

Cortez Key Bird Sanctuary Management Plan



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Cover photograph, Cortez Key Bird Sanctuary, Aerial photograph: Google Earth

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ACRONYMS

FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FWC	Florida Fish and Wildlife Conservation Commission
FCIS	Florida Coastal Islands Sanctuaries
MHW	Mean High Water
MLW	Mean Low Water
MLLW	Mean Lowest Low Water
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
SCS	Soil Conservation Service
SBEP	Sarasota Bay Estuary Program
SWFWMD	Southwest Florida Water Management District
SWIM	Surface Water Improvement and Management (Program)
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service

EXECUTIVE SUMMARY

This is a Management Plan for the Cortez Key Bird Sanctuary prepared by Audubon Florida's Florida Coastal Islands Sanctuaries, based in Tampa, in regard to the lease between the National Audubon Society, Inc. and the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. The report is funded in part by a grant from the U.S. Fish and Wildlife Service's Coastal Program, Jacksonville, FL.

Cortez Key is located on the east side of northern Sarasota Bay in Manatee County, in a small embayment locally referred to as "The Kitchen". It is a linear mangrove island approximately 3.4 hectares (8.3 acres) in size sited south of the fishing village of Cortez, and oriented from the northwest to the southeast. The island is owned by the State of Florida as a sovereign submerged land and is leased for management as a wildlife sanctuary by the National Audubon Society, Inc. dba Audubon Florida. This report outlines habitats and wildlife use of the island and presents a Management Plan.

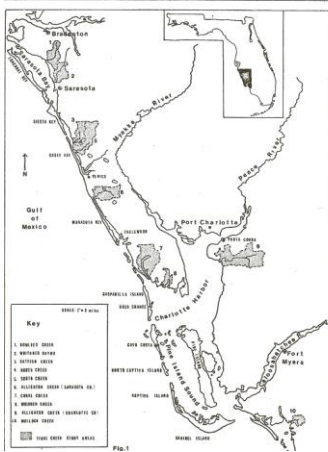
INTRODUCTION

General Description

Cortez Key Bird Sanctuary consists of an island located on the eastern side of northern Sarasota Bay in Manatee County south of the City of Bradenton and 250 m south of the fishing village Cortez in a small embayment known locally as "The Kitchen", at 27°27'45"N and 82°40'58"W. Anna Maria Island is on the west side of the Intracoastal Waterway west of Cortez and west of Cortez Key. The natural mangrove island is approximately 3.5 hectares (8.3 acres) in size, surrounded by shallow seagrass flats with numerous oysterbars on the north and east sides, along the island's shorelines. The lease from the State of Florida includes the adjacent submerged lands extending out 92 m (300 feet) surrounding the island. The Intracoastal Waterway is located 350-570 m to the west. Nearby development includes the village of Cortez, the Bell Fish House, several marinas, and the Bayview Mobile Home Park.



Map showing location of Manatee County in Florida. US Geological Survey, Hyde and Huckle 1983.

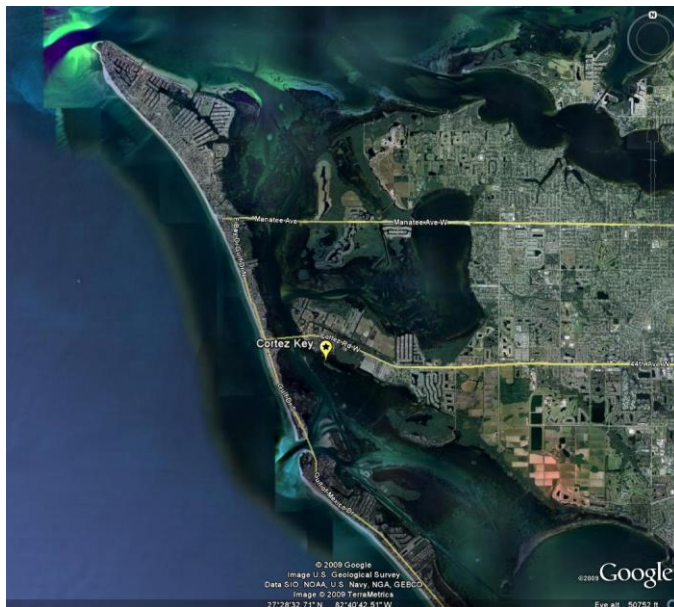


Location of Sarasota Bay on the Florida peninsular west coast. Smolker, Hayes, Baker 1977.



Cortez Key Bird Sanctuary is located in the north portion of Sarasota Bay, east of the Intracoastal Waterway, south of the village of Cortez, and east of Anna Marie Island, and defines a small embayment locally called “The Kitchen”.

Cortez Key Bird Island location in Sarasota Bay. Sarasota Bay Estuary Program 2010.



Google Earth.



Relationship of Cortez Key Bird Sanctuary to shoreline of East Sarasota Bay, Google Earth.

EXISTING CONDITIONS

Legal Background and Description

In 1981, the State of Florida, acting through the Division of State Lands and the Board of Trustees of the Internal Improvement Trust Fund, leased Cortez Key, described as a “tidally affected mangrove island, locally known as Cortez Island encompassing approximately ten (10) acres and all submerged lands lying within 300 feet of Cortez Island, lying and being in the S.E. quarter of Section 3, the N.E. quarter of Section 10, and the N.W. quarter of Section 11, Township 35 South, Range 16 East, in upper Sarasota Bay, Manatee County,” to the National Audubon Society to be managed for “resource management responsibilities” under Agreement 75-004.

Geology and Topography

Cortez Key is situated in the Sarasota Bay estuary in Manatee County. The elongated shaped island is 554 m long and 82 m wide at its widest point and is oriented from the northwest to the southeast parallel to and 250 m from the east Sarasota Bay shoreline. The island is generally very low in profile and the profile is very flat. There is a rocky substrate under the sand and mangrove leaf mold soil on the island’s surface.



Aerial photograph of Cortez Key showing adjacent seagrasses. Aerial photo: Google Earth.

Soil Types

The single soil type mapped on Cortez Key by the USDA NRCS Soil Survey for Manatee County is Estero muck, defined as nearly level soil in tidal mangrove swamps. It is very poorly drained and nearly flat in slope. The description of this soil type states that the soil is dark black muck with dark reddish brown and dark gray fine sand. Portions of the island, especially the southeast end, are flooded daily by high tides and storm tides wash over the entire island. Permeability is moderately rapid and the available water capacity is high. The natural vegetation is a thick stand of mangrove trees and some fringing marsh cordgrass (Hyde and Huckle 1983).

Meteorology

The region falls within two climatic divisions and is essentially in a zone of climatic transition between a temperate continental climate and a subtropical Caribbean climate (Wooten 1985). The mild subtropical conditions prevailing over much of the bay area are a result of its low latitude, proximity to the Gulf of Mexico and Atlantic Ocean, and low elevations. Warm humid summers are followed by relatively dry, mild winters. Rainfall and seasonal conditions are affected in summer by the presence of the Bermuda high-pressure system and generally daily on-shore seabreezes causing localized thunderstorms and in winter by continental frontal systems.

Rainfall amounts in the Sarasota Bay area total an average of 110 cm (43 inches) a year with most occurring during discrete significant storms in the summer (Sarasota Bay Water Atlas 2014). Rainfall is influenced by temperature differences of the land and water and by seasonal climatic conditions. Summer rains are usually the result of differential air pressures produced by the daily warming of air masses over the land. Convectional summer thunderstorm showers result from cumulonimbus clouds formed over the warmer land body. Winter showers are primarily carried along ahead of cold fronts as colder, drier air comes in contact with warmer,

moister air along the frontal boundary. These winter showers depend on the temporal movement of the front and are usually not heavy or particularly long, unless the front becomes stationary.

Infrequent hurricanes and tropical depression storms and associated storm surges can result in dramatic effects on the hydrology and sediments of the region. Lewis and Estevez (1988) distinguished three periods of seasonal climatic change: a warm, dry period lasting from April to mid-June, a warm wet period lasting from mid-June to November, and a cool dry period lasting from November to April. A detailed description of rainfall and wind patterns, temperature, relative humidity, solar radiation, evapotranspiration, and hurricanes is given in Wolfe and Drew (1990).

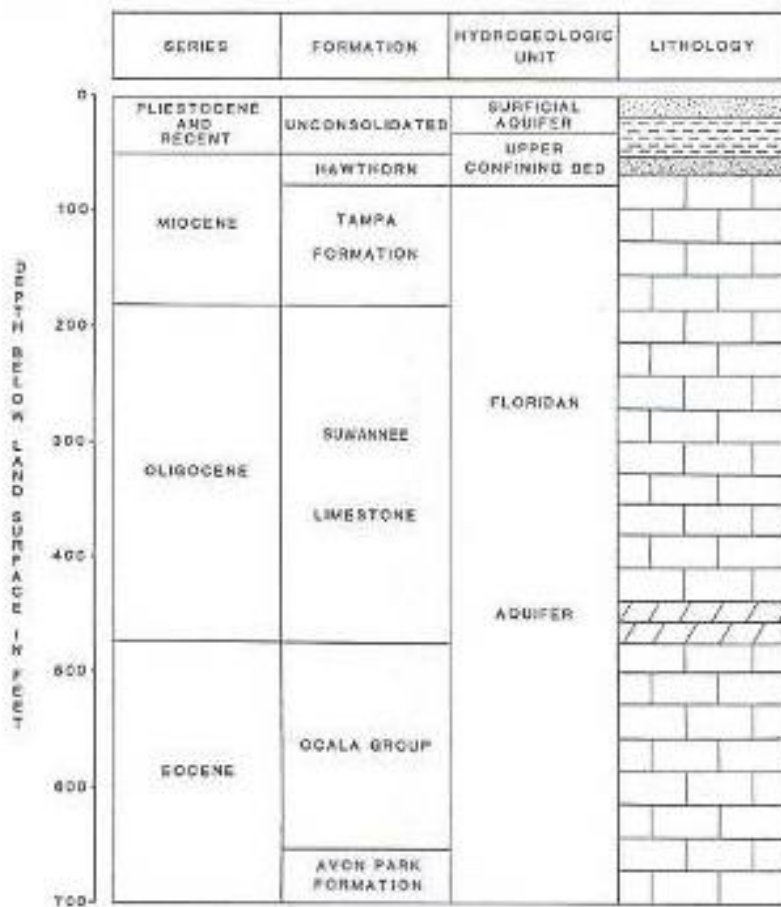
This seasonal rainfall pattern, with the typical dry winters and springs and wetter summers and falls, provide the basis for the spring and summer nesting by colonial waterbirds at the Cortez Key Bird Sanctuary. The seasonal rains in the summer, resulting from storms and tropical depression storms, fill wetlands across Manatee, Hillsborough, and Sarasota counties and the more inland counties of De Soto and Hardee. The wetlands, streams, and rivers overflow their banks during these rainy periods, and the wetland fauna have access to abundant leaf and forest detritus, the basis of a biological food chain that they use to propagate. As the wetlands, streams, and rivers dry out during the winter and spring, the wetland animals become concentrated in smaller pools of water, and this bountiful prey becomes easier for parent wading birds and other waterbirds to harvest, at the time when feeding efficiency is necessary in order to provide sufficient food for growing young birds.

The scattered showers of summer thunderstorms add water to lakes, streams, and ponds across the inland landscape differentially. In winter and spring, as these areas dry up, the wetland prey species that are sought by foraging wading birds become concentrated at different times, as the water levels in the wetlands decline and fish, shrimp, and other animals become “stranded” in shallow pools and littoral shelves. At each wetland site, the wading birds and other waterbirds congregate to collect the abundant and vulnerable fish, invertebrates, amphibians, and reptiles stranded by the evaporating water of their wetlands. The birds will fly as much as 40 km (25 miles) from their nesting colony to find wetlands with this vulnerable prey and return to feed it to their growing young. As a result, protection of the interior wetlands is critical to maintaining the productivity of the nesting birds at the Cortez Key Bird Sanctuary.

Hydrology

Groundwater

Groundwater in this region is present in two distinct aquifers, the Floridan Aquifer, confined to the area below the Hawthorn Geologic Formation, and a surficial aquifer in the unconsolidated sediments located above it. The Floridan Aquifer consists of 300–400 m of water-bearing geologic formations, chiefly limestone. Recharge occurs primarily northeast of Tampa Bay where the aquifer is exposed. To the southwest, the confining layer runs under Tampa Bay and Sarasota Bay, allowing mixing of fresh and salt waters in the surficial aquifer. The surficial aquifer occupies sand and mixed sediments from 6 m to 30 m thick above the confining layer. It discharges laterally into Tampa Bay, Sarasota Bay, and their contributing rivers and creeks (Wehle 1978).



There is some exchange of water between the Floridan and surficial aquifers where sinkholes or manmade features (i.e., canals, dredged channels, and uncased boreholes) allow. Downward leakage occurs farther inland and is important for recharge of the Florida Aquifer while upward leakage occurs where the potentiometric surface is above the surficial aquifer surface. Overall, lateral flow of groundwater follows general drainage patterns towards Tampa Bay and Sarasota Bay.

Hydrogeology (Wehle 1978).

Surface Water

Surface water inputs affect the plants and animals of Cortez Key Bird Sanctuary by impacting the water quality and quantity delivered to Sarasota Bay. Water quality is influenced by the activities of residents, businesses, and other human activity in the Manatee River and Sarasota Bay watersheds. Impacts such as over-fertilization of residential and business gardens and lawns, disposal of liquid wastes, runoff from streets and parking lots, agricultural waste and runoff from farm fields, pesticides and other chemicals that enter the water of ponds, ditches, and streams, and leakage from sewer lines and septic tanks result in cumulative non-point source pollution of rainwater into Sarasota Bay. Nutrients and other chemical pollution washing into Sarasota Bay affect the seagrasses, oysterbars, and mangrove shorelines of the Cortez Key Bird Sanctuary. Increased nutrients stimulate algal growth in the water column, shading seagrasses which require sunlight for photosynthesis. In addition, increased nutrients promote the growth of algae directly on the seagrass blades themselves, similarly negatively affecting seagrass photosynthesis. Oysters filter feed small plants and animals living in the water column, and can be negatively affected by oils, gasoline residues, pesticides, and other chemicals that may enter the waters off Cortez Key and the east side of Sarasota Bay. Mangroves growing on the shorelines of Cortez Key can be impacted by release of chemicals into bay waters. (Sarasota Bay National Estuary Program 1995).



Sarasota Bay watershed boundary. Sarasota Bay National Estuary Program 1995.

Irrigation of agricultural fields and landscaping, leading to additional freshwater inputs, can affect water quantity in the watershed that supplies the estuary near Cortez Key. Water quantity can also be affected by withdrawals from the aquifer supporting that watershed from wells, and withdrawals from freshwater creeks and streams for irrigation (Southwest Florida Water Management District March 1995). Cortez Key is in the portion of Sarasota Bay receiving water from two adjacent watersheds, the Manatee River watershed and the Sarasota Bay watershed.



Regional watersheds, Southwest Florida Water Management District March 1995.

