

CURRITUCK NATIONAL WILDLIFE REFUGE

Currituck County, North Carolina

ANNUAL NARRATIVE REPORT

Calendar Year 1995



Refuge Manager

2/27/03

Date



Refuge Supervisor

3-28-03

Date



Regional Chief, NWRS

4-2-03

Date

INTRODUCTION

Currituck NWR is located in northern Currituck County, North Carolina along the Outer Banks barrier island chain. The Currituck Banks are part of an extensive coastal lowland that stretches from Newfoundland southward to Florida, and westward into the Gulf of Mexico. Along the Currituck Banks, inlets have periodically formed and reformed depending on storms, amount of sedimentation, tidal heights, and degree of vegetation on the barrier beach.

Acquisition of Currituck NWR was intended to preserve and protect a part of the NC Outer Banks, one of the largest undeveloped coastal barrier ecosystems remaining on the East Coast. Service ownership ensures perpetuation of basic wetland functions, including nutrient cycling, floodplain and erosion control, and will help preserve the role of Currituck Sound estuaries as nurseries. The sound is an important black duck wintering area. Ownership of the protective buffer east of the productive marshes bordering the sound protects the marsh from direct pollution sources associated with development.

The Outer Banks remained isolated from the mainstream of activity in early America, and those few people who lived there relied heavily on activities associated with the area's natural values for their subsistence. Activity in the Currituck Sound area reached a peak in the late 1800's when commercial fishing and market hunting were at an all-time high. A number of hunting clubs were established for hunting waterfowl and drew much of their membership from affluent northern businessmen and professionals.

The navigation hazards along the Outer Banks resulted in numerous shipwrecks along the coast. Lifesaving stations were established along the beach of which several still exist. One station is located on an inholding within the Swan Island Tract (SIT) and is used as a seasonal residence by a private citizen. The Currituck Lighthouse at Corolla still functions throughout the year.

During 1975 and 1976, The Nature Conservancy (TNC) acquired several parcels of land on the Currituck Outer Banks. The two major tracts of land were being utilized by the Swan Island and Monkey Island Hunting Clubs. Funds to purchase these areas were provided by the Melon Foundation, a sponsor of the National Wetlands Project. TNC transferred approximately 500 acres of the Monkey Island Tract to the State of North Carolina for inclusion in the National Estuarine Sanctuary System as the Currituck Banks component. A narrow strip from sound to sea of about 50 acres was retained by TNC between the Sanctuary and the Monkey Island Tract.

The Migratory Bird Conservation Commission (MBCC) met to consider the Currituck Refuge on August 2, 1983. The MBCC approved the boundary of the refuge in two parcels: the Monkey Island Tract, which is 1.5 miles north of Corolla, NC, and the SIT some 3.5 miles further north. Two phases of acquisition resulted in 1,770 acres in fee title, 166 acres in conservation easement and some hunting blind rights at a cost of \$3.9 million. A third tract, 54 acres of marsh and low shrub and hardwood woodland, was acquired in 1988, through a trade with Currituck County, NC, for Monkey Island and is located along the west side of Corolla village. All three tracts comprise about 1,824 acres

and have been administered by Mackay Island NWR at Knotts Island, NC, since July of 1990.



Aerial view of Monkey Island.

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A. HIGHLIGHTS

Negotiations pertaining to North Carolina Power's request for an underground distribution line right-of-way continue. D.4.

Cattle trespass continues to pose a problem. G.15.

B. CLIMATIC CONDITIONS

As an unmanned refuge, weather is not monitored on the Currituck NWR. Weather is monitored at Mackay Island. In 1995, a note of interest was the approach of Hurricane Felix on August 16. All indications during the days prior to landfall were that the Outer Banks would take a direct hit. Fortunately, the storm stalled and veered back to a northeastern track. Currituck NWR did suffer heavy erosion damage, but no breaks through to the Sound occurred.

C. LAND ACQUISITION

1. Fee Title

Currituck Refuge, which was once thought to have potential for about 15,000 acres of the North Carolina Banks is a fragment of what was envisioned in the final Environmental Impact Statement (EIS) proposing its establishment in 1980. The main reason for the scaled back version of about 1,800 acres, which now exists, is easy to comprehend with land prices skyrocketing north of Corolla NC due to development.

