

NARRATIVE REPORT
MARK TWAIN NATIONAL WILDLIFE REFUGE
HAVANA DISTRICT
FISCAL YEAR 1974

DEPARTMENT OF THE INTERIOR
UNITED STATES FISH AND WILDLIFE SERVICE
MARK TWAIN NATIONAL WILDLIFE REFUGE
HAVANA, ILLINOIS

CHAUTAUQUA DIVISIONI. GENERALA. WEATHER CONDITIONS

Flood conditions carried over from spring of the previous fiscal year into August. The remainder of 1973 calendar year was extremely dry.

Water started rising in late January from melting snow in the north and was kept at flood stage because of above normal spring rains through June. The cross dike was cut in several places and at one point, to the bottom of the dike.

B. HABITAT CONDITIONS1. Water - Food and Cover

Water levels were at flood stage through the first part of July. It was not until late August that water levels were low enough to expose mudflats in the lower pool. Even at this late date, an estimated 145 acres of choice moist soil plants (chufa, love grass, pigweed, cupplant, rice cut-grass and bidens) grew on the exposed flats. This was the first time these flats had been exposed in over forty years.

Grain fields off the refuge had a minimum of waste because dry fall conditions allowed for an early harvest and extensive fall plowing.

Natural food production was above average in flood plains along the Illinois River Valley.

II. WILDLIFEA. MIGRATORY BIRDS1. Waterfowla. Ducks

The duck migration for the fall of 1973 and the spring of 1974 was normal for the Illinois River Valley as a whole. Total duck use days for Chautauqua was sharply up, however, from 1,000,000 in Fiscal Year 1973 to 3,000,000 in Fiscal Year 1974. Most of this increase occurred in the fall and is attributable to the moist soil plant production and ideal water conditions (6 to 12 inches in depth).

Continued flood conditions in the spring and early summer destroyed about one-half of the early wood duck nesting attempts. Overall production was down from 500 to 325.

b. Geese

Snow geese and Canada geese found the new habitat in the lower pool to their liking. Snow goose use days totalled 90,000 in Fiscal Year 1973 and 270,000 in Fiscal Year 1974. Canada goose use increased from 12,000 use days to 110,000.

c. Coots

Coot followed the increased use pattern of ducks and geese.

2. Other Water Birds

Nothing unusual to report.

3. Shorebirds

Without a doubt, the outstanding wildlife event at Chautauqua was the late summer/fall concentration of birds on mudflats of the lower pool. At one time, 200,000 shorebirds were estimated

to be on the refuge. Birdwatchers came from all over the state and a few from out of state to enjoy this spectacular sight. Shorebird use-days totalled 1,200 in Fiscal Year 1972; 137,000 in Fiscal Year 1973 and 1,469,000 in Fiscal Year 1974. See attached news release.

The avocet and buff-breasted sandpiper were added to the refuge bird list making a total of 247 species.

4. Doves

Normal numbers and reproduction occurred during the Fiscal Year.

B. UPLAND GAME BIRDS

Quail and pheasant numbers and hatch seemed to be average for this year.

C. BIG GAME ANIMALS

One doe and two fawns were seen this year. Tracks are not common.

D. FUR ANIMALS, PREDATORS, RODENTS, AND OTHER MAMMALS

There has been a definite increase in beaver over the past few years. Lodges are common all around the lake. Raccoon populations are down, probably the result of a distemper die-off last year.

Other animals in this category seem to occur in normal numbers, with habitat conditions for them unchanged.

E. HAWKS, EAGLES, OWLS, CROWS, RAVENS, AND MAGPIES

No trends to report.

F. FISH

There was some fish die-off, mostly shad. Loss of the ability to hold water in the lower pool resulted in water depths of less than one foot in the deepest part. Local fishermen felt most of the fish had



TOLL: 309/595-2290

DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service Regional Information

FOR IMMEDIATE RELEASE - SEPTEMBER 11, 1973

BUREAU OF SPORT FISHERIES AND WILDLIFE

BIRDS, BIRDS, BIRDS

HAVANA, ILLINOIS: BIRD WATCHERS AND NATURE LOVERS SHOULD GO TO THE CHAUTAUQUA NATIONAL WILDLIFE REFUGE NEAR HAVANA, ILLINOIS IF THEY WANT TO SEE AN UNUSUAL CONCENTRATION OF SHOREBIRDS AND WADERS. ACCORDING TO JACK TOLL, REFUGE MANAGER, A RECENT ESTIMATE PLACED THE POPULATION OF WATERBIRDS AT 200,000.

TOLL ACCOMPANIED BY PAT WARD, PRESIDENT OF THE MORGAN COUNTY AUDUBON SOCIETY, SIGHTED MOST OF THE COMMON SHOREBIRDS EXPECTED THIS TIME OF YEAR AND IN ADDITION SAW AN AVOCET, A BAIRD SANDPIPER, AND SEVERAL BUFF-BREASTED SANDPIPERS.