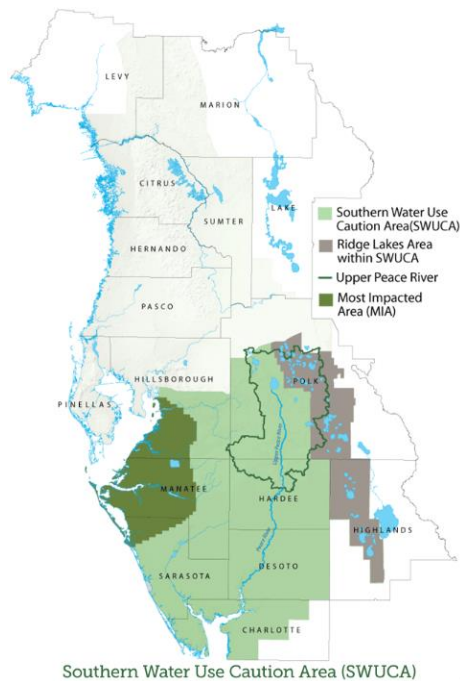
Saltwater intrusion

Saltwater intrusion has been identified as occurring in the Sarasota Bay watershed region (Southwest Florida Water Management District 2014). When freshwater is pumped from the aquifer for human use, the salty water from the Gulf of Mexico moves into the void.

In response, the Southwest Florida Water Management District has instituted a local Water Use Caution Area (WUCA). The WUCA is an area where water regulation action to monitor water withdrawals is necessary because current and former cumulative water withdrawals are causing or have caused adverse impacts to the water and related natural resources or the public interest. The District Governing Board designates WUCAs and establishes rules that enhance the protection and/or recovery of the water resources.

The Southern Water Use Caution Area (SWUCA) was designated in 1992 to address declines in aquifer levels due primarily to groundwater withdrawals. Drawdowns in aquifer levels in some

areas exceeded 15 m. The area encompasses approximately 1,320,000 hectares (13,209 km² or 5,100 square miles), including all of DeSoto, Hardee, Manatee and Sarasota counties, and parts of Charlotte, Highlands, Hillsborough, and Polk counties. Of concern is the rate of saltwater intrusion into the Upper Floridan aquifer along the coast, especially in the Most Impacted Area (MIA), a region of about 1,835 km² (708 square miles) located along the coast of southern Hillsborough, Manatee and northwestern Sarasota counties, including the watershed regions affecting waters around Cortez Key (Southwest Florida Water Management District 2014).



Southern Water Use Caution Area, Southwest Florida Water Management District March 1995.

Seasonally pulsed rainfall and storm events with their associated stormwater flushes provide important inputs to Cortez Key and the east Sarasota Bay estuary. Fundamental estuarine biological productivity is based on natural variations in freshwater input. Creek and river freshwater sources creating dilution of estuarine water salinities provide seasonal variation in salinity values within sectors of the bay system. This variation presents opportunities for sea and estuarine fish and invertebrates at various stages in their life histories to find the salinity levels and other habitat values critical to their survival. Thus, it is important that the amount of water entering the Sarasota Bay estuary be provided at naturally occurring input amounts and according to normal seasonal input regimes (Livingston 1990). Summer rain events that provide a pulse of freshwater to the estuary are especially important in dilution of the salty waters, vital for juvenile fish and invertebrates, including oysters.

Vegetative Community

Mangroves

Most of the vegetation on Cortez Key is composed of mangrove trees, including black, red, and white mangrove trees (*Avicennia germinans*, *Rhizophora mangle*, and *Laguncularia racemosa*, respectively). Mangroves are woody halophytic plants that have morphological and physiological adaptations for survival under conditions of periodic or continual inundation by

salty or brackish water. Mangrove trees thrive in sheltered estuarine bays or backwaters, estuarine fringes and along tidal rivers. A valuable function of mangrove-dominated communities is providing a detrital food base for a wide variety of marine invertebrates and economically important fishes (Lugo and Snedaker 1974; Florida Natural Areas Inventory 1990).



Red mangroves and oysterbars at Cortez Key, a roosting Reddish Egret with courting Roseate Spoonbills and a White Ibis adult. Photo credit: Mark Rachal.

Birds as Ospreys, herons, egrets, ibis, spoonbills, Brown Pelicans, and Magnificent Frigatebirds use the mangrove trees at Cortez Key for roosting and nesting. Neotropical migrants forage on insects and other small invertebrates in mangrove trees. Prairie Warblers, Black-whiskered Vireos, and Mangrove Cuckoos nest in mangrove forests in Florida. Mangrove crabs, adapted to life in the estuarine forest, are commonly noted. Mangrove trees and their roots provide protection of shorelines from erosion by waves and storms. In addition, the roots of mangroves provide a substrate for oyster and barnacle attachment; these animals filter water improving water quality and also are important elements of the food web (Odum and McIvor 1990).



Adult Black-crowned Night-Heron in black mangrove. Photo credit: Audubon files.

Grasses

Smooth cordgrass (*Spartina alterniflora*) and salt meadow cordgrass (*S. patens*) occur in small patches on Cortez Key Bird Sanctuary. Cordgrass marshes function to stabilize sediments, filter stormwater runoff, and serve as nursery grounds for fish and invertebrates. Willets are among the bird species that nest in these marsh patches.

Seagrasses

Cortez Key is surrounded by a shallow-water flat that supports a lush seagrass meadow. Seagrass beds constitute one of the world's most ecologically significant environments (McRoy and McMillan 1977). Seagrasses on the shallow flat surrounding Cortez Key include shoal grass (*Halodule wrightii*), turtle grass (*Thalassia testudinum*), widgeongrass (*Ruppia maritima*), and manatee grass (*Syringodium filiforme*). Seagrasses provide an important element in the estuary's biological food web, as primary food producers (Dawes 1981). They are underwater flowering plants with strong root anchors. Like land plants, seagrasses convert solar energy from sunlight through photosynthesis. Seagrasses provide critically important food and habitat for many animals, including manatees, turtles, seahorses, seatrout, redfish, tarpon, and shrimp. Algae growing on the seagrass leaves provides food for billions of estuary fish and invertebrates. Seagrasses trap sediments suspended in the water column, cleaning the water, and dampen waves near shorelines, reducing erosion of shorelines (Dawes 1981). Most seagrass beds occur in waters .9-1.2 m (3-6 feet) deep, and at low tides, they are very vulnerable to "prop-scars", damage caused by boat propellers plowing deep furrows through the grass.

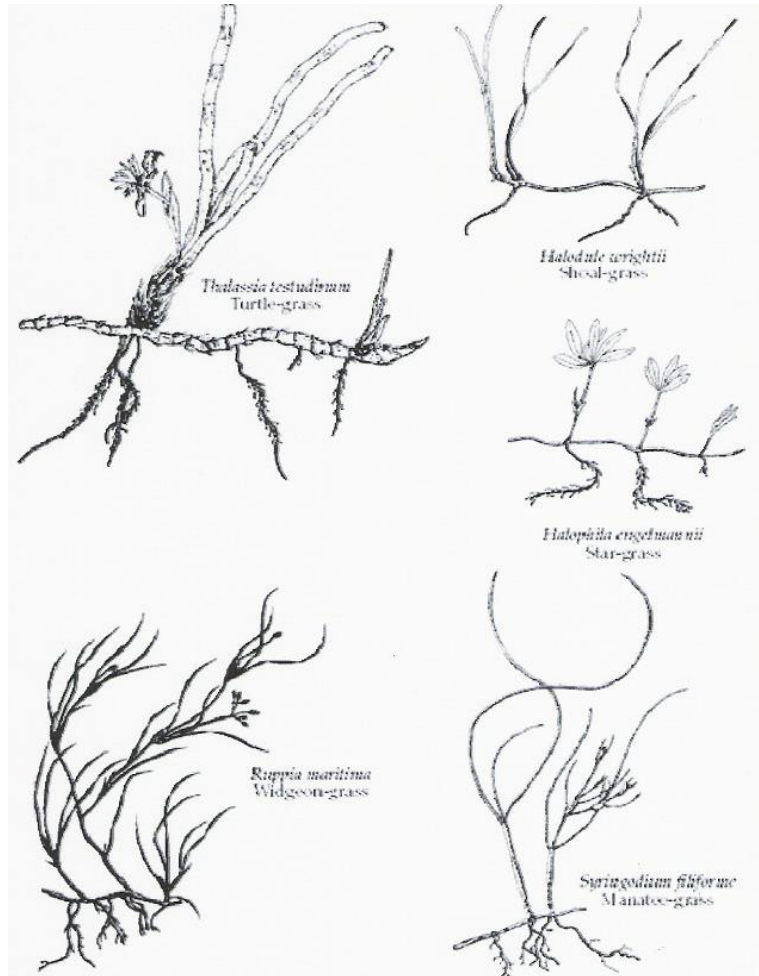


Seagrass meadow. Photo credit: Environmental Protection Commission of Hillsborough County.



The Sarasota Bay Estuary Program has posted the shallow water areas surrounding Cortez Key Bird Sanctuary with "Shallow Water Warning" signs to help boaters navigate via the marked channel, and to protect seagrass beds and oysterbars from propeller scarring.

Slow speed zone posted around Cortez Key. Photo credit: Mark Rachal.



Major anthropogenic impacts in Sarasota Bay have reduced historical seagrass coverage significantly. Dredge and fill operations have increased turbidity, decreased light penetration, and removed suitable habitat for seagrasses (Lewis 1977) by increasing depths beyond the light penetration zone and by filling in areas where seagrasses would occur naturally. Nutrient inputs from pollution points inland have resulted in algal epiphytes attaching to seagrass blades, increased phytoplankton and extensive macroalgae blooms in the water column, greatly reducing available light for seagrasses growing on the bay floor. In addition, impacts to seagrass flats from boat propellers have created slots and trenches, disrupting flat drainage and impacting seagrass coverage of flats near Cortez Key Bird Sanctuary.

Sketches of seagrass species, Environmental Protection Commission of Hillsborough County 2006.

Fauna

Benthic invertebrates are often studied because of their usefulness as indicator species. The populations and species richness present provide important data with regard to the relative ecological integrity of a particular site.

Recent studies in nearby Tampa Bay recorded 79 benthic invertebrate species (Table, below). This table reflects studies conducted over a 7-year period and is probably a realistic indication of the regional benthic faunal richness of the species that occur in Sarasota Bay near Cortez Key. Multiple crab traps located in waters near Cortez Key and nearby on Sarasota Bay also attest to a productive local blue crab (*Callinectes sapidus*) fishery.

Oyster beds adjacent to Cortez Key actively filter the estuary water of Sarasota Bay, improve water quality, and provide a hard substrate habitat for other benthic invertebrates and fish. Oyster beds occur in shallow bay waters, and are often exposed to the air on low tides but are underwater at higher tides. During warm weather, oysters spawn, releasing millions of sperm and egg cells into the water column.

Larval oysters live in the open water as zooplankton, developing through several larval stages into “veligers”, or small oysters that seek a hardened substrate for attachment. Near Cortez Key, mangrove roots and rocks provide attachment opportunities for veligers. Once attached, veligers grow into adult oysters.

Invertebrate taxa collected in benthic sampling in Tampa Bay, July 1988 through June 1995. Similar species can be expected to occur in Sarasota Bay.

TAXON	SCIENTIFIC NAME	TAXON	SCIENTIFIC NAME
NEMERTEANS	<i>Stylochus</i> sp.	MOLLUSKS	unid. gastropod
	<i>Nemertea</i> sp.		<i>Acteocina canaliculata</i>
ANNELIDS	unid. rhyncocoel	<i>Assiminea succinea</i>	
	<i>Eteone heteropoda</i>	<i>Haminoea succinea</i>	
	<i>Eumida sanguinea</i>	<i>Teinostoma lerema</i>	
	<i>Genityllis castanea</i>	unid. bivalve	
	<i>Neanthes succinea</i>	<i>Amygdalum papyrium</i>	
	<i>Paraehesione luteola</i>	<i>Astarte subequilatera</i>	
	<i>Laeonereis culveri</i>	<i>Ensis minor</i>	
	<i>Glycera americana</i>	<i>Lyonsia hyalina</i>	
	<i>Glycinde solitaria</i>	<i>Macoma constricta</i>	
	<i>Diopatra cuprea</i>	<i>Mysella planulata</i>	
	<i>Kinbergonuphis simoni</i>	<i>Parastarte triquetra</i>	
	<i>Leitoscoloplos</i> sp.	<i>Pseudomiltha floridana</i>	
	<i>Leitoscoloplos foliosus</i>	<i>Tagelus plebeius</i>	
	<i>Scoloplos rubra</i>	<i>Tellina</i> sp.	
	<i>Scolecopsis taxana</i>	CRUSTACEANS	<i>Bowmaniella</i> sp.
	<i>Aricidea philbinae</i>		<i>Taphromysis bowmani</i>
	<i>Aricidea taylora</i>		<i>Oxyurostylis smithi</i>
	<i>Polydora cornuta</i>		<i>Almyracuma</i> sp. A
	<i>Polydora websteri</i>		<i>Cyathura polita</i>
	<i>Prionospio heterobranchia</i>		<i>Xenanthura brevitelson</i>
	<i>Prionospio steenstrupi</i>		<i>Edotea</i> sp. A
	<i>Paraprionospio pinnata</i>		<i>Erichsonella filiformis</i>
	<i>Streblospio benedicti</i>		<i>Ampelisca</i> sp.
	<i>Carazziella hobsonae</i>		<i>Ampelisca abdita</i>
	<i>Magelona corona</i>		<i>Ampelisca vadorum</i>
	<i>Magelona pettiboneae</i>		<i>Ampelisca holmesi</i>
	<i>Capitella capitata</i>		<i>Acuminodeutopus</i> sp.
	<i>Heteromastus filiformis</i>		<i>Corophium</i> sp.
	<i>Mediomastus ambiseta</i>		<i>Elasmopus laevis</i>
	<i>Axiiothella mucosa</i>		<i>Grandidierella bonnieroides</i>
	<i>Cistenides gouldii</i>	<i>Gammarus mucronatus</i>	
	<i>Melinna maculata</i>	<i>Monoculodes edwardsi</i>	
<i>Fabriciella trilobata</i>	<i>Orchestia</i> sp.		
<i>Limnodriloides</i> cf. <i>rubicundus</i>	<i>Leptalpheus forceps</i>		
<i>Tharyx annulosus</i>	<i>Neopanope texana</i>		
<i>Syllid</i> spp.	<i>Panopeus herbstii</i>		
BRYOZOANS	<i>Phoronis architecta</i>	<i>Pinnixa pearsii</i>	
ECHINODERMS	<i>Ophiophragmus filigraneus</i>		

Oysters feed by filtering planktonic microscopic plants and animals and other materials floating in the water column from the estuary water where they live. This feeding technique acts to remove sediments and clarify the water. Oysters can tolerate a wide range of temperature,

oxygen, salinity, and turbidity changes, making them suitable for survival in the dynamic conditions of the estuary system. In Sarasota Bay, most oysters are American oysters (*Crassostrea virginica*). Oyster beds provide habitat for other invertebrates and small fish,



including blue crabs, killifish, silversides, and anchovies. They are also important low tide roost sites and foraging areas for birds, notably American Oystercatchers, Black-bellied Plovers, Willets, Ruddy Turnstones, and sandpipers, and other migratory and wintering shorebirds.

