

KIRWIN NATIONAL WILDLIFE REFUGE

Kirwin, Kansas

ANNUAL NARRATIVE REPORT

Calendar Year 1995

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INTRODUCTION

The Kirwin National Wildlife Refuge, authorized under a General Plan approved by the Secretary of the Interior on June 17, 1954, was established to provide habitat for and facilitate the management of the Nation's migratory bird resource. Basic authority for the existence of the refuge stems from the Fish and Wildlife Coordination Act, which authorized the establishment of wildlife areas on Federal water projects. The refuge is an overlay on the Bureau of Reclamation's Kirwin Reservoir project, fed by the North Fork of the Solomon River and Bow Creek. Fee title to the land is held for the United States by the Bureau of Reclamation. Water level control of the reservoir rests with the Kirwin Irrigation District and the Bureau of Reclamation. The watershed of the two water sources extends into western Kansas and covers approximately 800,000 acres. The 10,778 acre refuge is located west of the town of Kirwin in Phillips County in north-central Kansas.

The primary purpose of the reservoir is to provide for flood control and provide irrigation water for the Kirwin Irrigation District. The Kirwin Irrigation District irrigates up to 11,500 acres of cropland downstream of the reservoir. When the dam was completed in 1955, the reservoir completely filled in just a few years. The reservoir remained full, with seasonal fluctuations, until 1970 when a series of events caused a lowering of the lake level. From 1970 on, the combined effects of irrigation releases and reduced stream flow, resulting from underground water pumping, conservation farming practices and the building of hundreds of stock water ponds caused a steady decrease in the average lake level. Studies were done that stated that watershed runoff would not return to normal and that it was unlikely the reservoir would ever stabilize at full pool. In 1992-93 well above normal precipitation was recorded in the watershed and the reservoir refilled, reaching a record high level of 5.8 feet above conservation pool elevation. The reservoir remained full through 1995, and reached a new record high level of 7.8' above conservation level in June.

The refuge mission is to manage for the conservation, maintenance and management of wildlife, resources thereof, and its habitat thereon, encourage wildlife and wildland oriented public use that is compatible with refuge purposes and enhance public understanding of natural resources management and ecological concepts. This mission is supported by objectives for endangered species, migratory birds, indigenous species, fisheries and interpretation and recreation.

The topography of the refuge is rolling with grass-covered hilltops nearly 200 feet higher than the wooded creek bottoms. The lake covers about 5,000 acres at conservation pool level. Land above the conservation pool is cropland and grassland with shelter belts of cedar and deciduous trees.

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A. HIGHLIGHTS

RESERVOIR WATER LEVEL REMAINS HIGH.

B. CLIMATIC CONDITIONS

Weather data is recorded by the Bureau of Reclamation/Kirwin Irrigation District at a monitoring station located in Kirwin, Kansas. Table 1 shows weather data for 1995.

Table 1. 1995 Weather Data - Kirwin, Kansas

	HIGH TEMP	LOW TEMP	AVG. TEMP	SNOW	PRECIP	1955-95 AVG PRECIP
January	55	- 6	25.5	4.6	0.86	0.56
February	78	6	36.3	0.7	0.03	0.63
March	86	- 8	39.8	7.4	1.26	1.80
April	84	21	47.3	T	1.43	2.07
May	80	33	54.8	-	13.36	3.91
June	93	45	71.5	-	1.13	3.40
July	108	54	78.0	-	1.16	3.08
August	104	55	79.5	-	1.24	2.78
September	96	28	62.1	-	5.23	2.40
October	89	24	51.9	-	0.10	1.66
November	75	6	36.0	4.9	0.39	0.84
December	73	0	29.6	1.7	0.14	0.49
			TOTAL	19.3	26.33	23.62

1995 was a year of extremes, from a near record 108° F in July to below zero temperatures in March. Moisture also came in extremes. The 13.36 inches of rain received in May made it one of the wettest months on record. After May, however, the rains were few and far between. The year ended with extremely dry conditions, reported by many as one of the driest 7 month periods in many years.

C. LAND ACQUISITION

1. Fee Title

The Bureau of Reclamation holds fee title on all lands of the Kirwin NWR. From 1954 to 1985, based on a cooperative agreement the Bureau retained jurisdiction over the property and all decisions were made with their concurrence. In 1985, the cooperative agreement was rewritten, giving the Service primary administrative jurisdiction, although the Bureau retained fee title. The Bureau retained primary jurisdiction over the dam and the property below the dam as their operations area.

In 1987, discussions were held with the Bureau about the possible transfer of jurisdiction over the 185 acre area below the dam to the Service. The Service would control public access and use and assume land management responsibilities. No action had been taken on the proposal.

In April, Mike Delveaux from the Bureau of Reclamation met with Schoonover and Johnson to view and discuss the transfer of this property. After discussing the options it was decided to address the transfer as part of the Comprehensive Management Plan.

D. PLANNING

1. Master Plan

Kirwin National Wildlife Refuge functions without a Master Plan. The refuge is an overlay on a Bureau of Reclamation irrigation and flood control reservoir. In 1994, in response to public concern over the compatibility process that lead to the development of Environmental Assessments for refuge activities, a decision was made to write a Comprehensive Management Plan for Kirwin NWR. This process is discussed in the following sections.

2. Management Plan

A Comprehensive Management Plan was begun in 1994 after a public open house revealed many people felt the refuge lacked clear goals concerning the management of the Refuge, and intended to eliminate public use on the Refuge. The process continued in 1995. Meetings were held with the core team of Service and State personnel to outline the plan, and a committee of thirteen local citizens to evaluate issues of concern such as hunting, fishing, camping/picnicking, boating, agriculture, and local economics. The plan was near completion at year's end.

