

REVIEW AND APPROVALS

MARK TWAIN NATIONAL WILDLIFE REFUGE

Annada, Missouri

ANNUAL NARRATIVE REPORT



Calendar Year 1996

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**Mark Twain National Wildlife Refuge**

**Annada District**

**Annada, Missouri**

**Clarence Cannon National Wildlife Refuge**

**Delair Division**

**Gardner Division**

**Gregory Landing Division**

**Harlow Island Division**

**ANNUAL NARRATIVE REPORT**

**Calendar Year 1996**



**U.S. Department of the Interior  
Fish and Wildlife Service  
NATIONAL WILDLIFE REFUGE SYSTEM**



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## INTRODUCTION

The Annada District makes up the central District within the Mark Twain National Wildlife Refuge, which stretches 330 miles along the Mississippi River in the states of Iowa, Illinois and Missouri. The Annada District manages approximately 14,790 acres spread over 217 river miles and is made up of the Clarence Cannon National Wildlife Refuge (CCNWR), the Delair Division (DD), Gregory Landing Division (GLD), Gardner Division (GD), and the Harlow Island Division (HID). The refuge objectives of these lands vary and include providing habitat for migratory birds, protecting endangered and threatened species, enhancing wood duck habitat, restoring floodplain functions, and providing public opportunities for outdoor recreation and environmental education. The threatened bald eagle successfully nests on the District and eagles frequent all Divisions during the fall, winter and spring. The Annada District also manages over 800 acres in conservation easements over 17 counties in northeast Missouri and is involved in private lands restoration projects in these counties. The District Headquarters, consisting of an office, shop and storage buildings, is located on the Clarence Cannon NWR.

**The Clarence Cannon National Wildlife Refuge** is a 3,751 acre wetland complex situated within the Mississippi River floodplain adjacent to Pool No. 25, located in Pike County, Missouri, one mile east of the town of Annada. The refuge has 12 manageable moist soil units totaling 2,055 acres, 237 acres of green tree reservoirs, 4 semi-permanent water bodies totaling 131 acres, 498 acres of cropland and 830 acres of other lands including forests, brush native grasslands and water. A levee around the perimeter of the refuge provides protection from the Mississippi River until the river reaches six feet above flood stage. At this stage, a newly constructed spillway allows for water to flow into the refuge approximately once in three years.

The refuge was purchased fee title in 1964 with funds in part from the sale of migratory waterfowl stamps. The refuge, named after Congressman Clarence Cannon, was established to provide a feeding and resting area for migratory birds. Management emphasis has moved away from cropland towards moist soil management in part due to the increase in flooding from the spillway structure. Today, the bird list includes 237 species, 86 of which are known to nest here, 24 species of mammals, nine species of snakes, four species of turtles and eight species of frogs and toads. The bald eagle has successfully nested on the refuge for the past six years.

**The Delair Division** encompasses 1,737 acres of marsh, lakes, forest and cropland in Pike County, Illinois, three miles south of the Louisiana, Missouri bridge. The Division is also situated in the floodplain of the Mississippi River adjacent to Pool 24. The area was purchased fee title in 1965 and 1976 with funds from the sale of migratory waterfowl stamps.

The refuge, separated from the river by a major agricultural levee, sits one to ten feet below normal pool stage of the river, so water seeps through sand boils and gravity flows onto the area throughout the year. The flow rate of the seeps depends on the river level.

The permanent and semi-permanent water areas include: Cattail Marsh (226 acres), Upper and Lower Swan Lakes (36 and 55 acres), Upper and Lower Butcher Pond (8 and 31 acres), Hanei Pool (11 acres), Flake Hole (15 acres) and 15 acres of scattered ponds. These areas are connected to the Sny Island Drainage District System.

The area is managed as a resting and feeding area for a variety of migratory birds including waterfowl, marsh and wading birds and shorebirds. Bald eagles also frequent the area during periods of high waterfowl numbers and the winter months. Nesting attempts have been made in the past few years. Nesting waterfowl include Canada geese, wood ducks, hooded mergansers, mallards and blue-winged teal. Although the area is closed to the public, school groups and other interested parties are encouraged to visit by appointment.

**The Gardner Division** was formally established in 1958 as part of the Mark Twain National Wildlife Refuge under the Fish and Wildlife Coordination Act. The Division is General Plan Land owned by the U.S. Army Corps of Engineers and is managed under a cooperative agreement signed by the U.S. Fish and Wildlife Service and the Corps in 1963. In 1986 a cooperative agreement was signed with the Corps of Engineers adding the 1,450 acre Bear Creek Unit to the Division.

The Gardner Division is made up of 6,300 acres of islands and floodplain in the Mississippi River, Pool No. 21, about six miles upstream from Quincy in Adams County, Illinois. The Division contains 5,390 acres of mature bottomland hardwoods and 310 acres of cropland that are being converted back to bottomland hardwoods. Lakes, sloughs and ponds existing on the area account for approximately 600 acres. The Division is open to the public year-round in accordance with state regulations for fishing, hunting, wildlife observation and gathering of berries, nuts and mushrooms. This is the only Division allowing waterfowl hunting which is restricted to state managed blinds in Dee and Indian Graves Lakes and in public waters outside the Division boundary.

**The Gregory Landing Division** is located in Clark County, Missouri, approximately one mile north of the Mississippi River hamlet of Gregory Landing, two and one-half hours north of the Annada District office. The Division is a 1,794-acre strip of converted bottomland forest, about one-half mile wide and three miles long, forming a peninsula located between the Mississippi and Fox Rivers.

Climax vegetation is characterized by soft maple, cottonwood and willow interspersed with pin oak and pecan on the higher ridges. Six hundred and five acres remain in forested wetlands. With new acquisitions in 1996, cropland now totals approximately 1,048 acres. Most of this land will be allowed to revert to bottomland forest or converted to wetlands or native grasses. An additional 141 acres consists of slough channels, marsh areas, floodplain, and lakes. The entire area is subject to seepage when water levels rise on the Mississippi River. Flooding from either the Mississippi River or the Fox River is a common occurrence during periods of heavy rains.

**The Harlow Island Division**, located in Jefferson County, Missouri, is the newest Division. The Division is located approximately two hours south of the District Office and on the opposite side of metro St. Louis. Floodplain lands for this new Division, now totaling 1,224 acres, were purchased in 1996 in response to the record 1993 flood. Following that flood, Congress appropriated money for the Service to purchase flood-prone and flood-damaged lands suitable for inclusion in the Refuge System. Seven hundred and five acres of former cropland will be allowed to revert to floodplain forest. This land was previously protected from flooding by a private levee. This levee was severely damaged in the 1993 flood and will not be repaired, thus, restoring floodplain function (hydrology) to this land. The remainder of the Division (503 acres) is presently floodplain forest with interspersed remnant sloughs and side channels. Approximately 300 acres is still planned for acquisition.

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## **A. HIGHLIGHTS**

Spillway construction on Clarence Cannon NWR finally completed (Section I.1.).

Clarence Cannon NWR floods in June for first time from spillway (Sections F.2., I.1.).

Successful land acquisition on Gregory Landing Division (Section C.).

Gregory Landing Division opened to public uses (Section H.).

Harlow Island Division becomes fourth Annada District Division (Section C.).

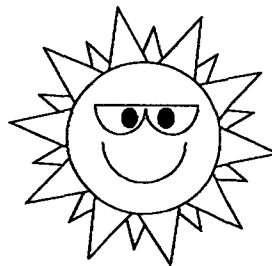
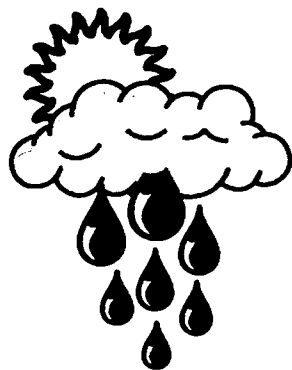
First youth deer hunt on Delair Division (Section H.).