Whimbrel on oyster shoreline, one of the migrant wintering shorebird species that forage on oyster beds near Cortez Key Bird Sanctuary. Photo credit: Audubon files.

Although the precise acreage of hard bottom habitat lost due to dredge-and-fill activities has not been determined, nearly 1,821 hectares (4,500 acres) of bay bottom are known to have been covered by dredge-and-fill operations. To compensate for lost habitats, SBEP has embarked on several oyster restoration and artificial reef creation projects.



Oyster beds constitute a unique and valuable component of the Sarasota Bay ecosystem. Oyster beds provide structural habitat for many species of fish and invertebrates; in fact, oyster beds often support the highest species diversity and faunal abundance of any given habitat type within the bay. Oysters are also valued for their ability to improve water quality through their prolific filtering capacity.

Sarasota Bay oyster reef restoration sites, SBEP web site.

The SBEP supported a study of the historical distribution of oyster beds throughout the estuary and found that many historical beds have been lost, either to physical disturbances accompanying coastal development, through burial by sediments, or other unknown causes. This study led to the decision by the SBEP to initiate an Eastern oyster (*Crassostrea virginica*) restoration program within Sarasota Bay.

As filter feeders, both clams and oysters have the theoretical potential to improve the water clarity of Sarasota Bay, particularly if water clarity impairments are linked to chlorophyll or phytoplankton levels. The size preferences of shellfish should be compared to dominant phytoplankton species in the region for predicting improvements. Other benefits of enhancing

shellfish populations would include increased biomass and productivity of the estuary, and the support of other species which prey on larval bivalves. Expanding oyster reefs could also provide additional habitat complexity particularly suited to invertebrate fauna and juvenile fish, increased shoreline stability, and reduced sediment re-suspension through wave damping (Dixon 1992).



Horseshoe crabs live in the Sarasota Bay estuary and Gulf of Mexico waters and come to sandy shores during high tide to lay their eggs. There is limited sandy shore on Cortez Key but horseshoe crabs do use it as nesting substrate, especially during spring high tides. Many species of shorebirds eat the high protein and fat horseshoe crab eggs (FFWCC 2014).

Horseshoe crab, halophytic *Portulacastrum maritima*, and black mangrove pneumatophores on the beach. Photo credit: Audubon files.

Fish

Sharks and Rays

Mote Marine Laboratory studies show that Sarasota Bay is an important area for sharks, including bull (*Carcharhinus leucas*), hammerhead (*Sphyrna* sp.), juvenile black-tipped (*C. limbatus*), and bonnethead (*S. tiburo*) sharks. Rays and skates include cow-nosed rays (*Rhinoptera bonasus*), southern and Atlantic stingrays (*Dasyatis americana*, *D. sabina*, respectively), butter rays (*Gymnura* sp.), and spotted eagle rays (*Aetobatis narinari*) (R. Hueter, Mote Marine Laboratory, pers. comm.). Water quality declines and subsequent decline in food availability have had important impacts on shark numbers (C. Manire, Mote Marine Laboratory, pers. comm.). Overfishing, a major problem for fish stocks and shark populations all over the world, has had dramatic effects regionally (R. Hueter and C. Manire, pers. comm.).

Bony Fish

Comp (1985) prepared a list of 202 fish species collected within nearby Tampa Bay (also in Wolfe and Drew 1990). They proposed that only 125 of these could be considered common inhabitants and, although the list indicates a diverse fish assemblage, ten or fewer species usually made up the majority of the fish caught in sampling programs. The ten most common fish in terms of numerical abundance in collections made with standard gear (which is somewhat biased toward capturing smaller, less mobile species) are listed in the table below. These lists include fish that use upper Sarasota Bay near Cortez Key.



Osprey carrying sunfish prey. Photo credit: Audubon files.

Adults of larger, more predatory species of fish typically depend upon these "top ten" as their main food source. Many of these species are important to recreational and commercial fisheries, especially tarpon, snook, cobia (*Rachycentron canadum*), spotted seatrout, sand seatrout (*Cynoscion arenarius*), and various species of sharks. Other important fish species appear to depend on invertebrates as their main source of food (R. McMichael and K. Peters, pers. comm). These include the red drum (*Sciaenops ocellatus*), black

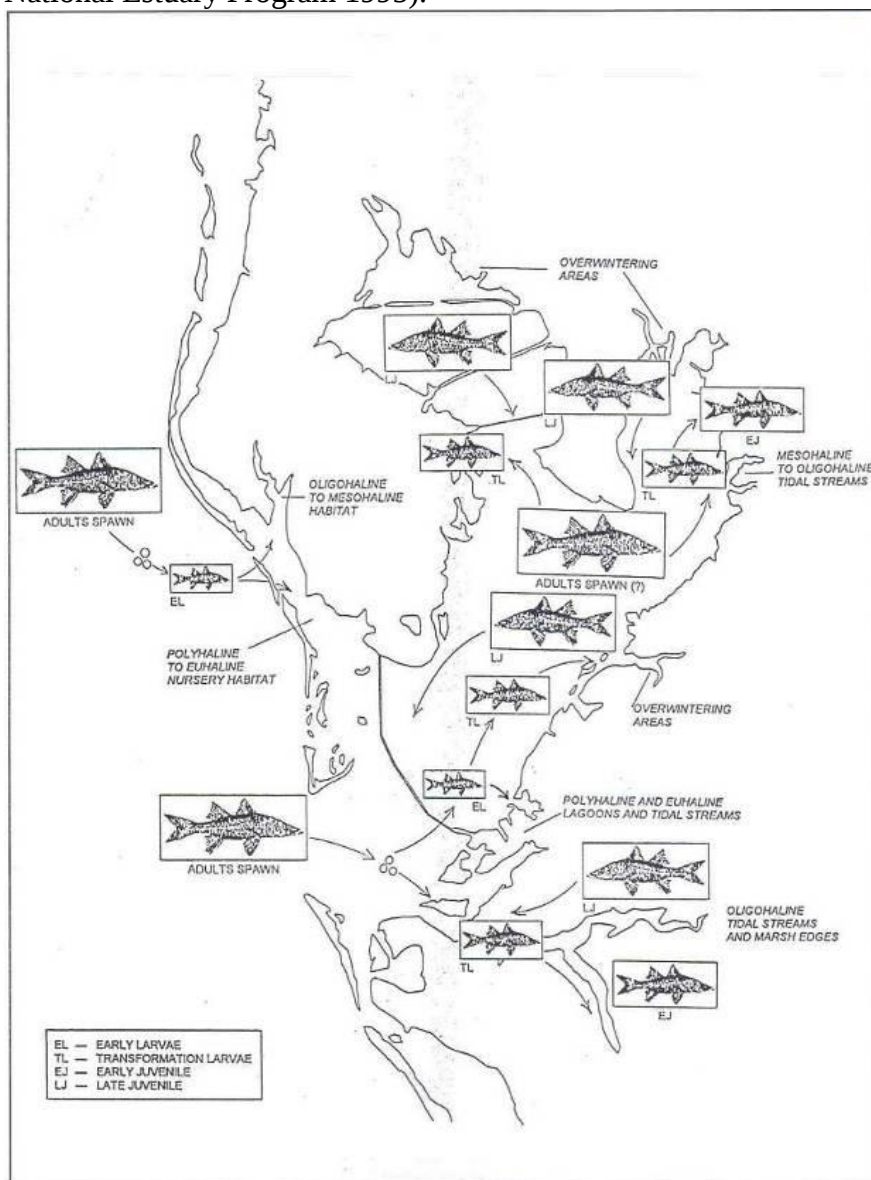
drum (*Pogonias cromis*), gag grouper (*Mycteroperca microlepis*), and catfish.

The ten dominant fish species, listed in approximate order of abundance (Springer and Woodburn 1960, Comp 1985).

SPECIES	SCIENTIFIC NAME	COASTAL BEACHES	BAY medium to high salinity	BAY medium salinity	BAY low salinity
		low salinity			
Tidewater silverside	<i>Menidia peninsulae</i>	X	X	X	X
Bay anchovy	<i>Anchoa mitchilli</i>	—	X	X	X
Scaled sardine	<i>Harengula jaguana</i>	X	—	X	X
Striped mullet	<i>Mugil cephalus</i>	—	X	X	X
Pinfish	<i>Lagodon rhomboides</i>		X	X	X
Longnose killifish	<i>Fundulus similis</i>	—	X	X	X
Spot	<i>Leiostomus xanthurus</i>	—	X	X	X
Silver perch	<i>Bairdiella chrysoura</i>	—	X	X	—
Silver jenny	<i>Eucinostomus gula</i>	—	X	X	—
Code goby	<i>Gobiosoma robustum</i>	—	X	X	—

Tampa and Sarasota Bays provide important nurseries for the larvae and juveniles of both resident and migratory fish species. Seventy-nine species use the bay as a nursery (Lewis and Estevez 1988). During and following spawning periods, larval and juvenile fish typically migrate into shallow, protected, low-salinity nursery areas of the bay, river, and creeks to feed and mature (Comp 1985, Lewis et al. 1985).

For example, larval-stage snook and spotted seatrout seek out seagrass meadows for nursery areas, relying on this habitat for a crucial stage in their life histories. Other fish have similar life history stages that depend on their use of various estuarine habitats, including semi-salty creeks and saltier or more fresh-water portions of the estuary system. Unfortunately, during the 1950s and 1960s, seagrass meadows in the bay were significantly reduced by dredging, which has affected approximately 15 % of the bay bottom (2,045 hectares; 5,054 acres) (Sarasota Bay National Estuary Program 1995).



Snook (*Centropomus undecimalis*) life history diagram. Lewis Environmental Services, Inc. and Coastal Environmental, Inc. 1996.

Amphibians and Reptiles

Amphibians typically reproduce in small ephemeral, freshwater ponds. Future regional habitat restoration projects should include the restoration and creation of such ponds upstream in the Sarasota Bay and Manatee River watersheds that are important forage regions for birds nesting on Cortez Key Bird Sanctuary. No amphibians inhabit Cortez Key itself, because there is no fresh water there.



Diamondback rattlesnakes are good swimmers and occur on estuary islands in Florida, especially spoil islands that provide some upland habitats. Photo credit: Audubon files.

Reptiles are more common in the region, with 15 species suspected or confirmed. Diamondback rattlesnakes (*Crotalus adamanteus*) are common residents on islands, and especially spoil islands, in Sarasota Bay. Rattlesnakes are excellent swimmers. Rattlesnakes are not commonly found on Cortez Key though because the island is low in elevation and most portions of the island are inundated during higher tides.

The diamondback terrapin (*Malaclemys terrapin*) is of particular interest. It is a small estuarine turtle that occurs locally in shallow coastal waters along the eastern seaboard and both coasts of Florida. They are now extirpated from Chesapeake Bay and endangered in New Jersey (R. C. Wood, organization, pers. comm.). Their distribution in Florida is spotty. Recent surveys have not found terrapins in Sarasota Bay (G. Heinrich pers comm), although they are resident in Tampa Bay.



Diamondback terrapin at the nearby Terra Ceia Bay. Photo credit: Audubon files.

Two species of sea turtles, loggerhead (*Caretta caretta*) and Kemp's Ridley (*Lepidochelys kemp*), occur in Sarastoa Bay. Discarded plastic bags and monofilament fishing line are a common cause of mortality of these species (A. Meylan, Florida Fish and Wildlife Conservation Commission Florida Wildlife Research Institute, pers. comm.).

Green anoles are the native Florida anole. Brown anoles were introduced from the Caribbean in 1960s and their populations have displaced the native green anoles. Several of the small heron species, including Cattle Egrets, Great Egrets, Little Blue Herons, and Snowy Egrets, have been observed preying on brown anoles.

The table below lists amphibians and reptiles known or suspected to occur on the mainland near Cortez Key, although do not occur on Cortez Key itself. While this list is likely incomplete, enough is known to identify particular management concerns and opportunities. Many of these animals are regular prey species for birds that nest on Cortez Key.

Herpetofauna that occur on the mainland near Cortez Key and in or near Sarasota Bay.

TAXON	COMMON NAME	SCIENTIFIC NAME
AMPHIBIANS	southern toad	<i>Bufo terristris</i>
	Cuban toad	<i>Bufo marinus</i>
	green treefrog	<i>Hyla cinerea</i>
	squirrel treefrog	<i>Hyla squirella</i>
	Cuban treefrog	<i>Hyla septrionalis</i>
REPTILES	southern leopard frog	<i>Rana sphenoccephala</i>
	box turtle	<i>Terrapene carolina</i>
	diamondback terrapin	<i>Malaclemys terrapin</i>
	gopher tortoise	<i>Gopherus polyphemus</i>
	Atlantic loggerhead	<i>Caretta caretta caretta</i>
	Kemp's Ridley turtle	<i>Lepidochelys kemp</i>
	Florida softshell turtle	<i>Trionyx ferox</i>
	green anole	<i>Anolis carolinensis</i>
	brown anole	<i>Anolis sagrei</i>
	ground skink	<i>Scincella lateralis</i>
	southeastern five-lined skink	<i>Eumeces inexpectatus</i>
	banded water snake	<i>Natrix fasciata</i>
	eastern garter snake	<i>Thamnophis sirtalis</i>
	eastern indigo snake	<i>Drymarchon corais couperi</i>
	Florida kingsnake	<i>Lampropeltis getulus</i>
	eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>
	mangrove water snake	<i>Nerodia fasciata</i>
	ring-neck snake	<i>Diadophis punctatus</i>
	black racer	<i>Coluber constrictor</i>
	eastern coral snake	<i>Micrurus fulvius</i>
	alligator	<i>Alligator mississippiensis</i>

Birds

Birds are the most diverse and most highly visible wildlife taxon of the area, with more than 160 species known or likely to occur in Sarasota Bay (see table below) (Powell 1987). A relatively high proportion of the species that occur are not generally common in Florida. In fact, 12 of the resident species are currently listed by the federal and state governments as threatened, endangered, or species of special concern. Migrant and wintering species, occurring seasonally, make up another significant segment of the region's avifauna.



Cortez Key Bird Sanctuary provides very important bird nesting habitat for colonially nesting waterbirds that nest in the mangrove trees. Birds that nest in the trees include Brown Pelicans, Double-crested Cormorants, Anhingas, Great Blue Herons, Great Egrets, Snowy Egrets, Little Blue Herons, Tricolored Herons, Reddish Egrets, Cattle Egrets, Green Herons, Yellow-crowned Night-Herons, Black-crowned Night-Herons, and Roseate Spoonbills. In some years, White and Glossy Ibis also nest there (Robertson and Woolfenden 1992).

Yearling Little Blue Heron foraging for small fish on sandflats. Photo credit: Audubon files.