"WE ALSO HAVE ABOUT 5,000 DUCKS, MOSTLY BLUE-WING AND GREEN-WING TEAL WITH SEVERAL HUNDRED MALLARDS AND WOOD DUCKS", TOLL SAID.

THE UNUSUALLY LARGE NUMBER AND VARIETY OF BIRDS IS CAUSED BY OVER 1,000 ACRES OF MUDFLATS. THE MUDFLATS WERE CREATED BY LOSS OF WATER DUE TO FLOOD DAMAGE TO DIKES THIS SPRING AND EARLY SUMMER.

THE 5,000 ACRE CHAUTAUQUA NATIONAL WILDLIFE REFUGE IS MANAGED BY THE BUREAU OF SPORT FISHERIES AND WILDLIFE, U. S. DEPARTMENT OF THE INTERIOR.

followed the water out as it dropped.

In spite of the low water level in the summer, trot line fishing for channel cat was excellent the following spring. In the upper pool many catches of small bass started to show up in the spring of 1974 - probably from last year's hatch during high waters.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. PHYSICAL DEVELOPMENT

In April of 1973 the Biological Technician position was eliminated at this refuge. This reduction in force limited most of the following year's work to routine maintenance. Contracts were let and work completed for two sets of restrooms, and insulation and siding of the manager's residence.

B. PLANTINGS

1. Trees and Shrubs

About 100 trees and shrubs were planted around the public use areas for wildlife cover and replacement vegetation for previously mowed grass areas.

C. CONTROL OF VEGETATION

Roadside mowing only.

IV. RESOURCE MANAGEMENT**A. COMMERCIAL FISHING**

Due to lack of interest and administrative costs, commercial fishing was eliminated this year. There are no plans to re-establish this program in the foreseeable future.

B. OTHER USES

The local tavern has a special use permit (\$10.00/year) that covers a portion of the building that extends onto the refuge. It may or may not be significant that the portion on the refuge is the restroom.

V. FIELD INVESTIGATION OR APPLIED RESEARCHA. PROGRESS REPORT1. Rountree Natural Area

An environmental assessment was completed for a proposed road that would go through the Rountree Research Natural Area. It will be used to respond to an Environmental Impact Statement being developed by the State Highway Department.

2. Heavy Metal Study

Two undergraduate students from Bradley University have completed a study that analyzed the mercury content of fish from Lake Chautauqua. Preliminary results showed acceptable levels. A final report will be completed soon.

3. Melz Slough Natural Area

A study was completed to see if this 95-acre bottomland timber area was suitable for a natural area. It was recommended for a Public Use Natural Area and was approved in March 1974.

VI. PUBLIC RELATIONS

A. RECREATIONAL USES

Recreational use at Chautauqua has steadily increased over the past several years. Visits for Fiscal Year 1974 totalled 105,000. This is up from the Fiscal Year 1973 total of 90,000. Fishing makes up the largest public use accounting for about 55 per cent with wildlife observation being second with about 40 per cent.

With the loss of fishing areas as dikes deteriorate, fishing use will drop. Hopefully, this will be offset by an influx of wildlife observers as habitat conditions change in favor of waterfowl and waterbirds.

B. REFUGE VISITORS

Refuge visitors came from all over the United States. In addition, we had one visitor, Dan Norman, from the Fish and Wildlife Division of Australia.

C. REFUGE PARTICIPATION

Refuge personnel talked and met with a variety of clubs and schools. Nineteen group contacts were made with just under 1,000 individuals.

Maintenanceman Watts is Vice-president of the Mason County Fire Fighters Association, Chaplain of the VFW, and Vice-president of the Havana Firemen's Association.

D. HUNTING

Refuge hunting is limited to 700 acres open for waterfowl only. Hunters made 584 trips and killed 209 ducks. Access is by water only, which limits the number of hunters and results in a quality hunting experience.

Hunting on private land near the refuge was considered fair for the year.

E. VIOLATIONS

Lack of personnel has drastically curtailed enforcement efforts. Two individuals were picked up in the public hunting area during the teal season with four wood ducks. They forfeited federal bonds of \$300.00.

F. SAFETY

Safety meetings were held at the Quincy Office on a regular basis. This station has gone nearly 8,000 days without a lost time accident.

VII. ENVIRONMENTAL EDUCATION

The Environmental Education efforts of the past two years have resulted in an ever increasing involvement by the refuge. However, with the decrease in manpower, the Environmental Education program was for the most part phased out by the end of Fiscal Year 1974.

The following is a listing of the accomplishments of Fiscal Year 1974:

1. State of Illinois Environmental Education Plan

The refuge manager has been one of the 26 Task Force members for the past two years. In November 1973, the draft form of the "State Plan" was submitted to the State Superintendent of Schools.

