



Audubon OF FLORIDA

**BIRD USE OF "SPOIL ISLAND,"
PORT MANATEE, MANATEE COUNTY, FL**

**Report for
February-June 2004**

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This report contains the results of surveys conducted on Port Manatee "Spoil Island" from February to June 2004. Future reports will be prepared quarterly.

BACKGROUND

The Port Manatee "Spoil Island" is a 59-acre man-made island lying offshore from Port Manatee, a few hundred yards to the west of the port. It was constructed in 1969, as a byproduct of channel dredging work to provide access to the port. Initially barren, the island gradually became vegetated by a variety of native and non-native invasive plants. Colonially nesting birds such as gulls, terns and skimmers nested on the island until the mid-1980s, but then abandoned the site as suitable habitats disappeared. These birds require open, unvegetated substrates or grasses -- essentially "beach"- type communities; once the island area supported taller plants, the colonial beach-nesting birds could not use those habitats (Paul and Schnapf, 1998).

Investigations on "beach-nesting" bird species elsewhere in Florida by biologists from a number of agencies and organizations over the past three decades have demonstrated that these beach-nesting birds have suffered significant loss of nesting habitat due to human population growth and use of natural beaches (Paul and Paul, 2003). Overall, beach-nesting birds may rank among the most imperiled groups of birds in Florida. At many sites, intensive management activities are necessary to allow successful nesting to occur.

In 2001-2002, the Manatee County Port Authority secured authorization to dredge sensitive habitats in order to expand port facilities. To offset (in part) permanent losses to seagrass and mangrove communities due to dredging, a long-term commitment was made to restore habitats for birds on "Spoil Island." The objective was to provide habitat for

- (a) vulnerable ground- or "beach-nesting" species of the order Charadriiformes (gulls, terns, and "sandpipers");
- (b) songbirds that nest in coastal maritime hammocks and mangroves; and
- (c) shorebirds and wading birds ("sandpipers", herons, egrets, ibis, pelicans, etc.) that forage or roost in coastal wetland systems.

Habitats on the island were restored according to a conceptual plan prepared by the National Audubon Society (Paul and Schnapf, 1998) as modified by Kevin Erwin and Associates Inc. (KLECE, 2002a, b).

Shorelines were left generally untouched to minimize erosion. All non-native plants were removed. A new intertidal lagoon was created on the southwest side of the island, with two new inlets open to Tampa Bay waters, connected by a winding creek. The sediments generated were relocated to a long, high central ridge, with the intention that this ridge will be maintained clear of vegetation as a nesting area for beach-nesting birds. The lagoon was planted with smooth cordgrass (*Spartina alterniflora*), and was expected to rapidly succeed to mangroves, thus greatly extending the mangrove community already present at the southeast end of the island. A few areas with developing native subtropical vegetation, chiefly strangler figs (*Ficus aurea*), seagrape (*Coccoloba uvifera*), and Florida privet (*Forestiera segregata*), were left in place to promote a tropical hammock habitat. The sandbar at the southeast corner of the island was left in place to allow a site for migratory and wintering birds. The mangrove forest at the southeast end

of the island was also left in place, and encroaching Brazilian peppers and Australian pines removed. Further details and descriptions of the island habitat restoration project are available in KLECE (2002b). The island habitat project construction was completed by the Port and Gulfstream Natural Gas Pipeline in late 2002.

In order to evaluate the success of the project, and to make timely management recommendations to ensure the maintenance of the restored habitats, the National Audubon Society/Audubon of Florida agreed to carry out an extensive program of monthly surveys and visits to "Spoil Island" year-round, with twice-monthly surveys during the nesting season.

METHODS

We carried out the following tasks:

1. Survey all habitats, including mangrove, marsh, hardwood hammock, and sand bar habitats monthly for seasonal bird use.
2. Monitor beach-nesting birds twice-monthly during the nesting season (April - July).
3. Periodically evaluate management success and provide management recommendations any changes considered necessary.

All habitats were slowly walked, and all birds encountered were identified and counted whether seen or heard. Surveys were conducted during morning hours to avoid the heat of the day and because songbirds are most active then. During the nesting season, special emphasis was placed on careful search for nesting birds, particularly "beach-nesting" species (gulls, terns, skimmers, plovers, oystercatchers, and willets). Shorelines were searched by boat prior to landing on the island, a disturbance-free technique that provided specific information about the location of territories and nests of certain species. Once birds had established nesting colonies on the interior restored central ridge, only sporadic entry into this area was attempted, to minimize disturbance to nesting birds.