In addition, the island's mangroves provide a significant roost site for non-breeding Magnificent Frigatebirds (*Fregata magnificens*), mostly males, but including some females and juvenile birds. Those birds roost at Cortez Key during the spring, summer, and fall, and are generally absent in the winter. Frigatebirds commonly steal fish that terns have caught and sometimes forage for themselves over dolphin pods or schools of large fish. Birds fish in the estuary and fresh water habitats (Audubon Florida 2013).

Mud and grass flats, oysterbars, shallows, and shores of Sarasota Bay are important foraging areas for many species of shorebirds, including Spotted Sandpiper, Sanderlings, sandpipers, and Ruddy Turnstones. Peregrine Falcons (*Falco peregrinus*), regular migrant and winter residents, haunt the mangroves between seeking gulls or ducks for prey. Bald Eagles (*Haliaeetus leucocephalus*) forage regularly on and near Sarasota Bay. White Pelicans (*Pelecanus erythrorhynchos*) are notable winter residents. Red-breasted Mergansers (*Mergus serrator*), Horned Grebes (*Podiceps auritus*), and Common Loons (*Gavia immer*) are also winter residents in the bay waters around Cortez Key and Sarasota and Tampa Bays in general.



Although not censused annually, significant shorebird populations use exposed and shallow flats. During the spring and fall, and over the winter, shorebirds rely on the island and mainland shores, mudflats, and grassflats of the eastern side of Sarasota Bay and along some shorelines at Cortez Key Bird Sanctuary. In addition, spring and fall migrations of neotropical songbirds use mangroves and other treed forests and habitats along Sarasota Bay.

Pine Warbler (*Dendroica pinus*), one of the neotropical migrant songbird species that use the habitats at Cortez Key. Photo credit: Audubon files.

Birds that regularly occur at or in the water near the Cortez Key Bird Sanctuary

Species	FWC Listing as of June 2014	FWC Proposed Listing
Common Loon		
Least Grebe		
Pied-billed Grebe		
Horned Grebe		
Magnificent Frigatebird		
American White Pelican		
Brown Pelican	SSC	
Double-crested Cormorant		
Anhinga		
Great Blue Heron		
Great Egret		
Snowy Egret	SSC	
Little Blue Heron	SSC	T
Tricolored Heron	SSC	T
Snowy Egret		
Reddish Egret	SSC	T
Cattle Egret		
Green Heron		
Black-crowned Night-Heron		
Yellow-crowned Night-Heron		
White Ibis	SSC	
Roseate Spoonbill	T	T
Wood Stork	E	E
Black Vulture		
Turkey Vulture		
Mallard/Mottled Hybrid		
Mottled Duck		
Red-breasted Merganser		
Osprey		
Pied-bill Grebe		
Black-bellied Plover		
American Oystercatcher	SSC	T
Willet		
Spotted Sandpiper		
Ruddy Turnstone		
Dunlin		
Laughing Gull		
Ring-billed Gull		
Belted Kingfisher		
Downy Woodpecker		
Fish Crow		
Common Grackle		

Notes: Florida Fish and Wildlife Conservation Commission listings as of June 2014 include E = Endangered, T= Threatened, SSC = Species of Special Concern; FWC is revising its listing process, and soon will offer only one listing category, Threatened, while acknowledging federal listing of Endangered.

Selected Species Accounts

Brief status summaries are provided below for several species that are particularly dependent on the habitats of Cortez Key Bird Sanctuary, to illustrate the significance of this area.



American White Pelicans. Photo credit: Audubon files.

American White Pelicans (*Pelecanus erythrorhynchos*) overwinter in Sarasota, Tampa, and other bay systems and water bodies in Florida, arriving in October from nesting areas in North Dakota, Minnesota, and Canada and wintering until mid-March. These birds use the island's sandbars and nearby docks at the Village of Cortez as roost sites. White Pelicans forage widely throughout the area in fresh and salt water, collecting schools of fish startled by their dangling orange feet and scooping them up in their expandable pouches.

Brown Pelicans (*Pelecanus occidentalis*) are currently listed by FWC as a "Species of Special Concern" but will not be listed once the up-dated listing process is complete. Brown Pelicans

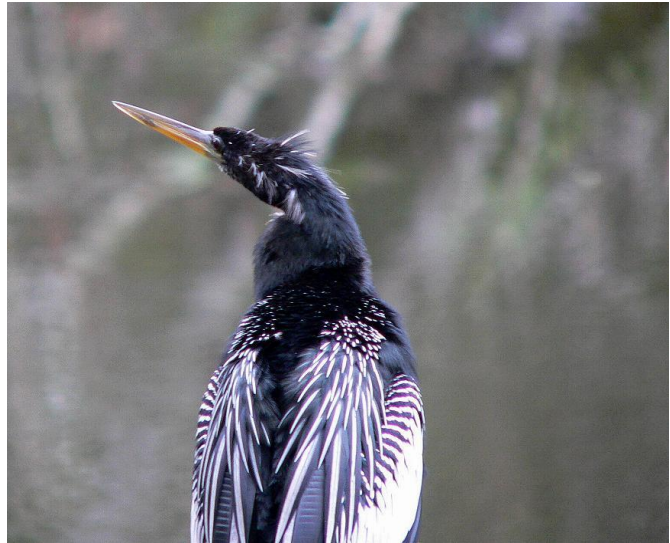


forage for small fish prey in Sarasota Bay and nest and roost on Cortez Key. Menhaden is probably the key prey species, but anchovies, silversides, mullet and other small fish are also taken. Conservationists are concerned about the impacts that fishing line and gear have on pelican populations, including both White and Brown pelicans, and other waterbirds.

In the Sarasota Bay area, Brown Pelicans typically lay three pale cream-colored eggs in early February in shallow-bowled large stick nests located high in mangrove trees. It takes 28-30 days for the eggs to hatch; both parents incubate. Pelican chicks hatch as gray-skinned naked chicks with eyes fused but quickly grow white downy feathers. Age at first flight is 9-12 weeks after hatching.

Adult Brown Pelican. Photo credit: Bruce Ackerman.

Anhingas (*Anhinga anhinga*) and Double-crested Cormorants (*Phalacrocorax auritus*) begin nesting at Cortez Key Bird Sanctuary in mid-winter, with their nests typically located in the tops of black mangrove trees, their preferred nesting habitat. Anhingas forage in freshwater habitats, while Cormorants are adept at feeding in both fresh and salt waters. Both species feed by swimming rapidly underwater to pursue fish and other wetland prey; cormorants use their hooked beak to snag their prey at capture while Anhingas spear their needle-sharp beaks through the scales, bones and muscles of their prey.



Anhinga male. Photo credit: Audubon files.



A Double-crested Cormorant adult (left) at the nest with its young displays a bright orange beak and pouch and glossy black plumage. Young birds have paler, smaller beaks and their feathers are a dull black. This adult has returned to the nest to feed its young, which are actively begging.

Photo credit: Audubon files.



Great Blue Herons (*Ardea herodias*) begin to nest in November at Cortez Key Bird Sanctuary. These larger birds nest in the top of the canopy, so most nests can be seen and a direct count of the nesting pairs is possible. For several years, a Great White Heron, the white morph of the Great Blue Heron, has nested at Cortez Key, with a Great Blue Heron mate.

Great Blue Herons typically lay three eggs. In most years, two or three of the hatched birds die due to starvation, as the wetland habitats in the region typically do not provide a sufficient prey base to support all the chicks. Chicks are independent approximately 90 days after hatching.

A Great Blue and Great White Heron mated pair at Cortez Key. Photo credit: Audubon files.

Great Egrets (*Ardea alba*) are among the herons that nest at the Cortez Key Bird Sanctuary. The symbol of the National Audubon Society, Great Egrets were killed in great numbers during the late 1800's through the early 1900's by plume hunters to provide feathers for ladies' hats, the result of an international fashion craze that caused the near extinction of egrets and other bird species worldwide. The egret populations in Florida were particularly impacted as hunters targeted coastal nesting colonies, slaughtering adult birds in breeding plumage by the thousands, and leaving their dependent young to die in their nests. Bird colonies along the west coast of



Florida were wiped out by hunters hired by a Frenchman, M. Lechavelier, who centered his activities at a homestead in south Tampa Bay. Princeton ornithologist W. E. D. Scott documented the wide-scale loss of nesting wading bird colonies in the region (Scott 1881, 1887, 1888, 1891). Great Egrets have made a population recovery and are now relatively abundant in the state.

Adult Great Egret. Photo credit: Audubon files.

Populations of the Snowy Egret (*Egretta thula*), Little Blue Heron (*Egretta caerulea*), and Tricolored Heron (*Egretta tricolor*) have all declined significantly in Florida in recent decades and all three species are currently listed by the state as "Species of Special Concern". These species nest in colonies on islands in Tampa and Sarasota Bay that have no mammalian predators.

The main factor affecting the local populations of these small herons is loss of freshwater wetland foraging habitat. Acquisition, protection and management of regional wetland foraging habitats must be pursued aggressively if the future of these species is to be secured.



Adult Snowy Egret. Photo credit: Audubon files.



All three small heron species require freshwater wetland prey year-around, with increased requirements during the nesting season to provide sufficient prey for their growing young. These herons have been observed foraging along Cortez Key shorelines and all three species nest in the mangroves located on the northern portion of the island. They nest under the canopy where the nests are shaded from the sun and are generally not visible from outside the island.

Adult Tricolored Heron foraging in the shallow water surrounding a mangrove island. Photo credit: Audubon files.



Little Blue Herons typically forage as a slow stalker in shallow water or among wetland vegetation while Tricolored Herons are active prey pursuers. Tricolored Herons forage in shallow water, stalking and chasing their aquatic prey. Both species generally rely on freshwater wetland prey.

Foraging adult Little Blue Heron (above) and adult Tricolored Heron (below). Photo credit: Audubon files.



Reddish Egrets (*Egretta rufescens*) forage exclusively on shallow estuary flats, salterns, or beaches for small fish. As the fish prey dodges to avoid capture, the Reddish Egret chases it, using spread wings to balance and maneuver.

Adult Reddish Egret exhibiting active foraging behavior on shallow sandflats. Photo credit: J. Wiley.

The Reddish Egret is the rarest heron in North America with only 2,000 breeding pairs estimated to occur throughout its range (Reddish Egret Working Group 2013). Only about 375 pairs are estimated to be in Florida (Paul 1996). The species was likely extirpated from Florida by plume hunters around 1900, and nesting birds did not return to the west central coastal Florida area until 1974 when two nests were found at nesting in the section of Tampa Bay known as Hillsborough Bay at the Alafia Bank Bird Sanctuary (Paul et al. 1975). The local population has grown and

spread to include three nesting sites in Sarasota Bay (Audubon's Cortez Key Bird Sanctuary, Bishop Bayou, and the Roberts Bay Bird Islands) and has increased to about 80 pairs across the west central coastal Florida region. This species is a habitat specialist, requiring barren, shallow coastal flats for foraging. Exposed at low tide, the shallow grass, mud, and sand flats and oysterbars near Cortez Key Bird Sanctuary and along the shorelines of Sarasota Bay provide the specific foraging habitat that this species requires. The Reddish Egret is currently listed by FWC as a "Species of Special Concern" but FWC is planning to change this listing to "Threatened".



These two Reddish Egret young, still dependent upon their parents, wait in the mangrove trees at Cortez Key Bird Sanctuary for their parents to bring the next meal. Reddish Egret young are independent at approximately 10 weeks after hatching. Photo credit: Audubon files.

It is difficult to conduct conclusive population surveys for night-herons because of their crepuscular and nocturnal foraging behaviors. Yellow-crowned Night-Herons (*Nyctanassa violacea*) sometimes nest in upland slash pine and oak nesting locations located within a few city blocks of an estuary shoreline. They generally eat crabs, supplemented with small fish and invertebrates. At Cortez Key Bird Sanctuary, Yellow-crowned and Black-crowned night-herons nest under the tree canopy in the black mangroves in the heron colony located at the north end of the island.



The broad beak of the Yellow-crowned Night-Heron accommodates capture of its main prey item, small crabs. Note the crab parts in the regurgitation pellets in this picture. Photo credit: Lauren Deaner.



Green Herons (*Butorides virens*) nest in small numbers at the Cortez Key Bird Sanctuary. These small herons nest in small stick nests on branches that stretch out over the water. The chicks are generally silent, trusting their excellent camouflage to disguise and protect them. Green Heron adults will often skulk in the bottom of the heron colony, picking up fish dropped as other birds feed their young.

Green Heron branchlings in mangroves. Photo credit: Audubon files.



White Ibis (*Eudocimus albus*) are the most abundant wading bird species in Florida, although biologists estimate that the population in the state has declined by 80% since the 1940s. This decline is due to urban development, and loss of pasturelands, wet prairie, and freshwater wetland habitats, which provide essential foraging sites, since White Ibis require freshwater wetland prey to feed their nestlings (Johnston and Bildstein 1990). For this reason, White Ibis has been listed by the FWC as a “Species of Special Concern” although it will no longer be listed when the new FWC listing program is implemented. White Ibis nest at the Cortez Key Bird Sanctuary in some years.

Adult White Ibis. Photo credit: Audubon files.

Roseate Spoonbills. Photo credit: Carlton Ward

The Roseate Spoonbill (*Ajaia ajaja*), like the Reddish Egret, is a rare coastal species that was nearly extirpated from the nesting population in Florida and only recently has returned to nest in west central Florida, in 1975 at Audubon’s Alafia Bank Bird Sanctuary in east Tampa Bay (Dunstan 1976). Over the years since then, the nesting population has increased and birds have begun to nest in small numbers at two colonies in Sarasota Bay (Cortez Key Bird



Sanctuary and the Roberts Bay Bird Islands) but, of the total area population of about 300 pairs, over 80% of the population still nest at the Richard T. Paul Alafia Bank Bird Sanctuary in Hillsborough Bay. Spoonbills forage extensively on coastal flats, tidal creeks and local wetland habitats. The shallow water and wetland habitats of Sarasota Bay provide crucial foraging habitats for this species.



Willetts (*Catoptrophorus semipalmatus*) breed in Florida in coastal marsh grasses, as inconspicuous nesters. They defend territories along shorelines. Chicks are precocial and capable foragers and are also fed by their attentive parents, which actively defend them against predators. Chicks use their effective camouflage to hide from ground predators, crouching motionless against a shadow-creating object. Willetts eat invertebrates and small fish, including horseshoe crab eggs. Populations are not well surveyed due to their secretive nesting behavior, but are likely impacted by human use of beaches and development of coastal marshes. Willetts may occasionally nest in the small section of cordgrass located on the northwest end of Cortez Key Bird Sanctuary.

Willet. Photo credit: Audubon files.

Coastal mangroves offer foraging and roosting opportunities for many species of birds. Small birds have not been observed nesting at Cortez Key Bird Sanctuary. The mangroves at Cortez Key offer foraging habitat for neotropical migrating birds, including warblers, vireos, and kingbirds.



Red-bellied Woodpecker (*Melanerpes carolinus*) foraging on mangrove stump. Photo credit: Audubon files.