2. Western Illinois University

Several lectures on Environmental Education and environmental problems were given to students at Western Illinois University. Several meetings were held with faculty at the school discussing ways the University could improve their Environmental Education program. Among other things, the Havana Pilot Program evolved out of these meetings.

In the fall of 1973, the refuge manager was offered and accepted an appointment as adjunct instructor. Since that time, he attends and participates in monthly faculty meetings.

3. Havana Pilot Program

In the early part of 1973, a series of meetings were held with various professors and deans from Western Illinois University and representatives from Office of the Superintendent of Public Instruction and the U. S. Fish and Wildlife Service to determine how best to develop an Environmental Education program. After several meetings, it was determined to develop a Pilot Environmental Education program in one of the local school districts. Mr. Toll and Dr. Kellogg conducted a survey of several schools in the area and selected the Havana School District because of their high interest in the program.

A committee was formed that was composed of representatives from Western Illinois University, O.S.P.I., U.S. Fish and Wildlife Service, Administration of the Havana School District, Teaching Staff of the Havana School District, Izaak Walton League, Jaycees, Havana Beautiful, and a school board member. This committee met on a monthly basis to discuss and develop the program for Havana.

At the end of 1973, over half of the teachers in the elementary Havana School System had completed forty hours or more of training in Environmental Education techniques. The Havana Pilot Program has been so successful that the State Director of Environmental Education has requested funds from the Institute for Environmental Quality for documentation that can be used to develop other Environmental Education programs in Illinois.

4. Environmental Association of Illinois

The Environmental Association of Illinois has a membership of 200 plus made up of individuals of various backgrounds with a common interest in promoting Environmental Education. Manager Toll joined the organization early in 1973 and was elected to the Board of Governors in April and at the present time serves as Chairman of the Governing Board of the organization.

5. Teacher Certification Meeting

In October, Manager Toll was appointed by O.S.P.I. to a committee of five individuals to recommend standards for certification in Environmental Education for all Illinois secondary and elementary teachers. Certification recommendations were developed by the committee and submitted to O.S.P.I. for their consideration.

6. Lectures and Workshops

Lectures were given on Environmental Education and general environmental topics at Western Illinois University, Champaign County Audubon Society, Bradley University, Woodruff and Richwoods High Schools in Peoria, and the Morgan County Audubon Society.

Workshops were conducted for: teachers at Minier public schools on school site planning; use of environmental impact statements in teaching Environmental Education at the annual Environmental

Association of Illinois meeting in Springfield; Henry County Conservation Committee on Environmental Education in the Havana Pilot Program. Assistance was also given to Drs. Kellogg and Miller from Western Illinois University during 22 four-hour sessions for teachers in Havana. In addition, the refuge manager participated as a panelist at a workshop conducted by the 4-H Extension Service for Western Illinois at Jacksonville.

Just under 1,000 people were reached in Fiscal Year 1974 through workshops and lectures.

VIII. ITEMS OF INTEREST

This has been the year of change and adjustment for Chautauqua. In April of 1973, the Biological Technician position was discontinued reducing the staff to two full-time men.

In May, the Meredosia National Wildlife Refuge was established when the Nature Conservancy deeded the Anderson Duck Hunting Club to the Service. This almost doubled our responsibility since the workload at Meredosia is nearly as large as Chautauqua.

In July Chautauqua and Meredosia Refuges were placed under the Mark Twain Refuge and became part of that complex. At the same time, the refuge clerk's tour of duty was reduced from three to one day a week.

The assumption is that this re-organization will save money and make a more efficient operation. At any rate, we are still going through the shakedown period trying to make the system work.

During this period the Rountree Research Natural Area was approved. The area is composed of 26 acres of unique upland sand habitat. About 16 acres is virgin oak-hickory timber.

MEREDOSIA ISLAND NATIONAL WILDLIFE REFUGE

(MEREDOSIA DIVISION)

I. GENERALA. HISTORY

In the fall of 1971, we were contacted by Mr. Jim Anderson of Chicago. His father had recently died and willed the 1,850 acre Anderson Gun Club to "a" conservation agency. Mr. Anderson asked that we develop a management plan for the area so that he and his mother could decide which conservation agency to give the land to. A plan was developed and sent to Mr. Anderson in early 1972. In May of 1973, we received clear title to the Anderson Gun Club through the Illinois Nature Conservancy.

It was the wish of Jim Anderson and his mother that the area be named "Meredosia Island National Wildlife Refuge." Other conditions that were accepted with the land are:

1. Priority management for waterfowl.
2. No hunting.
3. No economic harvesting of timber.
4. Restrictions on motor vehicle travel, particularly off-road vehicles.
5. The caretaker for the past forty years, L. G. Vandeventer, be allowed to live in the caretaker house for the remainder of his life.