Eight bird surveys were carried out during this period, including one survey each in February and March 2004, and two per month from April through June. No survey was performed in January 2004.

RESULTS

1. Bird Populations

Seventy-two species of birds were found in the eight surveys (Feb. - June 2004; Table 1), for a total of 82 species reported during this study since April 2003. Of these, 16 species are reported for the first time during this Winter/Spring 2004 reporting period. Ten species reported previously were not seen during this period.

Overall, the largest concentration of birds was found on the sand bar at the southeastern corner of "Spoil Island" (chiefly non-breeding, roosting birds such as pelicans, cormorants, gulls, terns, skimmers, and shorebirds) or on the restored central ridge. Flocks of wintering shorebirds, primarily Wilson's Plovers, Least Sandpipers, and Dunlins, roosted on the central ridge from

winter until April. By April 6, 2004, the flocks were nearly gone, but Wilson's Plovers had initiated nesting activity. American Oystercatchers had also initiated nesting, with six pairs found along island shorelines on the same date.

Eighteen species were "confirmed" or highly suspected to be "probable" nesters on "Spoil Island" (Table 1). No additional nesting species were added in 2004 that had not been observed in 2003. Most noteworthy were three species that require barren nesting substrates: Wilson's Plover, American Oystercatcher, and Least Tern. These are considered to be among the priority species for this project, and their presence and successful nesting again in 2004 are key criteria for evaluation of the project. Additional information about these species is provided here.

Nesting by Wilson's Plovers and Least Terns in summer 2004 is still ongoing and appears to have been very successful. However, to avoid unnecessary impacts to the nesting birds, we have not attempted to make close observation of nests and small chicks. As the spring progressed, the vegetation grew taller and so spotting nests and young became difficult. A final count of the juveniles of these species will be made in July 2004, when they are more visible away from the nesting area.

Wilson's Plovers

Although not a state-listed species, the Wilson's Plover is highly dependent on barren habitats such as beach dunes, intertidal flats, salt barrens, and recently cleared habitats (construction sites, restoration projects, etc.). Although Paul and Schnapf (1998) had listed Wilson's Plovers among the beach-nesting birds of Tampa Bay, they had largely overlooked the potential benefits of this project to this species. Therefore it was surprising in 2003 to find at least 25-30 pairs (possibly twice that) of plovers nesting on the central ridge. In 2004, our surveys found about the same the number of pairs (about 30 pairs, possibly more).

The population status of this coastal species is relatively poorly known in Florida (our tentative state-wide estimate is 1000 pairs), and it currently is a priority species for further study (FWC, 2003). Currently the plovers nesting at "Spoil Island" must be considered one of the larger known breeding populations in the state. Wilson's Plovers move readily from site to site as habitat conditions change. However this species is considered difficult to survey, as the birds and their nests are camouflaged, and when the adults are disturbed, they quietly walk away from their nests. The adults stay in motion and do not return to the nest while the surveyor is in the area. The nests and chicks are nearly invisible, due to their excellent camouflage. The rocky soil also provides disruptive camouflage for nests, eggs, and chicks.

American Oystercatchers

Only about 400 breeding pairs of American Oystercatchers are known to occur in Florida (population estimate from statewide survey, FWC 2000). Roughly 150 pairs occur within the Tampa Bay region, the most important segment of the population in the state. This rare species (listed as a "Species of Special Concern" in Florida) exhibits extreme site fidelity and pairs use the same nesting territories for many years. The six pairs at found at "Spoil Island" in 2004 constitute 1.5% of the state population, and very likely are the same pairs that were present prior to island restoration. It will be interesting to see if additional pairs establish additional territories on the Central Ridge. Oystercatchers occasionally were found on the ridge this year, but there

were no indications of nesting on that location. These are likely to be sentinel birds for pairs nesting on the shoreline. However, the oystercatchers apparently have not produced chicks this year. Two nests with eggs were seen May 12, 2004. Raccoon tracks were seen on May 27, 2004, in the same general area as three of the pairs, so this may have been the problem. At least one pair was still incubating in early July (most likely a second or third nesting attempt).