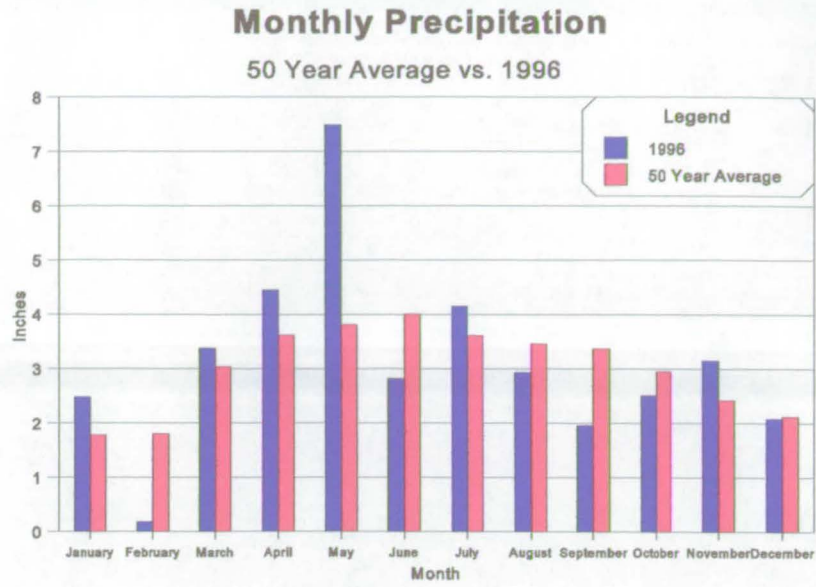
Waterfowl numbers increase again on Clarence Cannon NWR and Delair Division (Section G.3.).

County makes much needed improvements to Headquarters entrance road using Federal Public Lands Highway funds (Section J.1.).

## **B. CLIMATIC CONDITIONS**

The new year began with the usual cold, bleak weather. The first thaw occurred on January 17 and was marked with the arrival of 400 ducks to the Clarence Cannon NWR. The spring was marked by slightly colder temperatures and frequent freeze-ups. Over seven inches of rain in May caused the Mississippi River to rise, topping the spillway and flooding the Clarence Cannon NWR. The remainder of the summer was relatively dry. Fall temperatures were normal with early freezes occurring in mid and late November. Rainfall was low and Mississippi River levels remained low throughout the fall. Cumulative rainfall for the year was slightly below the 50-year average of 35.99 and totaled 35.65 inches.





**A weekend thunderstorm in May turned over this office trailer. The trailer was being leased from a local construction company by the RO Engineering Division to serve as an office for a seasonal Construction Inspector.**

## C. LAND ACQUISITION

### 1. Fee Title

The Harlow Island Division of the Mark Twain NWR became a reality in January with the purchase of the first two tracts of land. The Noce property (462 acres) and Randolph property (762 acres) were acquired for a total of 1,224 acres. The opportunity for this new Division was first identified after the record 1993 flood when Congress authorized special appropriations for the acquisition of floodplain lands. The Division is located in Jefferson County, Missouri, approximately 40 miles south of St. Louis. Negotiations were continuing at the end of the year with two additional landowners, (Brauch, 105 acres and Gold Properties, 90 acres). During planning this proposed Division was identified, along with other prospective acquisitions along this portion of the river, as part of the new "Tanahkwe District" of the Mark Twain NWR. This sounded good at the time but in reality, with no additional staff or funding, the Division will be administered as part of the Annada District. The Division is located 110 miles south of the District Headquarters and on the opposite side of metropolitan St. Louis. Ughhh!

Recent acquisition efforts on the Gregory Landing Division fell into place this year with purchase of the four highest priority tracts:

Winkelman	-	230 acres
JLM Farms	-	267 acres
Wright	-	96 acres
Krueger	-	<u>75 acres</u>
		668 acres

All four of these tracts were needed to have total ownership of Coin Pond, a remnant 75-acre floodplain slough. At the end of the year a signed purchase agreement was in place for the 315-acre Logsdon tract located west of the Fox River along the western boundary of the refuge. The Division now totals 1,787 acres.

### 4. Farmers Home Administration Conservation Easements

The Refuge manages fifteen conservation easements and two fee title properties, with one property in pre-inventory status. No easements were received for review in 1996. The Webster property is still in pre-inventory status pending a decision on the applicability of the 1996 Farm Bill and the new guidelines for conservation easements. It seems the easement will have to be surveyed for a third time prior to sale.



## **D. PLANNING**

### **3. Public Participation**

A public meeting was held on February 8 in the Alexandria, Missouri, town hall to present proposals to open the Gregory Landing Division to public uses. Approximately 40 people attended and a draft proposal including a variety of hunting, fishing and other uses was presented. Numerous comments and questions were received. Comments and suggestions were used and incorporated into the proposals to the extent possible and a follow-up meeting was held in April. This meeting, attended by 25 people, was used to present the final proposals, which were generally very well accepted. The Division was then formally opened to designated public uses in May following the issuance of news releases and the preparation of a Public Use brochure.

### **4. Compliance with Environmental and Cultural Mandates**

Two Partners for Wildlife wetland restoration projects in Pike County, Illinois were authorized under the Corps of Engineers Nationwide 27 permit and received IEPA 401 water quality certification.

## **E. ADMINISTRATION**

### **1. Personnel**

No changes or turnover in permanent staff positions this year. This was good from the standpoint of not losing anybody but bad from the standpoint that this station is seriously understaffed and did not receive any relief from this need this year. In August we were fortunate to be able to extend temporary Tractor Operator Alan Lagemann for a third year. Having a second maintenance person on the staff has made a tremendous difference in tackling a serious backlog of maintenance projects as well as completing new projects and improving many habitat management programs (water and vegetation management).

### **4. Volunteer Program**

Marsh and waterbird nesting surveys utilizing volunteers scheduled in June on Clarence Cannon NWR were canceled due to flooding. Subsequent surveys to look for rails during the fall migration, and general bird and plant surveys were accomplished by these volunteers and Paul McKenzie, Endangered Species Biologist of the Ecological Service office in Columbia, and Brad Jacobs, Missouri Department of Conservation Ornithologist in Jefferson City. Notable sightings included king, black and a possible yellow rail.

## 5. Funding

A summary of refuge funding over the past five years follows:

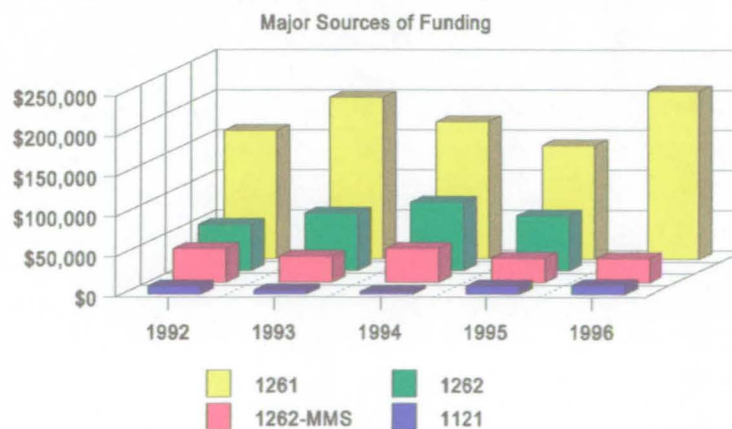
**Figure 2**

Subactivity	FY 1996	FY 1995	FY 1994	FY 1993	FY 1992
Operations-1261	\$209,379	\$141,654	\$170,973	\$201,503	\$160,053
Maintenance-1262	*	\$68,777	\$85,477	\$71,567	\$57,501
Maintenance Mgmt. Funds (MMS)-1262	\$30,000	\$30,000	\$42,250	\$32,000	\$42,000
Private Lands-1121	\$10,000	\$10,000	\$3,000	\$5,000	\$10,000
Proceeds from Sales-8260		\$22,274			\$ 2,350
Fire Funds-9251	\$ 200	\$200	\$200	\$500	\$2,000
Migratory Birds-1230		\$1,500		\$3,000	\$2,014
Law Enforcement-1221	\$ 500	\$1,000			
Private Lands - Habitat		\$7,900			
Private Lands - TA		\$19,625			

\* Beginning in 1996, 1262 base funds other than MMS were combined with 1261.