The 1,850 acres is made up of 1,250 acres of bottomland timber, 300 acres of farmland and 300 acres of marsh and water.

An effective moist soil management program has been developed by the club and will continue to operate much the way it has.

The long range plans for the area include the purchase of additional land to bring the total acres to approximately 6,000. When this is completed, a management program will be started. At the present time, because of lack of funds, manpower and poor access, no public use is permitted.

Since operation of Meredosia is on a limited basis, only a few items listed in the Narrative Outline have enough information to report.

B. WEATHER CONDITIONS

Flood conditions remained in July and into August from the previous Fiscal Year. The latter part of August, September, and October were extremely dry. Flood conditions started again in the latter part of January and continued through the report period.

C. HABITAT CONDITIONS

1. Water - Food and Cover

High water levels remained until August preventing a drawdown of the marsh areas on the refuge. Even with this late drawdown, there was some moist soil plant growth in the fall. The moist soil plants were of the same varieties that grew in Chautauqua except there was an abundance of marsh smartweed. The marsh smartweed had but very few seedheads - not an uncommon occurrence according to conversation with L. G. Vandeventer.

What little moist soil plant food did grow remained unavailable to waterfowl because of no way to flood the marsh. The pumping system that came with the refuge was inoperable.

In the spring of 1974, high water conditions flooded the 300 acres of farmland that had produced a good crop of annual weeds such as smartweed, millet, etc. Spring migrating ducks made excellent use of this volunteer food.

II. WILDLIFE

A. MIGRATORY BIRDS

1. Waterfowl

a. Ducks

Duck use-day objectives for Meredosia are established at 2,053,000 based on the 1965-1969 average figures. Use fell far short of this objective during the first year's operation of the refuge with total use-days of 562,000 or about one-fourth of the goal. Lack of water prevented flooding the marshes in the fall. Water was available for flooding in the spring, resulting in almost twice as many use-days as the fall. This is reverse of the normal situation.

b. Geese

The objective for geese at Meredosia is to hold a population just high enough so that wildlife observers have ample opportunity to view them. It seems that this will occur without any special management since geese were present in every month they could be expected.

2. Other Waterbirds

Several species of waterbirds are common at Meredosia in the small marshes and along the edge of the large lake. Lack of manpower plus the difficulty of getting to the area much of the time makes reported numbers shaky at best. For that reason, no attempt is made to discuss trends.

3. Shorebirds

Most of the species that occur at Chautauqua are found at Meredosia but in much smaller numbers.

B. UPLAND GAME BIRDS

Probably because of frequent flooding, neither quail or pheasant were observed on the island.

C. BIG GAME ANIMALS

Deer are common on the refuge. However, frequent and prolonged flooding pushes them to higher ground often so overpopulation will probably never be a problem.

III. REFUGE DEVELOPMENT AND MAINTENANCEA. PHYSICAL DEVELOPMENT

Considerable time was spent locating the boundaries and posting the area. After waters receded in July, the caretaker's residence was reconditioned. Floor coverings were replaced and the interior repainted. Water levels had reached three feet above the floor.

CAMERON DIVISIONI. GENERAL

The Cameron Division is 70 miles from the Chautauqua headquarters. Reduced money and manpower has made it impossible to do more than just check the area a few times a year. Therefore, detailed information is unavailable. Weekly fall waterfowl counts represent the only really good information available, those resulting from Illinois Natural History Survey flights.

A. WEATHER CONDITIONS

Weather records were not obtained for this station.

B. HABITAT CONDITIONS1. Water - Food and Cover

Moist soil plant production was fair on this area but was not available to waterfowl in the fall because of dry conditions. High water in the spring made foods available and waterfowl used it intensively through the spring migration.

HAVANA DISTRICT

FY 1974

MARK TWAIN NWR

II. WILDLIFE

Total waterfowl use was down sharply from last year. Waterfowl use-days in 1973 totalled 1,463,000; 533,160 in 1974. The dike system, over the past few years has washed out in several places. This leaves the flooding or dewatering at the mercy of the Illinois River. It is doubtful that any type of dike system could be economically constructed that would stand up against the river floods.

NARRATIVE REPORT
1974

Chautauqua National Wildlife Refuge
Havana, Illinois

PERMANENT PERSONNEL

John E. Toll
Charles W. (Bill) Watts
Alice Clanin (part time)

Refuge Manager
Maintenance
Clerk-Stenographer

TEMPORARY PERSONNEL

Robert F. Karrick (6/23/74 - 8/23/74)
Kenneth R. Walker (6/23/74 - 8/23/74)

Laborer
Maintenance

United States Department of the Interior
Fish and Wildlife Service

Chautauqua National Wildlife Refuge
Rural Route 2
Havana, Illinois 62644

CHAUTAUQUA NATIONAL WILDLIFE REFUGE

HAVANA, ILLINOIS

I. GENERAL

A. Weather Conditions

Flood conditions carried over from spring into August. The remainder of 1973 calendar year was extremely dry.