3. Public Participation

Six meetings were held with a thirteen member Citizen's committee of private individuals formed to represent the public on issues of concern during the planning process. These meetings gave us the opportunity to educate the committee about the goals and objectives of the Service

Kirwin NWR, as well as help us better understand the concerns and needs of refuge visitors. An organization called "Friends of Kirwin Lake" was formed in July, 1995, with the stated purpose of working with all involved parties to improve the lake for the public in ways acceptable to Service goals and objectives, as well as compatible to wildlife. Items such as trash pickup, boat docks, lake access, and campground improvements were to be considered. The organization's elected leadership took a negative approach by spreading many false rumors about what our intended plans for the future were, and tried to organize the public to resist changes proposed in the planning process. Several Congressional inquiries were answered during the year that were initiated by this organization, but because the concerns raised were often petty and obviously without merit, support for the "Friends" had declined significantly by years end to a small group of people. The group's organizer stated that he hoped a change in leadership could develop the state of cooperation and partnership that he had originally intended.

E. ADMINISTRATION

1. Personnel



Figure 2. Schoonover, Johnson, Stockman, Milazzo, Knowles, Truetken 09/93 BTS

1. Bruce T. Schoonover, Refuge Manager, GS 11, PFT, EOD 07/01/91
2. Bradley D. Johnson, Refuge Operations Specialist, GS 9, PFT, EOD 02/24/92
3. Diane L. Stockman, Administrative Support Assistant, GS 6, PFT, EOD 04/21/91
4. Samuel L. Milazzo, Maintenance Worker, WG 8, PFT, EOD 05/11/87
5. Stephen J. Knowles, Laborer, WG 3, SFT (TAPER), EOD 10/28/90
6. Floyd A. Truetken, Biological Science Technician, GS 4, Temporary, 01/01/95-02/04/95, 04/03/95-12/31/95

Maintenance Worker Sam Milazzo departed Kirwin NWR on January 8 for a position at Mark Twain NWR - Annada District.

Steve Knowles was selected to fill the wage grade 8 maintenance worker position vacated by Sam Milazzo in January.

Truetken received an On-the-Spot Award for his work on establishing several bluebird box trails on the refuge. The boxes were constructed and installed by the Stockton Correctional Facility inmate crew and Truetken made arrangements with Dane G. Hansen Scout Camp to check and maintain the boxes and record nesting success.



Truetken receiving On-the Spot award from Johnson.

All personnel, except Brad Johnson, were furloughed during the Government shut down.

Special Achievement Awards were presented to Schoonover, Johnson, Stockman, Knowles and Truetken.

3. Other Manpower Programs

A work crew from the Stockton Correctional Facility assisted the refuge with many projects during the year. Crews are composed of 5-7 minimum security prisoners and one guard. Projects completed included fence removal and replacement, picnic table maintenance, mowing, musk thistle control, tree cutting, reroofing the well house, public use area cleanup, painting, and vehicle/facilities cleaning.

4. Volunteer Program

Floyd Truetken volunteered several hours to conduct waterfowl surveys and to locate, inspect and clean wood duck boxes in January 1994.

In August, Jared Kendall, Boy Scout from Phillipsburg, KS, volunteered one day to assist Truetken with several projects. Bluebird boxes were cleaned and taken down, and a nature trail was laid out in Prairie Dog Town. Jared supervised the construction of the nature trail as an Eagle Scout project (See Section H.4).



Boy Scout Troop #123 from Phillipsburg, KS working on Prairie Dog Trail.

5. Funding

Table 3 outlines funding and it's sources over the last five years of operation at Kirwin.

Table 3. Fiscal Year Funding - Kirwin NWR

Fiscal Year	Base 1261	Base 1262	MMS 1262	Quarters 8610	TOTAL
1995	139,000	71,579	133,000	4,500	348,079
1994	141,000	72,000	98,400	4,431	315,831
1993	139,000	80,000	25,800	4,300	333,800
1992	156,000	80,000	93,500	5,417	283,417
1991	155,000	80,000	43,000	5,885	239,977

6. Safety

The February safety meeting was spent viewing films on hearing safety, hand safety and personal protective equipment.

Rock was hauled and spread on several soft spots along the north shore road to make it passable during March. The spots were areas that the water was over the road in 1994.

AIDS was the topic of the safety meeting in March. The video from the RO was viewed and books were given to the staff to complete.



Fire Staff practices drafting. BTS

In April, a review of the fire pumpers and some hands-on spraying and drafting was the safety topic.

Truetken, a recently certified EMT, was assigned the task of inspecting, restocking and upgrading all first aid supplies of the station in May.

The safety meeting on July 12th was held on fire and watercraft safety.

A contractor from Phillipsburg was the successful bidder on an emergency road repair project. A stretch of road had received severe flood damage and was repaired during the month. Other flood damaged areas were repaired force account.

The safety meeting in October included a video on winter survival.

A video about MSDS's was viewed and discussed in November. An inspection of all fire extinguishers was conducted by Hays Fire Extinguisher Company during the month.

During the December safety meeting a film was viewed dealing with such topics as holiday cooking safety, roof climbing safety and flight safety.

8. Other

Meetings/training sessions attended during the year included:

Schoonover and Johnson attended a Kansas Department of Wildlife & Parks (KDWP) district biologist's meeting in Hays, KS on the 27th of January. Presentations were given by Johnson on Partners for Wildlife and by Schoonover on the Comprehensive Management Plan being written for Kirwin NWR.

Schoonover and Johnson attended a private lands meeting, to discuss budget issues, in Manhattan on the 6th of February. A tour of the COOP unit was taken on the 7th.

Schoonover and Johnson attended the annual law enforcement refresher in Tucson, AZ on February 21-26.

Schoonover attended the project leaders Roundtable Meeting in Kearney in March.

Stockman attended a WordPerfect workshop in Salina in April.

Schoonover, Johnson and Knowles attended Aircraft Safety Training at Quivira NWR on April 18th.

Schoonover conducted a radio interview in April with Tad Felts from KKAN/KQMA radio station in Phillipsburg to update the public on the progress of the CMP.

Johnson and Knowles attended S-214 Fire Engine Use and Tactics in Valentine, NE on April 12th and 13th.

Schoonover and Johnson traveled to Denver for a briefing on the CMP for Regional Office staff members in May.

Schoonover met with the Phillipsburg Kiwanis on the 23rd of May. Topics discussed were the refuge, the CMP and the water situation.

