

NWR -1984

REVIEW AND APPROVALS

WAUBAY NATIONAL WILDLIFE REFUGE

Waubay, South Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1984

Refuge Manager

Date

Refuge Supervisor Review

Date

Regional Office Approval

Date

INTRODUCTION

Waubay National Wildlife Refuge was established in 1935 and is located in northeastern South Dakota. The name "Waubay" is of Sioux Indian origin which means "a nesting place for birds". Over 232 species of birds have been observed on the refuge. All five species of grebes commonly found in the U.S. nest at Waubay.

The topography is gently rolling hills with numerous wetland basins and large, shallow prairie lakes. The area contains a higher density of wetlands than found in adjacent physiographic regions within South Dakota. The refuge contains 4,649 acres and is comprised of 1,998 acres of grassland, 1,722 acres of wetlands, 665 acres of native timber and shrublands, 241 acres of cropland, and 23 acres of administrative lands (roads, buildings, and parking lots).

Refuge management is primarily directed toward waterfowl and other migratory bird production, to provide sanctuary for migratory birds during spring and fall migrations, and to provide wildlife-oriented public use.



The splendid colors of fall on Waubay NWR. October, 1984.
JWK-21-84.

SD-WBS-680

UNITED STATES
FISH AND WILDLIFE SERVICE

97°18'



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A. HIGHLIGHTS

Construction of the new office/visitor facility began in April. At year's end, the job was 99% completed. (Section I.1).

Administrative problems associated with the Ordinary High Water Mark determination are continuing. As a result of the mark, we had to request the State Game, Fish, and Parks to establish a State Game Refuge to protect lands that couldn't be protected under Federal law. (Section F.11).

Two personnel changes occurred in the permanent staff, both assistant managers. (Section E.1).

Major accomplishments were made in upgrading the station interpretive program. (Section H.1, H.2, H.4, H.6, and H.7).

South Dakota Public Television spent a day filming Eastern bluebirds and interviewing refuge personnel for a documentary to be aired next spring. (Section H.1).

B. CLIMATIC CONDITIONS

January, 1984, was a welcome change from December, 1983, which went down as one of the coldest on record. January's warmer temperatures got to a high of 42°F, while still trying to hang onto December's chill by recording 11 days below the zero mark and recording the year's extreme low temperature of -29°F. The months following showed a slow climb to higher temperatures with August recording the year's high of 96°F.

A total of 37.7 inches of snowfall was received during 1984, with no more than 12 inches on the ground at any one time. This depth is recorded as being on the ground during the first two days of the year. All snowcover was gone by March 24 with October 19 bringing the first snowfall. By year's end, 4 inches of snow was back on the ground.

First killing frost occurred on September 26 recording a temperature of 23°F.

All refuge lakes were free of ice on April 16 and freeze-up occurred on November 29.

Area wetlands filled to overflowing capacity with the progress of the spring thaw. This condition was short-lived; with the disappearance of the wetland's frost-seal, water levels dropped. As levels continued to lower, June, with its near record-breaking precipitation, brought water levels back to their earlier spring condition, a condition that has not been seen in many years. As the warmer summer months progressed, water levels again went down. Again, the above average precipitation in August and October did much to allow most area wetlands to contain water at freeze-up.

The following table shows how 1984 fared against the station's historical precipitation record as reported to the National Oceanic and Atmospheric Administration.

Table 1. 1984 precipitation levels as it compares with high and low records of past years.

<u>Month</u>	<u>1984 Precipitation</u>	<u>30 Yr. Ave.</u>	<u>Record Levels/Years As Maintained by Station Weather Rec.</u>	
			<u>Lowest/Year</u>	<u>Highest/Year</u>
JAN	.45	.49	0-1974	1.51-1969
FEB	.56	.52	T-1968	1.55-1969
MAR	1.10	.82	.03-1959	3.73-1977
APR	2.76	1.93	.31-1980	3.92-1952 & 53
MAY	1.32	2.98	.56-1967	8.31-1962
JUN	6.82	3.67	.94-1974	8.64-1971
JUL	1.45	2.88	.45-1976	8.58-1962
AUG	3.13	2.56	.38-1958	6.60-1966
SEP	1.21	1.59	.12-1972	5.62-1965
OCT	3.76	1.42	T-1964	5.09-1971
NOV	.06	.70	T-1976 & 80	2.39-1970
DEC	<u>.54</u>	<u>.79</u>	<u>.02-1974 & 82</u>	<u>1.41-1968</u>
Totals	23.16	20.02	2.81	57.35