**Figure 5**

### Budget Summary - 1992-1996



## 6. Safety

Safety meetings were held throughout the year with the following topics being covered: accident reporting, first aid kits, stress, lightning, oxyacetylene and oxygen use in welding, proper lifting, and tornados. All employees were recertified in first aid and CPR by Phil Renner from the Pike County Memorial Hospital. Staff also participated in a boating safety course which was taught by Gerald Fox, with the Missouri Water Patrol.

No accidents occurred during the year. This station has not had an accident since October, 1985.

## F. HABITAT MANAGEMENT

### 2. Wetlands

We are able to manage water levels in wetland and moist soil habitats (units) on the Clarence Cannon NWR and the Delair Division. The goal on these areas is to manage for a variety of water levels creating a diversity of habitats from mudflats to deeper pools. These habitats provide both migrating and breeding habitat for shorebirds, marsh and waterbirds, waterfowl, songbirds, and other resident wildlife. Active wetland management is not feasible on the Gregory Landing or Gardner Divisions because porous soils allow water levels to fluctuate with the river level. Backwater sloughs on the Gardner Division and remnant semipermanent wetlands on Gregory Landing provide habitat for waterfowl and other wetland species throughout the year.

Farming, along with burning, mowing and discing, are used as tools in the management of the wetlands and moist soil units on the Clarence Cannon NWR and the Delair Division. The moist soil units are periodically disturbed by rotating them into the farming program to set back succession. This controls woody vegetation and stimulates the germination of many desirable annual species. Without periodic disturbance, the vegetation in these units quickly changes to rank stands of cattail, bulrush, buttonbush, willow and maple, that are less desirable for migrating shorebirds and waterfowl. To provide diversity, a few of the moist-soil units and semi-permanent and permanent wetlands are allowed to advance to a later successional stage to provide nesting or foraging habitat for species of rails, bitterns or herons.

Clarence Cannon NWR Water is supplied to 12 manageable moist soil units (2,055 acres) and 3 semi permanent wetlands via a ditch system and two stationary 22,000 gallon-per-minute pumps that pull water from Bryants Creek on the south side of the refuge. In some years high river levels facilitate the flooding of the moist soil units in the fall, but more often than not relying on gravity flow is not an option to provide fall habitat for migrating shorebirds and waterfowl.

Water and habitat management efforts were hampered in late May and June, when heavy rains fell over a large portion of the Midwest causing the Mississippi River to rise to its fifth highest level on record. The river waters topped the spillway, flooding the refuge for about three weeks. The river crested on May 30 at 32.76 on the Clarksville tailwater gauge. As waters receded water levels were maintained in five moist soil units for re-nesting marsh and waterbirds whose nests were destroyed during the high water. Water levels in three other units were slowly lowered and allowed to evaporate in late July and early August providing excellent shorebird habitat. Most other units were dewatered by mid-summer to repair internal and external levees, water control structures and stimulate growth of annual moist soil plants.



**ROS Treiterer looks over flood debris on the new spillway as water recedes from the refuge.**

We mowed selected moist soil units in late July to control pest species and encourage growth of desirable vegetation such as smartweeds and wild millet. Pumping was initiated in early October and about 600 acres were initially flooded. Additional units were then flooded throughout November culminating in approximately 1,100 acres of flooded ground for fall migrating birds. Natural vegetation including smartweeds, wild millet and foxtail were abundant this year attracting thousands of waterfowl. Dry weather conditions through the fall months reduced water levels in all four of the semi-permanent water bodies (131 acres).

Drainage tile left over from before the area became a refuge in the 1960's are still occasionally encountered. One such tile found and removed this year from the 42-acre MSU # 9 should help solve the perplexing history this unit had of holding water poorly.

Delair Division Wetlands consist of 117 acres of seasonally-flooded small basins, 141 acres of manageable open water units, and 226 acres of manageable shallow marshes. The Division is bordered on the west by the mainstem of the Sny agricultural levee which separates the Division from the Mississippi River. Portions of the Division are five to ten feet below the adjacent Mississippi River pool. As a result seep water flows into the refuge throughout the year, even during extremely dry summer months, and creates small areas of open water during all but the coldest part of the winter months. Water levels on the area are controlled by a number of water control structures which eventually drain through two structures into the adjacent Sny drainage ditch. This somewhat unique arrangement of managing seep water provides for most, but not all, of the water needed to provide good habitat conditions for a number of species throughout the year without pumping.

Early drawdowns were begun in April on Cattail Marsh and Upper and Lower Swan Lake to reduce stress on bordering trees. Beavers made the job of maintaining low water levels difficult throughout the spring and into the summer. Stable water levels were maintained through mid-summer in Lower Butcher Pond and Hanei Marsh for broods and nesting marsh and waterbirds. Upper Swan Lake and eventually Lower Swan Lake, as well as three other areas were slowly drained through the summer to facilitate work on water control structures, provide shorebird habitat and stimulate annual moist soil plants. Mudflats created in Upper and Lower Swan Lake and Hanei Marsh attracted numerous shorebirds and resulted in dense stands of natural vegetation for the fall migration. Portions of Cattail Marsh were mowed in mid-July to control cocklebur and release more desirable species.

Selected water control structures were closed in late September to begin flooding areas for the fall migration. Low river levels resulted in lower than normal flows from the seeps which supply the water to the refuge, thus the refuge wetlands filled more slowly than desired this year. Still, by mid-November over 500 acres were flooded and habitat conditions were excellent for migrating ducks and geese and the bald eagles that feed on them.

Gregory Landing and Gardner Divisions The high river levels during the end of May and June inundated these areas and hindered the growth of vegetation in the semi-permanent wetlands on both the Gregory Landing and Gardner Divisions. Subsequently, the dry summer and fall limited seasonal wetlands although backwater sloughs and permanent wetlands provided limited habitat for fall migrating waterfowl.

### 3. Forests

The effects of the 1993 flood on bottomland forests on the Clarence Cannon NWR, Gregory Landing and Gardner Division continued to be apparent. In 1996 we continued to see an increase in dying, dead and downed trees on all these areas. Data collected on the Gardner Division and Clarence Cannon NWR indicated the extended flooding caused between 80-90% mortality of hard mast species such as pin oak, pecan and hickory.

Although no data were collected on the Gregory Landing Division, considerable tree mortality was observed on this area also. The Delair Division was minimally impacted by the 1993 flood because the main Sny levee was not overtopped and the area was not flooded. However, ground conditions throughout most of the refuge remained saturated due to the increase in seep water and the high water table. This has resulted in the loss or severe stress on about 50% of the trees (cottonwood, maple, and river birch) around the semipermanent wetlands, primarily Upper and Lower Swan Lakes and Cattail Marsh.

Clarence Cannon NWR In 1995, the Wildlife Ecology Section of the Upper Mississippi Science Center (National Biological Survey) assisted the refuge staff in developing short and long term monitoring protocol to determine the effects of the 1993 flood on tree survival. Future changes associated with a more frequent flooding regime due to construction of a spillway in the perimeter levee will also be monitored.

Data on tree mortality were collected again in 1996 that indicated additional hard mast trees were lost and that regeneration was very limited. Statistical results are not yet available from the surveys. No data were collected on the Gardner Division this year.



**Tractor Operator Lagemann and Maintenance Mechanic Milazzo used the new seedling planter to plant a variety of bottomland species in fields on the Delair Division.**

Reforestation efforts were limited this year with only one small effort on the Delair Division. Nineteen acres of cropland were planted with bare-root seedlings of a variety of bottomland species. Seedlings were also planted into 16 acres of former cropland to supplement seedlings that had been planted in 1994 but experienced poor survival.

**Gardner Division** Global Releaf of the American Forestry Association provided \$84,062 to match \$252,188 of Section 1135 funds available to the Corps for restoring bottomland hardwoods on the Division. The Army Corps of Engineers retains forest management responsibilities on these General Plan lands although the FWS manages other aspects of the lands. In 1994 a contract was awarded by the COE to Bergman Nursery in Quincy, Illinois. The schedule called for 420 acres of croplands to be planted to acorns and 50 acres to be planted with bare-root seedlings over a three-year period. This effort was completed this year with 220 acres planted to acorns and 25 acres planted with seedlings.