Johnson traveled to Canada for one week the first of June to catch fish and drink LaBatt's Blue Ice. He had to be dragged kicking and screaming into the plane on the last day.

Schoonover visited with State Representative Laura McClure in June.

Stockman attended Remote Data Entry training in Denver, during the week of June 24th.

Schoonover, Johnson and Stockman attended the monthly meeting of the Phillips County Chamber of Commerce to present a program on the CMP and the current water situation.

Schoonover and Johnson attended NEPA training in Denver on the July 22nd-24th.

Schoonover and Johnson attended a meeting in Hays, KS with representative from the Bureau of Reclamation, Kansas Department of Wildlife & Parks, and the USFWS-Manhattan field personnel in August.

Schoonover and Johnson attended the firearms requalification at Quivira NWR on August 25th.

Schoonover and Johnson attended hazardous materials training in Grand Junction, CO on

September 6th-8th.

Knowles and Truetken worked in the USFWS booth at the Kansas State Fair on September 11th and 12th.

Schoonover and Johnson attended the Grassland Workshop held in Minot, ND on September 18th-21st.

Schoonover and Johnson attended two meetings in Denver during the month of November to review the progress of the CMP and do final editings. A meeting was also held during the month with the Kansas Department of Wildlife and Parks to discuss the plan.

Official visitors to the refuge during the year included:

The Platt/Kansas Ecosystem Team visited the refuge on March 21st for a tour and to visit with the staff.

Surveyor Pat Carson was on the refuge to check and re-mark several boundary corners along Bow Creek.

Diane Orf, RO Engineering, was on the refuge on May 31st, to look at the office building in preparation for the remodeling project.

Dick Sorenson, Region 3, visited the refuge on October 18th and 19th to develop concept drawings of public use sites for inclusion in the CMP.

F. HABITAT MANAGEMENT

1. General

Habitat management around Kirwin NWR was dramatically changed in 1993 when Kirwin Reservoir refilled following 20 years of below normal water levels. Large tracts of bottomland cottonwood/willow forests, grasslands, and farmground were flooded, destroying a large part of the refuge's resident species habitat. More details on habitat changes are contained in the following sections.

2. Wetlands

The primary purpose of Kirwin Reservoir is to provide for flood control and provide irrigation water for the Kirwin Irrigation District. From the time of completion, in 1955, until 1970 the reservoir remained full, with seasonal fluctuations. From 1970 on, the combined effects of irrigation releases and reduced runoff, resulting from underground water pumping, conservation farming practices and the building of hundreds of stock water ponds, caused a steady decrease in the average lake level. This decline continued into the 1980's with the water level averaging near inactive pool. No irrigation releases were made in 1981, 1982, 1985, 1991, or 1992. In 1993 the reservoir was needed for its original purpose of flood control as record water flows hit the area. The reservoir filled to a record high level of 5.8 above conservation pool, an increase of 39.5 feet from its low in 1991. The reservoir has since remained full.



Water, water everywhere! BDJ

1995 began with the water level slightly below conservation pool elevation (1729.25). The water level increased through early 1995 and was nearly 2 feet into flood pool by the end of April. Then came the wettest May in recent history. The month began with the water level at 1730.65'. As the water neared 1731.25', the two foot into flood pool mark that the Bureau wanted to maintain, releases were begun. Heavy rains and downstream flooding forced the Bureau to stop releases on May 24. The water raised to 1732.18' by the morning of May 26. On the night of May 26, heavy rains (3.5 to 4.5 inches) were recorded across the region. By May 30 the water level had risen to 1736.79'. Release were begun again on May 30. On May 31, the lake was at 1736.95'. The reservoir reached a record high elevation of 1737.07' on June 4. This was 7.82' above conservation pool and 2' above the previous record high in 1993. Surface acreage was 6,478 acres and storage capacity was 144,610 AF. The water level receded through the summer as water releases were made through the spillway and the irrigation canals. The water level started to come back up late in the year, with 1995 ending with the water level at 1730.20' (0.95' above conservation pool).

3. Forests

In 1993, over 1,500 acres of bottomland cottonwood and willow forests were lost when the reservoir refilled after a 20 year dry spell. As the water has stabilized at a higher elevation a new band of cottonwood/willow forest has begun to regenerate around the reservoir. In most areas this forest growth will be allowed to return, creating a new riparian zone around the reservoir. In other areas tree plantings will be used to enhance the remaining riparian zones.

In April, the Stockton Correctional Facility crew planted trees in several areas around the lake. In addition to cottonwoods and willows, a variety of hardwood and shrub species were planted including green ash, bur oak, silver maple, black walnut, hackberry, chokecherry and plum.

4. Croplands

Farming is conducted on Kirwin NWR to help the refuge achieve its purpose of providing wildlife habitat and benefitting wildlife, with an emphasis on migratory birds. All farming on the refuge is done by cooperative farmers. Field sizes are kept small, the largest being approximately 30 acres. Crops are rotated in a five-year rotation, and generally include seeded winter wheat, harvested winter wheat, corn, milo and alfalfa. Shares are figured on a 1/4-3/4 basis, with the government getting 1/4 for wildlife. This share differs from the customary 1/3-2/3 shares in the area because the cooperators are being required to follow our cropping plan, are sharply restricted on chemical usage, and wildlife benefits significantly from the browse provided by winter wheat and alfalfa, which is normally considered the cooperators share.

Above normal rainfall was received in May that produced heavy inflows into Kirwin Reservoir, and eventually raised the lake 7.8' into flood pool before releases could be initiated. These flood waters inundated approximately 1,000 acres of the 1,600 cropland acres above conservation pool, killing existing crops and spreading fallen trees and other debris throughout many of the fields. As the flood waters receded, fields were cleared of debris, and sorghum was planted on higher land. Winter wheat was planted later on some of the lower ground, although flood waters still impacted approximately 400 acres of cropland by the end of the growing season, and was not farmed. Smartweed thrived in many of these flooded areas and provided additional waterfowl benefits.

An early frost in September stopped row crop development before maturity, and reduced yields in most fields.