D. PLANNING

2. Management Planning

The annual Water Management Plan was prepared and approved. Waubay Refuge has three water control structures which maintain water levels in accordance with the approved plan. Water rights on the meandered waters within the refuge are maintained by the State.

An update for the Fire Management Plan was also prepared.

A Sign Plan was written and approved. This plan will provide the basis for replacing all the entrance, information, and regulatory signs on the refuge. This will be accomplished in FY 85.

3. Public Participation

Public involvement in station programs is obtained during meetings with county commissioners, sportsman's groups, and local civic groups. In addition we annually sponsor a booth exhibit at the Day County Farm and Home Show. This two day event normally draws 2,000 to 2,500 visitors and provides an excellent medium for information exchange and feedback on refuge programs. More information can be found in Section H.6.

We also host a voluntary check station during the deer hunting season. Hunters and non-hunters alike stop-by for coffee and to talk about refuge hunting opportunities. This has proven to be valuable for the refuge staff and much appreciated by the public.

4. Compliance With Environmental And Cultural Resource Mandates

One Environmental Assessment was prepared for a refuge program this year. The EA was written to evaluate the impacts of allowing public access to an area where access was previously not permitted. We wanted to develop another hiking trail in conjunction with a scenic overlook. Our major concerns were wildlife disturbance factors and cultural resource considerations as there are two burial mounds near where the trail would be developed. Greg Rowlett, Regional Historic Preservation Officer, eventually gave us the go ahead from the CR standpoint, and we concluded a finding of no significant impact on the disturbance factors.

The major archaeological contract awarded last year to provide a site clearance for the new administration building, is still uncompleted. The contractor is nearing completion of the final report; the clearance from the SHPO's office was obtained prior to contract award.

The archaeological contractor reports finding some interesting things, especially in the faunal remains, including 9 species of fish, many reptiles and amphibians, many species of birds including passenger pigeons, and mammals including wolf bones. The largest volume of materials was that of bison remains.

5. Research And Investigations

Bryan Schultz, graduate student from South Dakota State University, is looking at the possibility of using cattle to control cattail proliferation in semi-permanent wetlands. This investigation is assigned the name: Waubay NR-84-"Cattail Grazing Study" (64590-001).



Graduate student, Bryan Schultz, washing and screening bottom samples collected from Jailbait Pond prior to turning in the cattle. June 8, 1984. JWK-11-84.

SN-WAY-681

Bryan initiated his field work in May. The grazing experiment was conducted on Jailbait Pond on the refuge and on a wetland on the McCarlson WPA. Before turning in the cattle, he took quantitative measurements on plant stem densities, benthic contents, water chemistry, waterfowl use, and others. He then confined the cattle to a portion of the wetland (treatment area) with the use of an "Australian" type electric fence. The cattle had to eat cattail because there was nothing else and no supplemental feeding was done except mineral block.

The theory is similar to that of crowd grazing Kentucky bluegrass; ie. intensively graze during the time period when the stored carbohydrate

reserves are at their lowest, hoping that the plant will not have enough stored energy to recover.

Ten head of yearlings were confined to the treatment area for approximately three weeks. The size of the treatment area was 2 acres. After the cattle were removed Bryan again took collections and quantitative information from both the treatment and control areas.

The response by wildlife and differences in the quantitative measurements will not be evaluated until next spring and summer. Quantitative measurements were not taken on the cattle. Although they appeared to suffer no ill effects, weight gain or loss information would have been important information when trying to convince a cooperator to confine his cattle to a cattail-choked wetland on a WPA. Results of the study will be available next year.



Jailbait Pond as it looked before the cattle were turned in on the cattail... June 7, 1984. JWK-8-84.