Water started rising in late January from melting snow in the North and was kept in flood stage because of above normal spring rains through June. The cross dike was cut in several places and at one point, to the bottom of the dike.

B. Habitat Conditions

1. Water - Food - Cover

Water levels were at flood stage through the first part of July. It wasn't until late August that water levels got low enough to expose mudflats in the lower pool. Even at this late date, we estimated 115 acres of choice moist soil plants made up of chufa, love grass, pigweed, cupplant, rice cut grass and bidens grew on the exposed flats. This was the first time these flats had been exposed in over forty years.

Grainfields off the refuge had a minimum of waste because dry fall conditions allowed for an early harvest and extensive fall plowing.

Natural food production was above average in flood plains along the Illinois River valley.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

a. Ducks

The duck migration for the fall of 1973 and the spring of 1974 was normal for the Illinois River valley as a whole. Total duck use days for Chautauqua was sharply up, however, from 1,000,000 in FY 1973 to 3,000,000 in FY 1974. Most of this increase occurred in the fall and is attributable to the moist soil plant production and the ideal water condition (6" - 12") covering it.

Continued flood conditions in the spring and early summer destroyed about one-half of the early wood duck nesting attempts. Overall production was down from 500 to 325.

b. Geese

Snow geese and Canada geese found the new habitat in the lower pool to their liking. Snow use days were 20,000 in FY 1973 and 270,000 in FY 1974. Canada geese increased from 12,000 use days to 110,000.

c. Coots

Coots followed the increased use pattern followed by ducks and geese.

2. Other Water Birds

Nothing unusual to report.

3. Shorebirds

Without a doubt, the outstanding wildlife event at Chautauqua was the late summer/fall concentration of birds on mudflats of the lower pool. At one time, 200,000 shorebirds were estimated on the refuge. Birdwatchers came from

all over the state and a few from out of state to enjoy this spectacular sight. Shorebird use days totaled 1,200 in FY 1972; 137,000 in FY 1973 and 1,469,000 in FY 1974. See attached news release.

4. Doves

Normal numbers and reproduction.

B. Upland Game Birds

Quail and pheasant numbers and hatch seemed to be average for this year.

C. Big Game Animals

One doe and two fawns were seen this year. Tracks are not common.

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

There has been a definite increase in beaver over the past few years. Lodges are common all around the lake. Raccoon populations are down. Probably as a result of a distemper die off last year.

Other animals in this category seem to be in normal numbers with habitat conditions for them unchanged.

E. Hawks, Eagles, Owls, Crows, Ravens and Magpies

No trends to report.

F. Other Birds

The avocet and buff-breasted sandpiper were added to the refuge bird list making a total of 247.

G. Fish

Loss of the ability to hold water in the lower pool resulted in water depths of less than one foot in the deepest part. There was some fish die off, mostly shad. The local fishermen felt the fish had followed the water out as it dropped.

In spite of the low waters in the summer, the following spring the trot line fishing for channel cat was excellent. In the upper pool many catches of small bass started to show up in the spring of 1974 - probably from last year's hatch during high waters.

H. Reptiles

Nothing to report.

I. Disease

None to report.

III. REFUGE DEVELOPMENT & MAINTENANCE

A. Physical Development

In April of 1973 the Biological Technician position was eliminated at this refuge. This reduction in force limited most of the following year's work to routine maintenance. Contracts were let and work completed for two sets of out-houses and insulation and siding of the manager's residence.

B. Plantings

1. Aquatic and Marsh Plants

None.

2. Trees and Shrubs

About 100 trees and shrubs were planted around the public use areas for wildlife cover and replacement for previously mowed grass areas.

3. Upland Herbaceous Plants

None.

4. Cultivated Crops

None.

C. Collections and Receipts

None.

D. Control of Vegetation

Roadside mowing only.

E. Planned Burning

None.

F. Fires

None.

IV. RESOURCE MANAGEMENT

A. Grazing

None.

B. Haying

None.

C. Fur Harvest

None.

D. Timber Removal

None.

E. Commercial Fishing

Due to lack of interest and administrative costs, commercial fishing was eliminated this year. There are no plans to pick up this program in the foreseeable future.

F. Other Uses

The local tavern has a special use permit (\$10.00/year) that covers a portion of the building that extends onto the refuge. It may or may not be significant that the portion on the refuge is the restroom.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report

1. Rountree Natural Area

An environmental assessment was completed for a proposed road that would go through the Rountree Research Natural Area. It will be used to respond to an Environmental Impact Statement being developed by the State Highway Department.

2. Heavy Metal Study

Two undergraduate students from Bradley University have completed a study that analyzed the mercury content of fish from Lake Chautauqua. Preliminary results showed acceptable levels. A final report will be completed soon.