Chemical usage has been significantly reduced on Kirwin NWR in recent years. Request for chemical use is required to go through the Refuge Manager, and is approved only if all other alternatives have been exhausted and large economic loss or spread of noxious weeds is threatened.

5. Grasslands

Kirwin NWR is located in the mixed grass prairie area of the Great Plains. Dominant grasses include big bluestem, Indiangrass, switch grass, little bluestem, blue grama and sideoats grama. Prior to land acquisition by the Bureau of Reclamation, most refuge lands were being farmed. Less than 10% of the grasslands are virgin native. Many of the more unproductive areas were reseeded shortly after acquisition. Smooth brome was a primary component of many of the grass seedings and is a persistent problem on the refuge.

There are currently 3,148 acres of grassland on Kirwin NWR. Over the years, the grasslands have suffered from a variety of problems related to over rest, such as areas of bare ground, noxious weed invasion, and poor plant health. In addition there were areas of significant tree invasion (Siberian elm, Eastern red cedar, locust) and smooth brome invasion.

In 1987, grazing was added as a grassland management tool at Kirwin. Prior to 1987, the primary tools used were haying and occasionally prescribed fire. Through the years other tools have been added including increased use of prescribed fire, mechanical removal of trees and farming of monotypic smooth brome stands prior to replanting to natives.

In 1995, (both sides of silver bridge - both corners; area down by Big Bend; north of Ed Linkous; replanted in north end of Unit 11;) monotypic smooth brome was plowed up in preparation for reseeding to native grass species. 30 acres of grassland previously farmed was reseeded.

7. Grazing

Prior to 1987, haying and occasionally prescribed burning were the only active grassland management tools being used on Kirwin. Many grassland areas were suffering from overrest, with areas of bare ground, heavy noxious weed infestations, and cool season exotic grass invasion. In 1987, grazing was introduced as a management tool, using an HRM approach. The program was begun with one cooperator in a 320 acre unit. Currently there are sixteen units (about 2400 acres) available for grazing. Seven cooperators were used in 1995, with not all units grazed. A total of 1,674 acres were grazed with 892.6 AUM's removed, between April 28 and August 15.

Like many parts of the refuge, the high water had an effect on several areas of grassland, including a few of the grazing units. Some damage was done to permanent fences and temporary fences were used in several units to keep cattle out of flooded areas.

Despite the problems, the grazing program went smoothly with the refuge staff and most cooperators satisfied with the results. However, due to the shortage of moisture during the summer, many units were slow to respond to the grazing treatment. Several rotations were shortened to accommodate the dry conditions. Rains received in September did give the warm season native grasses some time to recover before winter. Long term gains continue to be made as noxious weed problems decline, bare ground areas fill in with grasses and forbs and warm season native grasses expand into areas previously dominated by cool season exotics, primarily smooth brome.

8. Haying

Haying was used in the past as the primary grassland management tool on Kirwin NWR. In recent years, it has been used as a supplement to the grazing program, generally on small tracts of native and tame grassland that are inconvenient to graze. Due to excessive habitat loss in 1993, no haying was done in 1994 or 1995.

9. Fire Management

Prescribed burning began in April, with two burns completed. A total of 60 acres were burned, mainly for flood debris cleanup in grassland and cropland units. Additional burns were planned for May, but the extremely wet conditions (rain on 23 days in May) prevented any further burning.



Prescribed burn at Willow Flats. BDJ

In April, Johnson and Knowles attended S-214 Fire Engine Use and Tactics, held in Valentine, NE.

10. Pest Control

Noxious weeds present on Kirwin NWR include musk thistle, Canada thistle, Johnsongrass, and field bindweed. Johnsongrass is found in a few small remote sites and is controlled exclusively by mechanical means, primarily mowing.

While Canada thistle was known to be present on the refuge, it had not been dealt with, in the past, as a noxious weed. In 1992, an effort was made to identify all Canada thistle sites. Ten small sites were located and controlled (largest about 1 acre). In 1993 all known sites were inundated by the high water. In November 1994, an area of Canada thistle was found in a field that had been flooded earlier. The area was sprayed and monitored until freeze-up. No additional sites were found in 1995.

Musk thistle is fairly common on and near the refuge and requires the greatest control effort. Control methods are primarily mechanical including mowing and hand chopping. Musk thistle seed head weevils (*Rhinocyllus conicus*) are well established in the area and are found in significant numbers in most plants. In 1993, adult musk thistle rosette weevils (*Trichosiromachus horridus*) were released at a site that was later inundated by the high water. It is unknown if the bugs were able to move to a new location ahead of the water. No chemical control of musk thistle was required in 1995.

12. Wilderness and Special Areas

In 1969, a 120 acre tract was established as the Solomon River Grasslands Natural Area. This

site is representative of a K-69 bluestem-grama prairie.

14. Partners for Wildlife

Kirwin staff has responsibility for the Private Lands Program in Northwest Kansas. Due to the shortage of staff and the low number of natural wetlands in this part of Kansas, the PFW program has been slow to develop in this part of the state.

In 1995, several sites were reviewed in Jewell, Republic and Lincoln counties as possible PFW projects. None of these sites met the criteria established for the PFW program.

G. WILDLIFE

1. Wildlife Diversity

Following needed updates, Kirwin's bird list will stand at 205 species. Due to its central location Kirwin hosts birds from all areas of the country.

Thirty-four species of mammals have been documented as occurring on Kirwin NWR. Seven species occur in the area and are probably found on the refuge and nine species are possibly on the refuge, but not found in the immediate area.

2. Endangered and/or Threatened Species

Three endangered and two threatened species are documented to have used the refuge. The bald eagle, whooping crane, peregrine falcon, interior least tern, and piping plover are currently on Kirwin NWR's bird list.

Bald eagles are common visitors during the winter months. Eagle use is directly tied to the migration of Canada geese, with eagles feeding on sick and injured geese during the winter. On March 9, a record high of 67 bald eagles (32 adult, 35 immature) was censused. This record was again broken on December 28 when 105 eagles (63 adults, 42 immature) were counted during the Christmas Bird Count.

Whooping cranes pass through the area during spring and fall migrations. They are infrequent visitors to the refuge, however, there are annual sightings in the area. In late a March an unconfirmed report of a sighting in the Phillipsburg area was received.