Least Terns

Least Terns are state-listed as "Threatened" because of their extreme dependence on beach habitats that have been lost, altered or subject to chronic human disturbance. Least Terns require barren habitats, such as beach dunes or recently cleared habitats where bare sand or gravel substrate is found (construction sites, restoration projects, etc.), with little or no vegetation, and where an unobstructed horizon allows adult birds to observe any approach by a predator on the ground. Least Terns are one of the priority targets of this project. In April of both 2003 and 2004, Least Terns migrated back to Florida after wintering in South America and almost immediately were found at "Spoil Island."

In 2003, nesting was confirmed on June 4, when three nests with eggs were found and 15-20 pairs estimated. By June 12, 2003, numbers had grown to 80 birds, suggesting a breeding population of at least 40 pairs, but only 10 nests were found (four with eggs, six empty scrapes) suggesting that the colony was still forming. Subsequent heavy rains of June 18-22 apparently did not flood out the colony, as happened elsewhere in the Tampa Bay region, since on July 3, 2003, 120-150 birds (suggesting 60-75 pairs) and 39 nests with eggs or young were found. It is believed that this colony grew as terns failed in initial nesting attempts at other sites, and relocated to "Spoil Island." However, the unauthorized military helicopter landings on July 11 and 15, 2003, caused complete failure of Least Tern nesting colony last year.

In 2004, as in 2003, only small numbers were present at first (two birds on April 6, 2004; see Table 1), and while courting behavior was seen, there was no clear indication of nesting. But by April 29, there were about 40 Least Terns present (20 pairs), and by May 27, 2004, about 100 birds were present (50 pairs). Fledged chicks were seen on June 14 and 29, 2004.

Least Terns arrived in numbers at least one month earlier in 2004 than in 2003. In 2003, the site was newly cleared and nesting birds would have had to locate it for the first time. In 2004, they would already have known about the site (despite nesting failure caused by the helicopter in 2003). Their early arrival in 2004 allowed the incubation and guard stage nesting to be completed before the summer rains began. Early nesting in 2004 and a successful season bodes well for continuing use of the "Spoil Island" by nesting Least Terns in the future.

Like Wilson's Plover, the Least Tern is difficult to survey, as most of the birds take to the air whenever the surveyor is in the area. We estimated that there were approximately 50 nests in Spring 2004. Through the end of June, large numbers of terns are continuing to actively defend the nesting area, suggesting that good numbers of chicks were close to fledging.

2. Assessment of Habitats

KLECE (2002b) summarized the area and condition of six habitat types as of the end of construction. Although we did not quantitatively evaluate the habitats, we made casual

observations of the condition and short-term changes in habitats as an aid to interpreting the pattern of bird nesting found and in identifying upcoming management needs. The following habitat types are based on that report (see also Figure 1 [=Figure 2 of KLECE 2002b]).

Created/Restored Wetlands

Planted *Spartina* flats are growing extremely well, with almost no mortality of transplants, and have begun to spread. Mangrove seedlings, both planted and naturally recruiting, are also doing well. Most of this habitat remains quite open, and is used commonly by foraging and roosting shorebirds, terns, herons and ducks. As the vegetation spreads and converts to mangrove forest, these birds will be replaced by Clapper Rails and species that exploit the mangrove canopy. Along the Central Ridge, portions of the landward edge of the *Spartina* flat are silting in due to sediment eroded from the uplands.

Enhanced Native Communities

(a) Mangrove Forest

The well-developed mangrove forest at the southeastern end of "Spoil Island" was formerly heavily invaded by Brazilian pepper along beach ridges and upland margins. Following restoration, this habitat is now remarkably free of exotic plants. A few songbirds used the mangroves, notably Prairie Warblers (2003) and Gray Kingbirds (2003-2004), but overall bird activity so far is light. Although a few heron nests (believed to be of Yellow-crowned Night-herons) were found in this habitat prior to island restoration, none was found in 2003 and one unsuccessful nest was noted in 2004.

(b) High Salt Marsh

Use of this area by small birds is light and not particularly distinguishable from use of the adjacent mangroves and coastal strand. But it is used extensively by nesting Wilson's Plovers, Killdeer, Willets, and Mottled Ducks, and by migrating shorebirds.

(c) Mangrove Lagoon, Mangrove/Storm Berm

Small numbers of roosting and foraging herons, and nesting Common Grackles and Red-winged Blackbirds, were found here as well as Gray Kingbirds and Prairie Warblers.