3. Molz Slough Natural Area

A study was completed to see if this 95-acre bottomland timber area was suitable for a natural area. It was recommended for a Public Use Natural Area and was approved in March 1974.

VI. PUBLIC RELATIONS

A. Recreational Uses

Recreational use at Chautauqua has steadily increased over the past several years. Visits for FY 1974 totaled 105,000. This is up from FY 1973 total of 90,000. Fishing makes up the largest public use accounting for about 55% with wildlife observation being second with about 40%.

With the loss of fishing areas as we lose dikes, the fishing use will drop. Hopefully, this will be offset by an influx of wildlife observers as habitat conditions change in favor of waterfowl and waterbirds.

B. Refuge Visitors

Refuge visitors came from all over the United States. In addition, we had one visitor, Dan Norman, from the Fish and Wildlife Division of Australia.

C. Refuge Participation

Refuge personnel talked and met with a variety of clubs and schools. Nineteen group contacts were made with just under 1,000 individuals.

Maintenanceman Watts is vice-president of the Mason County Fire Fighters Association, chaplain of the VFW, and vice-president of the Havana Firemen's Association.

D. Hunting

Refuge hunting is limited to 700 acres open for waterfowl only. Hunters made 594 trips and killed 209 ducks. Access is by water only. This limits the number of hunters and results in a quality hunting experience for them.

Hunting on private land near the refuge was considered fair for the year.

E. Violations

Lack of personnel has drastically curtailed our enforcement effort. Two individuals were picked up in the public hunting area during the teal season with four wood ducks. They forfeited federal bonds of \$300.00.

F. Safety

Safety meetings were held at the Quincy office on a regular basis. This station has gone nearly 8,000 days without a lost time accident.

VII. ENVIRONMENTAL EDUCATION

The E. E. efforts of the past two years have resulted in an ever increasing involvement by the refuge. However, with the decrease in manpower, the E.E. program was for the most part phased out by the end of FY 1974.

The following is a listing of the accomplishments of FY 1974:

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In the fall of 1973, the refuge manager was offered and accepted an appointment as adjunct instructor. Since that time, he attends and participates in monthly faculty meetings.

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University and representatives from Office of the Superintendent of Public Instruction and the U. S. Fish and Wildlife Service to determine how best to develop an E. E. program. After several meetings, it was determined to develop a Pilot E. E. Program in one of the local school districts. Toll and Dr. Kellong conducted a survey of several schools in the area and selected the Havana School District because of their high interest in the program. A committee was formed that was composed of representatives from WIU, O.S.P.I., U. S. Fish and Wildlife Service, Administration of the Havana School District, teaching staff of the Havana School District, Izaak Walton League, Jaycees, Havana Beautiful, and a school board member. This committee met on a monthly basis to discuss and develop the program for Havana. At the end of 1973, over half of the teachers in the elementary Havana school system had completed 40 hours or more of training in E. E. techniques. The Havana Pilot Program has been so successful that the State Director of Environmental Education has requested funds from the Institute for Environmental Quality for documentation that can be used to develop other E. E. programs in Illinois.

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The Environmental Association of Illinois has a membership of 200+ made up of individuals of various backgrounds with a common interest in promoting environmental education. Manager Toll joined the organization early in 1973 and was elected to the Board of Governors in April and at the present time serves as Chairman of the Governing Board of the organization.

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Workshops were conducted for teachers at Minier public schools on school site planning, use of environmental impact statements in teaching E. E., at the annual Environmental Association of Illinois meeting in Springfield, Henry County Conservation Committee about E. E. in the Havana Pilot Program, and assistance was given to Drs. Kellogg and Miller from WIU during 22 four-hour sessions for teachers in Havana. In addition, the refuge manager participated as a panelist at a workshop conducted by the U-S Extension Service for Western Illinois at Jacksonville.

Just under 1,000 people were reached in FY 1974 through workshops and lectures.

VIII. ITEMS OF INTEREST

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In May, the Meredosia National Wildlife Refuge was established when the Nature Conservancy deeded the Anderson Duck Hunting Club to the Service. This almost doubled our responsibility since the workload at Meredosia is nearly as large as Chautauqua. In July the Chautauqua Refuge and the Meredosia Refuge were placed under the Mark Twain Refuge and became part of that complex. At the same time, the refuge clerk's tour of duty was reduced from three to one day a week. The assumption is that this re-organization will save money and make for a more efficient operation. We believe the result has been an upward shift in manpower with little change in the responsibility at the project level. At any rate, we are still going through the shakedown period trying to make the system work.

During this period the Roundtree Research Natural Area was approved. The area is composed of 26 acres of unique upland sand habitat. About 16 acres is virgin oak-hickory timber.