Initial surveys of acorn and seedling survival planted in the fall of 1995 were disappointing but expected due to extensive flooding in the late spring and early summer. However, we have learned to give these plantings three to four years before really judging their success or failure. Very often more surviving seedlings are evident in subsequent years than in the first one or two. Go figure!



**The Long Island reforestation project entered its second year. Under a Corps of Engineers contract, 470 acres of cropland are being planted with seedlings and acorns. Above, COE Forester Gary Swenson leads a site visit to a field planted in the fall of 1995. Mark Twain EMP Coordinator/Refuge Biologist Ross Adams is at left.**

In October on the Bear Creek Unit of the Gardner Division a volunteer effort resulted in 15 acres of abandoned crop fields being planted with trees. This effort was primarily organized by the Corps of Engineers and involved about 100 students from nearby John Wood Community College. As mentioned previously, the COE retains forest management responsibilities on General Plan lands along the Mississippi River. The

cooperative farming program on these fields was ended by the refuge after the 1993 flood. The refuge provided funds to hire a local farmer to bushhog the fields to allow access and improve planting conditions. Approximately 320 trees of a variety of bottomland species were planted. These were larger stock trees (2 gal. and 5 gal. containers) which should help them compete and survive in the tough world of the Mississippi River floodplain.

#### 4. Croplands

Spring flooding delayed the planting of crops on all Divisions. No crops were planted on the Gardner Division, no corn was planted on Clarence Cannon NWR, and a limited amount was planted on the Delair Division because of the wet conditions. The government share of wheat acres was reduced on the Delair Division to offset the costs of replanting 54 acres of corn to beans. Cutworms destroyed over 70% of the corn crop this year on Delair. The following acres were planted:

**Figure 4**

	Crop		
	Corn	Soybean	Wheat
<b>Clarence Cannon NWR</b>			
Refuge Share			105
Cooperator Share		210	
Total		210	105
<b>Delair Division</b>			
Refuge Share	54		43
Cooperator Share		231	
Total	54	231	43
<b>Gregory Landing</b>			
Refuge Share			89
Cooperator Share		179	
Total		179	89



Prescribed fire activities on the Delair Division included this 30-acre stand of native grasses.

#### 10. Pest Control

Pest control was limited to herbicide use by coop farmers on cropfields on the Clarence Cannon NWR, Delair and Gregory Landing Division. Mowing of moist soil units, levees and dikes on Clarence Cannon NWR and Delair was used to control for noxious or other undesirable weeds. Cutworms were a problem this year on the Delair Division and destroyed over 70% of the corn crop. Unfortunately no control method was available.

The following herbicides were used on Clarence Cannon NWR, Delair Division and Gregory Landing Division:



Figure 5

Acres			
Chemical	Clarence Cannon NWR	Delair Division	Gregory Landing Division
Banvel		50	
Basagran		30	
Prowl		170	
Blazer			160
Poast Plus			160

### 11. *Private Lands*

We continued to work with Ecological Services, state agencies and the Natural Resource Conservation Service to identify wetland restoration projects. Private lands work included wetland restoration projects, assisting private citizens and other governmental organizations in developing wetland restorations and mitigation plans, investigating possible 404 violations and working on Wetland Reserve Program proposals.

ROS Treiterer worked with three landowners through the Partners for Wildlife program to restore approximately 56 acres of wetlands in Lewis County, Missouri, and Adams and Pike Counties, Illinois. The restoration in Pike County, Illinois, is part of a larger project that will be developed in 1997 to restore an additional 50 acres of sloughs and wetlands within the Sny Island Drainage District. We hope these wetland restorations generate interest in surrounding landowners within the Sny Drainage District. As the Partners for Wildlife wetland restorations have increased in Lewis County, Missouri, additional interest has been generated locally. Furthermore, the District Conservationist in Lewis County has taken a special interest in wetland restorations. However, due to a more strict interpretation implemented statewide this year of an MOA with the Missouri Dept. of Conservation, future "Partners" projects will be referred to MDC biologists, essentially removing FWS from the program.

ROS Treiterer worked with Shaw Arboretum, near St. Louis in 1995 to restore seasonal wetland pools and native wet prairie vegetation on two sites (6 and 15 acres). Non-native vegetation and trees were removed and vernal pools were constructed. These pools were completed in 1996 and have attracted wildlife as well as interest from the public.

To facilitate FWS acquisition efforts, attempts were made in 1995 to generate interest in the WRP program with potential willing sellers surrounding the Gregory Landing Division, which were hit hard during the 1993 flood. A portion of the 315-acre Logsdon

property was accepted into the WRP program in 1996 and a Purchase Agreement has been signed. This property is important in restoring a portion of the floodplain of the Fox River.

## G. WILDLIFE

### 2. Endangered and/or Threatened Species

The bald eagle is the only federally endangered or threatened bird species known to nest on the District. Although active bald eagle nests were found on the Delair and Gardner Divisions in the past, the only active nest this year was on Clarence Cannon NWR. A pair of eagles were seen on a nest built in 1994 during early 1996 on the Delair Division, but did not breed. Another possible eagle nest was located on Gardner, but we did not find any signs of eagles when the area was visited in early May. All Districts are important migratory and wintering areas for bald eagles with numbers reaching more than 35 eagles on the Clarence Cannon NWR and Delair Division.

On Clarence Cannon NWR, a pair of bald eagles successfully nested again this year. A new nest was used this year after the nest used last year collapsed. The new nest is also located near Crane Pond but unfortunately is in another dead tree. Two young were fledged from the nest this year.

Peregrine falcons are seen occasionally on Clarence Cannon NWR during the spring and fall migration. We recorded peregrine falcons in May and September. The endangered gray bat and Indiana bat are known to occur on the Gardner Division, but its status remains unknown.

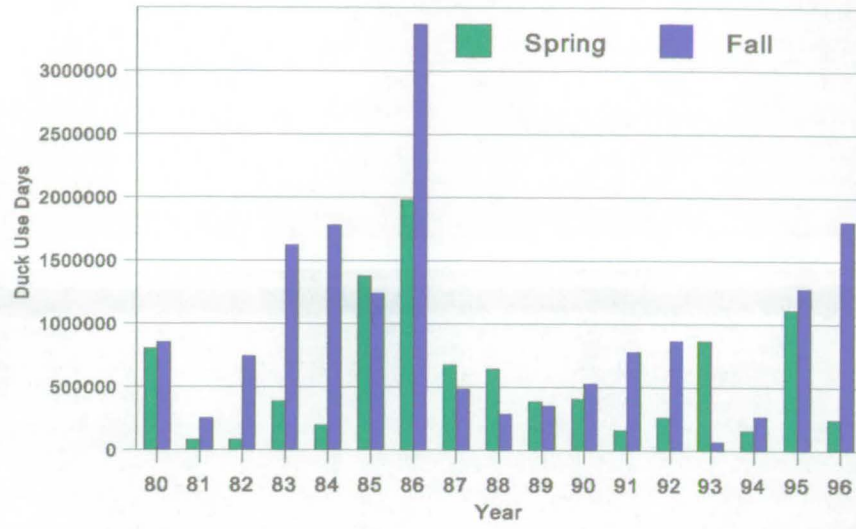
On Delair a nest built by bald eagles in 1994 was again attended by a pair of eagles through the winter, but then taken over by great-horned owls during the nesting season. The wimpy eagles have yet to successfully use this nest.

### 3. Waterfowl

The variety of wetland habitats on the various Districts (forested, semi-permanent, permanent, scrub/shrub and seasonal) provide waterfowl with undisturbed feeding and loafing sites during the spring and fall migrations and breeding season. Waterfowl begin to arrive in early October and remain until freeze-over. Breeding birds include wood ducks, hooded mergansers, mallards, blue-winged teal and Canada geese. Twenty-one species frequent the refuge areas, the most common being the mallard and Canada goose.

Clarence Cannon NWR Total duck use days were slightly lower than 1995 and totaled 2,058,560. However, fall use days increased again and were the second highest recorded in the last twenty years. This despite an early freeze in mid-November just prior to what should have been our peak duck use period (Figure 6). Mallards, followed by pintails and green-winged teal, were the most abundant.