(d) Coastal Strand and Tropical Hammock

Migrant and wintering songbirds used this habitat, as did summer residents such as Gray Kingbirds, Prairie Warblers (2003), Northern Cardinals, Mourning Doves, and Common Ground-Doves. Additional surveys in the fall and winter months will reveal more about the importance of this habitat. A subsequent report of surveys conducted in fall and winter 2003 will follow. Species seen in this habitat during spring migration included Ruby-throated Hummingbird (2003), White-eyed Vireo (2003, 2004), Blue-gray Gnatcatcher (2003), Gray Catbird (2003, 2004), American Redstart (2003), Yellowthroat (2004), Hooded Warbler (2004), and Blue Grosbeak (2003, 2004), Orchard Oriole (2003), and American Goldfinch (2003). Gray Kingbirds successfully raised young both years. Common Grackles (2003, 2004) and probably Great Crested Flycatchers (2003) nested in this habitat as well.

(e) Beach-Nesting Bird Habitat

In March of both years, the "Central Ridge" was nearly free of vegetation as a result of monthly spraying. With spraying suspended during the nesting season, scattered vegetation quickly appeared virtually throughout this habitat -- especially on the northwest slope where grasses and forbs were growing in densely by late June. This did not prevent use by birds, but did hinder surveying the birds nesting there.

On top of the central ridge, roosting flocks of wintering shorebirds, primarily Wilson's Plovers, Least Sandpipers, and Dunlins (2003), were found until April. Beginning in April, the crown of the ridge was used by nesting Wilson's Plovers, and from mid-April to July 2004, by Least Terns. Individual American Oystercatchers and Willets were often seen on the ridge, but these were likely sentinel birds responding to the surveyors; the only confirmed nests were discovered along island shorelines. Common Ground-Doves, Mourning Doves, Killdeer, and Palm Warblers (Fall through April) were noted on the central ridge slopes and nested there in the spring.

(f) Sand Bar Habitats and Mangrove Cove

At the southeast end of "Spoil Island" are two sand bars, which enclose a protected mangrove cove. These features developed after the original placement of spoil material in 1969, due to shoreline erosion and littoral drift of sediments. They greatly enhance the habitat diversity of the island. The northern sand bar (Figure 1) curves inward to the cove, while the southern sand bar is long and straight. These habitats were preserved during the restoration project, and not altered. Sand bars are especially valuable for roosting birds at all times of year. Large numbers of Brown Pelicans, Double-crested Cormorants, shorebirds (Short-billed Dowitchers, Ruddy Turnstones, Least Sandpipers) and flocks of gulls, terns (Roseate, Sandwich, Least Terns), and Black Skimmers were found here and are to be expected at any time of year. Nesting is not likely on the sand bar, and none was found. However, one pair of American Oystercatchers nesting nearby along the northeast shore did move their young to the point of the northern bar in June 2003. The cove was an important foraging site for White Ibis and several species of herons, including the rare Reddish Egret, a state-listed "Species of Special Concern".

DISCUSSION AND RECOMMENDATIONS

This project successfully reestablished habitats that attracted target species of beach-nesting birds in its first and second years. Large numbers of Least Terns and Wilson's Plovers successfully nested in 2003. Qualitative observations in 2004 also indicate highly successful nesting by Least Terns and Wilson's Plovers. American Oystercatchers experienced successful nesting in 2003 but, although the same number of pairs attempted nesting in 2004, they were apparently not successful to date (one nest still in "incubation" in late June).

The wetland habitats created on the "Spoil Island" will change rapidly over the next few years, and the bird species using them will also change.

As expected, the barren Central Ridge becomes vegetated rapidly in summer, in the absence of regular control efforts, which are not carried out while nesting is in progress. However, the goal of providing barren substrates for beach-nesting birds was successful. Annual vegetation control during the non-nesting season will be essential in order to maintain these open-substrate habitats

required by these species each spring. An effective program of control is already in place, and will resume following the cessation of nesting. We look forward to further discussion about vegetation control with the Port Authority. We noted an instance of Varnishleaf (*Dodonaea viscosa*), a desirable native shrub, being killed, likely by mistake.

We continue to expect and look for seedlings of Australian pine (*Casuarina quisetifolia*), Brazilian pepper (*Schinus terebinthifolius*), Carrotwood (*Cupaniopsis anacardioides*), and White Leadtree (*Leucaena leucocephala*) to attempt to establish on the island. These should be removed as they occur.

