

NARRATIVE REPORT
MACKAY ISLAND NATIONAL WILDLIFE REFUGE
FY 1974

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
VIRGINIA BEACH, VIRGINIA 23456

NARRATIVE REPORT

MACKAY ISLAND NATIONAL WILDLIFE REFUGE

PERSONNEL

Dennis F. Holland	Refuge Manager
Harold C. Olson (Trans. to Presquile NWR - 10/13/73)	Assistant Refuge Manager
Allen C. Jones (E.O.D. 3/18/74)	Assistant Refuge Manager
James A. Pittman	Maintenanceman

Temporary Appointment

Richard A. Williams	WAE - Laborer
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I-GENERAL

A. Weather Conditions

Weather data was obtained from Back Bay National Wildlife Refuge, located approximately six air miles from Mackay Island National Wildlife Refuge. Total precipitation for FY 1974 was 44.17 inches which is 8.78 inches below normal. Much of the drop occurred in August, September, October, and November, normally the wettest part of the year.

B. Habitat Conditions

1. Water

Water elevations in the marsh are dependent almost entirely on wind direction. Northeast winds prevail during the winter, causing a drop in the water levels in Back Bay and the marsh. Summer winds out of the southwest bring water from Currituck Sound into the marsh.

Approximately 510 hours of pumping into the south marsh impoundment during March, April, and May raised the water level to the 6.68 foot elevation. This area was burned last winter and the water is being held up to retard the growth of needlerush.

2. Food and Cover

The Refuge contains some areas of very low value to waterfowl due to dense stands of needlerush. In areas where needlerush is absent, spikerush is the most common plant. Other plants of value to waterfowl are also present in the areas not completely dominated by needlerush. When the needlerush is burned, these plants become more readily available to waterfowl.

Milfoil continues to flourish throughout most of Back Bay and Currituck Sound. In most areas where milfoil is found, there are also good growths of wild celery, widgeon grass, redhead grass, and najas. Waterfowl made good use of these aquatics, especially the milfoil.

Thirty-four acres of corn were planted on Live Oak Point for waterfowl use. In September the cornfield along with sixteen additional acres were over seeded to ryegrass. Snow geese cleaned up the corn by the end of December and began to work on corn and winter wheat on private land.

II. WILDLIFE

A. Waterfowl

Waterfowl use remained about the same as last year with a total of 3,212,465 use days.

The swan population increased only slightly to 116,500 use days, with a peak of 2,500 in November and December 1973.

The number of Canada geese using the Refuge continues to decrease. This year only 33,500 use days were recorded for a new low.

The total snow goose use days was 1,219,000; this figure being down from the 1,440,000 use-day total of last year. Numerous complaints were received again this year concerning snow goose depredation. Much of maintenanceman Pittman's time during the months of November through February, was spent working with farmers in the Virginia Beach - Chesapeake area to keep the geese out of winter wheat fields.

In late February, the hazing operation was turned over to a team headed by a biologist, Otto Florschutz, from Washington, North Carolina. The complaints lasted until late March.

Duck use was up 19% to 1,580,000 use days from 1,324,500 use days last year. Approximately 75% of the use came during the fall quarter. Heavy use areas were Flynn's Folly and Bull's and Barley's Bays.

It is estimated that 110 woodducks, 20 mallards, and 15 black ducks were produced on the Refuge this year.

Coot numbers were down by about 90,000 use days to 264,000.

B. Big Game Animals

The whitetail deer herd is fast approaching the point when some control will be necessary. Concentrations of between 30 and 50 animals were seen on several occasions around the cornfield on Live Oak Point. This past spring the cornfield was reduced by about 40% in this field and a smaller amount in some fields on Knotts Island. This use cut heavily into the amount of corn available for waterfowl.

C. Fur Animals, Predators, Rodents, and Other Mammals

No trapping was permitted this year due to what we believed to be a drop in the population of nutria and raccoon along with normally low population of muskrat. As spring progressed, however, we began to experience damage to dikes and roads. The revised population estimates are muskrats 800 and nutria 3,000.

D. Raptors

Three young osprey reached flight stage out of four active nests. Screech owls were seen frequently in wood duck boxes.

E. Fish

Some of the best bass and bream fishing in North Carolina and Virginia is found in the waters of Currituck Sound and Back Bay. Many large bass were taken again this year, some weighing more than 10 pounds.

F. Reptiles

Snapping turtles are a major predator on young wood ducks. Over 500 were removed last year and a lesser number this year.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

Two stalls of the pole equipment shed were closed in to provide the new maintenance area for the Refuge. With heat and plenty of work space, this is a great improvement over the old chicken house we have used for the last several years. New gas and diesel tanks were installed at the new service building.

The Virginia Beach Technical School repaired the engine for the Ford tractor. The clutch and hydraulic system were repaired by refuge personnel.

The ceiling was replaced in the bedroom in the assistant manager's residence and several rooms were painted. The interior walls in residence #94 were repainted and the living room floor refinished.

High water levels in Currituck Sound with accompanying strong winds created washouts on the refuge road at Live Oak Point. These were repaired, however, the wind and water are working on this area continuously. The shoreline has receded up to 30 feet from a bulkhead built in the 1930's.

B. Planting

Cultivated Crops

The Refuge has only one cooperative farmer. He planted 80 acres of corn and 86 acres of soybeans. Soybeans averaged 26 bu/acre. The corn yield was 65 bu/acre.

Fifty acres of corn and grass on Live Oak Point was over seeded to ryegrass. Snow geese made heavy use of both the corn and the ryegrass.

C. Collections and Receipts

The Refuge received 275 bushels of corn from Blackwater National Wildlife Refuge for use in the banding program.

