surrounding protected species nesting sites in the J. N. “Ding” Darling, Pine Island, Matlacha Pass, and Island Bay refuges. At the current time, the Service monitors seven nesting islands within these refuges. Since 1992, nesting surveys have shown a 53% decline in overall nesting efforts. This downward trend is believed to be associated with declining habitat quality, reduced forage availability, predation, and/or human disturbances. If the nesting declines continue, the Service may request management authority over such areas and would consider the creation of 100-meter buffer zones surrounding protected species nesting sites.

Commercial fishing and shrimping industries, commercial sportfishing guide services, and numerous associated marine and service industries are economically important



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to many local residents. This is especially true in the vicinity of the Pine Island and Matlacha Pass refuges. The Service's management goals will not adversely impact these industries because most of the waters of the complex are excluded from the proposed boundaries. The only waters included within the proposed boundaries are the historic oxbows of the Caloosahatchee River and a 500-foot buffer area north of the "Ding" Darling refuge. In addition, the Service may pursue management agreements with the State of Florida over 100-meter buffer zones surrounding protected species nesting sites. As previously stated, prior to formalizing any agreement to create buffer zones, public input will be requested.

### FISH AND WILDLIFE POPULATION MONITORING

Periodic fish and wildlife surveys are conducted within the complex to document the presence of species and to assess population numbers and habitat use. Current wildlife inventories conducted on the refuge complex include: biweekly bird surveys (Wildlife Drive); Florida Migratory Bird Count survey; colonial bird nesting surveys; colonial bird roosting surveys; International Shorebird survey; point count bird survey; mottled duck production survey; and the Audubon Christmas Bird Count. Banding and marking of wildlife are occasionally conducted. These surveys will continue and will be expanded, as needed, on acquired lands. The data gathered will be used to develop management objectives and resource management protocols.

Educational institutions, other governmental agencies, and private groups may be asked to assist the Service in conducting these surveys. They also may be permitted to conduct independent surveys or research on refuge properties.

### PUBLIC USE OPPORTUNITIES AND MANAGEMENT

The National Wildlife Refuge System Improvement Act of 1997 emphasizes the importance of providing wildlife-dependent recreational opportunities on national wildlife refuges as long as they are compatible with the purposes of the refuges. Public use opportunities would likely include consumptive (fishing) and non-consumptive uses (wildlife observation, photography, environmental education, and interpretation).

If appropriate and compatible, and if it is in compliance with state, county or local ordinances, regulations and laws, the Service may consider offering limited hunting opportunities in certain portions of the proposed expansion areas.

The following public use regulations are in effect on current refuge lands and will be adopted on any additional acquired lands to achieve the management goals of the complex:

Public entry is limited to designated areas shown in the refuge leaflet and/or marked by appropriate signs.

Public entry is limited to daylight hours only.

No camping or overnight parking is permitted.

Possessing or discharging firearms is prohibited except during established hunting seasons in areas which may be open to hunting in the future.

Collecting any plant or animal is prohibited unless otherwise specified.

No person may search for, disturb, or remove from the refuge any cultural artifact or other historical artifact.

Directing the rays of any artificial light for the purpose of spotting, locating, or taking any animal is prohibited.

Entering or remaining on the refuge while under the influence of alcohol or other drugs is prohibited.

Fires are not be permitted except for agricultural and/or forestry management practices.

Dogs and other pets are required to be kept on a 6 foot lease at all times.

Approved commercial activities may be allowed after proper permit is obtained..

### **Visitor Access**

The majority of lands proposed for acquisition are limited in accessibility, thus restricting public use opportunities. Some portions of the refuges may be closed to visitors at certain times of the year to protect sensitive wildlife and their habitats (including protected species nesting sites or rookery areas). Signs and leaflets will clearly indicate the open and closed areas of the refuge complex. The needs of physically challenged persons will be considered during the comprehensive conservation planning process when addressing access for all planned refuge activities or facilities.