The reasons for establishing the refuge and the importance of this fragile coastal barrier island ecosystem are clearly defined in the original EIS. These reasons were reemphasized with the listing of the piping plover in 1986 thus protecting it under the Endangered Species Act. In fact, the Swan Island Tract and areas north of the refuge have been identified as the best piping plover nesting habitat in North Carolina.

Small tracts of land such as the Covington Tract need to be given serious consideration for acquisition before they are subdivided and developed. These smaller tracts have great value for migratory birds, endangered species, bio-diversity, water quality, dune protection, and will lessen the indirect affects of increased human activity associated with development.

D. PLANNING

4. Compliance with Environmental and Cultural Resource Mandates

In 1992, North Carolina Power initiated actions to obtain a right-of-way (ROW) for an underground distribution line across approximately 9,800 feet of Refuge Lands. The site of this ROW would be at the Swan Island Tract (SIT) which is just south of the community of Carova, North Carolina. Currently, the electrical supply for Carova comes

from an existing overhead line from the north which is under service from Virginia Power. The capacity of the existing system is not adequate to meet current demand and will not meet future demands with development proceeding at a rapid pace. Carolina Telephone has also expressed interest in the ROW to install an underground fiber optic cable but has apparently decided to let North Carolina Power take the lead.

A Section 7 Evaluation was originally completed in August of 1993 which considered the direct impacts to species covered under The Endangered Species Act (i.e., piping plover, seabeach amaranth, loggerhead sea turtles, bald eagle, and peregrine falcon). This Section 7 was later revised to include indirect impacts and contained specific mitigation measures. Numerous meetings and telephone conversations took place from February to June this year in an attempt to properly mitigate the impacts and grant a ROW to North Carolina Power. Meetings were held in February and March with officials of North Carolina Power, Currituck County, and Carolina Telephone with little progress made toward an agreement on proper mitigation. A meeting with Regional Solicitor John Harrington was held in Atlanta in April concerning the Service's position that mitigation was appropriate to alleviate indirect or secondary effects of this project on the refuge. There did not appear to be a case in the refuge system where secondary impacts were cited as the single factor in a compatibility decision. In June, North Carolina Power sent a letter to the Regional Director expressing concerns about the Service request for mitigation and the delays in getting a ROW for the power line. The Regional Director responded in a letter stating that mitigation was appropriate for this project and that environmental education and land protection measures are required. In July, a meeting was held in Manteo, North Carolina with North Carolina Power and Carolina Telephone officials to discuss the newly completed Environmental Assessment (EA). Deputy Associate Manager Cal Garnett and Realty Chief Tom Follrath attended along with Refuge Manager Ken Merritt. North Carolina Power agreed to revise the original EA to include secondary impacts and agreed in principle to provide mitigation for environmental education and a visitor contact station. The rest of the year was quiet while the EA was being revised by North Carolina Power.

E. ADMINISTRATION

1. Personnel

As an unstaffed satellite refuge, Currituck is managed by the staff at Mackay Island. Of note for 1995, a Student Conservation Association (SCA) volunteer was hired primarily to conduct surveys at Currituck NWR. In April, Jon Obrecht was selected; he began service on April 26 continuing through August 2.

5. Funding

The Mackay Island NWR fiscal budget was augmented in 1995 with an additional \$2100.00 from the Asheville NC Endangered Species Office for piping plover surveys at Currituck NWR. The funds were used to hire a seasonal Student Conservation Association member.

F. HABITAT MANAGEMENT

1. General

Currituck NWR is located on the Currituck Banks stretch of North Carolina's Outer Banks barrier island. The Currituck Outer Banks are primarily maintained by a variety of coastal processes including long shore currents, tides and tidal currents, wave action, storm surges and wind action. These dynamic forces cause shorelines to undergo constant change. The adaptability of this coastal strand to constant physical change is a major part of their natural ecology. The approximate size of the habitat types on the refuge are: 13% sand and dune, 48% brush and woodlands and 39% marsh.

2. Wetlands

Two types of wetland areas are situated across the three major land tracts of the refuge; these include the brackish water marshes that border Currituck Sound and the wetland flats between the primary dunes and the ancient secondary dunes. The most extensive area of these interdunal flats occur on the SIT where the refuge operates a water control structure. This structure is situated in the middle of an old dune line where these wetlands, also known as the Flats, drain into a creek which empties into Currituck Sound. The structure is adjusted to maintain moist soil conditions by trapping rainwater through the summer to promote moist soil species.