The peregrine falcon, interior least tern and piping plover are uncommon visitors to the area, pausing briefly during spring and fall migrations. Sightings are limited to one or two per season.

3. Waterfowl

Kirwin NWR's primary purpose is to serve as a feeding and resting area for migratory birds, especially waterfowl. In the 1960's and 70's, the area was used extensively by white-fronted geese. Management emphasis was placed on providing feeding areas for fall and spring migrations. In recent years, Kirwin has become a major migration and wintering area for large numbers of Canada geese, while white-front use has declined. Snow geese are also present but usually in insignificant numbers.

Peak goose concentrations for 1995 were as follows:

- Spring - Canada geese - 40,000 (mid-March), White-fronted geese - 5,000 (mid March), Snow geese - 100 (early March)
- Fall - Canada geese - 40,000 (mid-December), White-fronted geese - 200 (early December), Snow geese - 70 (early December)

With the increase in goose numbers and collaring projects, sightings of neck-collared geese have become more common. Efforts were stepped up by refuge personnel and State personnel from Cheyenne Bottoms to read collars in the Kirwin area. Limited data received shows that these birds are coming from the central Arctic west of Hudson Bay.

In the past, Kirwin NWR started a Canada goose nesting program with a captive flock. Several hundred nesting structures were erected and maintained around the lake for returning geese. Due to water fluctuations and the large amount of maintenance required, the project was discontinued in the 1970's. Several successful nestings, with total production of 25-35 birds, are confirmed each year. Goose production was also documented on a private pond north of Phillipsburg, where goose tubs are maintained through a Wildlife Extension Agreement.

Ducks used the reservoir extensively in the years following construction. Declines in the reservoir water level since 1970 and the decline of the continental duck population have shown up in the smaller numbers of ducks migrating through the area. The increased water levels since 1993 have provided large areas of shallow flooded habitat, including flooded crops, for water dependant birds. Duck numbers, during spring migration, peaked at 40,000 in late March and during fall migration, peaked at 40,000 in mid-December.

An unusual sighting was made on November 5, when three trumpeter swans were spotted in a shallow flooded cropfield west of the headquarters. The two adults and one immature remained in the field until dark, but were gone the next morning.

4. Marsh and Waterbirds

Nesting by great blue herons and double crested cormorants was again confirmed in flooded timber on the west end of the reservoir. The rookeries were reestablished in 1993, after water levels rose. Prior to 1993, no rookery activity had been documented since 1990.

Other marsh and waterbirds censused during the year included white pelican, green heron, snowy egret, great egret, white-faced ibis, eared grebe and pied-billed grebe.

5. Shorebirds, Gulls, Terns, and Allied Species

Subject birds censused during the year included American avocets, killdeer, white-rumped sandpiper, Baird's sandpiper, stilt sandpiper, lesser yellowlegs, ring-billed gull, Franklin's gull, black tern, Forster's tern, common tern, Wilson's phalarope and willet. Killdeer were the only confirmed nester.

Due to Kirwin's location, large numbers of sandhill cranes pass over the area in the spring and fall, on their way to and from the Platte River in Nebraska. Crane use is generally limited to overnight use on local fields.

6. Raptors

Bald eagles are common visitors during the winter months on Kirwin (Section G-2).

Sightings of osprey have become common since the water returned in 1993. In late September/early October up to seven osprey were present on the refuge.

Other raptor species observed during the year included golden eagle, turkey vulture, *red-tailed hawk, *Swainson's hawk, sharp-shinned hawk, Cooper's hawk, rough-legged hawk, ferruginous hawk, marsh hawk, osprey, merlin, kestrel, screech owl, and *great-horned owl. (* denotes nesting species)

7. Other Migratory Birds

In 1994, 23 bluebird boxes were built and put up by the fifth graders from Phillipsburg. In the spring of 1995 the current 5th grade class helped the refuge staff clean and reinstall the boxes. In addition, 27 boxes were built and installed at various locations by Truetken and the Stockton Correctional Facility crew. Total number of fledglings for all boxes was 19 bluebirds (5 nests), 2 black-capped chickadees (1 nest), 14 tree swallows (6 nests), and 158 house wrens (33 nests).

In June, Johnson and Truetken conducted a Breeding Bird Survey in the Dresden/Leoville area, 60 miles west of the refuge. No unusual sightings were made.

A rare sighting was added to the refuge bird list in October, when a visiting bird watcher observed a golden-crowned sparrow near the refuge headquarters. This western species is a rare winter vagrant in Kansas.

The Christmas Bird Count in the Kirwin area was conducted on December 28, by a state biologist from Wilson and a local birding enthusiast. In spite of the furlough, access was granted to the refuge for the survey. A total of 63 species were recorded. Unusual sightings included 2 red-breasted mergansers and a hooded merganser/common goldeneye hybrid.

8. Game Mammals

Despite the loss of large areas of resident species habitat, the white-tailed deer herd in the area remains high. While many deer were forced off the refuge by the high water, large numbers return to the refuge during the winter to feed in refuge cropfields. The winter population is estimated to be about 200-250 deer. Mule deer are also present in the area, and are frequent visitors to the refuge. Estimates place no more than one dozen on the refuge at any one time.

Other resident game mammals at Kirwin include the Eastern cottontail, black-tailed jackrabbit, and fox squirrel.

10. Other Resident Wildlife

Rio Grande turkeys are present in good numbers on and around the refuge. A large part of their preferred habitat was lost to the high water. Several small flocks continue to use the few areas of acceptable habitat around the edges of the lake but most birds left the refuge and moved up the rivers to private land.

A sixty acre black-tailed prairie dog colony is located on the south side of the refuge. The colony, after years of spreading, appears to be declining as it is now fragmented into numerous small colonies.

Ring-necked pheasant and bobwhite quail populations continue to recover from past bad winters. Indications are that the numbers are nearing past levels. High local involvement in CRP has helped substantially in the recovery.

Bobcats are present on the refuge and sightings are becoming more common each year. Coyotes are abundant in all parts of north central Kansas including on Kirwin NWR.