### **Hunting**

As stated above, recreational hunting for waterfowl, feral hogs, and small game may be



allowed within designated areas of the proposed expansion areas. Such hunting would be conducted during state-designated hunting seasons within the framework of state and federal regulations and licensing requirements. Seasons, areas, and types of hunting would be determined by public safety issues, management needs, wildlife populations, size of area, location and public interest. Sport hunting provides recreational opportunities. It can also be used to assist in the management of certain game species. Carefully managed hunting programs help maintain populations at sustainable levels.

### **Fishing**

Fishing would be permitted within the framework of state regulations and licensing requirements.

### **Wildlife Observation and Photography**

Wildlife observation and photography are also popular activities in and around several of the refuges. These non-consumptive uses are limited in the mangrove estuary portions of the complex due to their inaccessibility. Much of the complex consists of mangrove islands and shallow water estuaries, which are only accessible by boat. The proposed expansion areas primarily include mangrove habitats. Small areas of West Indian hardwood hammocks, oak scrub, and pine flatwoods are also included in the proposed expansion areas. Most of the proposed expansion areas are limited in accessibility, thus restricting opportunities for wildlife observation and photography to boaters, kayakers, and canoeists. Occasionally, shallow-draft pontoon tour boats are able to access these areas for wildlife-viewing tours.

To provide additional opportunities for wildlife observation, facilities that might be developed include wildlife observation platforms and nature trails. The development of these facilities will depend upon the availability of funds, accessibility of the proposed areas, and public input gathered during the CCP process.

### **Environmental Interpretation and Education**

Environmental education and interpretive programs would be designed to enhance the visitor's understanding of natural resource management and ecological concepts. The J. N. "Ding" Darling NWR has an established environmental education and interpretation program. These programs serve the entire refuge complex and will continue to serve all proposed acquisitions. The programs emphasize the preservation, restoration and enhancement of all natural ecosystems and the flora and fauna that depend on these natural systems. Additionally, the refuge staff strives to provide an understanding and appreciation of fish and wildlife ecology and people's role in the environment. The Service plans to increase its environmental outreach presence in the community.

## **Law Enforcement**

Law enforcement activities at the J. N. “Ding” Darling National Wildlife Refuge Complex are authorized under the National Wildlife Refuge Administrative Act, Refuge Recreation Act, Migratory Bird Treaty Act, Lacey Act, Endangered Species Act, and Archeological Resource Protection Act. These laws and regulations allow the refuge complex’s law enforcement officers to protect the natural and cultural resources of the complex and provide for public safety.

The law enforcement program consists of three collateral duty officers and one full-time refuge officer. Additionally, the full-time officer at Florida Panther National Wildlife Refuge is assigned to the complex one day per week. Additional law enforcement personnel are provided as available by the Service’s Division of Law Enforcement (one Special Agent) and by the Sanibel Police Department (SPD). The SPD only patrols those public roads, parking lots, and water areas within the “Ding” Darling refuge that are located within the city limits of Sanibel. The SPD also provides contract officers when requested by the Refuge Manager.

A variety of law enforcement concerns are addressed by refuge officers, including: illegal commercial and sportfishing (including crabbing); trespassing; non-payment of entrance fees; harassment of wildlife; littering; plant, animal and artifact collecting; vehicle and boating violations; and public safety. Enforcement of state and federal laws on a national wildlife refuge is important to safeguard the refuge’s natural and cultural resources as well as protect and manage visitors. Refuge officers work closely with other law enforcement agencies and complement their efforts.

## **FACILITIES MANAGEMENT**

To provide additional opportunities for wildlife observation, facilities that might be developed include wildlife observation platforms and nature trails. The development of these facilities will depend upon the availability of funds, accessibility of the proposed areas, and public input gathered during the future CCP process. At the current time the Service is not planning to construct any additional buildings; however, as stated above, the Service may develop wildlife observation platforms or nature trails.