This year, rain was scarce from July through September which completely dried out the flats. The flashboards were pulled from the water control structure early this year to dry out the flats for disking. The bombadier and disk were employed in early June, but constant breakdowns resulted in the completing of the project in mid-July. With little rainfall until mid-September, the wetland vegetation was very slow in coming back. September and October came with ample rainfall to promote *Bacopa* sp. and fall panicum. The fall panicum emerged in a carpet but was quickly trampled and consumed by feral horses. Rainfall was normal through the fall but was insufficient to fill the flats until mid-December. Waterfowl use was almost non-existent with the disking, poor growing conditions, and grazing pressure.

The second type of wetland on the refuge includes the Currituck marshes along the western side of the refuge. These emergent marshes are dominated by *Juncus roemerianus*, *Typha* spp., and *Spartina cynosuroides*. These sizeable marshes are influenced by wind tides. Management on marshes include placement of wood duck nest boxes through cooperation with the former owners, the Swan Island Gun Club, and prescribed burning on the marsh. No prescribed burns were conducted this year.

3. Forests

Forty-eight percent of the total refuge consists of maritime shrub and forest habitat. A dense shrub thicket occurs on the protected west side of the primary dune system. Dominant shrub species include American holly, yaupon holly, wax myrtle, and live oak.

Farther west from the primary dunes, a low, laterally branching maritime forest dominated by live oak and red cedar is found. West of ancient secondary dunes the forest becomes taller and exhibits a more open canopy where loblolly pine is dominant. All of these shrubs and woodland areas provide important resting and cover habitat for neo-tropical passerines and raptors.

6. Other Habitats

Approximately 243 acres of beachfront and sand dune are contained within the Swan Island and Monkey Island tracts. The refuge's fee title ownership extends along the beachfront out to the mean high water line. The intertidal zone falls within the state's ownership according to state law.

G. WILDLIFE

1. Wildlife Diversity

A rich wildlife diversity occurs across the Currituck Outer Banks due to the diversity of habitats along this area. Avian species comprise the bulk of the wildlife diversity as indicated by over 240 species having been documented at Back Bay NWR ten miles north of Currituck NWR. The Currituck Outer Banks serve as a migration corridor for a variety of birds such as accipiters, falcons, neo-tropical warblers, shorebirds, gulls, terns, and many waterfowl species. Periodic monitoring covers waterfowl and the threatened piping plover.

2. Endangered Species

Student Conservation Association Volunteer Jon Abreact arrived in late April and began surveys for piping plover in May. One to two plovers were observed throughout the month along the beach but no breeding behavior was observed. The Asheville Endangered Species Office assisted in this survey effort by allocating \$2,000 to help pay the costs of the SEA Program. Surveys were continued through late July when several migrating plovers were seen, including one flight capable young-of-the-year. No piping plover nesting activity was observed this year.

There are no records of nesting sea turtles for Currituck but Jon did find three loggerhead nests just north of the Swan Island Tract this year. Two were about 1.5 miles south of the Virginia/North Carolina boundary with the other about 2 miles south of the line.

3. Waterfowl

Aerial surveys were conducted on a bimonthly basis to assess waterfowl use during the 1994-95 winter. Overall waterfowl use was up 49% over the 1993-94 season due to large increases in gadwall, widgeon, green winged teal, bufflehead, ruddy ducks and coots (Table 1). Canada geese numbers decreased 88%! Only fair waterfowl use was recorded in the Flats; the greatest use continued to occur on the north refuge boundary, Rainbow

Creek, and in the Hay Pond. The peak of the use again followed the same pattern as it has the previous two years. This included 4,000-5,000 snow geese frequenting the Hay Pond from mid-February until they leave mid-March. Duck use peaked once in November and then again in January through February.

TABLE 1
WINTERING WATERFOWL OCCURRENCE ON
CURRITUCK NWR
1994-1995

GROUP	PERCENT	NUMBER OF USE-DAYS	%DIFFERENCE FROM 1993- 1994	PEAK NUMBER	PEAK PERIOD
Tundra Swans	18.0	106193	-1	1,109	01/13/94
Canada Geese	1.7	7,035	133.7	150	02/16/94
Snow Geese	35.5	141,750	11.7	6,000	02/16/94
Ducks	33.5	133,805	88.4	1,410	03/07/94
Coots	2.5	10,045	>100.0	200	02/16/94
All Waterfowl	100.0	399,875	123	8,280	02/21-27/94

The increase in overall duck use may correspond to some improvement in the abundance of SAT in adjacent sound waters to the refuge and the Swan Island marshes. Beds of milfoil, naiads, wild celery, and sago pondweed expanded noticeably in aquatic areas cited above. These grasses were undoubtedly responsible for holding the large flocks of coots that were observed in Refuge waters in 1995. While waterfowl numbers recorded in 1995 are low compared to historical use, if SAT beds continue to expand then waterfowl use should also increase.