One key to attracting beach-nesting birds and maximizing their chances of successful nesting, is keeping the island free of terrestrial predators, especially raccoons. Although Port Authority staff successfully trapped and removed one raccoon in 2003, tracks indicated that at least one more was still present at that time. In 2004, raccoon tracks were not detected prior to the May 27 survey, and two raccoons were quickly removed in early June 2004. This removal likely allowed more nesting pairs of Least Terns to use "Spoil Island" in 2004 than in 2003. It is possible that the presence of raccoons affected the success of the American Oystercatcher pairs that nested along the shoreline. It is essential to maintain efforts to remove raccoons from "Spoil Island." Since newly independent male raccoons disperse widely in September and October, trapping efforts should be particularly intense in the fall and winter.

With the heavy rains of 2003 and 2004, a number of deep gullies have developed in the sides of the Central Ridge. Erosion of barren habitats was anticipated, with sediment capture basins and a stormwater retention area built into the island's redesign, but it will be useful to schedule an annual site visit in the fall or early winter (October-December 2004), after the nesting season, to discuss the potential need for recontouring and additional erosion-control measures.

There is a break in the check-dam in the stormwater retention area on the northeast side of the island, noted in April 2004, which should be repaired.

The island is regularly patrolled in the context of routine Port security operations and also as part of the maintenance of a "motor exclusion zone" to protect seagrasses. This provides important protection for the nesting bird colony. It is important that human intrusion onto the island be prevented, especially during the critical period when the beach-nesting bird colony is present (April to July).

The "closed area" signs that were erected in 2003 by the Port Authority have apparently been successful in reducing the amount of unauthorized human entry. The signs should be checked, after the nesting season. It was noted in Spring 2004 that some signs were apparently been destroyed or pushed down by storm action and should be replaced.

We look forward to collaborating fully with the Port Authority to ensure that "Spoil Island" achieves and maintains the highest possible habitat values for wildlife. We appreciate the opportunity to provide input to this project, to keep it successful.

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Table 1. Birds recorded at Port Manatee "Spoil Island," February to June, 2004.

Species	Listing Status ¹	Local Area Status ²	Nesting Status ³	Year First Seen ⁴	2-23-04	3-19-04	4-6-04	4-29-04	5-12-04	5-27-04	6-14-04	6-29-04
(Time of survey)					1345-1604	0900-1205	0945-1133	1420-1635	0925-1145	0900-1200	0945-1300	0945-1045
Staff (Initials) ⁶					RP	RP	RP,BA	AP,BA	BA	BA	BA	AP,BA
Common Loon		WM		2004	2	1	1					
American White Pelican		WMs		2003	127	60	6					
Brown Pelican	SSC	PR		2003	8	2	4	3		7	5	5
Double-crested Cormorant		PR		2003	51	44	35	16	13	7	16	7
Magnificent Frigatebird		S		2003		2	1			1	1	1
Great Blue Heron		PR		2003	1	3	1	2	3	2	1	1
Great Egret		PR		2003	3	2		2	1		1	
Snowy Egret	SSC	PR		2003	1	1				1	2	2
Little Blue Heron	SSC	PR		2003	2	1	1	1	1			1
Tricolored Heron	SSC	PR		2003		1	1	2			2	
Reddish Egret	SSC, W	PR		2003				3			1	
Black-crowned Night-Heron		PR		2004		1						
Yellow-crowned Night-Heron		PR	Possible	2003					4			
White Ibis	SSC	PR		2003	27	22	7	6	7	4	3	6
Roseate Spoonbill	SSC	PR		2004							1	
Turkey Vulture		PR		2003	1							
Mottled Duck	W	PR	Confirmed	2003		7(3pr)	6	5	3	6	1	1
Blue-winged Teal		W		2004		4						
Lesser Scaup		W		2004			3					
Red-breasted Merganser		W		2003	4	10	1	4	1			
Osprey		PR		2003	1	1	1	1		1		1
Bald Eagle	T	PR		2004			1					
Northern Harrier		WM		2004		1	1					
Peregrine Falcon	E	WM		2003		1						
Clapper Rail		PR	Probable	2003								
Black-bellied Plover		WMS		2003								1
Wilson's Plover	W	PR	Confirmed	2003	19	65	15	32 (16 pr)	Lots	20+ (10 pr)	50 (25 pr)	60 (30 pr)
Semipalmated Plover		WMS		2003							10	
Killdeer		PR	Confirmed	2003	3	2(1 pr)	5	1	1	6(3 pr)		2+1yng
American Oystercatcher	SSC, W	PR	Confirmed	2003		4 (2 pr)	12 (6 pr)	3 (3 pr)	6(4 pr) 2 nests	8 (4 pr)	5 (3 pr)	5 (2 pr)
American Avocet		PR		2004						6		
Willet		PR,WM	Confirmed	2003		12	36	11	14	7 (5 pr)	20(10 pr)	30(15 pr)
Spotted Sandpiper		WM		2003	2	8	1	4				
Whimbrel	W	WS		2003			2					
Marbled Godwit		WM		2004							3	
Ruddy Turnstone		WMS		2003					18	2		
Red Knot	W	WM		2003								
Western Sandpiper		WM		2003					4			
Least Sandpiper		WM		2003	10	14	33	5	6	1		
Dunlin		WM		2003								
Short-billed Dowitcher	W	WMS		2003	2		4	5	100	1	67	230