Boundaries of any lands acquired would be posted with national wildlife refuge signs at regular intervals. Signs and barriers may be used to protect sensitive wildlife habitats to reduce disturbance to wildlife or to assure public health and safety.



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## MISCELLANEOUS

### **Cultural Resource Management**

The Service will inventory the archaeological and historic sites on the proposed refuge lands and assess their eligibility for listing on the National Register of Historic Places. Management would be coordinated with the Regional Archeologist, the State Historic Preservation Office, and other pertinent federal and state agencies.

## Appendix B

### **DRAFT INTERIM COMPATIBILITY DETERMINATION**

This Interim Compatibility Determination describes the wildlife-dependent recreational activities proposed for lands to be acquired as part of the J. N. “Ding” Darling, Matlacha Pass, Pine Island, Caloosahatchee and Island Bay National Wildlife Refuges . It also determines whether these activities are compatible with the purposes for which the refuges were established. Under the National Wildlife Refuge System Improvement Act of 1997, the National Wildlife Refuge System Administration Act of 1966, and the Refuge Recreation Act of 1962, the Service may not permit public recreational activities on a national wildlife refuge unless the activities are first determined to be compatible with the purposes of the refuge. This Interim Compatibility Determination is intended to bridge the gap between acquisition of refuge lands and completion of a Comprehensive Conservation Plan (CCP). A CCP is a federally mandated planning document, requiring significant public input, which describes the desired future conditions of the refuge and provides long-range guidance and management direction for the Refuge Manager to accomplish the purposes of the refuge, contribute to the mission of the System, and to meet other relevant mandates.

All lands of the National Wildlife Refuge System will be managed in accordance with an approved CCP. The CCP will be consistent with sound resource management principles, practices, and legal mandates, including Service compatibility standards and other Service policies, guidelines, and planning documents. One of the major objectives of a CCP is to provide a basis for determining the compatibility of secondary uses on refuge lands. The CCP planning process for the refuge complex will begin as soon as practical after the proposed expansion planning effort is completed.

**Refuge Name:** J. N. “Ding” Darling National Wildlife Refuge Complex. This refuge complex is comprised of the following refuges:

J.N. “Ding” Darling National Wildlife Refuge;  
Matlacha Pass National Wildlife Refuge;  
Pine Island National Wildlife Refuge;  
Caloosahatchee National Wildlife Refuge; and  
Island Bay National Wildlife Refuge.

#### **Establishing and Acquisition Authorities:**

J. N. “Ding” Darling NWR: Established on December 1, 1945 as the Sanibel National Wildlife Refuge under the authority of the Migratory Bird Conservation Act of 1929; later renamed in 1967 in honor of pioneer conservationist Jay

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Norwood Darling. Acquisition authorities include: Migratory Bird Conservation Act (16 U.S.C. 715d); Refuge Recreation Act (16 U.S.C. 460k-460k-4 as amended); Emergency Wetlands Resources Act of 1986 (16 U.S.C. 3901 (b), 100 Stat. 3583; Fish and Wildlife Act of 1956 (16 U.S.C. 742f(a)(4) and 742f(b)(1)).

Pine Island NWR: Executive Order 939 signed by President Theodore Roosevelt on September 15, 1908. Acquisition authorities include: Refuge Recreation Act (16 U.S.C. 460 k-2 and 460k-460k-4 as amended); and Fish and Wildlife Act of 1956 (16 U.S.C. 742 f(b)(1)).

Matlacha Pass NWR: Executive Order 943 signed by President Theodore Roosevelt on September 26, 1908.

Island Bay NWR: Executive Order 958 signed by President Theodore Roosevelt on October 23, 1908.

Caloosahatchee NWR: Executive Order 3299 signed by President Woodrow Wilson on July 1, 1920.

**Refuge Purposes** (purposes for which the refuges were established):

J.N. “Ding” Darling NWR: ...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (Migratory Bird Conservation Act).

...suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...the Secretary ...may accept and use...real...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors...(Refuge Recreation Act, as amended).

...the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions (Emergency Wetlands Resources Act of 1986).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude (Fish and Wildlife Act of 1956).

... for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character...wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use (Wilderness Act of 1964).

Pine Island NWR: ...as a preserve and breeding ground for native birds (Executive Order 939).

...suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...the Secretary...may accept and use...real...property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors (Refuge Recreation Act, as amended).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude (Fish and Wildlife Act of 1956).

Matlacha Pass NWR: ...as a preserve and breeding ground for native birds (Executive Order 943).

Island Bay NWR: ...as a preserve and breeding ground for native birds (Executive Order 958). ... for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character...wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use (Wilderness Act of 1964).

Caloosahatchee NWR: ....as a preserve and breeding ground for native birds (Executive Order 32999).

**Additional Applicable Laws, Regulations and Policy affecting National Wildlife Refuges:**

National Wildlife Refuge System Improvement Act of 1997  
National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee)  
Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k-4)  
Title 50 of the Code of Federal Regulations, Subchapters B and C)  
The Refuge Manual

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The Service Manual  
Endangered Species Act of 1973 (16 U.S.C. 1531-1543)  
Migratory Bird Conservation Act of 1929 (16 U.S.C. 715-715d)  
Migratory Bird Hunting and Conservation Stamp Act (16 U.S.C. 718-718h)  
Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712)  
National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347)  
Bald Eagle Protection Act of 1940 (16 U.S.C. 668-668d)

### **National Wildlife Refuge System Mission:**

To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (National Wildlife Refuge System Improvement Act of 1997)

### **Description of Use:**

The following wildlife-dependent public uses are hereby considered within the Interim Compatibility Determination: wildlife observation and photography, fishing, hunting, and environmental education and interpretation.

Wildlife-dependent public use is generally encouraged on national wildlife refuges as long as it is compatible with the purposes for which the refuges were established. Public use opportunities are varied and may include consumptive and non-consumptive uses.

Because the main purpose for establishing national wildlife refuges is the conservation of wildlife and their habitats, surveys are conducted to collect data regarding wildlife populations and habitat trends. This information forms the basis for habitat management decisions. Wise management of fish and wildlife habitats, fish and wildlife populations, and public use, requires current and accurate information about the resources on and adjacent to the refuge. Biological and public use information is available for the property currently managed within these refuges; however, it is not available for other lands within the proposed expansion area.

This Interim Compatibility Determination relies on estimates of current public use levels on current refuge lands. During the Comprehensive Conservation Planning process, the Service will gather public data, conduct surveys to estimate wildlife populations, and fully assess public use impacts on the resources.

In assessing the potential impacts of proposed refuge uses, all available tools will be utilized. A site-specific document referred to as the Draft Environmental Assessment for the J. N. "Ding" Darling National Wildlife Refuge Complex, site-specific personal

communications (Service and refuge biologists, as well as state and local biologists), and general references are considered to be sufficient to make this Interim Compatibility Determination.

#### Wildlife Observation and Photography

Wildlife observation and photography are popular activities on J.N. “Ding” Darling NWR, especially on Wildlife Drive. These non-consumptive uses are limited in the mangrove estuary portions of the complex due to inaccessibility. Much of J.N. “Ding” Darling and the satellite refuges are mangroves islands and shallow open-water estuaries, which are only accessible by boat.

#### Availability of Resources:

The proposed acquisitions to the refuge complex include primarily mangrove estuarine habitats. Small areas of West Indian hardwood hammocks, oak scrub, and pine flatwoods are also included in the proposed expansion. All proposed acquisition areas are limited in accessibility, restricting opportunities for wildlife observation and photography to boaters, kayakers, and canoeists. Occasionally, shallow-draft pontoon tour boats use these areas for wildlife-viewing tours.