MEREDOSIA ISLAND NATIONAL WILDLIFE REFUGE

MEREDOSIA, ILLINOIS

I. GENERAL

In the fall of 1971, we were contacted by Mr. Jim Anderson of Chicago. His father had recently died and willed the 1,850-acre Anderson Gun Club to "a" conservation agency. Mr. Anderson asked that we develop a management plan for the area so that he and his mother could decide which conservation agency to give the land to. A plan was developed and sent to Mr. Anderson in early 1972. In May of 1973, we received clear title to the Anderson Gun Club through the Illinois Nature Conservancy.

It was the wish of Jim Anderson and his mother that the area be named "Meredosia Island National Wildlife Refuge." Other conditions that were accepted with the land are:

1. Priority management for waterfowl
2. No hunting
3. No economic harvesting of timber
4. Restrictions on motor vehicle travel, particularly off-road vehicles
5. The caretaker for the past forty years, L. G. Vandeventer, be allowed to live in the caretaker house for the remainder of his life

The 1,850 acres is made up of 1,250 acres of bottomland timber, 300 acres of farmland and 300 acres of marsh and water.

An effective moist soil management program has been developed by the club and it is our intention to continue that program pretty much the way it has been.

The long range plans for the area include the purchase of additional land to bring the total acres to approximately 6,000. When this is completed, a management program will be started. At present time, because of lack of funds, manpower and poor access, no public use is permitted.

Because we are operating Meredosia on a limited basis, only a few items listed in the Narrative outline will have enough information to report.

A. Weather Conditions

Flood conditions remained in July and into August. The latter part of August, September and October were extremely dry. Flood conditions started again in the later part of January and continued through the report period.

B. Habitat Conditions

1. Water - Food - Cover

High water levels remained until August preventing a drawdown of the marsh areas on the refuge. Even with this late drawdown, there was some moist soil plant growth in the fall. The moist soil plants were of the same varieties that grew in Chautauqua except there was an abundance of marsh smartweed. The marsh smartweed did not have but very few seedheads--not an uncommon occurrence according to conversation with Vandeventer.

What little moist soil plant food did grow remained unavailable to the waterfowl because we had no way to flood the marsh. The pumping system that came with the refuge was inoperable.

In the spring of 1974, we had high water conditions flooding the 30 acres of farmland that had produced a good crop of annual weeds such as smartweed, millet, etc. Spring migrating ducks made excellent use of this volunteer food.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

a. Ducks

Duck use day objectives for Meredosia are established at 2,053,000. This is based on the 1965-69 average figures. We were far short of this objective during our first year's operation of the refuge with total use days of 562,000 or about one-half of our goal. Our downfall was the lack of water to flood the marshes in the fall. We did have water

in the spring resulting in almost twice as many use days as the fall. This is reverse of the normal situation.

b. Geese

Our objective for geese at Meredosia is to hold a population just high enough so that wildlife observers have ample opportunity to view them. It seems that we can do this without any special management since geese were present in every month they could be expected to be.

2. Other Waterbirds

Several species of waterbirds are common at Meredosia in the small marshes and the edge of the large lake. Because of our lack of manpower plus the difficulty of getting to the area much of the time, we feel our reported numbers are shaky at best. For that reason, we will not attempt to discuss trends.

3. Shorebirds

Most of the species that occur at Chautauqua are found at Meredosia but in much smaller numbers.

B. Upland Game Birds

Probably because of frequent flooding, neither quail or pheasant were observed on the island.

C. Big Game Animals

Deer are common on the refuge. However, frequent and prolonged flooding push them to higher ground often so overpopulation will probably never be a problem.

III. REFUGE DEVELOPMENT & MAINTENANCE

A. Physical Development

Considerable time was spent locating the boundaries and posting the area. After waters receded in July, the caretaker's residence was reconditioned. Water levels had reached three feet above the floor. Floor coverings were replaced and the interior repainted.

CAMERON UNIT

I. GENERAL

The Cameron Unit is 70 miles from headquarters. Reduced money and manpower has made it impossible to do more than just check the area a few times a year. Therefore, detailed information is unavailable. Weekly fall waterfowl counts are the only really good information we have.

A. Weather Conditions

Weather records were not obtained for this station.

B. Habitat Conditions

1. Water - Food - Cover

Moist soil plant production was fair on this area but was not available to the waterfowl in the fall because of dry conditions. High water in the spring made all of it available and waterfowl used it intensively through the spring migration.

II. WILDLIFE

Total waterfowl use was down sharply from last year. Waterfowl use days in 1973 - 1,463,000; 1974 - 533,160. The dike system that has been built over the past few years is washed out in several places. This leaves the flooding or dewatering at the mercy of the river. It's doubtful that any type of dike system could be economically constructed that would stand up against the river floods.