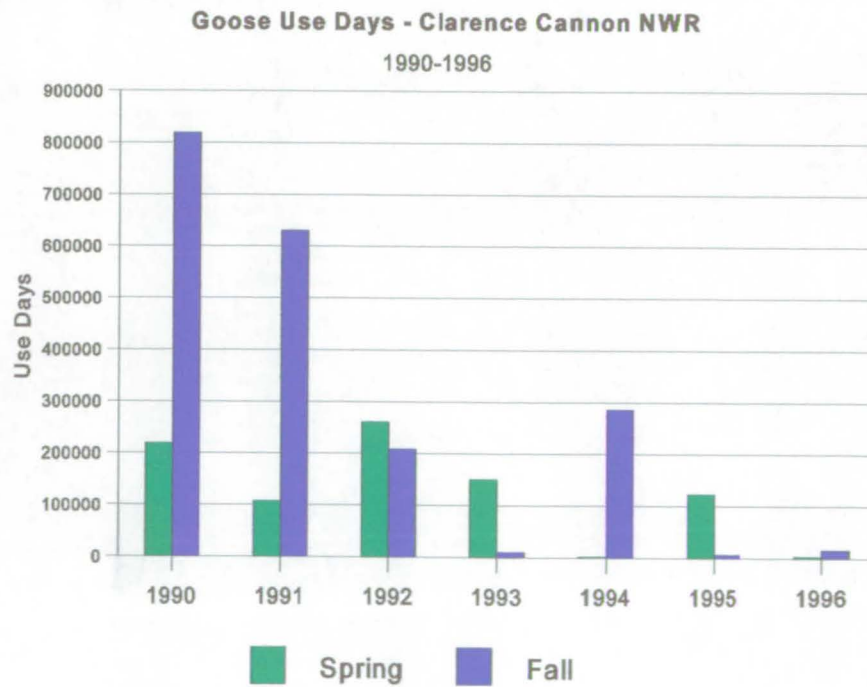
Duck Use Days - Clarence Cannon NWR  
1980-1996





Fall waterfowl use increased again this year on the Clarence Cannon NWR. The 2,000 acres of moist soil units, located adjacent to the Mississippi River, receive some of the most intensive use of any wetlands along the river.

Figure 7



Goose use days were down again from the previous year and totaled 18,927 with Canada geese making up the majority of the migrants (Figure 7).

Only a few hundred snow geese visited the refuge for less than a week during the fall migration. About 35 white-fronted geese were seen on the area in the spring and fall. Both the snow and Canada geese preferred the Delair Division to Clarence Cannon NWR again this year.

Canada geese numbers have been dropping since 1990, and fall use was down significantly from the past six years. The reason for this is unknown, although we speculate the geese are changing their migration patterns. Although they are nice to have around, this decline in use is not of particular concern since the overall flyway population remains strong and there are ample other areas for the birds to use. For example, use on the Delair Division just 15 miles north has increased in recent years. Five hundred to one thousand Canada geese did spend the months of November and December on Clarence Cannon Refuge. They rested on Display Pond next to the refuge office and fed heavily in the wheat field adjacent to the pond. They were in a nice location for both the refuge staff and visitors to enjoy.

Spring use days were lower than in 1995 for both ducks and geese. An early thaw in January attracted hundreds of ducks to the area. But successive freezes throughout the months of February, March and April contributed to low use. We did not see the high concentrations of ducks as we did in 1995, despite good water levels and food availability. Mississippi River levels remained low throughout January, February and March.

Waterfowl remaining on the area during the breeding season included wood ducks, hooded mergansers, mallards, blue-winged teal and Canada geese. Production estimates were low due to flooding in late May and June and were estimated around 250 wood ducks, 40 hooded mergansers, 10 mallards and 14 Canada geese. Flood waters receded by early July.

Most of the available water for fall migrating birds was a result of pumping efforts this year, demonstrating the value of the pump station. We began flooding moist soil units in late September. By mid-October, about 600 acres were flooded. We continued to pump at intervals of 24-36 hours every week throughout the month of October and into November to flood new areas. By mid-November, we had flooded about 1,200 acres.

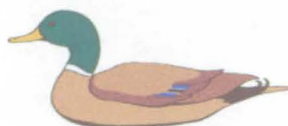
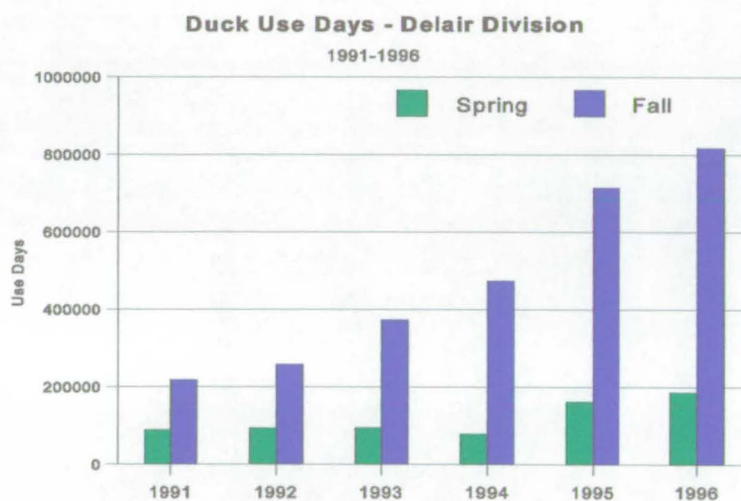
Delair Division Thousands of ducks and geese were attracted to the refuge this year with the abundant food and good water levels. Duck use days increased again this year and totaled 1,002,833 (Figure 8), the second highest in the last twenty years. Mallards followed by green-winged teal and gadwall were the most abundant. Goose use, mainly Canada and lesser snow geese, was slightly lower this year and totaled 495,744 (Figure 9). Overall goose use has increased the last several years despite a reduction in the total acres being farmed each year. Thirty-five white-fronted geese were recorded in the fall.

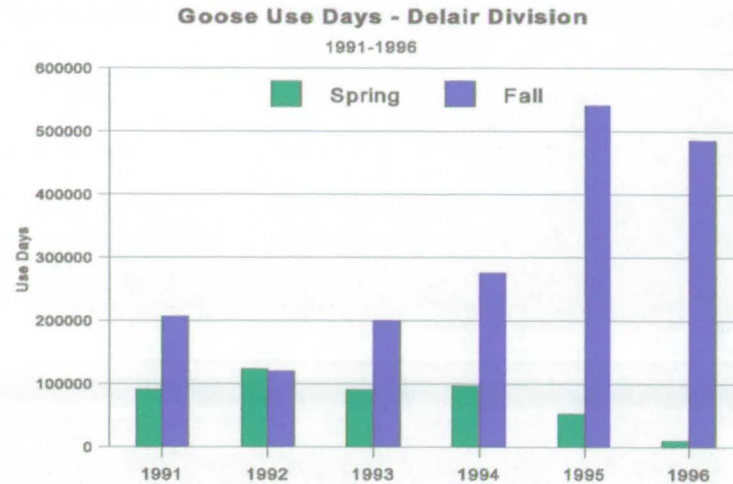
Habitat conditions remained good to very good throughout the year. Seep water was impounded in early spring to provide migration habitat. Slow drawdowns were initiated in various units to provide habitat for shorebirds and attracted large numbers of dabblers such as green-winged teal. Most birds had moved north by late April.

Waterfowl breeding on the area included wood duck, hooded merganser, mallard and Canada goose. Production estimates were about 250 wood ducks, 30 hooded mergansers, 20 mallards and 10 Canada geese.

Fall water levels remained low through late October because low Mississippi River levels reduced seep water coming into the refuge. By November 1, approximately 500 acres were flooded. Water levels were increased throughout the fall, but little deep water habitat was available this year. The shallow water attracted the highest number of dabblers seen on the refuge since the 1980's. Most ducks and geese had left by the third week in December because of the freeze-up.

**Figure 8**





**Gardner Division** The refuge depends on the Illinois Natural History Survey for waterfowl use data. The aerial surveys are done weekly and a single pass is made over the area, so duck use may be higher than the aerial censuses indicate. No production estimates are available, but the habitat provides ideal nesting cavities for wood ducks and hooded mergansers. Waterfowl numbers peaked in late November and early December around 8,000 ducks, mainly mallards.