A large variety of wildlife species occur in these habitats. Wading birds, ospreys, bald eagles, frigate birds, terns, gulls and shorebirds are frequently observed year-round in the estuarine habitat. Neotropical migrants use the mangrove islands as resting and feeding sites during their spring and winter migrations. Limited numbers of wintering waterfowl seek refuge in the brackish backwaters surrounding the mangrove islands. Additionally, alligators, crocodiles, sea turtles, and a variety of marine mammals including the West Indian manatee are year-round residents of the local waterways..

#### Anticipated Impacts of the Use:

Wildlife observation/photography activities might result in some disturbance to wildlife, especially if visitors venture (either accidentally or purposely) too close to a bird rookery or to feeding or resting manatees. This disturbance, when properly managed, is expected to be minimal and to have an insignificant effect on refuge resources, including the fish and wildlife and their habitats and wetland values. Cultural resources such as Native American burial sites and midden mounds could receive small levels of disturbance.

#### Public Review and Comment:

This will be addressed during the CCP process.



#### Determination:

Wildlife observation/photography use is compatible with the purposes for which the refuges were established, with the following stipulation: minimize the possibility of disturbance events to wildlife, habitat and cultural resources.

#### Stipulations Necessary to Ensure Compatibility:

During this interim period, environmental education and interpretation programs will continue to address the need for greater care while wildlife is being observed or photographed, especially during nesting, feeding, and resting times. Public access will be limited to designated areas and will be open during daylight hours only. No camping will be allowed and all cultural resource sites, wading bird rookeries and nesting sites will be closed to public access.

### **Fishing**

Saltwater fishing is extremely popular in and around the established refuges. Most fishing is done from motorized boats. Open waters within or adjacent to the proposed expansion boundaries are owned and managed by the State of Florida as sovereignty submerged lands; consequently, fishing and boating within these waters are now and will continue to be regulated by the State of Florida.

#### Availability of Resources:

More than 100,000 acres of waters lie in and around the expansion boundaries. These waters are renowned for providing some of the best saltwater sportfishing in the world. The main fishery species of commercial and recreational value in the area include black mullet, spotted sea trout, red drum, black drum, king whiting, flounder, blue crab, pink shrimp, stone crab, hard clam, snook, tarpon, grouper, sea bass, snapper, Florida pompano, permit, bluefish, sand sea trout, Spanish and king mackerel, sheepshead, and several species of shark (Charlotte Harbor National Estuary Program, *The Story of the Greater Charlotte Harbor Watershed*, 1998, page 62).

#### Anticipated Impacts of the Use:

The State of Florida manages the local fisheries to assure a renewable resource. Properly regulated recreational fishing should not have any adverse impacts on either the fisheries resource, wildlife resource, or other natural resources of the refuge complex. There may be some limited disturbance to certain species of wildlife; however, this should be short-lived, relatively minor and is not expected to negatively impact

the ecology of the estuaries.

Public Review and Comment:

Any proposed changes to fishing regulations would be negotiated by the State of Florida with public input.

Determination:

Fishing in and around the expansion boundaries is compatible with the purposes for which the refuges were established, with the following stipulation: state fishing regulations will continue to be enforced.

Stipulations Necessary to Ensure Compatibility:

During this interim period, problems associated with the illegal take of fish (undersized fish, over bag limit) and littering (including disposal of monofilament line) will continue to be controlled through effective law enforcement.

### **Hunting**

Hunting is not currently allowed on any refuge lands or from waters within the existing complex boundaries. Sport hunting for waterfowl, feral hogs, and small game (squirrel, rabbit, quail, etc.) will be considered within designated areas of the proposed acquisition during state-designated hunting seasons.