TABLE 2
COMPOSITION OF DUCKS WINTERING ON CURRITUCK NWR
1994-1995

SPECIES	PERCENT	NUMBER OF USE-DAYS	% DIFFERENCE FROM 1993-1994	PEAK NUMBER	PEAK PERIOD
Gadwall	39.0	79,470	146	1255	01/05/95
Black Duck	13.3	27,053	-14	388	11/21/94
Greenwing Teal	26.2	53,297	102	1435	11/21/94
Mallard	6.1	12,361	-52	210	12/09/94
Pintail	1.2	2,400	-48	80	02/23/95
Widgeon	12.0	24,374	462	516	01/05/95
Ruddy	1.6	3,242	213	90	11/21/94
Shoveler	0.0	0	-100.0	0	11/04/94
Bluewing Teal	0.0	126	-91	6	01/05/95
Wood Duck	0.0	75	-94	6	03/13/95
Merganser	0.0	126	-55	6	01/05/95
Bufflehead	0.5	1,103	125	25	11/21/94
Scaup	0.0	0	N/A	0	11/04/94
Ringneck	0.1	210	N/A	10	11/04/94
All Ducks	100	203,835	57	11,331	02/23/95

4. Marsh and Water Birds

Many of the 20 species of marsh and water birds that use Mackay Island also frequent wetlands of Currituck NWR either year-round or seasonally. Most heron use is by great blue, little blue and green-backed herons. Common egrets, snowy, and cattle egrets are found on the refuge throughout the year. Glossy ibises and tri-colored herons seasonally frequent refuge marshlands. Other seasonal water bird use is derived from coots, pied-billed grebes, and double-crested cormorants. King and Virginia rails, are the most common rails on most refuge tracts. Infrequent marsh birds include sora, clapper rails, and least bitterns.

5. Shorebirds, Gulls, Terns, and Allied Species

The coastline of the Currituck Banks provides important habitat for a variety of shorebirds during their spring and fall migrations. The beach of the Currituck Outer Banks are especially valuable during shorebird migrations due to the lack of regularly

exposed tidal (i.e., lunar) mudflats in Currituck Sound and Back Bay where irregular wind tides infrequently expose mudflats in these areas. Several species using this beachfront, such as sanderling, least sandpiper, and black-bellied plovers, are recognized by the Service as species of special concern having suffered recent declines in their continental populations. Sanderling, ruddy turnstone, semipalmated plovers, and black-bellied plovers are among the most abundant migrants along the Currituck Banks during both migrations.

The Flats, high refuge marsh, and irregularly exposed mudflats on the Currituck Sound are foraged over by greater and lesser yellowlegs, solitary and spotted sandpipers, and by willet during spring and fall migrations. Exposed mudflats on the east side of Currituck Sound are heavily used by yellowlegs, semipalmated plovers, and other shorebirds for protection and forage zones during spring Noreaster storms.

A variety of gulls and terns use the beachfront and other water areas of the refuge tracts. Ring-billed, herring, great black-backed, and laughing gulls are the most common gulls. Common, royal, sandwich, Forester's and least terns frequent the refuge beachfront from spring through fall.

6. Raptors

Moderate numbers of raptors use the refuge during the fall migration. Stopovers are made by American kestrels, sharp-shinned hawks, merlin, and Cooper's hawks. In early October, several peregrine falcons were witnessed on a daily basis passing over the refuge. Northern harriers are commonly seen over marshlands from December through March.

15. Animal Control

Unfortunately several types of non-native animals including feral horses, feral pigs, and domestic cattle have been left to range over refuge tracts.

The origin of the wild horses on the Currituck Banks is unclear. Little has been done to control their numbers and competition with native plants and wildlife has been apparent in recent years (see Section F.2). Feral horses were commonly found in the Flats and beachfront of SIT grazing on grasses and herbs; their numbers generally ranged from 10-20 on this unit.