Mammals

At least 14 species of mammals are known or suspected to occur at or in shoreline habitats near Cortez Key (see table below). Among the terrestrial mammals, one management issue is critical: impacts of raccoons (*Procyon lotor*) on nesting birds. Raccoons commonly forage along mangrove shorelines and shallow flats.



Raccoons are excellent swimmers and occasionally reach bird nesting colony islands. The results are immediate: many or all of the nesting birds will abandon the site if a raccoon is present. Audubon staff routinely monitor nesting colony islands including Cortez Key Bird Sanctuary for signs of raccoon activity, and live-trap them and remove them, once detected.

Raccoons preclude nesting by most colonial waterbirds. Photo credit: Audubon files.

Two marine mammals, bottle-nosed dolphins (*Tursiops truncatus*) and West Indian manatees (*Trichechus manatus*), are well-known residents of waters surrounding Cortez Key. Manatees are particularly vulnerable to boat collisions, and considerable attention is devoted statewide to their protection (Ackerman pers. comm).



Bottle-nosed dolphins are active foragers in the waters near Cortez Key Bird Sanctuary. They travel in small family groups. Active and intelligent mammals, they feed on fish, especially mullet, chasing them onto shorelines or against shoals. Photo credit: Debbie Chayet.



Manatees are federally and state listed animals that eat only aquatic waterplants, especially seagrass. Females give birth to a single young every two or three years. Photo credit: FWC.

Mammals that occur near the Cortez Key Bird Sanctuary

Virginia opossum	<i>Didelphis virginiana</i>
Bats	unidentified species
Nine-banded armadillo	<i>Dasypus novemcinctus</i>
	<i>Sylvilagus palustris</i>
eastern cottontail rabbit	<i>Sylvilagus floridanus</i>
eastern gray squirrel	<i>Sciurus carolinensis</i>
rice rat	<i>Oryzomys palustris</i>
hispid cotton rat	<i>Sigmodon hispidus</i>
black rat	<i>Rattus rattus</i>
nutria	<i>Myocastor coypus</i>
gray fox	<i>Urocyon cinereoargenteus</i>
raccoon	<i>Procyon lotor</i>
river otter	<i>Lutra canadensis</i>
bobcat	<i>Lynx rufus</i>

Notes: Adapted from Paul (1982), Wolfe and Drew (1990) and Audubon field notes.

Protected Species

Plant and animal species that are protected by the U.S. Fish and Wildlife Service through the Endangered Species Act, or through listing by the FWC or the Florida Department of Agriculture and Consumer Services (FDACS), and which are known or likely to occur at Cortez Key or in the Cortez Key watershed are listed in the table below. Note: the FWC is revising its listing process and the status of all listed plants and animals. Once this process is accepted by the FWC Board, all plants and animals that the state agency lists will be included in the category “Threatened” and there will not be categories as “Endangered” and “Species of Special Concern”, although the state will acknowledge federally listed species according to the federal listing. For example, Wood Stork, as a federally listed “Endangered” species will be listed by the state as “Endangered” also.

Endangered and threatened species known or likely to occur at or near the Cortez Key Bird Sanctuary

TAXON	SCIENTIFIC NAME	COMMON NAME	FWC	FDACS	USFWS	CITES
Birds	<i>Ajaia ajaja</i>	Roseate spoonbill	SSC	—	—	—
	<i>Circus cyaneus</i>	Marsh hawk; northern harrier	—	—	—	II
	<i>Egretta caerulea</i>	Little blue heron	SSC	—	—	—
	<i>Egretta rufescens</i>	Reddish egret	SSC	—	C2	—
	<i>Egretta thula</i>	Snowy egret	SSC	—	—	—
	<i>Egretta tricolor</i>	Tricolored heron	SSC	—	—	—
	<i>Eudocimus albus</i>	White ibis	SSC	—	—	—
	<i>Haematopus palliatus</i>	American oystercatcher	SSC	—	—	—
	<i>Haliaeetus leucocephalus</i>	Bald eagle	T	—	T	I
	<i>Lanius ludovicianus</i>	Loggerhead shrike	—	—	C2	—
	<i>Mycteria americana</i>	Wood stork	E	—	E	—
	<i>Pandion haliaetus</i>	Osprey	—	—	—	II
	<i>Pelecanus occidentalis</i>	Brown pelican	SSC	—	—	—
	<i>Rynchops niger</i>	Black skimmer	SSC	—	—	—
	<i>Sterna antillarum</i>	Least tern	T	—	—	—
Mammals	<i>Lutra canadensis</i>	River otter	—	—	—	II
	<i>Trichechus manatus</i>	West Indian manatee	E	—	E	I

FWC - Florida Fish and Wildlife Conservation Commission (previously Florida Game and Fresh Water Fish Commission) (list published in Section 39-27.003-005, Florida Administrative Code).

FDACS - Florida Department of Agriculture and Consumer Services (list published in Preservation of Native Flora of Florida Act, Section 581.185-187, Florida Statutes).

USFWS - United States Fish and Wildlife Service (list published in List of Endangered and Threatened Wildlife and Plants, 50 CFR 17.11-12).

CITES - Convention on International Trade in Endangered Species of Wild Fauna and Floras.

E - Endangered

T - Threatened

SSC - Species of Special Concern

CE - Commercially exploited

C2 - A candidate for federal listing with some evidence of vulnerability but for which not enough information exists to justify listing; not federally protected under the Endangered Species Act, but the USFWS "...encourages their consideration in environmental planning" (US FR Vol. 55 No. 35, pp. 6184–6229).

I - Appendix I Species

II - Appendix II Species



Adult Least Tern. Least Terns are listed by the FWC as Threatened. They forage in waters adjacent to Cortez Key Bird Sanctuary. Photo credit: FWC.

MANAGEMENT ISSUES AND ACTIVITIES FOR CORTEZ KEY BIRD SANCTUARY

As holders of a long-term lease from the State of Florida for management of the Cortez Key Bird Sanctuary as a bird sanctuary, the National Audubon Society, Inc. dba Audubon Florida has directed the Florida Coastal Islands Sanctuaries staff to manage the Sanctuary. FCIS staff have identified and addressed a series of issues and implemented solutions over the years. In addition, we are working to find solutions for newer problems, from sea level rise, nature photographer intrusion, and inappropriate derelict vessel disposal.

1. Issue: Protection of the nesting birds from disturbance by boaters, fishermen, and trespassers.

Management Action:

- A. Post Cortez Key Bird Sanctuary with Audubon “No Trespassing” signs.



FCIS has been posting Cortez Key Bird Sanctuary with Audubon “No Trespassing” signs for the entire lease period. Signs are nailed to mangrove tree trunks at consistent 30 m intervals around the island’s perimeter, plus a few signs attached to white PVC posts. We have used the mangroves to hold the signs because the rock substrate would not allow posts to be installed in most places.

- B. Patrol Cortez Key Bird Sanctuary regularly during the nesting season. FCIS staff visits Cortez Key during the nesting season and in the fall and winter and speaks to anyone observed on or near the island. If they are trespassing, we ask them to leave. If they are close enough to the island shorelines to disturb the nesting or roosting birds, we speak with them about helping give the birds the buffer space that they require to safely raise their young. Our goal is to enlist the boating public in the cooperative protection of this special nesting colony site.
- C. Coordinate with the Manatee County Sheriff’s office to address people anchoring their boats and living aboard boats adjacent to the island.



During early spring 2013, the Manatee County Sheriff’s officer assisted us in dealing with a person living aboard her sailboat anchored adjacent to the shoreline.

Aerial photograph: Google Earth

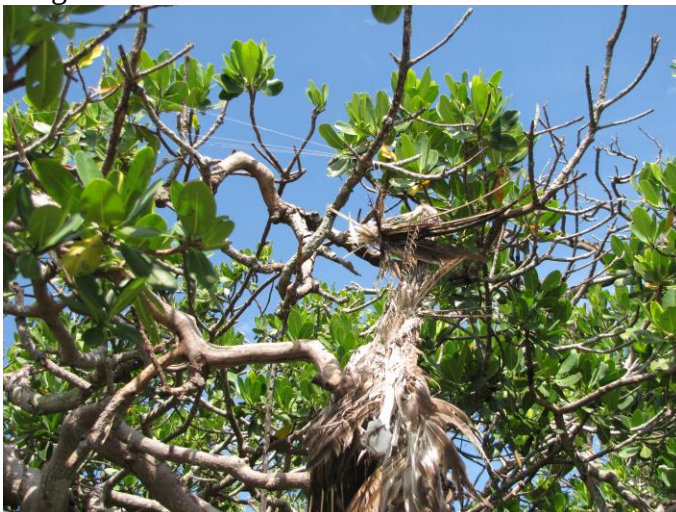
2. Issue: Development of community support for the restoration and management of Cortez Key Bird Sanctuary, to promote understanding of the ecological requirements of the regional estuarine habitat, long-term participation in the management of the island and its surrounding grassflats, and development of a conservation ethic within the community.

Management Action:

- A. Present information about the Cortez Key Bird Sanctuary to local groups. We have given presentations to the local Audubon Chapter leaders, at Manatee County Audubon Society and Sarasota Audubon Society meetings, the Sarasota Bay Estuary Program's Technical Advisory Committee, Manatee County Board of County Commissioners, and others about the bird populations in Sarasota Bay and Cortez Key Bird Sanctuary.
 - B. Coordinate with community agencies and leaders on management issues. We have enlisted Sarasota Bay Estuary Program staff and contractors and Sarasota Bay Watch leaders in discussions about management issues at Cortez Key Bird Sanctuary.
 - C. Recruit volunteers. We have enlisted volunteers to help us monitor the Cortez Key Bird Sanctuary and remove fishing line from the island.
3. Issue: Trash, fishing line, and other entangling material accumulating in the habitat at Cortez Key Bird Sanctuary.

Management Action:

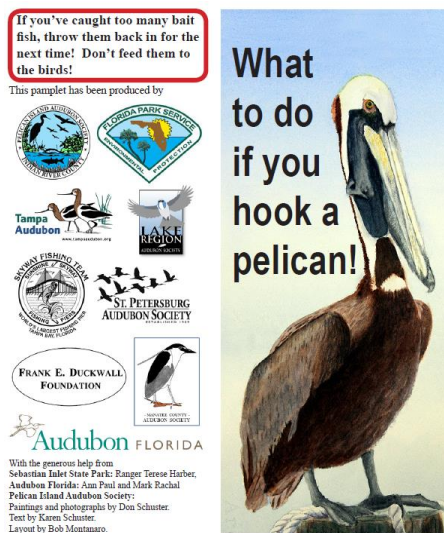
- A. Regularly remove trash from Cortez Key Bird Sanctuary on scheduled clean-up days. We have been reluctant to schedule clean-up activities on Cortez Key because the activity churns up a lot of the soft mud substrate on the island, promoting erosion. However, on every visit that staff makes to the Sanctuary we regularly remove plastic, glass, and metal trash.
- B. Schedule volunteers from Audubon and Sarasota Bay Watch to participate in the fall Fishing Gear Cleanup (normally scheduled annually in October), to specifically target fishing line and other entangling materials and remove them from Cortez Key and other foraging and nesting bird islands in Sarasota Bay during the time of year when birds are not nesting. This cleans the island of deadly fishing line and promotes increased awareness among fishermen and the public about the impacts of fishing gear on birds and wildlife.



The FWC has identified fishing line entanglement as the main cause of mortality for Brown Pelicans in Florida.

Brown Pelican carcass hanging from mangroves by fishing line. Photo credit: Audubon files.

- C. Develop and distribute a brochure that details safe techniques for removing fishing hooks and line from entangled birds.



We have developed a brochure titled “What to do if you hook a pelican!” in association with Audubon chapters, the Florida Parks Service, the Skyway Pier concessioner, and the Duckwall Foundation. A direct link to the brochure is available on the Tampa Bay Water Atlas website at

http://www.tampabay.wateratlas.usf.edu/upload/documents/pelican_brochure_final.pdf.

4. Issue: Derelict vessels abandoned on the shorelines of the Cortez Key Bird Sanctuary. A traditional method for disposal of unwanted small boats in the fishing community of Cortez, Florida has been to moor the boat to the mangroves at Cortez Key. This action can damage the trunks of the mangroves, as the boats float to and fro and the mooring ropes pull at the mangroves, and the oysterbeds located on the island’s east side.

Management Action:

- A. Identify the presence of abandoned derelict vessels and contact the U.S. Coast Guard office, requesting removal. Work with the Coast Guard to accomplish vessel removal.
- B. Educate the local population, especially the fishermen at the village of Cortez, about the negative impacts to habitats caused by abandoning vessels adjacent to the island.



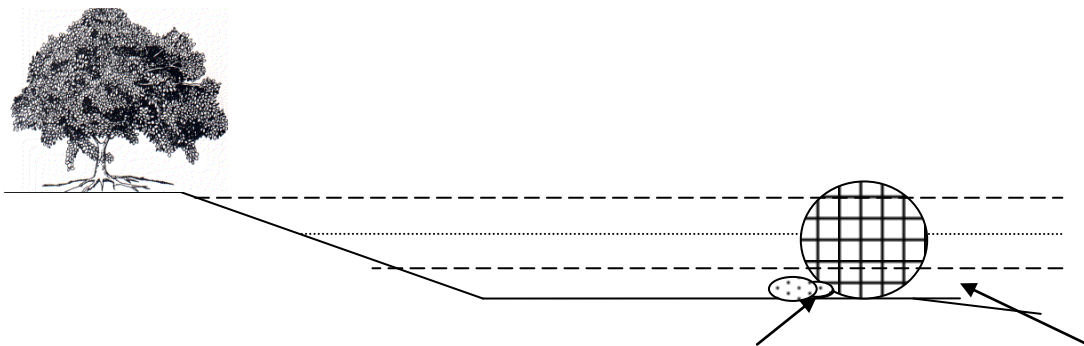
5. Issue: Sea level rise threatens the continued survival of the mangrove trees at Cortez Key Bird Sanctuary. At almost every spring tide, the slimmer section of the island located at the southeast washes over, with waves from storms and the Intracoastal Waterway moving across the mangroves roots. The easily displaced, erodible mangrove soil is vulnerable to erosional loss from the island's profile.

Management Action:

- A. We are working with Manatee County Environmental staff, Sarasota Bay Estuary Program staff and contractors, and others to develop an erosion control solution to intercept wave energy and allow suspended material in the water column to settle on the island. Slowing the wave action across the island will allow mangrove leaf matter to develop into soil, and with time, to increase the island's profile height. It will also slow the ongoing erosion. A breakwater using pH-balanced reefballs will also provide additional oyster habitat structure (SBEP 2010).

One proposal being considered involves installation of reef balls to create a quiet water area next to the island, known as a "living shoreline". Reef balls would be installed landward of the seagrass meadow on the Intracoastal Waterway (west) side of Cortez Key. The reef balls would be constructed of pH-balanced concrete, to promote colonization by pelagic oyster larvae. We are seeking funding for this project.