**Gregory Landing Division** No waterfowl surveys were done on the area because of the remote location and difficult accessibility during wet conditions. Unless there are unusually heavy rains, the Division provides very limited fall habitat. A few remnant sloughs may hold water, but even these areas are greatly influenced by the water level of the nearby river. Spring habitat conditions are usually much better due to overwinter precipitation. Wood ducks and hooded mergansers nest on the area but no production estimates are available.

#### 4. **Marsh and Waterbirds**

Habitat for nesting marsh and waterbirds exists on all Divisions of the refuge. No estimates are yet available for the Delair, Gregory Landing or Gardner Divisions. Great blue heron rookeries were recorded only on the Gardner Division. Habitat for ground nesting species such as rails and bitterns exists on the Gregory Landing Division, but no surveys have been done. Cursory surveys on the Delair Division documented nesting Virginia, king and sora rails, as well as least bittern, American coot and common moorhen.

**Clarence Cannon NWR** A total of 14 species were recorded in 1995. The most common species were great egret, great blue heron, little blue heron and American coot. Marsh and waterbird species nesting on the area included pied-billed grebe, American bittern, least bittern, black-crowned night heron, yellow-crowned night heron, king rail, sora rail, common moorhen and American coot. Red-winged blackbirds, marsh and sedge wrens, dickcissels and eastern meadowlarks were also recorded.

Systematic surveys of marsh and waterbirds were initiated in selected moist soil units in 1993. This year the surveys of selected moist soil units were canceled because of flooding in June. This flooding came at a very bad time for many nesting birds. Preliminary surveys indicated numerous nests of American coots, pied-billed grebes and least bitterns were lost. Renesting attempts were limited to two moist soil units with suitable habitat. Only two least bittern and three pied-billed grebe nests were found. Black-crowned night herons also nested on the refuge and over 20 young were counted on the refuge. Double-crested cormorants began nest construction during the high water, but abandoned the nests after the water receded.



The secretive black-crowned night heron frequents shrubby and woody wetlands around the Clarence Cannon NWR. This fine photo was taken by refuge enthusiast and volunteer Al Blount.

##### ***5. Shorebirds, Gulls, Terns and Allied Species***

Weekly surveys including these species are done on the Clarence Cannon NWR and Delair Division. No systematic surveys were done on the Gardner or Gregory Landing Divisions. The ring-billed and herring gull are commonly seen on all Divisions as they

move through in the spring and fall in small numbers (5-20). Common, Forster's, Caspian and black terns were seen on the Clarence Cannon NWR during the spring and/or fall migration. Black tern numbers topped 400 as the flood waters receded in early July.

Shorebird numbers were up from the previous year on both Clarence Cannon NWR and Delair Division. The receding flood waters on the Clarence Cannon NWR provided high quality mudflats and attracted hundreds of shorebirds. Shorebirds began arriving in mid-March and stayed through mid-May. The return migration was marked by the arrival of hundreds of pectoral sandpipers in mid-July. On the Clarence Cannon NWR, pectoral sandpipers were the most abundant followed by lesser yellowlegs, killdeer, greater yellowlegs and common snipe. The following shorebirds were also recorded on either the Clarence Cannon NWR or Delair Division in the spring and/or fall:

**Figure 10**

Spotted sandpiper	Buff-breasted sandpiper	Killdeer
Semipalmated sandpiper	Short-billed dowitcher	Wilson's phalarope
Least sandpiper	Willet	American avocet
White-rumped sandpiper	Common snipe	White-faced ibis
Western sandpiper	Lesser yellowlegs	Black-necked stilt
Baird's sandpiper	Greater yellowlegs	
Pectoral sandpiper	Black-bellied plover	
Stilt sandpiper	American plover	
Solitary sandpiper	Semipalmated plover	

## 6. *Raptors*

The following raptors are commonly seen on the Divisions: turkey vulture, bald eagle, northern harrier, sharp-shinned hawk, Coopers hawk, red-tailed hawk and American kestrel. Owls include great-horned owl, eastern screech owl, barred owl and short-eared owl. Ten short-eared owls were seen during December and January on the Clarence Cannon NWR this year. Bald eagle numbers peaked around 30 on Clarence Cannon NWR and 12 on Delair Division. No numbers are available for the other units. An adult golden eagle spent a few weeks on the refuge harassing waterfowl.

Osprey, broad-winged hawk and rough-legged hawk, and peregrine falcon are seen occasionally during the migration. A rare, dark phase rough-legged hawk and the "white-tailed" red-tailed hawk (Harlans) were again seen on Clarence Cannon NWR. Mississippi kites were seen on the Clarence Cannon NWR and Gardner Divisions and are also suspected of nesting near or within refuge boundaries.

No use days were calculated for raptors because of the lack of systematic surveys. Additional data on nesting species would assist in management decisions.

### 8. Game Mammals

White-tailed deer numbers are again increasing after the flood of 1993. Herds of 30-50 deer on Clarence Cannon NWR are a big attraction. The deer population is estimated at around 350 animals on Delair and 450 on Clarence Cannon NWR. No estimates are available for the other units.

### 10. Other Resident Wildlife

Muskrat populations are again increasing after the 1993 flood and will soon be back to pre-flood levels. Beavers were plentiful on all Divisions and kept us busy on Clarence Cannon NWR and Delair, cleaning out dams and water control structures. Otters were observed on both the Clarence Cannon NWR and Delair Division and we hope their numbers are increasing.

Frog surveys were done on the Clarence Cannon NWR for a second year as part of the pilot project initiated by the Missouri Department of Natural Resources. A total of nine species were recorded during three surveys.

## H. PUBLIC USE

### 1. General

The Clarence Cannon NWR, Gardner and Gregory Landing Divisions are open to public use including wildlife observation, photography, and nut, berry and mushroom picking. Hunting and fishing are allowed on the Gardner and Gregory Landing Divisions in accordance with state regulations. Hunting is restricted on the Gregory Landing Division and the area is closed from October 15 through April 15. Duck blinds on the Gardner Division are administered by the Illinois Department of Natural Resources. As a stipulation of the purchase of the Delair Division, the area is to remain closed to public entry except for environmental education and special hunts.

Clarence Cannon NWR Visitation was once again limited in early summer due to flooding. The entrance road was closed from late May to early July. The number of visitors was estimated at 5,500. Peak visitation periods are during the spring and fall migrations when visitors come to see the waterfowl, eagles, shorebirds and deer.

Gardner Division Main recreational use on the Gardner Division is fishing and recreational boating followed by hunting. The number of visitors was estimated at 21,000. Most of the Division is accessible only by boat, except for the Bear Creek Unit.

This area is accessible by car and has unimproved walking trails. The area is adjacent to the Bear Creek Camping Area administered by the Army Corps of Engineers.

Gregory Landing Division In June this Division was opened to public use for the first time. These uses include limited hunting, fishing along the Fox River, wildlife observation, photography, nut, berry and mushroom picking. Additional uses such as deer hunting are being evaluated. The area is closed from October 15 to December 31 to reduce disturbance to migrating birds and eagles. No figures or even estimates of use are available primarily because this Division is located 110 miles from the headquarters and no LE patrols were made of the area. A severe limiting factor to any use of this area is the very poor road access. The only county road is virtually unmaintained since it does not serve any residences or as a school bus route. This road is impassable in all but the driest or frozen parts of the year. It often looks more like a farm field road than a public county road. It is also subject to serious flood damage by the adjacent Fox River. Another road along a railroad ROW is also used for access although it is not legally a public road.

## 2. Outdoor Classrooms- Students

Letters were sent to local schools in the fall of 1996 inviting them to visit the Clarence Cannon NWR and Delair Division. Classes from BONCL school visited Clarence Cannon NWR and students from Pleasant Hill Elementary School visited the Delair Division.



An annual event is students from the Pleasant Hill Elementary School visiting the Delair Division. Above, ROS Treiterer leads the group.