Jailbait Pond as it looked shortly after the 10 head of yearling steers were removed. The treatment (grazed) area is in the center; the control areas are on either side. July 11, 1984. JWK-13-84.

50-VBN-682

E. ADMINISTRATION

1. Personnel



1. John W. Koerner, Refuge Manager, GS-11, PFT
2. Ralph L. Bryant, Assistant Refuge Manager, GS-9, PFT, EOD 5/13/84
3. Wm. J. Kurtenbach, Assistant Refuge Manager, GS-7, PFT, Transfer 6/10/84
4. Michael H. Getman, Assistant Refuge Manager, GS-7, PFT, EOD 11/11/84
5. Dennis D. Okroi, Refuge Assistant, GS-5, PFT
6. G. Roger Waddel, Maintenance Worker, WG-6, PFT
7. Richard Dolney, Laborer, WG-2, PPT
8. Emil J. Gruba, Laborer, WG-2, PPT
9. Michael J. Rabenberg, Bio. Tech., GS-5, Temporary
10. Lana J. Lunde, Bio. Aid, GS-4, Temporary
11. Steven A. Hicks, Bio. Aid, GS-4, Cooperative Education Student
12. Scott Mikkelson, YCC, EOD 6/4/84; Terminate 8/10/84
13. Therese Cumiskey, SCA Volunteer, EOD 5/14/84; Terminate 9/4/84
14. Kenneth Husmann, Refuge Volunteer
15. Harvey O. Smith, Assistant Refuge Manager, GS-9, Resigned 2/4/84

SD-WBY-683



Mike Getman joined the staff in November as an assistant manager, coming from the BLM in Meeker, Colorado. We were doing easement ground checks when he came on board and he jumped right in and helped. November 21, 1984. RLB-7-84.

SD-WBY-684



Jack Cantwell, normally from Sand Lake Refuge, spent most of the summer and fall at Waubay admirably serving as the Building Inspector for our new headquarters building. December 13, 1984. JWK-20-84.

SD-WBY-685

Two personnel changes took place in the permanent staff this year. Harvey Smith, primary assistant manager at Waubay since 1977, left to rejoin the Corps of Engineers in February. Smith wanted out of the Fish and Wildlife Service shortly after he arrived at Waubay and it was unfortunate for all concerned that it took him 7 years to make it.

Bill Kurtenbach transferred to Red Rock Lakes NWR in June. Bill had been at Waubay since 1978 and received a well deserved promotion to GS-9 at Red Rocks. All of us enjoyed working with Bill and we wish him well in his new assignment.

Ralph Bryant transferred to Waubay in May to take over as primary assistant manager. Ralph and his family transferred from Quivira where Ralph had been since 1979.

Mike Getman joined the staff as assistant manager in November to take Bill Kurtenbach's place. Mike came to Waubay and the Fish and Wildlife Service from the BLM at Meeker, Colorado. Mike is a native of Boulder, Colorado, and a wildlife graduate of Colorado State University.

Ralph and Mike are both digging right in and significantly contributing to our program.

Richard Dolney and Emil Gruba were appointed to permanent part-time appointments last year, Richard on a TAPER and Emil on a VRA. During 1984 they both worked from April 2 until November 9.

Mike Rabenberg returned again this year working from April 2 until November 9. Mike did his usual fine job especially in setting up and coordinating our nest dragging study.

Steve Hicks recently received an appointment as a Cooperative Education Student and came to Waubay for his first work assignment. Steve participated in many aspects of refuge work ranging from nest dragging to weed spraying. Steve's next work assignment will be at Quivira Refuge for the summer of 1985.

2. Youth Programs

Waubay has one YCC slot. This year, prior to the YCC recruiting season, one of SD's U.S. Senators sent a letter to every school in the state telling of YCC opportunities in South Dakota with the Service. We, along with probably other field stations in the state, were inundated with requests and applications. Scott Mikkelsen was finally selected by a random selection process and worked for 8 weeks during June and July. Scott was an excellent worker, participating in general maintenance, lawn care, nest dragging, fence maintenance, litter control, etc. He has entered a wildlife curriculum in college and hopes to work for the Service on a professional level some day.

Table 2. Five year comparison of station staffing.