Species	"Listed" Species	Local Area Status ²	Nesting Status ³		2-23-04	3-19-04	4-6-04	4-29-04	5-12-04	5-27-04	6-14-04	6-29-04
Laughing Gull		PR		2003		1	2	12	2	5	10	38
Ring-billed Gull		Ws		2003	1		1	1				
Caspian Tern		PR		2003		4	2					
Royal Tern		PR		2003	2	3	42	81	45	76	83	8
Sandwich Tern		PR		2003			16	3	3	10	5	
Common Tern		SM		2003								
Forster's Tern		WM		2004		1				1		
Least Tern	T	S	Confirmed	2003			2	40 (20 pr)	94 (42 pr)	100 (50 pr)	80(40 pr) 4 yng	70(35pr) 2yng
Black Tern		M		2004								
Black Skimmer	T	PR		2003	1		8	28	30	7	6	
Mourning Dove		PR	Confirmed	2003		3	3		4	4	2	13
Common Ground-Dove		PR	Probable	2003	1		2	2	1		2	3
Ruby-throated Hummingbird		M		2004			1					
Common Nighthawk		S	Probable	2003				1			2 (nest?)	1
Belted Kingfisher		W		2003						1		
Red-bellied Woodpecker		PR	Possible	2003								
Great Crested Flycatcher		S	Probable	2003				1				
Eastern Kingbird		M		2003								
Gray Kingbird		S	Confirmed	2003				7	5	6	10 (5 pr)	28 (11 pr)
White-eyed Vireo		PR	Possible	2003			2					
Fish Crow		PR	Probable	2003		4	3	2	6	4	1	1
Purple Martin		SM		2003		1						
Tree Swallow		WM		2004		40	1					
Barn Swallow		M		2004			1	2				
Blue-gray Gnatcatcher		WM		2003		3						
Gray Catbird		WM		2003		1		1				
Northern Mockingbird		PR	Confirmed	2003				2	2	1	3	2
Brown Thrasher		PR		2003			1				1	1
Prairie Warbler	W	Sw	Probable	2003								
Palm Warbler		WM		2003	8	9	16	19	4			
American Redstart		WM		2003								
Common Yellowthroat		PR		2004		1						
Hooded Warbler		M		2004			1					
Savannah Sparrow		W		2004	6							
Northern Cardinal		PR	Probable	2003		1						
Blue Grosbeak		M		2003			1					
Red-winged Blackbird		PR	Probable	2003							1	1
Common Grackle		PR	Probable	2003	1	5	5	10		2	3	4
Brown-headed Cowbird		PR	Possible	2003			1			4		3
Orchard Oriole		M		2003								
American Goldfinch		W		2003								
Total species					24	38	44	33	27	29	31	28

List follows phylogenetic order as presented in AOU (1998).

¹ **"Listing" Status:** **E** = State-listed as Endangered by Florida Fish and Wildlife Conservation Commission.; **T** = State-listed as Threatened; **SSC** = State-listed as Species of Special Concern; **W** = WatchList of American Bird Conservancy and National Audubon Society.

² **Local Area Status:** **PR** = Permanent Resident; **M** = Migrant; **W** = Winter or "nonbreeding season"; **S** = Spring and Summer (lower case = very small numbers only).

³ **Nesting Status on "Spoil Island" only:** **Confirmed** = Nest with eggs, or pre-fledged or recently fledged young seen in 2003 or 2004; **Probable** = Nesting highly likely as indicated by adult behavior, alarm calls, singing males, persistence in appropriate habitat etc.; **Possible** = Nesting to be expected, but strong evidence not seen.

⁴ **Year First Seen:** 2003 or 2004

⁵ **Staff Names:** AP = Ann F. Paul, BA = Bruce B. Ackerman, RP = Richard T. Paul