### **5. Interpretive Tour Routes**

An interpretive auto tour route is planned for a portion of the Clarence Cannon NWR to guide visitors. The 1993 flood and lack of funding set back the implementation of the plan. No other tour routes are developed or planned for the other Divisions.

### **6. Interpretive Exhibits/Demonstrations**

A small visitor reception area in the District headquarters on Clarence Cannon NWR, open during working hours Monday through Friday, received about 2,500 visitors. Several new wildlife mounts were added to this area over the past few years and many of the visitors have positively commented on the displays and wildlife mounts. The observation deck adjacent to the headquarters parking lot is always open and provides visitors with an opportunity to see many different types of wildlife.



**This sign post on the Delair Division became a favorite rub for one of the refuge's many deer. We thought it was interesting enough that the sign and post are now on display in the refuge office.**

### 7. Other Interpretive Programs

An Open House was held at the District's headquarters on Clarence Cannon NWR to celebrate National Wildlife Refuge Week. Approximately 150 visitors attended the activities which included a self-guided auto tour, door prizes and activities for children. Two local dignitaries (mayors) attended the event this year which was more widely publicized through radio spots and newspaper articles. The day was beautiful but a little windy.



**One of several activities for kids at the refuge open house in October included building an eagle nest. Clarence Cannon NWR hosts one of only about 25 eagle nests in Missouri.**

Administrative Technician Gregory organized the sixth annual National Wildlife Week Art Contest in two local school systems. The contest was a great success with prizes of ribbons and T-shirts given to the overall winners and first, second and third places. The theme for this year was "Nature's Web - Communities and Conservation."





**Winners of the sixth annual National Wildlife Week art contest sponsored by the refuge.**

A variety of programs were given to local schools and clubs this year, raising awareness of the Service and the refuge system to over 5,000 local residents. ROS Treiterer gave programs to the Lincoln Hills Natural History Club, Lincoln County Wildlife Club, 4-H Club, and local schools. Refuge Manager Ellis also presented a program to the Lincoln County Wildlife Club. Staff also participated in Environmental Day at Mark Twain Lake, sponsored by Army Corps of Engineers; Environmental Education Day sponsored by the Natural Resource Conservation Service in Pike County, Missouri; Natural Resource Festival, sponsored by the Natural Resource Conservation Service; Big Rivers Day sponsored by the City of Clarksville and Missouri Department of Conservation; and Eagle Days Weekend, sponsored by Missouri Department of Conservation. ROS Treiterer participated in staffing the Department of Interior Natural Resource booth at the National Science Teachers Convention held in St. Louis. The booth was visited by thousands of teachers over the course of the three-day event and were thrilled with all the free stuff.

ROS Treiterer participated in judging two local science fairs.

## 8. Hunting

Gardner Division The Division is open to all Illinois state hunting seasons except waterfowl which is limited to registered blind sites administered by the Illinois DNR.

Delair Division The Illinois DNR sponsored its first-ever youth deer hunt and selected Pike County for the site of the hunt. Most hunting was to occur on private land but the

Delair Division was also included in the hunt, which was held on the weekend of October 12 and 13. Eighty youths accompanied by their adult partners were issued permits for this shotgun, antlerless-only hunt. Fifteen of these were selected to hunt on the refuge. Saturday, October 12 was used for scouting and a series of hunting seminars at the nearby PASA Sportsmen Club. These included safety, hunting techniques and ethics. Refuge Manager Ellis talked to the group about hunting opportunities on public lands. Thirteen of these young hunters hunted on the refuge on the 13th and harvested five deer, including three that were first-ever deer. A total of 13 deer were harvested county-wide so the refuge contributed greatly to the success of this first-time hunt.



**Above is one of five youth hunters to harvest a deer on the Delair Division. The first-ever youth hunt sponsored by the Illinois DNR was held mostly on private lands in Pike County, but also included refuge lands.**

The regular annual muzzleloader hunt for Delair was moved to January to reduce disturbance to waterfowl and conflicts with waterfowl season. The hunt will be reported in the 1997 narrative.

Gregory Landing Division This Division was opened to hunting for the first time this year. Small game hunting was allowed in conjunction with state seasons except closed from October 15 to Dec. 31 during the peak of the fall migration. Waterfowl hunting remained closed and no deer season was scheduled for 1996 but will be needed at some time in the future. Due to the distance from the refuge headquarters (120 miles) and very difficult road access to the Division, no patrols were made during the season so little is known of actual use although it is suspected that it was very light.

## **11. Wildlife Observation**

Five miles of roads are open to the public on Clarence Cannon NWR most of the year. This is the primary source of wildlife observation on any of the District's units. The fall and spring waterfowl migrations, of course, are the biggest draw. Eagles associated with the waterfowl concentrations also receive quite a bit of attention. Portions of these roads may be closed during peak waterfowl times to reduce disturbance to the birds.

Clarence Cannon NWR is located only 35 miles north of the western suburbs of the St. Louis area. Many refuge visitors are from the St. Louis metro area. However, there is much greater potential and interest, and familiarity with the refuge seems to be slowly building each year. Improvements to the County entrance road this year may also help by providing a safer and more reliable access. (See Section J.1.).

## **17. Law Enforcement**

Only one person on staff has LE authority (Refuge Manager). Attempts to schedule the ROS for basic LE training have been unsuccessful for a variety of reasons. The workload resulting from an understaffed station and the significant logistical problems of having four Divisions and the Clarence Cannon Refuge spread along 250 miles of the Mississippi River unfortunately means that active LE efforts are very limited and inadequate to say the least. The Gregory Landing Division (120 miles north of headquarters) was opened for the first time to limited public uses during the year. The refuge remains closed to all entry from October 15 through December 31. The Harlow Island Division (110 miles south of the headquarters) was established with the purchase of 1,200 acres in January. This Division was not yet open to public uses. Unfortunately no patrols were made of either area during the fall hunting seasons.

On Clarence Cannon NWR, a new landowner across Ramsey Creek along the northwest corner of the refuge was suspected of deer hunting along the refuge boundary and shooting into the refuge. He was contacted in the field and also with a follow up letter to clarify the location of the refuge boundary and reduce potential conflicts.

In November, on the Delair Division, tips from a local landowner provided information about an out-of-state hunter illegally bowhunting on the Refuge. Refuge Manager Ellis apprehended the individual the evening of November as the hunter left the refuge near the Gosline boat ramp. Information was taken and Manager Ellis met IDNR Conservation Officer Roger Frazier the following morning at the subject's nearby motel room. Citations for two state charges were issued. Following this, Manager Ellis returned to the location where the individual had been seen leaving the refuge the previous evening to look for a deer stand. While searching an area on the west side of Cattail Marsh, a recently killed ten-point buck was discovered. The deer's head had been propped up as if posed for a picture. Manager Ellis along with Officer Frazier again contacted the subject at his motel room. After further questioning and seizing film from his camera, the subject confessed to killing the deer the previous evening. He had been

on his way to get help to drag the deer when apprehended by Manager Ellis. The subject, from Oklahoma, paid \$750.00 in state court and was sentenced to two years probation for any additional wildlife violations in the state of Illinois.



**This deer was found "posed" like this the morning after a bow-hunter was apprehended illegally hunting on the Delair Division. After seizing film from his camera and collecting other evidence, the hunter confessed to killing the deer. He paid \$750.00 in fines and was placed on two years probation.**

In recent years Pike County, Illinois, has developed a national reputation for large bucks and been identified in several bowhunting magazines as a trophy hotspot. This has led to an influx of out-of-state hunters. However, there is very little public land in Pike County and almost all hunting is on private leases. As a result, competition and prices for these lands have greatly increased. Delair Refuge has long had been known for its many deer and big bucks, so is probably receiving more illegal hunting pressure with the increase in hunting pressure throughout the County.

In December a local resident was apprehended as he entered Delair Refuge, walking within 50 feet of a clearly visible "Area Closed" sign. His answers to most questions were confused and unclear so his intent for entering the refuge could not be determined. A \$100.00 trespassing fine was paid through Federal Court.

Three Special Agents and Manager Ellis worked a detail around Delair Refuge the evening before and morning of the opening of Illinois deer gun season. No violations were detected.