D. Planned Burning

Units 5 and 7 along with small portions of units 2 and 4 were burned this year. Controlled burning is used to open the dense stands of needlerush for use by snow geese and to hold back succession. An 85% burn was achieved on unit 5 and parts of 2 and 4 and a 30% burn was achieved on unit 7.

About 1,000 snow geese used unit 5 for a short time after burning. No goose use was noted on unit 7. This area is on the south end of the Refuge in a low goose use area.

IV. RESOURCE MANAGEMENT

A. Fur Harvest

No fur trapping was done this year due to the apparent low populations of muskrat, nutria, and raccoon. As spring progressed, however, nutria and muskrat began making their presence known on the dikes and roads.

B. Commercial Fishing

There is no commercial fishing permitted on the Refuge, however, some of the islanders set nets in adjacent areas of Currituck Sound and Back Bay.

C. Other Uses

A permit was issued during the summer of 1973 for trapping snapping turtles. Approximately 2,000 pounds were removed, down from 5,000

pounds last summer. The number of wood duck broods sighted, has been up and the survival rate seems to be better. In future years we will monitor the snapper population to determine when the population will need reducing again.

V. FIELD INVESTIGATIONS AND APPLIED RESEARCH

A. Banding

Plans to band greater snow geese fell through when they cleaned up the cornfield on Live Oak Point and left the area before the banding season.

B. Wood Duck Nesting Study

In 1970, 37 pairs of wood ducks were released on the Refuge. Prior to their release, nesting boxes were placed in various habitat types throughout the Refuge. Nest use was evaluated each year and the boxes in areas with poor use were moved to higher use areas. A summary of use follows:

	<u>Boxes Available</u>	<u>Boxes Used</u>
1970	34	11
1971	33	5
1972	33	12
1973	33	22
1974	33	22

Production Estimate for Production Year 1974

22 Nest boxes used by wood ducks
 12 Successful nests
 120 Ducklings left the nest
 Estimate 50% reached flight stage

C. Vegetative Transects

The three wetland vegetation transect lines established in 1965 were run September 11, 1973. The five-point sampling method was used.

The vegetation along the north marsh transect line this year was found to be very similar to the 1972 results in species composition and ranking of the dominant plants with spikerushes being the most important species followed by pennywort, needlerush, and salt-grass. Cattails increased from 0.9% to 2.8%.

The middle marsh vegetation was also quite similar to 1972's data with the four most dominant plants being spike-rushes, saltmeadow cord-grass, salt-grass, and frog-fruits.

The dominant plant in the south marsh was found to be needlerush. This plant was even more abundant and has shown an increase in each of the last three years. Spike-rushes were second in importance, but were down from last year.

All three marshes are presently of very low value for feeding waterfowl. Vegetation of low food value covered all three marsh areas. The south and middle marsh contain very low value areas for feeding waterfowl. The more desirable waterfowl foods such as spike-rushes in these areas grow in association with dense stands of needlerush and cattails consequently are not normally used by feeding waterfowl. Of the three marshes sampled, the north marsh which was burned during the 1972-1973 winter contained the best and most available waterfowl food supply. Snow geese created eat-outs in the burned area which became revegetated with smaller species of spike-rushes, duck-potato, cyperus, and other good foods present in an available condition.

The south marsh transect is in burn unit 7 which was burned this winter.

VI. PUBLIC RELATIONS

A. Recreational Uses

Visitor use increased 60% this year to 20,100 visits. Of the 55,691 activity hours recorded, fishing comprised 50%, crabbing 37%, wildlife observation 8%, and all other programs 5%.

B. Refuge Participation

Mackay Island National Wildlife Refuge joined Back Bay National Wildlife Refuge in participating in Hunting and Fishing Day activities at Portsmouth, Virginia on September 22 and 23. Thirteen hundred people viewed our exhibits for 107 hours.

An amateur radio club from the Tidewater Virginia area set up in the observation tower on the Knotts Island Causeway the weekend of June 22-23 to participate in a contest to contact as many hams as possible in a 24-hour period. They made over 600 contacts in all 50 states and several foreign countries.

C. Hunting and Fishing

No hunting is permitted on Mackay Island National Wildlife Refuge. Fishing and crabbing were permitted March 15 through October 15 on

the Refuge except that bank fishing is permitted along the Knotts Island Causeway year-round.

D. Violations

One case was made by refuge personnel this year. Maintenceman Pittman apprehended John D. Hollett with a loaded firearm on the Refuge on January 19, 1974.

E. Safety

Safety meetings were held jointly with Back Bay Refuge personnel covering most phases of our refuge operations. No lost time accidents have occurred on Mackay Island National Wildlife Refuge since the Refuge was first manned September 25, 1961. A total of 4,691 calender days have been worked since then.

VII. OTHER ITEMS

Assistant Manager Harold G. Olson transferred to Presquile National Wildlife Refuge as project leader October 13, 1973. Allen C. Jones transferred from Mingo National Wildlife Refuge to become Assistant Refuge Manager March 18, 1974.

Credits: Report written by Assistant Manager Allen C. Jones. Report typed by Clerk Mrs. Edna Ford and Clerk-typist Trainee Miss Cindy Novak.

Respectfully submitted by:



Dennis F. Holland
Refuge Manager

Date

Regional Office Approval

The presence of large beds of milfoil in Back Bay and Currituck Sound helps control wave action and allows much silt to settle out of the water. Many other aquatic plants grow in association with the milfoil.



NAJAS sp.



Wild Celery



Red Head Grass



Snow geese made heavy use of agricultural fields. Sometimes, as in this picture, they chose fallow or stubble fields in which case everything was just fine. At other times they chose fields of winter wheat and the farmers became rather vocal.



Two stalls of the five stall shed built in 1971 were closed in to provide an all-weather work area.