Schematic drawing of a proposed breakwater concept



6. Issue: Presence of raccoons on bird nesting islands. Raccoons are terrestrial mammals that are experiencing elevated populations in Manatee and Sarasota counties due to the availability of enhanced food sources from uncontained garbage, pet food provided outside, and other sources, and reduced populations of the larger predatory animals that in predevelopment Florida controlled the raccoon population. As territorial animals, adults defend regions against other raccoons and will fight raccoons entering their territories. Young raccoons must leave the territories of their mothers upon reaching independence, but often are faced with limited options for finding territories of their own to occupy, as most available raccoon habitat is already taken by large, experienced adults. Sites where birds are nesting would provide a food source, but are typically difficult for raccoons to

reach, being islands separated from land by tidal currents over deeper water or located in lakes patrolled by alligators. When raccoons do reach a bird nesting island, they typically predate nests, eating eggs, chicks, and on occasion, even the nesting adults. This will cause the nesting birds to abandon the island soon after the raccoon appears.

Management Action:

- A. Search for signs of the presence of raccoons, as tracks or scat.
- B. Note if bird nesting has stopped at a nesting island.
- C. If raccoons are present, trap and remove them from the island.

7. Issue: Nature Photographers and classes or groups disturbing birds.

Management Action: Work with the nature photographer community to increase awareness about appropriate, ethical behavior. We have presented information about this to the local Audubon chapters, nature photographer groups, the media, the Florida Ornithological Society, and others.



Photographer tour leader. Photo credit: Audubon files.

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Fish Species of Tampa and Sarasota Bays (adapted from Wolfe and Drew 1990)

	COMMON NAME	SCIENTIFIC NAME	HABITAT TYPE	ABUNDANCE
Chondrichthyes	nurse shark	<i>Ginglymostoma cirratum</i>	M	
	whale shark	<i>Rhincodon typus</i>	M	X
	sand tiger	<i>Odontaspis taurus</i>	M	X
	white shark	<i>Carcharodon carcharias</i>	M	X
	blacknose shark	<i>Carcharhinus acronotus</i>	M	
	bull shark	<i>C. leucas</i>	M	
	blacktip shark	<i>C. limbatus</i>	M,E	
	dusky shark	<i>C. obscurus</i>	M	
	sandbar shark	<i>C. plumbeus</i>	M	X
	lemon shark	<i>Negaprion brevirostris</i>	M	X
	great hammerhead	<i>Sphyrna mokarran</i>	M	X
	bonnethead	<i>S. tiburo</i>	M,E	
	Smalltooth sawfish	<i>Pristis pectinata</i>	M,E	X
	Atlantic guitarfish	<i>Rhinobatos lentiginosus</i>	M	
	southern stingray	<i>Dasyatis americana</i>	M,E	
	Atlantic stingray	<i>D. sabina</i>	M,E	X
	bluntnose stingray	<i>D. sayi</i>	M,E	
	smooth butterfly ray	<i>Gymnura micrura</i>	M,E	
	spotted eagle ray	<i>Aetobatus narinari</i>	M	
	cownose ray	<i>Rhinoptera bonasus</i>	M,E	
	Atlantic manta	<i>Manta birostris</i>	M	
Osteichthyes	Atlantic sturgeon	<i>Acipenser oxyrhynchus</i>	E	X
	longnose gar	<i>Lepisosteus osseus</i>	F	X
	Florida gar	<i>L. platyrhincus</i>	F	X
	Ladyfish	<i>Elops saurus</i>	M,E	
	Tarpon	<i>Megalops atlanticus</i>	M,E	
	Bonefish	<i>Albula vulpes</i>	M	
	American eel	<i>Anguilla rostrata</i>	M,E	X
	ocellated moray	<i>Gymnothorax saxicola</i>	M	X
	sooty eel	<i>Bascanichthys bascanium</i>	M	X
	spotted spoon-nose eel	<i>Echiophis intertinctus</i>	M	X
	stippled spoon-nose eel	<i>E. punctifer</i>	M	X
	speckled worm eel	<i>Myrophis punctatus</i>	M,E	
	shrimp eel	<i>Ophichthus gomesi</i>	M,E	
	Palespotted eel	<i>O. ocellatus</i>	M	X
	gulf menhaden	<i>Brevoortia patronus</i>	M,E	
	yellowfin menhaden	<i>B. smithi</i>	M	
	gizzard shad	<i>Dorosoma cepedianum</i>	F	X
	threadfin shad	<i>Dorosoma petenense</i>	F	X
	scaled sardine	<i>Harengula jaguana</i>	M,E	
	Atlantic thread herring	<i>Opisthonema oglinum</i>	M,E	
	Spanish sardine	<i>Sardinella aurita</i>	M	
	Cuban anchovy	<i>Anchoa cubana</i>	M	
	striped anchovy	<i>A. hepsetus</i>	M,E	
	bay anchovy	<i>A. mitchilli</i>	M,E	
	inshore lizardfish	<i>Synodus foetens</i>	M,E	
	hardhead catfish	<i>Arius felis</i>	M,E	
	gafftopsail catfish	<i>Bagre marinus</i>	M,E	
	brown bullhead	<i>Ictalurus nebulosus</i>	F	X

COMMON NAME	SCIENTIFIC NAME	HABITAT TYPE	ABUNDANCE
gulf toadfish	<i>Opsanus beta</i>	M,E	
leopard toadfish	<i>O. pardus</i>	M	
Atlantic midshipman	<i>Porichthys plectrodon</i>	M,E	
skilletfish	<i>Gobiesox strumosus</i>	M,E	
pancake batfish	<i>Halieutichthys aculeatus</i>	M	X
polka-dot batfish	<i>Ogcocephalus radiatus</i>	M,E	
southern hake	<i>Urophycis floridana</i>	M,E	
longnose cusk-eel	<i>Ophidion beani</i>	M	X
blotched cusk-eel	<i>O. grayi</i>	M	
crested cusk-eel	<i>O. welshi</i>	M	
ballyhoo	<i>Hemiramphus brasiliensis</i>	M	X
halfbeak	<i>Hyporhamphus unifasciatus</i>	M,E	
Atlantic needlefish	<i>Strongylura marina</i>	M	X
redfin needlefish	<i>S. notata</i>	M,E	
timucu	<i>S. timucu</i>	M,E	
houndfish	<i>Tylosurus crocodilus</i>	M	X
diamond killifish	<i>Adinia xenica</i>	E	
sheepshead minnow	<i>Cyprinodon variegatus</i>	E	
goldspotted killifish	<i>Floridichthys carpio</i>	E	
marsh killifish	<i>Fundulus confluentus</i>	E	
gulf killifish	<i>F. grandis</i>	E	
Seminole killifish	<i>F. seminolis</i>	F	X
longnose killifish	<i>F. similis</i>	E	
rainwater killifish	<i>Lucania parva</i>	E	
mosquitofish	<i>Gambusia affinis</i>	F,E	
sailfin molly	<i>Poecilia latipinna</i>	E	
rough silverside	<i>Membras martinica</i>	E	
tidewater silverside	<i>Menidia peninsulae</i>	E	
oarfish	<i>Regalecus glesne</i>	M	X
lined seahorse	<i>Hippocampus erectus</i>	E	
dwarf seahorse	<i>Hippocampus zosterae</i>	E	
fringed pipefish	<i>Micrognathus criniger</i>	E	
dusky pipefish	<i>Syngnathus floridae</i>	E	
chain pipefish	<i>S. louisianae</i>	E	
gulf pipefish	<i>S. scovelli</i>	E	
bluegill	<i>Lepomis macrochirus</i>	F	X
largemouth bass	<i>Micropterus salmoides</i>	F	X
snook	<i>Centropomus undecimalis</i>	M,E	
black sea bass	<i>Centropristis striata</i>	M	X
blackchin tilapia	<i>Tilapia melanotheron</i>	E	
sand perch	<i>Diplectrum formosum</i>	M	
Jewfish	<i>Epinephelus itajara</i>	M,E	
red grouper	<i>E. morio</i>	M	X
gag	<i>Mycteroperca microlepis</i>	M	
belted sandfish	<i>Serranus subligarius</i>	M	X
greater soapfish	<i>Rypticus saponaceus</i>	M	X
bronze cardinalfish	<i>Astrapogon alutus</i>	M	X
bluefish	<i>Pomatomus saltatrix</i>	M,E	
cobia	<i>Rachycentron canadum</i>	M,E	
sharksucker	<i>Echeneis naucrates</i>	M,E	
Remora	<i>Remora remora</i>	M,E	
blue runner	<i>Caranx crysos</i>	M	
crevalle jack	<i>C. hippos</i>	M,E	

COMMON NAME	SCIENTIFIC NAME	HABITAT TYPE	ABUNDANCE
horse-eye jack	<i>C. latus</i>	E	X
Atlantic bumper	<i>Chloroscombrus chrysurus</i>	M,E	
bluntnose jack	<i>Hemicaranx amblyrhyncus</i>	M	X
leatherjacket	<i>Oligoplites saurus</i>	M,E	
Atlantic moonfish	<i>Selene setapinnis</i>	M	X
Lookdown	<i>Selene vomer</i>	M	
Florida pompano	<i>Trachinotus carolinus</i>	M,E	
Permit	<i>T. falcatus</i>	M,E	
Palometa	<i>T. goodei</i>	M	
schoolmaster	<i>Lutjanus apodus</i>	M	X
gray snapper	<i>L. griseus</i>	M,E	
lane snapper	<i>L. synagris</i>	M,E	
Tripletail	<i>Lobotes surinamensis</i>	M,E	
Irish pompano	<i>Diaterus auratus</i>	M	X
striped majorra	<i>D. plumieri</i>	E	
spotfin mojarra	<i>Eucinostomus argenteus</i>	M,E	
silver jenny	<i>E. gula</i>	M,E	
yellowfin mojarra	<i>Gerres cinereus</i>	E	X
Tomtate	<i>Haemulon aurolineatum</i>	M	X
white grunt	<i>H. plumieri</i>	M	
Pigfish	<i>Orthopristis chrysoptera</i>	M,E	
Sheepshead	<i>Archosargus probatocephalus</i>	M,E	
grass porgy	<i>Calamus arctifrons</i>	M	X
spottail pinfish	<i>Diplodus holbrooki</i>	M	
Pinfish	<i>Lagodon rhomboides</i>	M,E	
silver perch	<i>Bairdiella chrysoura</i>	M,E	
sand seatrout	<i>Cynoscion arenarius</i>	M,E	
spotted seatrout	<i>C. nebulosus</i>	M,E	
high-hat	<i>Equetus acuminatus</i>	M	X
Cubby	<i>E. umbrosus</i>	M	X
Spot	<i>Leiostomus xanthurus</i>	M,E	
southern kingfish	<i>Menticirrhus americanus</i>	M,E	
gulf kingfish	<i>M. littoralis</i>	M	
northern kingfish	<i>M. saxatilis</i>	M,E	
Atlantic croaker	<i>Micropogonias undulatus</i>	E	
black drum	<i>Pogonias cromis</i>	M,E	
red drum	<i>Sciaenops ocellatus</i>	M,E	
spotted goatfish	<i>Pseudupeneus maculatus</i>	M	X
Bermuda chub	<i>Kyphosus sectatrix</i>	M	X
Atlantic spadefish	<i>Chaetodipterus faber</i>	M,E	
slippery dick	<i>Halichoeres bivittatus</i>	M	X
Hogfish	<i>Lachnolaimus maximus</i>	M	X
emerald parrotfish	<i>Nicholsina usta</i>	M	
striped mullet	<i>Mugil cephalus</i>	M,E	
white mullet	<i>M. curema</i>	M,E	
fantail mullet	<i>M. trichodon</i>	M,E	
great barracuda	<i>Sphyrna barracuda</i>	M,E	
northern sennet	<i>S. borealis</i>	M	X
guaguanche	<i>S. guachancho</i>	M	X
Atlantic threadfin	<i>Polydactylus octonemus</i>	M	X
moustache jawfish	<i>Opistognathus lonchurus</i>	M	X
sand stargazer	<i>Dactyloscopus tridigitatus</i>	M	X
southern stragazer	<i>Astroscopus y-graecum</i>	M,E	

COMMON NAME	SCIENTIFIC NAME	HABITAT TYPE	ABUNDANCE
banded blenny	<i>Paraclinus fasciatus</i>	E	X
marbled blenny	<i>P. marmoratus</i>	E	X
striped blenny	<i>Chasmodes bosquianus</i>	M	X
Florida blenny	<i>C. saburrae</i>	M,E	
crested blenny	<i>Hypleurochilus geminatus</i>	M	X
feather blenny	<i>Hypsoblennius hentzi</i>	M,E	
highfin blenny	<i>Lupinoblennius nicholsi</i>	M	X
seaweed blenny	<i>Blennius marmoreus</i>	M	X
fat sleeper	<i>Dormitator maculatus</i>	F	X
frillfin goby	<i>Bathygobius soporator</i>	E	
darter goby	<i>Gobionellus boleosoma</i>	E	
sharptail goby	<i>G. hastatus</i>	E	
naked goby	<i>Gobiosoma boscii</i>	E	
twoscale goby	<i>G. longipala</i>	E	X
tiger goby	<i>G. macrodon</i>	M,E	
code goby	<i>G. robustum</i>	E	
clown goby	<i>Microgobius gulosus</i>	E	
green goby	<i>M. thalassinus</i>	E	
Atlantic cutlassfish	<i>Trichiurus lepturus</i>	M	
king mackerel	<i>Scomberomorus cavalla</i>	M	
Spanish mackerel	<i>S. maculatus</i>	M,E	
harvestfish	<i>Peprilus alepidotus</i>	M	X
butterfish	<i>P. triacanthus</i>	M	X
barbfish	<i>Scorpaena brasiliensis</i>	M	X
horned searobin	<i>Bellator militaris</i>	M	X
bluespotted searobin	<i>Prionotus roseus</i>	M	X
blackfin searobin	<i>P. rubio</i>	M	X
leopard searobin	<i>P. scitulus</i>	M,E	
bighead searobin	<i>P. tribulus</i>	M,E	
ocellated flounder	<i>Ancylosetta quadrocellata</i>	M	X
spotted whiff	<i>Citharichthys macrops</i>	M	X
fringed flounder	<i>Etropus crossotus</i>	M	
gulf flounder	<i>Paralichthys albigutta</i>	M,E	
dusky flounder	<i>Syacium papillosum</i>	M	X
lined sole	<i>Achirus lineatus</i>	M,E	
hogchoker	<i>Trinectes maculatus</i>	M,E	
blackcheek tonguefish	<i>Symphurus plagiusa</i>	M,E	
orange filefish	<i>Aluterus schoepfi</i>	M	
fringed filefish	<i>Monacanthus ciliatus</i>	M,E	
planehead filefish	<i>M. hispidus</i>	M,E	
scrawled cowfish	<i>Lactophrys quadricornis</i>	M,E	
trunkfish	<i>L. trigonus</i>	M,E	X
smooth truckfish	<i>L. triqueter</i>	M	X
smooth puffer	<i>Lagocephalus laevigatus</i>	M,E	X
southern puffer	<i>Sphoeroides nephelus</i>	M,E	
striped burrfish	<i>Chilomycterus schoepfi</i>	M,E	
balloonfish	<i>Diodon holocanthus</i>	M	X

Notes: Occurrence code: M—marine; E—estuarine; F—freshwater; X -- uncommon to rare.