In October a routine inspection of the Frier Conservation easement in Marion County revealed that timber cutting had recently taken place. The landowner was contacted and at first denied the cutting was on the easement. Subsequently he acknowledged that it was but that it was unintentional and resulted from a misunderstanding with the logger. This did not ring very true since virtually all of the forested acres on his property is within the easement. The investigation was continuing at the end of the year. A mitigation plan will be developed and hopefully agreed to by the landowner. Otherwise a civil action will be filed.

## **I. EQUIPMENT AND FACILITIES**

### **1. New Construction**

#### **Clarence Cannon NWR**

Contracted work on the 800' spillway was finally and painfully completed in August. Plans for this spillway began after the record 1993 flood which did extensive damage to the ten mile main perimeter levee on the refuge. This new spillway is intended to allow "controlled" flooding of the refuge every few years, thereby allowing the 3,700-acre refuge to provide floodwater storage and reduce damage caused by catastrophic flooding.

The Contractor, Meyer-Korte Construction, Highland, Illinois, began work in November of 1995 on the 800' sheet pile and gabion basket spillway. Work on the project was excruciating slow during a period of unusually mild weather through November and December. This slow pace continued into early 1996 as winter weather finally caught up with the contractor, causing frequent shut-downs of work. Finally, in April, as the project was nearing completion, a preliminary final inspection identified several deficiencies. Most were relatively minor. However, one that was the most troublesome was the many, many missing clips needed to properly close and secure the gabion baskets lids and secure one basket to another. This problem had been previously identified to the contractor with assurances that it would be corrected. These clips are extremely important in reducing damage to the spillway as flood debris catches on the baskets.

Before the problem could be addressed, the river rose in May topping the spillway and partially flooding the refuge. Another rise in the river in June then sent up to eighteen inches of water across the spillway flooding the entire refuge. After floodwaters receded, a ridiculous and maddening fight took place between the contractor and the Engineering and Contracting Divisions over what damage to the gabion baskets was caused by the missing clips (Contractor responsibility) or was inherent in the design with water and debris flowing across wire baskets. After a great gnashing of teeth on all sides, the contractor agreed to some repairs. A luckless 1-2 man crew also began the task of going back over the entire structure, basket by basket, to place missing clips. This effort took several weeks and over 20,000 missing clips were installed!

Towards the end of the contract period, the contractor reorganized and became MJC Construction, probably to try and hide from their creditors. As the contract was coming to a close, we had calls from several local suppliers asking if we could help them collect on overdue bills. We were glad to see this contractor leave for the last time.

## **2. Rehabilitation**

Two slide areas on the main perimeter levee, one along Bryants Creek and one along Ramsey Creek, were repaired again this year. Both of these areas are perennial trouble spots.

## **3. Major Maintenance**

### **Clarence Cannon NWR**

This year, as in 1995, a concentrated effort was made to address a serious backlog of maintenance problems and needs. This backlog of non-functioning or poorly functioning water control structures and other water management facilities was limiting and even significantly reducing our habitat management program on both Clarence Cannon Refuge and the Delair Division.

### **Clarence Cannon NWR**

The west ditch and dike in MSU #11 were refurbished allowing both better drainage when needed as well as improved capacity to hold water in this 110-acre unit.

The east ditch in MSU #2 was refurbished allowing better drainage when needed to prepare the unit for either prescribe burning or periodic rotation back into the farming program.

Two to three feet of accumulated silt was cleaned out of the main ditch between the pumphouse and the twin screw gates (approx 250 yards).

A screwgate on MSU #2 was replaced with a new pipe and stoplog structure allowing improved water level management in this 154-acre unit.

In June the sewage line from the office and shop became blocked. This was caused by the settling of backfill around the line. This fill was placed in conjunction with the removal of an underground storage tank in 1994. This work had been accomplished by an inexperienced contractor. Repairs to the sewer line took two fun-filled days.



As floodwaters on the Clarence Cannon NWR recede in June, temporary Tractor Operator Alan Lagemann ponders the cleanup work ahead. Above, debris collects at the outlet structure. Note debris on spillway in upper right background. See photo on page 7 to see what the outlet structure looks like under all this debris.

#### Delair Division

The following three projects will allow much improved water level management over a significant portion of managed wetlands on Delair:

- A poorly functioning 36" screwgate on the Lower Swan Lake outlet ditch was replaced with a new 42" pipe with stoplog water control structure.
- A poorly functioning 48" screwgate at the Lower Hanei outlet to the Sny ditch was replaced with a stoplog structure placed on the existing pipe.
- An inadequate stoplog structure at the Lower Butcher outlet was replaced with a taller stoplog structure.

#### **4. Equipment Utilization and Replacement**

A new Dodge Ram 1500 4X4 pickup was received in February. This replaced a well-worn 1990 Dodge pickup which was sold by GSA bid.

## **6. Computer Systems**

The refuge purchased a new Micron Millennia computer this year along with new software for the machine including Spry Internet Office 4.0, cc:Mobile Version 6.0 and Filemaker Pro 3.0. Now there is a mailbox for the Refuge Manager, Refuge Operations Specialist, and Administrative Technician.

Administrative Technician Gregory began using several new programs as required by the region. They include: the new automated Time and Attendance Program, FFS (Federal Financial System), FPPS (Federal Personnel/Payroll System) and RDE (Remote Data Entry).

Administrative Technician Gregory also developed several new Filemaker Pro forms during the year which were shared with other refuges in the region.

In September, our "old" Dell computer, purchased in 1988, was donated to the Palmer Family Library in Elsberry, Missouri. We put the computer on excess property, but no one was interested. The hard drive capacity was only 40MB, a dinosaur by today's standards.

## **J. OTHER ITEMS**

### **1. Cooperative Programs**

We were quite pleased, and even a little shocked, to be notified that our 1995 request for a \$20,000 grant through the Federal Highway Administration's Public Lands Highway Program was approved. These funds were administered through the Missouri Department of Transportation and used by the Pike County Highway Department to significantly improve the 1 ½ mile county entrance road to the Clarence Cannon NWR and the District headquarters. This gravel road has served as the only access to the refuge and headquarters since it was established in 1964. Its condition was always poor and during periods of wet weather could become difficult or even hazardous to drive. The County performed minimal maintenance since the road did not serve as a school bus route or serve any residences. The \$20,000 project funding allowed the County to significantly improve the drainage along the road and resurface the entire road with a higher grade of road rock. It is still a gravel road, but a much better gravel road!





**Noted botanist Dr. Robert Mohlenbrock leads a wetland plant identification course on Clarence Cannon NWR. Dr. Mohlenbrock was impressed with the quality and diversity of the refuge's wetlands.**

Again this year personnel from the Illinois DNR office in Pittsfield trapped wood ducks on the Delair Division in August and September. After unsuccessful attempts to get the birds to take corn as bait, the trappers switched to chunky dry dog food (about the size of a pin oak acorn - seriously). It worked! Thirty-two birds were trapped and banded.

### ***3. Items of Interest***

Al Blount, a wildlife/wetland enthusiast and photographer from St. Louis, who spends a great deal of time on the Clarence Cannon NWR, conducted a month-long show of his photographs at a business in St. Charles, Missouri, in October. Several photographs taken on the refuge were featured in the show. In his biography prepared for the show, Al thanked the refuge staff for their assistance and patience.

#### **Visits from Washington and Regional Office personnel during the year included:**

**May** - Chief of Refuges, WO, Rob Shallenberger visited Clarence Cannon NWR and the Delair Division. Rob was in the St. Louis area to participate in a panel discussion at the Outdoor Writers convention.



**In May, Chief of Refuges Rob Shallenberger visited the refuge. Above, Rob looks over the newly completed outlet structure adjacent to the Mississippi River.**

**October** - Nita Fuller, ARD, Refuges and Wildlife, Region 3, visited Clarence Cannon NWR and the Delair Division on a familiarization trip.

**November**- From Regional Office: Don Hultman, Refuge Operations Chief; Jim Litzinger, DARD Refuges and Wildlife; and Tom Worthington, Outdoor Rec. Planner also on a familiarization trip.

#### **4. Credits**

Refuge Manager Ellis, ROS Treiterer, and Administrative Technician Gregory all contributed to the writing, typing, and editing of the narrative.