Year	Permanent		Temporary	FTE's
	Full-Time	Part-Time		
FY 84	5	3	2	7.67
FY 83	5	2	1	6.67
FY 82	5	1	2	7.20
FY 81	3	3	3	7.67
FY 80	3	3	3	7.50

3. Other Programs

This is the first year we have participated in the Student Conservation Association (SCA) Program. We were able to select a volunteer from a list of applicants supplied by the SCA. Our responsibilities to the volunteer were to provide lodging, subsistence (paid to the volunteer through the SCA), and meaningful work experiences.

We selected Therese Cummiskey to work during the summer of 1984. Since we had no lodging accommodations available, Therese was housed at the nearby NE-SO-DAK Bible Camp and we paid the lodging bill.

Therese worked from the first of May until September 7. She worked primarily in the area of developing on-site interpretive programs, especially in development of a "Guide to Outdoor Classroom Opportunities on Waubay NWR".

The Guide, approximately 90% complete now, will be distributed to local schools and summer youth camps for their use. Therese was a pleasure to work with; she has a witty personality and she fit in well with our staff. More on her contribution can be found in Section H.2.

4. Volunteer Program

Kenneth Husmann, again this year, donated hundreds of hours on the Eastern bluebird nesting project. This year, Kenneth installed almost 100 bluebird houses, monitored them periodically, filled out nest record cards for Cornell, and tabulated this year's results. South Dakota Public TV came to the refuge to do a documentary on the volunteer program and the bluebird project. More on the documentary can be found in Section G.7.

5. Funding

Waubay Refuge and Wetland Management District are funded as a single unit and operations on both are covered under one Annual Work Plan. We estimate that approximately 75% of our annual budget, manpower, equipment costs, and discretionary dollars are spent managing the WMD.

In addition to a healthy increase in our O&M budget, thanks mostly to ARMM funding, we also had some carryover Jobs Bill monies for work associated with the new headquarters building, and Construction funding. The ARMM funds were project specific, but most could be completed force account, giving us more flexibility. The Construction funds were also project specific, but were contracted, one for fence construction, and one for wetlands development. The following table shows a history of station funding over the past 5 years.

Table 3. Station funding from 1980 through 1984. (Money in thousands.)

FY	O&M Allotment	Construction Funds	Jobs Bill	Rent \$ (1994)	Total S/D Worked	Salary Costs
84	266.5*	40.0	-	2.1	1995	158.0
83	220.0	42.0	500.0	1.1	1872	138.9
82	173.9	-	-	5.4	2002	141.7
81	178.3	29.0	-	3.6	1839	130.3
80	157.0	343.0	-	-	1910	117.3

* Includes \$72.0 ARMM funding.

6. Safety

No lost time accidents occurred in 1984 bringing the station safety record to 2,216 days. Station safety meetings are held monthly and all station personnel attend. Assistant Manager Bill Kurtenbach acted as the Station Safety Officer prior to his departure, and Assistant Mike Getman assumed this post upon his arrival.

The entire staff attended a 4 hour Defensive Drivers Course in Aberdeen put on by the BIA. The other 4 hours needed for refresher training was made up through monthly safety meetings.

Two minor injuries occurred during the year. Richard Dolney suffered a sprained wrist while building fence, and Roger Waddel suffered a burned instep on his foot. Roger was using a cutting torch and a molten piece of metal dropped inside his boot. He was in an awkward position which resulted in his pant cuff riding up over his boot top. Both Richard and Roger received medical attention for their injuries.

A deer hunter was shot and killed by another deer hunter just a few miles north of the refuge. The accident occurred prior to sunrise. The victim was crouched over sneaking up on a deer. Another hunter, 275 yards away, saw this person, thought it was a deer, and fired at it. The first shot missed, the second shot was fatal. The victim was not wearing any hunter orange. Since this accident, the Game, Fish, and Parks Commission has proposed the mandatory use of some orange clothing.

7. Technical Assistance

Monthly precipitation records and weekly weather summaries (daily high, low, and precipitation) are maintained for NOAA with all submittals going through their Sioux Falls office. We also maintain daily records of soil temperatures down to six feet deep.