11. Fisheries Resources

Fisheries management in Kirwin Reservoir is the responsibility of the Kansas Department of Wildlife and Parks (KDWP), through a cooperative agreement with the Service. Species found in the reservoir include walleye, largemouth bass, white bass, wiper (striped bass/white bass hybrid), channel catfish, flathead catfish, drum, black crappie, white crappie, green sunfish, and bluegill (and lots of carp).

Aside from the hybrid wipers, walleye are the only game fish stocked in the reservoir. The stocking is needed to supplement the populations as fluctuating water levels virtually eliminate natural reproduction. Fish stocked in 1995 included 1,000,000 wiper fry, 55,000 walleye fingerlings, and 149 adult emerald shiners.

A large fish kill occurred in the spillway channel, below the dam, when the Bureau of Reclamation shut off water releases on July 24. By the afternoon of the 25th walleye began floating up in the channel. By the 26th, large numbers of fish including shad, drum, carp, bass, walleye, and catfish were dead. After numerous complaints about the smell and the possible contamination of Kirwin's city well, BOR opened the spillway gates for one hour to flush the dead fish out of the channel and downstream. The State estimated that up to 100,000 fish may have died although only about 2,000 were believed to be game fish. Complaints received in the refuge office, including a call from the EPA, were forwarded to the Bureau of Reclamation and the Kansas Department of Wildlife and Parks.



Kirwin Reservoir spillway channel. BDJ

A small scale fish die-off was reported in the reservoir in late August. The regional KDWP fisheries biologist attributed the die-off to a bacteria that infected fish stressed by the hot weather and the water drawdown.

17. Disease Prevention and Control

No major disease problems were discovered on Kirwin in 1995. Several dead pelicans were picked up on a mudflat in November, but no significant die-off occurred. Subsequent checks found no more birds.

H. PUBLIC USE

1. General

Kirwin NWR continues to attract high public use year-round, from the January hunting seasons through spring fishing and summer recreation into the fall hunting seasons. 1995 was a high public use year mostly due to the heavy fishing pressure. Spring fishing for walleye and largemouth bass and fall Canada goose hunting were especially popular.

Memorial Day weekend was again the heaviest public use period of the year. Heavy rains and flooding (see Section F.2) were not enough to keep people away. As the water rose and flooded roads, campgrounds and boat ramps, most people just moved to higher ground, several more than once. Visitation was estimated at 6,000. By the end of the weekend, camping was confined to 4 dry sites and many roads around the lake were flooded.

One individual was especially caught off guard by the rising water. He had a camper and boat on a trailer parked at the Kiln. When notified on Saturday, there was no way to get to the area because of flooded roads. On Sunday, he was able to get in to the area, and proceeded to get a

pickup, a 6x6 military truck and a 4x4 articulating loader stuck. On Monday, a large 4x4 spray truck with flotation tires was brought in and they were finally able to get all the equipment out.



Camping & fishing doesn't get any better than this! BDJ

2. Outdoor Classrooms-Students

In January, a program about bald eagles was given to the 2nd and 3rd grade students from Eastern Heights Elementary School in Kirwin. A reporter from KSNW-TV in Wichita was present during the program to do a story for an Outdoor Stuff segment that was aired in February.

4. Interpretive Foot Trails

The Woodland Nature Trail that was located west of headquarters was destroyed by the high water in 1993. The Comprehensive Management Plan calls for a number of foot trails to be built to replace this trail. In October, construction was started on a foot trail at Prairie Dog Town. A quarter mile long trail was laid out and rock was spread and packed. Jared Kendall, an Eagle Scout candidate from Phillipsburg, took the lead on completion of the first stage of trail development. Future plans call for a bench and interpretive panels along the trail and a photo blind.

5. Interpretive Tour Routes

In 1991, eleven interpretive signs were put up along the North Shore Scenic Drive. The Drive and the displays do receive heavy use at times, primarily due to their location in the main public use areas. Many of the signs were made obsolete by the return of water in 1993 and have been removed or replaced. Future plans call for moving the auto tour route to the southeast side of the refuge to take advantage of the riparian areas of Bow Creek and move the traffic away from the heaviest public use.

6. Interpretive Exhibits/Demonstrations

In celebration of National Wildlife Refuge Week in October, displays were set up at the Community Building in Kirwin, the Kirwin City Library, and the Phillipsburg City Library.

In November, the endangered species display was set up at a medical conference in Phillipsburg.

7. Other Interpretive Programs

In February, Stockman presented a slide show on Kansas wildlife to the third grade class in Phillipsburg.

In March, a program was given to a Boy Scout troop from Phillipsburg. Topics discussed were bird migration, trees, poisonous plants, and the refuge.

Truetken led a church youth group on a nature walk on July 25.

On September 11 and 12, Knowles and Truetken worked in the USFWS booth at the Kansas State Fair in Hutchinson.

In celebration of National Wildlife Refuge Week in October, the refuge hosted a 5-K run in conjunction with Kirwin's Old Settler's Day. With assistance from the Kirwin Lions Club, Wild Thing t-shirts were presented to the runners.

Truetken assisted with a hunter education class in Smith Center in October.

Truetken presented a program on endangered species to the Kirwin Lions Club in November. He showed the audience endangered species products from a Cargo for Conservation kit received earlier in the year.

8. Hunting

Species for which hunting is allowed on Kirwin NWR include waterfowl, turkey, mourning dove, pheasant, quail, prairie chicken, snipe, coot, cottontail rabbit, fox squirrel, and deer (archery only). Hunting pressure is generally highest for Canada geese and archery deer hunting, with occasionally heavy pressure for pheasant, quail, and duck. 1995 fit this general pattern.

Starting in January, hunting related public use was basically low, although goose, pheasant, and quail hunting seasons were open. Canada goose hunting attracted most of the hunters reported in January.

In April, the spring turkey season opened with a few people hunting the refuge. Due to the high water, turkey habitat was limited in the open hunting area. A few people did manage to take turkeys, but hunting pressure was light.

The fall hunts began in September with dove season. Due to steel shot restrictions, few people hunt doves on the refuge. A special teal season was offered in mid-September with little hunting pressure.