Availability of Resources:

Limited areas of habitat and wildlife resources would be considered compatible for this purpose of hunting. Most areas within the proposed expansion boundary will be closed to hunting due to inaccessibility, human safety requirements, lack of sustainable populations of game, or to protect threatened and endangered species. Habitat types which would support hunting are open water, pine flatwoods, oak scrub, and West Indian hardwood hammocks. Proximity to residential areas, roads, and heavily utilized boating areas will be some of the factors used in determining the feasibility of establishing hunting in certain areas.

Anticipated Impacts of the Use:

Sport hunting provides recreational opportunities and can be used to assist in the management of certain game species. Carefully managed hunt programs help maintain populations at levels compatible with the environment. There may be some limited disturbance to non-target species of wildlife and some trampling of vegetation; however,



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this should be short-lived, relatively minor and is not expected to negatively impact the habitat on the refuges.

Public Review and Comment:

Hunting will be addressed during the CCP process. Any proposed changes to hunting regulations would have to be negotiated by the state with public input.

Determination:

Hunting within the proposed expansion areas would be compatible with the purposes for which the refuges were established, with the following stipulations: issues of public safety, suitability of habitat, sustainable populations of wildlife, disturbance to vegetation and non-target species, and impact on threatened and endangered species will be addressed; all state, county, or local ordinances and regulations will be complied with.

Stipulations Necessary to Ensure Compatibility:

During this interim period, limited opportunities for hunting would be addressed with assistance from the public and the State of Florida. As areas are permitted, refuge maps and pamphlets will be prepared to specify the locations of hunting areas, hunting seasons, and the targeted game species. Educational programs will address issues such as hunter safety, sustainable populations of wildlife, and methods to reduce disturbance to vegetation and non-target species. Problems associated with littering and violations of game laws would be controlled through effective law enforcement.

**Environmental Education and Interpretation**

The J.N. “Ding” Darling NWR has established active environmental education and interpretation programs. While the majority of these programs are conducted at the “Ding” Darling refuge, public outreach programs also serve many areas within the proposed complex expansion as well as other communities throughout the region. Future programs are expected to expand in number and locations. Programs emphasize the preservation, restoration, and enhancement of all natural ecosystems and the flora and fauna that depend on these natural systems. A major goal of these programs is to provide an understanding and appreciation of fish and wildlife ecology and people’s role in the environment.

Availability of Resources:

The refuge complex’s public use staff includes a trained environmental education

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and interpretation specialist who regularly conducts programs regarding the fish, wildlife and habitat resources of the refuge. Trained volunteers also conduct many environmental education programs. The "Ding" Darling refuge is the focal point for the complex's environmental education and interpretation programs. Additional educational and outreach programs are conducted at schools and other public locations throughout the region.

Anticipated Impacts of Environmental Education and Interpretation:

Environmental education and interpretation programs would have no negative impacts on the resources of the complex. In fact, well researched and properly conducted environmental education and interpretation programs should help minimize impacts from all other forms of public use.

Public Review and Comment:

Future environmental education and interpretation programs will be addressed during the CCP process.

Determination:

Environmental education and interpretation programs are considered to be compatible with the purposes for which the refuges were established, without any stipulations.

**Justification:**

The Service's current policy is to expand and enhance opportunities for wildlife observation and photography, fishing, hunting, and environmental education and interpretation on national wildlife refuges.

Fishing and hunting are compatible with the purposes of the refuges (when conducted with public safety concerns and sustainable wildlife populations in mind and when following all applicable state regulations.) In addition, these activities help meet the Service's objectives to provide for compatible wildlife-dependent recreation. Allowing fishing and hunting also helps to maintain and build support for the Service and its fish and wildlife conservation efforts.

Nonconsumptive wildlife-dependent uses such as wildlife observation and photography and environmental education and interpretation are compatible with the purposes of the refuges and meet the objectives to provide for compatible wildlife-dependent recreation. Allowing these uses follows current Service policy to provide for compatible wildlife-dependent recreation. Allowing these non-consumptive recreational opportunities



helps to maintain and build public support for the Service and its fish and wildlife conservation efforts.