Free roaming cattle and horses continue to consume wetland and dune vegetation and impact refuge resources. Horse use of the refuge could be best described as daily. Infrequent visits to Currituck do not adequately document the horse use. Unfortunately, the Flats is also an area which was known to be a prime feeding area for waterfowl. In June, it was noted that horse numbers have increased with 18-20 horses regularly seen on the Swan Island Flats. This coincides with actions by the Corolla Wild Horse Fund this spring when fifteen horses were driven north of the fence separating Corolla from the undeveloped beaches to the north. Horses discontinued using the area shortly thereafter

due to two events: The Flats were disked as part of a habitat improvement project in June and July eliminating much of the forage. A contractor completed work in November on a smooth wire electric fence that excludes cattle and horses from the Flats.

Cattle trespass has been noted on the refuge as being serious since 1986, shortly after the refuge was established. Past refuge managers have attempted to deal with the owner who is also a Currituck County Commissioner through telephone calls, face-to-face meetings, and letters of warning. Unfortunately, each spring the owner would turn his cattle out to wander the area and they would be attracted to the refuge where the best grasses were located. By the time each refuge manager went through the procedures of calling, meeting, and finally presenting a letter of warning to the owner the damage would be done and the cattle would move on to other non-refuge areas.

With the first instance of cattle trespass this year on May 30, the owner was called with each subsequent trespass and allowed the opportunity to retrieve the cattle. The owner did round up the cattle and remove them from the refuge in a timely manner but did not repair his fences. Thus, the cattle continued to roam free and returned to the refuge within a few days. After thirty days, the owner was sent a letter of warning. This resulted in a telephone conversation between the owner and the refuge manager in which the owner stated that he was not going to take any action to keep his cattle off the refuge. Cattle trespass violations became less numerous after the letter was issued but this may have been related to the state of the vegetation after being grazed by the cattle and horses. The owner received five separate citations on September 2, 1994 for cattle trespass violations. The last cattle trespass violation in 1994 occurred on August 25. The owner was scheduled to appear in court on September 21 but received a continuance. As part of the continuance, the owner was advised by the magistrate that if any future violations occur before the owners next scheduled court date that he would be found guilty and fined. The owner was scheduled to appear in court early in 1995. A pre-trial settlement was reached between the U.S. District Attorney and the owner on January 30 in which it was agreed that cattle will not enter the Refuge during the next 12 months. In June, Refuge Officer Panz met with pre-trial diversion attorney (PDA), Richard Whittaker of the U.S. Attorney's Office to inspect the owners cattle fence. Several violations were found (though no cattle were found on the Refuge). The PDA subsequently met with the owners attorney to correct the violations and to amend the agreement to require that the cattle be securely contained and tagged. In July, a hearing between PDA Whittaker, the owner and his attorney resulted in the signing of an amended pre-trial diversion agreement.

In a related issue, the cattle owner called the Refuge in March complaining about snow geese depredating his pastures on the Outer Banks. The owner demanded that "the Service get its geese off his land". The owner was offered assistance consisting of equipment and technical advice but declined.

After the issuance of the permit in 1994 to construct an ocean to sound fence above Corolla, a committee was formed to develop a long range management plan which is a condition of the State permit. The committee is made up of representatives of Currituck

and Back Bay refuges, Corolla Wild Horse Fund, Currituck County, and NC Department of Environment, Health and Natural Resources. This committee met several times during the year to develop a management plan. As an initial step, the committee has decided to make the number one priority a basic census to determine how many horses are present, age and sex ratios, band composition, etc. This information will be used in future meetings to develop the long range management plan.

In order to obtain this information, the refuge conducted two aerial horse surveys this year. Mrs. Rowena Dorman of the Corolla Wild Horse Fund participated in the surveys which were conducted in September and November. A total of 36 horses were observed during the first survey and 39 during the second. The survey results differed in that twenty of the horses counted on the first survey were within the Refuge Boundary and only two were within the Refuge during the November Survey. This probably reflects the effectiveness of the newly constructed fence at the Flats.

As the horse management committee meetings continue, the refuge is exploring its options to exclude or remove the horses. A recent solicitors opinion confirmed the belief that the horses are not owned and the Service can remove them within the guidelines of 50 CFR. The realities are that independent removal by the Service would be very expensive, violate County ordinances, cause a public relations problem, and become a political nightmare.