Cortez Key Bird Sanctuary Surveys, 1981-2014 (numbers represent nesting pairs)

Survey Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990#	1991#	1992	1993	1994	1995	1996	1997	1998
Survey Date Species							5/30, 6/6, 6/20		5/20	2/17, 3/10, 4/12, 6/8	1/6, 5/7, 6/9		5/20, 5/26, 6/4	5/12	3/25, 4/15, 5/4	5/7, 6/14, 7/3	5/7	5/6
Brown Pelican	270	329	284	268	225	168	244	148	394	239	117	134	239	312	240	160	127	178
Double-crested Cormorant	50+	40	200	200	200	100	50	77	100	26	124	117	150	89	100	100	75	77
Anhinga				1			1			5	1	3	5	10		2		1
Great Blue Heron	30	50	50	75	42	25	44	41	100	50	17*	50	60	35	52	40	15	45
Great Egret	20	75	100	100	60	30	40	30	100	20	30	75	125	120	110	100	100	185
Snowy Egret	30	40	40	38	40	1	10	5	15	10	25	50	200	330	300	95	108	190
Little Blue Heron	20	30	30	11	25	1	2	36			2	10	15	20	20	30	30	30
Tricolored Heron	40	30	30	24	25	1	10	5	10	10	10	30	70	85	60	40	50	50
Reddish Egret	0	2	2								2	1	3	5	2	3	2	2
Cattle Egret	75	50	50	15	25		50		20	10	20	50	330	290	180	165	170	60
Green Heron	+		1		1										1	1	1	1
Black-crowned Night-Heron	10	10	10	10	5	1	10	3	3	2	4	20	40	5	6	20	10	10
Yellow-crowned Night-Heron	2	5	5	1	10								1				1	
White Ibis	5								1		3				5	35	60	30
Glossy Ibis																		
Roseate Spoonbill																		
Total	634	661	802	743	658	327	461	345	743	372	335	540	1,238	1,301	1,076	791	749	858

#A raccoon was removed from the island early in the nesting season. *A Great White Heron adult paired with a Great Blue Heron.

Survey Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Survey Date	5/8	5/8	5/15	5/6, 5/28	2/15, 4/28, 5/15	3/8, 5/23	5/17	5/18	5/9	2/24+	5/25	5/17	5/9	5/25	4/6, 5/24	6/5
Species																
Brown Pelican	137	214	88	112	135	71		52	6	25	23	37	15	19	9	4
Double-crested Cormorant	15	39	76	58	55	15		38	35	20	75	50	41	60	37	85
Anhinga								10	6			2	0	2	1	5
Great Blue Heron	32	25	19	5	29	5		4++	6	2	5	12	14	11	10*	8
Great Egret	44	80	18	67	93	11		25	35		100	135	110	35	40	50
Snowy Egret	93	55	9	27	6			15	10		75	80	70	10	25	90
Little Blue Heron	10	24	20	40	3				5		10	6	12	5	5	40
Tricolored Heron	24	30	35	48	3			18	15		60	30	20	25	30	75
Reddish Egret	1	3	8	3	3	1		2	6	1	1	10	2	4	5	3
Cattle Egret	84	150	20	70				30	12		240	90	175	0	25	140
Green Heron	1	1	1	3				1	2		1	1	0	1	1	5
Black-crowned Night-Heron	2	10	8	7	3	20			6		6			5	5	25
Yellow-crowned Night-Heron	2		6	5	15			2			1					5
White Ibis	18	15						10	10		35	20	22	0	0	10
Glossy Ibis																**
Roseate Spoonbill		3	13		3	4		2	9		25			13	15	5
Total	462	649	321	445	348	Colony abandoned	Colony abandoned	209	163	48	657	485	484	143	208	550

++ White morph Great White Heron chick observed

*Includes an adult Wurdeman's Heron observed at the nest.

**Adult in breeding condition in the colony – nesting suspected but nest not observed.

+Very early season survey

Bird species that occur in Sarasota Bay and Manatee County near Cortez Key

COMMON NAME	SCIENTIFIC NAME	STATE LISTING	NESTS on Cortez Key	SEASONAL STATUS				COMMENTS; HABITAT
				SP	SU	F	W	
Common Loon	<i>Gavia immer</i>	-		O		R	O	open water
Pied-billed Grebe	<i>Podilymbus podiceps</i>	-					O	
Horned Grebe	<i>Podiceps auritus</i>	-		U		U	C	open water
American White Pelican	<i>Pelecanus erythrorhynchos</i>	-		C	O	U	C	open water, sandbars, shallows
Brown Pelican	<i>Pelecanus occidentalis</i>	SSC	X	C	C	C	C	islands, beaches, open water
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	X	C	C	C	C	
Anhinga	<i>Anhinga anhinga</i>	-		C	C	C	C	
Magnificent Frigatebird	<i>Fregata magnificens rothschildi</i>	-		O	U	O		forages over open water
Great Blue Heron	<i>Ardea herodias</i>	-	X	C	C	C	C	
Great Egret	<i>Ardea alba</i>	-	X	C	C	C	C	
Snowy Egret	<i>Egretta thula</i>	SSC	X	C	C	C	C	
Little Blue Heron	<i>Egretta caerulea</i>	SSC	X	C	C	C	C	
Tricolored Heron	<i>Egretta tricolor</i>	SSC	X	C	C	C	C	
Reddish Egret	<i>Egretta rufescens</i>	SSC	X	U	U	U	U	forages on shallow flats
Cattle Egret	<i>Bubulcus ibis</i>	-	X	C	C	C	C	
Green Heron	<i>Butorides striatus</i>	-	X	C	C	C	C	
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	-	X	U	U	U	U	
Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	-	X	C	C	C	C	
White Ibis	<i>Eudocimus albus</i>	SSC	X	C	C	C	C	feeds in marshes and on flats
Glossy Ibis	<i>Plegadis falcinellus</i>	-		C	C	U	U	
Roseate Spoonbill	<i>Ajaia ajaja</i>	SSC	X	C	C	U	U	
Wood Stork	<i>Mycteria americana</i>	E		O	O	O	O	flats, mangroves
Black Vulture	<i>Coragyps atratus</i>	-	X	C	C	C	C	
Turkey Vulture	<i>Cathartes aura</i>	-		C	C	C	C	
Gadwall	<i>Anas strepera</i>	-		O		O	U	
American Wigeon	<i>Anas americana</i>	-		U		U	C	
Mallard	<i>Anas platyrhynchos</i>	-		R		R	U	
Mottled Duck	<i>Anas fulvigula</i>	-	X	C	C	C	C	
Blue-winged Teal	<i>Anas discors</i>	-		U	R	C	C	

COMMON NAME	SCIENTIFIC NAME	STATE LISTING	NESTS on Cortez Key	SEASONAL STATUS				COMMENTS; HABITAT
				SP	SU	F	W	
Northern Shoveler	<i>Anas clypeata</i>	-		U	R	U	C	
Northern Pintail	<i>Anas acuta</i>	-		U		U	U	
Green-winged Teal	<i>Anas crecca</i>	-		U	R	C	C	
Lesser Scaup	<i>Aythya affinis</i>	-		C	O	C	C	Large flocks on bay waters in winter
White-winged Scoter	<i>Melanitta fusca</i>	-					R	
Oldsquaw	<i>Clangula hyemalis</i>	-		R			R	
Red-breasted Merganser	<i>Mergus serrator</i>	-		C	U	C	C	
Ruddy Duck	<i>Oxyura jamaicensis</i>	-	X	U	R	U	C	
Osprey	<i>Pandion haliaetus</i>	-		C	C	C	C	forages throughout area
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T		U	U	U	U	Approximately 15 nests in Sarasota and Manatee Counties
Northern Harrier	<i>Circus cyaneus</i>	-		U		U	U	
Sharp-shinned Hawk	<i>Accipiter striatus</i>	-		U		U	U	
Cooper's Hawk	<i>Accipiter cooperii</i>	-		R		R	R	
Red-shouldered Hawk	<i>Buteo lineatus</i>	-		U	U	U	U	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	-		U	U	U	U	
American Kestrel	<i>Falco sparverius</i>	-		U		U	U	
Merlin	<i>Falco columbarius</i>	-		O		O	O	
Peregrine Falcon	<i>Falco peregrinus</i>	T		O		O	O	
Clapper Rail	<i>Rallus longirostris</i>	-	X	U	U	U	U	
Black-bellied Plover	<i>Pluvialis squatarola</i>	-		C	U	C	C	
Wilson's Plover	<i>Charadrius wilsonia</i>	-		U	U	U	C	
Semipalmated Plover	<i>Charadrius semipalmatus</i>	-		C	U	C	C	
Killdeer	<i>Charadrius vociferus</i>	-		U	U	U	U	
American Oystercatcher	<i>Haematopus palliatus</i>	SSC	X	U	U	U	U	
Greater Yellowlegs	<i>Tringa melanoleuca</i>	-		C	U	C	U	
Lesser Yellowlegs	<i>Tringa flavipes</i>	-		C	U	C	C	
Willet	<i>Catoptrophorus semipalmatus</i>	-	X	C	C	C	C	breeds in high marsh, forages on marsh edges and flats
Spotted Sandpiper	<i>Actitis macularia</i>	-		C	O	C	C	
Whimbrel	<i>Numenius phaeopus</i>	-		O	O	O	O	
Long-billed Curlew	<i>Numenius americanus</i>	-		O		O	O	

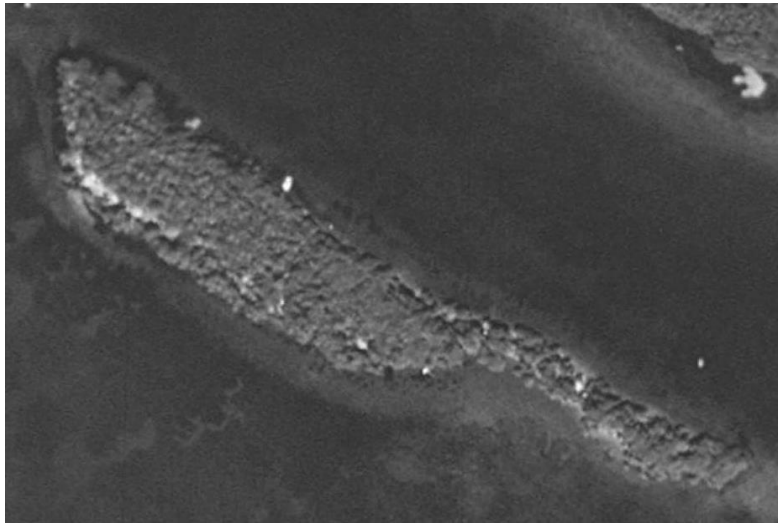
COMMON NAME	SCIENTIFIC NAME	STATE LISTING	NESTS on Cortez Key	SEASONAL STATUS				COMMENTS; HABITAT
				SP	SU	F	W	
Marbled Godwit	<i>Limosa fedoa</i>	-		C	O	C	U	
Ruddy Turnstone	<i>Arenaria interpres</i>	-		C	U	C	C	
Red Knot	<i>Calidris canutus</i>	-		C	O	C	C	
Sanderling	<i>Calidris alba</i>	-		U		U	U	
Semipalmated Sandpiper	<i>Calidris pusilla</i>	-		C	U	C		
Western Sandpiper	<i>Calidris mauri</i>	-		C	U	C	C	
Least Sandpiper	<i>Calidris minutilla</i>	-		C	U	C	C	
Dunlin	<i>Calidris alpina</i>	-		C	O	C	C	
Short-billed Dowitcher	<i>Limnodromus griseus</i>	-		C	U	C	C	
Laughing Gull	<i>Larus atricilla</i>	-	X	C	C	C	C	abundant; islands, shores, flats, open water
Ring-billed Gull	<i>Larus delawarensis</i>	-		C	O	C	C	
Herring Gull	<i>Larus argentatus</i>	-		U	O	U	U	
Caspian Tern	<i>Sterna caspia</i>	-	X	U	U	U	U	island shores and sandbars, forages over open water
Royal Tern	<i>Sterna maxima</i>	-	X	C	C	C	C	island shores and sandbars, forages over open water
Sandwich Tern	<i>Sterna sandvicensis</i>	-	X	U	U	U	U	island shores and sandbars, forages over open water
Common Tern	<i>Sterna hirundo</i>	-		R	O	O	R	island shores and sandbars, forages over open water
Forster's Tern	<i>Sterna forsteri</i>	-		C	U	C	C	island shores and sandbars, forages over open water
Least Tern	<i>Sterna antillarum</i>	T	X	C	C	U		island shores and sandbars, forages over open water
Black Tern	<i>Chlidonias niger</i>	-		U	C	U		island shores and sandbars, forages over open water
Black Skimmer	<i>Rynchops niger</i>	SSC	X	C	C	U	U	island shores and sandbars, forages over open water and coves, creeks
Rock Dove	<i>Columba livia</i>	-	X	C	C	C	C	Nests in manmade structures
Mourning Dove	<i>Zenaida macroura</i>	-	X	C	C	C	C	
Common Ground-Dove	<i>Columbina passerina</i>	-	X	U	U	U	U	
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	-		U	U	U		
Mangrove Cuckoo	<i>Coccyzus minor</i>	-		R	R			Possibly decreasing locally due to Brown-headed Cowbird nest parasitism
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	-	X	U	U	U		

COMMON NAME	SCIENTIFIC NAME	STATE LISTING	NESTS on Cortez Key	SEASONAL STATUS				COMMENTS; HABITAT
				SP	SU	F	W	
Chimney Swift	<i>Chaetura pelagica</i>	-		U	U	U		
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-		U		U		
Belted Kingfisher	<i>Ceryle alcyon</i>	-		U	O	C	C	
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	-	X	C	C	C	C	
Downy Woodpecker	<i>Picoides pubescens</i>	-		C	C	C	C	
Northern Flicker	<i>Colaptes auratus</i>	-		C	C	C	C	
Eastern Phoebe	<i>Sayornis phoebe</i>	-		U		U	C	
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	-	X	C	C	C	U	
Gray Kingbird	<i>Tyrannus dominicensis</i>	-	X	U	U	U		
Loggerhead Shrike	<i>Lanius ludovicianus</i>	-	X	U	U	U	U	
White-eyed Vireo	<i>Vireo griseus</i>	-	X	C	C	C	U	
Yellow-throated Vireo	<i>Vireo flavifrons</i>	-		R	R	R		
Solitary Vireo	<i>Vireo solitarius</i>	-		U	R	U	U	
Red-eyed Vireo	<i>Vireo olivaceus</i>	-		C	U	C		
Black-whiskered Vireo	<i>Vireo altiloquus</i>	-		R	R	R		possibly extirpated
Blue Jay	<i>Cyanocitta cristata</i>	-		C	C	C	C	
Fish Crow	<i>Corvus ossifragus</i>	-	X	C	C	C	C	
Purple Martin	<i>Progne subis</i>	-		C	C	U		
Tree Swallow	<i>Tachycineta bicolor</i>	-		C	U	C	U	
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	-	X	U	U	U		
Ruby-crowned Kinglet	<i>Regulus calendula</i>	-		C		C	C	
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	-		C	U	C	C	
American Robin	<i>Turdus migratorius</i>	-		U		U	C	
Gray Catbird	<i>Dumetella carolinensis</i>	-	X	C		C	C	
Northern Mockingbird	<i>Mimus polyglottos</i>	-	X	C	C	C	C	
European Starling	<i>Sturnus vulgaris</i>	-		C	C	C	C	
Cedar Waxwing	<i>Bombycilla cedrorum</i>	-		U			U	
Orange-crowned Warbler	<i>Vermivora celata</i>	-		R		R	U	
Northern Parula	<i>Parula americana</i>	-		C	U	C	R	
Yellow Warbler	<i>Dendroica petechia</i>	-				R	R	
Magnolia Warbler	<i>Dendroica magnolia</i>	-		O		O		