NATIONAL WILDLIFE REFUGE SYSTEM
REPORT OF ECONOMIC OUTPUTS - FY 74
(IN DOLLARS)

CHAUTAUQUA
03-3531-61-CTC

TYPE OF BENEFIT	JUL-SEP 73	OCT-DEC 73	JAN-MAR 74	APR-JUN 74	FY TOTAL
REFUGE RECEIPTS					
OTHER RECEIPTS	0.00	0.00	0.00	10.00	10.00
TOTAL	0.00	0.00	0.00	10.00	10.00

NATIONAL WILDLIFE REFUGE SYSTEM
LAND USE INVENTORY REPORT
FY - 74

CHAUTAUGUA
03-3531-61-CTU

LAND CLASSIFICATION

ACREAGE

I. DETAILED CLASSIFICATIONS

WETLAND TYPES	
INLAND FRESH AREAS	
SEASONLY FLOODED BASIN/FLAT	919.0
OPEN FRESH WATER	3,405.0
UPLAND TYPES	
FORESTLANDS	
NON-COMMERCIAL FORESTS	135.0
TOTAL ACRES	4,459.0

II. SUMMARY CLASSIFICATIONS

INLAND FRESH AREAS	4,324.0
WETLAND TYPES	4,324.0
FORESTLANDS	135.0
UPLAND TYPES	135.0

NATIONAL WILDLIFE REFUGE SYSTEM
REPORT OF MISCELLANEOUS OUTPUTS
FY-74

NERECOSTIA
03-3531-03-PDA

TYPE OF OUTPUTS	UNITS	FY TOTAL
PROFESSIONAL SERVICES		
REFUGE ORIENT. PUBLISHED BY NWA-REFUGE PERSONL	EACH	1
MISCELLANEOUS WILDLIFE OUTPUTS		
WILDLIFE DIVERSITY	NO. SPECS	273

NATIONAL WILDLIFE REFUGE SYSTEM
PUBLIC USE REPORT

VISITS BY MONTH

PEREODOSIA
83-3531-63-MDA

ACTIVITY NAME

JUL-73 AUG-73 SEP-73 OCT-73 NOV-73 DEC-73 JAN-74 FEB-74 MAR-74 APR-74 MAY-74 JUN-74

12 MONTH
TOTAL

TOTAL WILDLIFE ORIENTED

TOTAL NON-WILDLIFE ORIENTED

TOTAL PUBLIC USE

NO. VISITS TO REFUGE

**NATIONAL WILDLIFE REFUGE SYSTEM
LAND USE INVENTORY REPORT
FY - 74**

**MPREGOSIA
03-3531-63-MDA**

LAND CLASSIFICATION

ACREAGE

I. DETAILED CLASSIFICATIONS

WETLAND TYPES	
INLAND FRESH AREAS	
SEASONLY FLOOD BASIN/FLAT	1,550.0
UPLAND TYPES	
CROPLANDS	
NONFIR-GRN BROWSE, PERANL	300.0
TOTAL ACRES	1,850.0

II. SUMMARY CLASSIFICATIONS

INLAND FRESH AREAS	1,550.0
WETLAND TYPES	1,550.0
CROPLANDS	300.0
UPLAND TYPES	300.0

NATIONAL WILDLIFE REFUGE SYSTEM
REPORT OF MISCELLANEOUS OUTPUTS
FY-74

CAMERON UNIT
03-3531-62-CMU

TYPE OF OUTPUTS	UNITS	FY TOTAL
MISCELLANEOUS WILDLIFE OUTPUTS		
WILDLIFE DIVERSITY	NO. SPECS	273

NATIONAL WILDLIFE REFUGE SYSTEM
PUBLIC USE REPORT

ACT HRS BY MONTH

CANON UNIT
03-3531-62-CMU

ACTIVITY NAME

JUL-73 AUG-73 SEP-73 OCT-73 NOV-73 DEC-73 JAN-74 FEB-74 MAR-74 APR-74 MAY-74 JUN-74

12 MONTH
TOTAL

TOTAL WILDLIFE ORIENTED

TOTAL NON-WILDLIFE ORIENTED

TOTAL PUBLIC USE

NO. VISITS TO REFUGE

NATIONAL WILDLIFE REFUGE SYSTEM
LAND USE INVENTORY REPORT
FY - 74

CAMER IN UNIT
03-3531-62-CMU

LAND CLASSIFICATION

ACREAGE

I. DETAILED CLASSIFICATIONS

WETLAND TYPES	
INLAND FRESH AREAS	
SPASIMLY FLOOD BASIN/FLAT	602.0
UPLAND TYPES	
FORESTLANDS	
NON-COMMERCIAL FORESTS	37.0
TOTAL ACRES	639.0

II. SUMMARY CLASSIFICATIONS

INLAND FRESH AREAS	602.0
WETLAND TYPES	602.0
FORESTLANDS	37.0
UPLAND TYPES	37.0