It is hoped that this problem can be solved with a long range management plan which will meet the needs of the refuge and protected species on non-refuge lands in the near future.

Rooting by small numbers of feral pigs was very obvious in the late winter - spring period on the Flats and the Monkey Island Tract wetlands.

On occasion, free-roaming dogs range through the refuge and are a disruption to various wildlife.



Endangered Piping Plover.



Egrets nesting atop the trees on Monkey Island.



Sanderlings on the beach.



Cows and Wild Horses gathering in the fields.

H. PUBLIC USE

1. General

The refuge is open to beach activities, hiking, birdwatching and photography with visitation estimated at 5,000. Travel to the refuge is via NC 12 to Corolla and then northward on the beach between the dune line and the ocean. Over 30,000 vehicles travel the beach each year to access the communities of Ocean Beach, Seagull, Swan Beach, North Swan Beach and Carova Beach. It is also the only route for surfers, sunbathers and surf-fishermen. The refuge presently has no facilities or trails, but visitors may freely explore the dunes and maritime forests during daylight hours. Camping, fires and free roaming pets are not permitted.

8. Hunting

The refuge is closed to public hunting. Waterfowl hunting rights were retained by the Swan Island Hunt Club when the Swan Island Tract was purchased.

Waterfowl hunting rights were acquired by the Service with the purchase of the Monkey Island Tract. Each year the refuge buys ten blind licenses from the county game commission and builds duck blinds along the shore. County regulations restrict hunting within 500 yards of a licensed blind, thereby providing a rest area between the refuge and float blind hunters.

17. Law Enforcement

Refuge Officers have patrolled on an irregular basis due to the 1.5 hour drive around Back Bay and down the beach to the refuge. A portable building was obtained from military surplus and trailered/dragged into place early in the spring. It holds two ATV's, posts, signs and tools to maintain nearly everything. Travel time is now cut to 20 minutes by boat and patrols are accomplished by ATV. County Deputies enforce state and county laws along the beach strand and have been very cooperative in reporting violations of vehicular trespass above the dune line. NC Wildlife Officers patrol the refuge but did not encounter any violations this year. A total of 88 patrols were made, which resulted in 81 reported incidents and the issuance of 35 violation notices and 23 written warnings.

A breakdown of incidents by category:

Type of incident	# reported	# written warnings	# violation notices
Accident: Vehicle	1		
Assist Citizen	2		
Assist Other Agency	9	2	
Camping	3	4	5

Type of incident	# reported	# written warnings	# violation notices
Controlled Substance	1		1
Disorderly Conduct	1		
Fire: Bonfire	5	2	
Firearms	2		2
Hunting	1		
Littering	6	3	
Probation Violation	3		2
Property Found	2		
Traffic	7	3	5
Trespass: Cattle	1		
Horse	1	1	
Vehicle	32	8	20
Vandalism	3		
Wildlife Incident	1		
***TOTALS	81	23	35

***These are included in the Mackay Island Summary

I. EQUIPMENT AND FACILITIES

1. New Construction

A fence project to exclude cattle and horses from the Swan Island Flats was initiated in February with the clearing of fenceline. Arrangements were made with Region 5 to have the hydroaxe operator from Moosehorn NWR (already in the area working on other nearby refuges) complete the initial clearing of the fenceline. The hydroaxe cleared approximately 2 miles of fenceline. This was followed by clearing with the Refuge bulldozer (also Alligator River's D-7) and surveying of the line. The contractor, Everett Fence Builders, Greenville, NC, initiated construction in September and completed the work in November. A four-strand smooth wire electric fence was completed and proved to be highly effective in excluding horses. The fence was constructed to allow full access to white-tailed deer and this was verified with numerous observations of deer jumping the fence and numerous deer within the enclosure.

2. Rehabilitation

In January, the surplus CONEX box at Mackay was retrofitted as a secure storage unit to be placed near the Swan Island Flats. On February 22, it was hauled to Back Bay NWR for final preparations. The following week, it was hauled on a flatbed trailer by the D-4 dozer and placed near Ferebee Inlet. It holds two ATVs and support equipment for land management and law enforcement operations.

J. OTHER ITEMS4. Credits

K. Merritt

G. Andres

M. Panz

P. VanZant

S. Andres

Sections C, D, F, and G

Sections A, B, E and I

Section H

Typing, Colating

Editing

Photo Credits

BN - Ben Nottingham

JM - Jessie McCleskey

KM - Ken Merritt