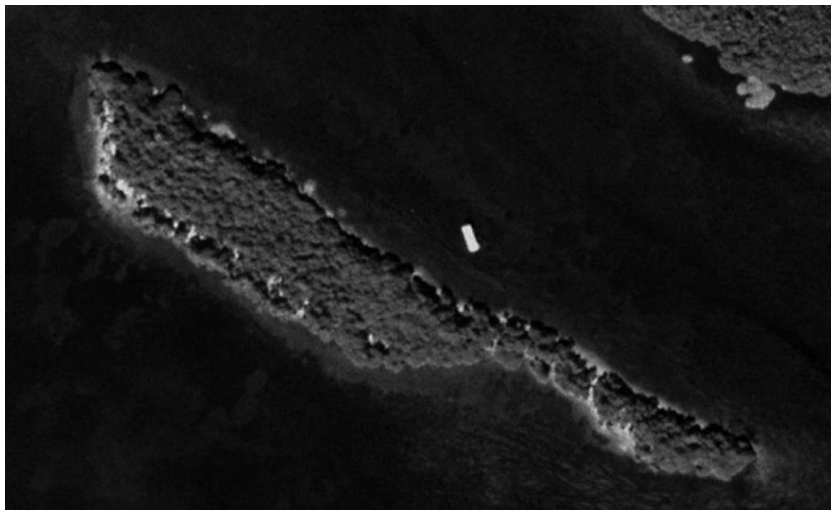
COMMON NAME	SCIENTIFIC NAME	STATE LISTING	NESTS on Cortez Key	SEASONAL STATUS				COMMENTS; HABITAT
				SP	SU	F	W	
Cape May Warbler	<i>Dendroica tigrina</i>	-		U	R	O		
Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-		U				
Yellow-rumped Warbler	<i>Dendroica coronata</i>	-		C		U	C	
Yellow-throated Warbler	<i>Dendroica dominica</i>	-		U	R	U	U	
Prairie Warbler	<i>Dendroica discolor discolor</i>	-	X	U	U	U	U	nests in mangroves
Palm Warbler	<i>Dendroica palmarum</i>	-		U		U	C	
Black-and-white Warbler	<i>Mniotilta varia</i>	-		C		C	C	
American Redstart	<i>Setophaga ruticilla ruticilla</i>	-		U	R	U	R	
Ovenbird	<i>Seiurus aurocapillus</i>	-		U		U	U	
Northern Waterthrush	<i>Seiurus noveboracensis</i>	-		U		U	R	
Louisiana Waterthrush	<i>Seiurus motacilla</i>	-				R	R	
Common Yellowthroat	<i>Geothlypis trichas</i>	-		C	U	C	C	
Summer Tanager	<i>Piranga rubra</i>	-		U	U	U	R	
Scarlet Tanager	<i>Piranga olivacea</i>	-				O		
Northern Cardinal	<i>Cardinalis cardinalis</i>	-	X	C	C	C	C	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-		U			R	
Indigo Bunting	<i>Passerina cyanea</i>	-		U			R	
Painted Bunting	<i>Passerina ciris</i>	-		U			R	
Bobolink	<i>Dolichonyx oryzivorus</i>	-		U		U		
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	X	C	C	C	C	
Common Grackle	<i>Quiscalus quiscula</i>	-		C	C	C	C	
Boat-tailed Grackle	<i>Quiscalus major</i>	-		C	C	C	C	
Brown-headed Cowbird	<i>Molothrus ater</i>	-		C	R	C	C	
Orchard Oriole	<i>Icterus spurius</i>	-		U		U		
Baltimore Oriole	<i>Icterus galbula</i>	-		U		U		
American Goldfinch	<i>Carduelis tristis</i>	-		U			U	
House Sparrow	<i>Passer domesticus</i>	-		U	U	U	U	

Notes: Occurrence code: S—summer resident, T—transient, P—permanent resident, I—irregular or accidental, W—winter resident

Series of aerial photographs of Cortez Key, from 1994-2013



Cortez Key, 2/14/1994, US Geological Survey.



Cortez Key, 12/30/1998. US Geological Survey.



Cortez Key, 4/17/2002. Digital Globe.



Cortez Key, 12/30/2003. Google Earth.



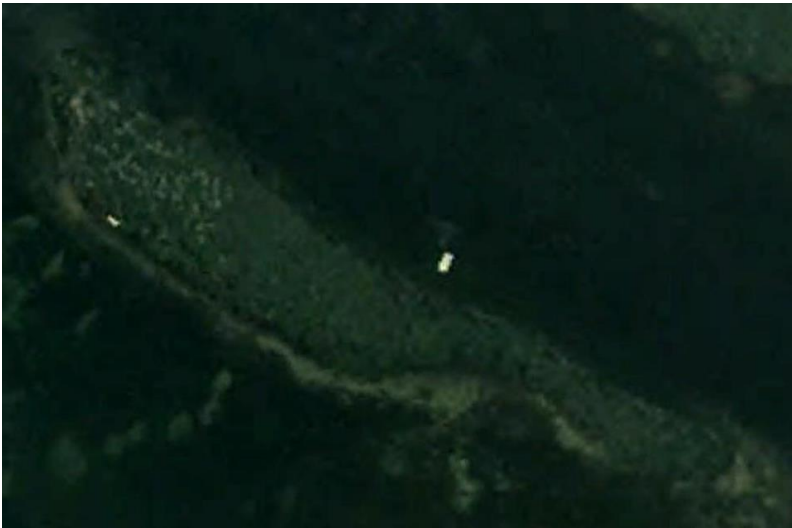
Cortez Key, 12/30/2004. Florida Department of Environmental Protection.



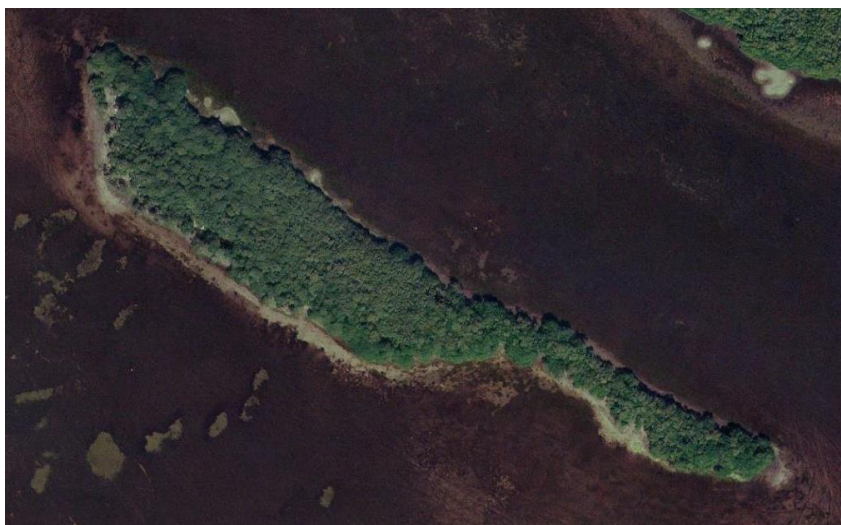
Cortez Key, 11/22/2005. USDA Farm Service Agency.



Cortez Key, 1/31/2006. US Geological Survey.



Cortez Key, 8/30/2006. USDA Farm Service Agency



Cortez Key, 2/18/2007. Google Earth.



Cortez Key, 11/12/2007. USDA Farm Service Agency.



Cortez Key, 1/8/2008. US Geological Survey.



Cortez Key, 12/1/2010. Google Earth.



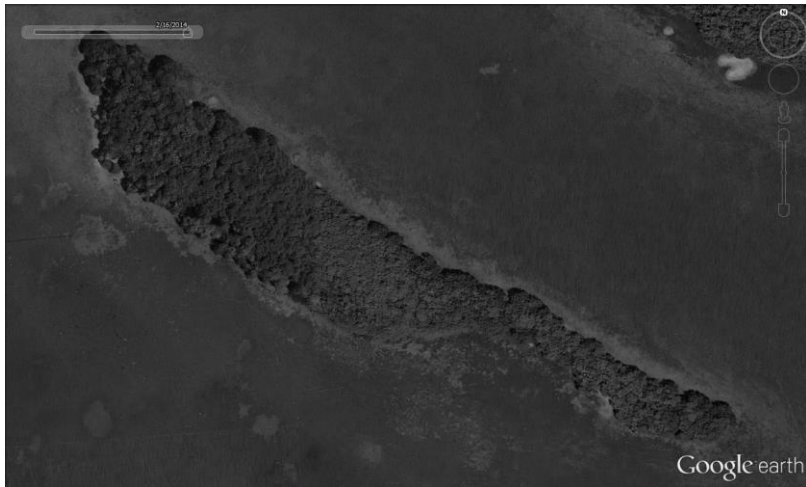
Cortez Key, 12/30/2010. USDA Farm Service Agency



Cortez Key, 1/19/2012. Google Earth.



Cortez Key, 1/24/2013. Google Earth.



Cortez Key, 2/16/2014. Google Earth.

Audubon lease with the State of Florida for management of the Cortez Key Bird Sanctuary

RESOURCE MANAGEMENT AGREEMENT
FOR
CERTAIN LANDS
ON
CORTAZ ISLAND

Agreement No. TS-8004

THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST
FUND OF THE STATE OF FLORIDA, referred to herein as the
"Board" and the DEPARTMENT OF NATURAL RESOURCES, DIVISION
OF STATE LANDS, as agent for the "Board" hereby grant to
the National Audubon Society, Inc. referred to as the
"NAS", authorization for resource management responsibilities
in Manatee County, Florida, described as follows:

[See Exhibit A, attached hereto and made a part hereof]

W I T N E S S E T H

The Board and the NAS, for and in consideration of the
covenants hereinafter contained do hereby covenant as
follows:

1. Subject to all existing easements and the terms
and conditions on the subject parcel, the Board hereby grants
to the NAS authorization as the subject property for resource
management responsibilities which shall not conflict with the
conservation, protection, and management of said lands.

2. It is understood and agreed that the NAS shall have
responsibility for the protection of the property, and shall
through its agents and employees take all reasonable measures
to provide security against property damage, property
degradation and unauthorized use.

It is understood and agreed that in addition to the
resource management responsibilities and attendant activities
stated, the NAS will furnish the Division of State Lands a
written statement within six (6) months of the date of this

agreement which outlines the management activities proposed
for the subject property. Upon receipt and acceptance by
the Division of State Lands, the management statement shall
serve as a guideline for future management activities. The
management statement will be reviewed jointly by the Division
of State Lands, as agents for the Board, and NAS at no greater
than five (5) year intervals and updated as necessary. The
NAS shall have no right other than as specified to use the
premises for any purpose other than as specified in the
management statement.

3. The NAS shall not clear, plant, build or alter the
property except as provided for in the required management
statement without the advance written approval of the Director
of the Division of State Lands acting as agent for the Board.

4. Upon execution of this Agreement, the NAS shall
have the right to enter and occupy the property for the
purpose necessary to fulfill the designated responsibilities.

5. The Board, or its duly authorized agent, shall
retain the right to enter the property or engage in management
activities not inconsistent with the statement provided for
herein and shall retain the right to grant compatible uses of
the property to third parties during the term of the Agreement.
In the event of a possible conflict, the Board shall determine
whether or not any proposed uses by a third party are in
conflict with the responsibilities of the NAS.

6. The Board or its duly authorized agent shall have the
right at any time to inspect the works and operations of the
NAS in any matter pertaining to this Agreement. Should the
NAS fail to keep and perform any activities in accordance with
the authorization provided for herein, the Board shall have
the right to terminate this agreement on the 90th day
following written notice to the NAS. In any event, should a
need of greater public benefit and use arise, the Board shall
have the right to terminate the agreement. At such time,
the Board, acting through the Director of the Division of

State Lands, shall issue written notification to the NAS regarding the need for and effective date of such termination.

7. This Agreement and any rights and privileges contained herein are for the sole use of the NAS and shall not be assigned or transferred to any other party.

8. The NAS shall defend, hold and save the Board and its designated agent harmless from any and all liability or claims that may result from injuries to persons or damage to property arising out of the use of the property by the NAS to the extent allowed by the laws of Florida.

9. Execution of this Agreement in no way affects the National Audubon Society's obligations pursuant to Chapter 267, Florida Statutes.

10. Any inequities that may subsequently arise as a result of this Agreement shall be subject of negotiation upon written request of either party hereto, and the parties agree to negotiate in good faith. In case of failure by the respective staffs to resolve conflict(s), the matter may be referred to the Board for final resolution.

IN TESTIMONY WHEREOF, the legally designated agent of the Board of Trustees of the Internal Improvement Trust

Fund of the State of Florida and the National Audubon Society have hereunto set their hands.

(SEAL)
BOARD OF TRUSTEES
OF THE INTERNAL
IMPROVEMENT TRUST
FUND

BOARD OF TRUSTEES OF THE INTERNAL
IMPROVEMENT TRUST FUND OF THE STATE
OF FLORIDA

By: Elton J. Gissendanner
Elton J. Gissendanner
Executive Director
Department of Natural Resources
Agent for the Board of Trustees of
the Internal Improvement Trust Fund
authorized to execute this instrument
for and on its behalf pursuant to
authority granted by Department of
Natural Resources Resolution dated
April 15, ~~1980~~
1981

WITNESS:

NATIONAL AUDUBON SOCIETY

Nancy J. Anderson

By: John M. Anderson

Arthur Gringert

Date: September 4, 1981

APPROVED AS TO
FORM AND LEGALITY

John P. Williams
COUNSEL ATTORNEY

EXHIBIT A

A tidally affected mangrove island, locally known as Cortez Island encompassing approximately ten (10) acres and all submerged lands lying within 300 feet of Cortez Island, lying and being in the S.E. quarter of Section 3, the N.E. quarter of Section 10, and the N.W. quarter of Section 11, Township 35 South, Range 16 East, in upper Sarasota Bay, Manatee County.