Archery deer hunting season began on October 1, with very little pressure. Hunting activity steadily increased, peaking during the rut in mid-November. Despite the limited habitat and lower deer numbers, a few hunters did manage to harvest some impressive bucks. Also in October, the first split of the duck hunting season opened. Hunting activity was comparable to past years, although the success was low because of low duck numbers.

The peak of the hunting activity began in November, when duck, Canada goose, pheasant and quail seasons opened. Dark goose hunting opened on the 4th with heavy pressure. 37 vehicles were counted in the waterfowl hunting area on opening day. The following weekend duck and pheasant seasons opened, again with above average numbers of hunters. Quail season opened on the 18th, however, hunting pressure was beginning to lighten by then. During the remainder of the year, hunting pressure was low but steady.

In December, the Government furlough affected the hunting public when all hunting programs were shut down. Most hunters were understanding, however, there were several cases of sign vandalism and a few reports of archery hunters "sneaking" onto the refuge to hunt.

9. Fishing

The fishery in Kirwin Reservoir is managed by the Kansas Department of Wildlife and Parks through a Cooperative Agreement with the Service. Major game species present include walleye, largemouth bass, black crappie, white crappie, channel catfish, flathead catfish, bluegill and drum.

The return of water to Kirwin Reservoir in 1993 brought with it the promise of good fishing and the return of large numbers of fishermen. Walleye fishing was again the major draw to Kirwin Reservoir. Walleye fishing along the dam started in April and steadily improved through May peaking in early-June. Just prior to Memorial Day weekend, large number of walleye were being caught. Word quickly spread that Kirwin was the place to go to catch lots of walleye. Estimated daily boat use on weekends was 150 to 200 boats, from across Kansas and Nebraska. The fishing success had slowed considerably by the end of June, but there were still many days with 50 to 75 boats on the water. By July, the walleye fishing had slowed considerably, although the fishermen that were patient and knew what they were doing were still getting limits of fish. During the remainder of the year the fishing pressure was light with occasional busy weekends.

In addition to the walleye fishing, largemouth bass fishing continues to attract attention. In 1995 four bass tournaments were held on Kirwin NWR. These were all by regional bass clubs with small memberships and usually limited to less than 20 boats. It appears that Kirwin will continue to attract this type of fishing, as the largemouth bass fishery is in excellent shape.

In conjunction with National Fishing Week and Kansas Free Fishing Day, a fishing clinic was held for area youngsters on June 10. Presentations were given on fishing equipment, knot tying, fish identification, and the theme of the day "Get Hooked on Fishing, Not on Drugs". The clinic was sponsored by the Service and the Kansas Department of Wildlife and Parks.



Steve Price, Kansas Department of Wildlife & Parks helps kids bait hooks (eventually). BDJ



The sweet smile of success. BDJ

11. Wildlife Observation

Fall and early winter are the most popular times for wildlife observation. While hunting remains the primary fall activity, there are many area people who just enjoy a drive through the refuge to view deer, turkey, geese, pheasant, and bald eagles.

13. Camping

Aside from hunting and fishing, camping is one of Kirwin's most popular recreational activities. Camping generally peaks during the fishing season, with Memorial Day weekend being the busiest. Memorial Day weekend in 1995 was very eventful for campers at Kirwin. In addition to fighting for space with all the boat trailers, they also had to fight rapidly rising water after heavy rains fell in the area. Many campers moved two or three times during the weekend. Many simply packed up and went home. Camping pressure for the remainder of the summer was lower than normal, as many campsites remained flooded or unusable through July.

17. Law Enforcement

Schoonover and Johnson attended the annual Law Enforcement Refresher in Tucson, Arizona in February and the Law Enforcement Refresher at Quivira NWR in August.

During the period in June when the walleye were biting, there were numerous reports of people double bagging and keeping short walleye (15" minimum). At this same time, the local KDWP CO took a position as boating enforcement officer for the northwest part of the state. This left no local State enforcement on the area. The numerous complaints finally were handled by a concentrated State effort on the 28th and 29th. The fishing had slowed by then and the effort appeared to be too much, too late.

During September, a growing law enforcement problem showed up when individuals were seen harvesting "snakeroot", the root of the black samson plant. A verbal warning was given as not many plants had been disturbed. A later survey of the area and other nearby sites revealed several large areas of native grass where digging had occurred. Patrols for this type activity will be stepped up in the future. The root is sold commercially for medicinal purposes.

In October, Johnson took part in a large scale Law Enforcement Road Block on Interstate 80 in Nebraska. Over 200 officers were involved in the effort, primarily directed at big game hunters returning from the mountain states.

In November, Schoonover and Johnson assisted Kansas Department of Wildlife and Parks officers with a roadblock in Glade, KS, concentrating on pheasant, quail and goose hunters. Although traffic was slow a number of tickets were written for failure to leave proper identification on geese, improper license, and non-hunting violations.

19. Concessions

In June, a letter was requested by the attorney of a former concession owner, removing him from liability for the old concession area, specifically a cement picnic table that was part of the original concession site. The request was passed up to the Regional Office. Due to the fact that the Government had purchased the concession contract and all structures, there was no liability on the part of the past owner.

I. EQUIPMENT AND FACILITIES

2. Rehabilitation

Maintenance Management System money was received in FY 95 to complete an office

remodeling project. The project will involve converting three bays of the office building that are currently vehicle storage into office space and converting the office area into an environmental education room and an interpretive display room.

Planning was started early in the year with contracts going to prospective bidders in July. The project was started in October with removal of asbestos sheeting from the ceiling of the old shop bay. All sheetrock and ceiling tiles were also removed. Although the materials did not contain asbestos, the compounds used to install them did. This material was removed by a company from Kearney, NE. The primary contractor for the remodeling is CM of North Dakota, Inc., from Fargo, ND. The majority of the work is being done by a subcontractor from Oakley, KS. At the end of year the project was still in the demolition stage. Completion is expected in early 1996. Temporary office space was set up in the shop during the remodeling.