There has been substantial historical use in and around these areas for wildlife-dependent recreational activities. Based on the available information, there is no indication of adverse biological impacts caused by these activities. Allowing well-managed wildlife observation and photography, fishing, hunting, and environmental education and interpretation is consistent with refuge objectives and follows current Service policy.

This Interim Compatibility Determination is based on current public use and biological information. Much more information will be needed to complete a detailed analysis of compatibility. During the comprehensive conservation planning process, which will include appropriate public input, the Service will gather additional data necessary for a thorough determination of compatibility. When the refuge's Comprehensive Conservation Plan is completed, additional refuge-specific regulations may be implemented and adjustments to the public use program may be made at that time.

**Project Leader:** \_\_\_\_\_  
(Signature/Date)

**Refuge Supervisor:** \_\_\_\_\_  
(Signature/Date)

**Regional Compatibility  
Coordinator:** \_\_\_\_\_  
(Signature/Date)

**Regional Chief, National  
Wildlife Refuge System,  
Southeast Region:** \_\_\_\_\_  
(Signature/Date)

## Appendix C

### **DRAFT INTERIM RECREATION ACT FUNDING ANALYSIS**

**Station Name:**

J. N. "Ding" Darling National Wildlife Refuge Complex. This refuge complex is comprised of the following refuges:

J.N. "Ding" Darling National Wildlife Refuge  
Matlacha Pass National Wildlife Refuge  
Pine Island National Wildlife Refuge  
Caloosahatchee National Wildlife Refuge  
Island Bay National Wildlife Refuge

**Date Established:**

J.N. "Ding" Darling NWR - December 1, 1945;  
Matlacha Pass NWR - September 26, 1908;  
Pine Island NWR - September 15, 1908;  
Caloosahatchee NWR - July 1, 1920;  
Island Bay NWR - October 23, 1908.

**Purpose (s) for which the Refuge was Established:**

J.N. "Ding" Darling NWR: ... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (Migratory Bird Conservation Act).

... suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species... the Secretary... may accept and use... real... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors... (Refuge Recreation Act, as amended).

... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions (Emergency Wetlands Resources Act of 1986).

... for the development, advancement, management, conservation, and protection of fish and wildlife resources... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude (Fish and Wildlife Act of 1956).



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... for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character... wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use (Wilderness Act of 1964).

Pine Island NWR: ... as a preserve and breeding ground for native birds (Executive Order 939).

... suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species... the Secretary... may accept and use... real... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors (Refuge Recreation Act, as amended).

... for the development, advancement, management, conservation, and protection of fish and wildlife resources... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude (Fish and Wildlife Act of 1956).

Matlacha Pass NWR: ... as a preserve and breeding ground for native birds (Executive Order 943).

Island Bay NWR: ... as a preserve and breeding ground for native birds (Executive Order 958).

... for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character...wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use (Wilderness Act of 1964).

Caloosahatchee NWR: ... as a preserve and breeding ground for native birds (Executive Order 32999).

**Recreational Use(s) Evaluated for the proposed expansion of the J.N. "Ding" Darling National Wildlife Refuge Complex:**

(1) Wildlife observation/photography; (2) fishing; (3) hunting; and (4) environmental education and interpretation.

**Funding required to administer and manage the recreational use(s):**

Minimal funding in the amount of \$100,000 would be made available to implement initial protection, data collection, and consumptive and nonconsumptive uses.

Based on a review of the refuge budget allocated for recreational use management, I certify that funding is adequate to ensure compatibility and to administer and manage the recreational use(s).

**Project Leader:** \_\_\_\_\_  
(Signature/Date)

**Refuge Supervisor:** \_\_\_\_\_  
(Signature/Date)

**Regional Chief, National  
Wildlife Refuge System,  
Southeast Region:** \_\_\_\_\_  
(Signature/Date)