Work was also done on the refuge quarters, including new roofing. In September, a local contractor was hired to do work in the quarters bathroom. A window was removed, a new tub and surround installed and water damage was repaired in the wall.

3. Major Maintenance

Repair of flood damaged facilities, including roads, fences, and public use facilities, kept the staff busy in 1995. Repair of public roads continued to be a priority. Starting in March, rock was hauled and spread on several soft spots along the north shore road to make it passable. Then came the Memorial Day flood. Road damage was extensive following this flooding. In July, a contractor from Phillipsburg was the successful bidder of an emergency road repair project. This required repairs to a culvert crossing that had been overtopped by flood waters and severely damaged. Other flood damaged areas continued be repaired force account. In September, a contractor from Hill City received the bid for the second phase of the road repair project. Numerous stretches of road were reshaped and rerocked by this contractor.

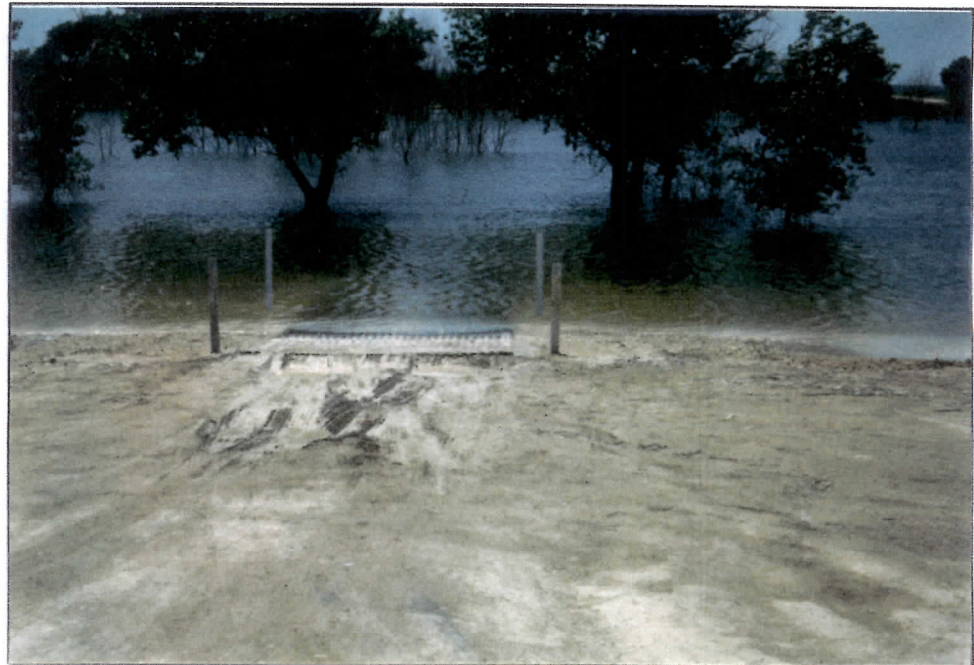


Flood water over road on Bow Creek northeast of Silver Bridge. BTS



Road after flood water receded. BTS

Through June and into July, the entire staff was kept busy trying to keep open the only boat ramp available to the public. As the water receded a temporary landing mat extension had to be repeatedly rolled up, moved and reinstalled at a lower level. This was done five times in June and three times in July. By the end of July the water was back down below the top of the concrete ramp. In October, a concrete high water extension was added to this boat ramp. The extension was designed so that it can be removed and placed at the low end of the ramp as the reservoir water level recedes.



South Shore boat ramp with APS extension. BTS

6. Computer Systems

In January, Dell was contacted about several recurrent problems with the 486 computer received in late 1994. Problems included occasional lock up of the hard drive during boot-up,

hard drive lock up in Quattro Pro, and destruction/loss of data on small diskettes. Past diagnosis by Dell revealed no problems. An on-site technician was finally sent out. After replacing several major components, no further problems came up.

In October, three new computers were purchased with year-end money. Two Ultra desktop computers and one Ultra notebook computer were received through a local vendor in Phillipsburg.

7. Energy Conservation

The following table compare 1994 and 1995 energy consumption.

Table 4 - Energy Conservation - Kirwin NWR

	Gas	Diesel	Electricity	Propane	Mileage
1994 Use	1,153	1,259	18,708	2,210	38,864
1995 Use	1,695	2,542	20,390	2,530	36,699
Increase Decrease	+542	+1,283	+1,682	+ 230	- 2,165
Increase Decrease %	+ 32%	+50%	+ 08%	+ 09%	- 06%

J. OTHER ITEMS

1. Cooperative Programs

Kirwin has three cooperative agreements that affect the refuge.

These agreements are:

A Cooperative agreement between the Bureau of Reclamation and the Fish and Wildlife Service was approved on June 17, 1954. this is the basic agreement which allows the refuge, as an overlay on the reservoir, the management of habitat and wildlife resources.

A Cooperative agreement between the Bureau of Reclamation and the Fish and Wildlife Service was approved on October 18, 1985. This is actually a revision of the original 1954 agreement, and gives the Service sole administrative jurisdiction of refuge lands and water, whereas the previous agreement required Bureau concurrence.

A Cooperative agreement between Fish and Wildlife Service and the Kansas Department of Wildlife and Parks (KDWP), was approved on June 28, 1954, dealing with public hunting and

fishing on Kirwin NWR. The agreement gives KDWP jurisdiction over the reservoir fishery and a cooperative role in establishment of public hunting programs. Law enforcement is also to be handled cooperatively.

2. Other Economic Uses

A Special Use Permit was issued to bee keeper Jerome Bydalek. He maintains a total of 112 bee hives at three locations on the refuge. An annual fee of \$1 per hive was assessed.

3. Items of Interest

In November, Biological Technician Floyd Truetken competed in the Tulsa Marathon in Tulsa, Oklahoma. He recorded a time of 2:47:00, for a sixth place finish (out of 500 runners). Very impressive for his first marathon.

4. Credits

Schoonover: D. 2 & 3, F.4

Johnson: A, B, C, D, E, F, G, H & I

Stockman: E.1-6, E.8, I.7, J.1,2&3, Tables and final assembly