Other technical assistance activities accomplished on an annual basis are: (1) the Waubay Refuge Christmas Bird Count is conducted in conjunction with the National Audubon Society, (2) bird nest record cards are prepared and sent to the Cornell Laboratory of Ornithology, (3) Breeding Bird Survey routes are conducted (two in the district) in conjunction with the Migratory Bird Habitat Lab in Laurel, MD, (4) two dove routes are annually run for the Office of Migratory Bird Management (5) shorebird census routes are run in cooperation with the Manomet Bird Observatory, Manomet, MA, and (6) seasonal bird observations are sent to the South Dakota Ornithological Union for printing in their quarterly publication.

We also assisted the South Dakota Department of Game, Fish, and Parks in obtaining weight and measurement data on harvested Canada geese. We also collected tail fans. The information will be used to try to determine the population source of the geese migrating through NE South Dakota.

Lastly, we participated in a technical workshop for Soil Conservation Service employees by presenting ideas and techniques for uplands management. The workshop was held in Watertown and attended by about 40 SCS employees.

8. Other Items

A contract was awarded in the fall of 1983 to build a new office/visitor facility. It was decided to wait until the following spring to start work. So in April of 1984 the project was initiated and construction continued through the end of the year. The final inspection was held on January 8 and 9, 1985. More on the new administration building can be found in Section I.1.

The administration of the refuge was changed slightly this year with the establishment of the Waubay State Game Refuge. This action was necessary to protect those portions of the refuge that fall below the Ordinary High Water Mark, as set by the State. More on this can be found in Section F.11.



SD-WBY-686

The new headquarters building takes shape. This shows the new building in conjunction to the existing headquarters. A new public access road comes in from the right to join the service road between the new building and the old headquarters. July 23, 1984. Bryan Schultz photo.

Refuge Supervisor Jim Matthews and Regional Fire Coordinator Ned Peabody came to the station to conduct a program and operational inspection on April 24, 25, and 26. As part of the inspection, we visited a number of WPA's in southern Day, Codington, and Clark Counties. Regional Interpretive Planner Carol Lively joined us on April 26 to discuss planned interpretive concepts for the refuge.

F. HABITAT MANAGEMENT

1. General

Habitat management on the Waubay Refuge is aimed primarily at increasing waterfowl production. The variety of habitats, i.e., wetlands, grasslands, lakes and woodlands, allow for a variety of management practices to be applied for the enhancement of the wildlife habitat. The results of the different management practices applied are influenced directly by the climatic conditions that occur both before and after application.

For several years prior to 1984 wetland conditions on the refuge were generally poor. This year, the limited snowmelt was accompanied by spring rains that improved the wetlands to the best they have been in many years. Abundant June rains continued to improve the wetlands and stimulated a favorable vegetative growth on the uplands. The various management practices applied are discussed in their appropriate sections.

2. Wetlands

Approximately 1,700 acres of wetlands are present on the Refuge. They vary in size from small temporary and seasonal basins to large open lakes. Water levels increased on nearly all wetlands from March through July. Warm summer months caused many of the seasonal and semi-permanent basins to go dry. Most of these basins again held some water following the substantial rains received in August and October.

Three wetlands have manageable water levels by stop-log water control structures. These are Swan Pond, Barse Slough and New Slough. Each were filled in April and remained near the full levels until freeze-up. New Slough was drained in November to reduce muskrat burrow damage to the road shoulder.

The poor water conditions over the past few years have resulted in many of the wetlands becoming totally choked with emergent vegetation, primarily cattail and phragmites. Portions of three small cattail choked basins near the refuge headquarters were treated with Rodeo (glyphosate) herbicide by hand sprayer for a first time experimental trial. The chemical was applied on August 16 and visual effects were observed seven to ten days later. The areas treated will be evaluated over the next few years. Perhaps in the future many of the non-productive wetlands will again be attractive to waterfowl and result in increased production.

Spring Lake and Hillebrand Lake each were six inches higher at freeze-up this year than at freeze-up in 1983. (See Table 3. 1984 Monthly Water Level Readings.)



Assistant Manager Bryant applying glyphosate (Rodeo) to dense cattail vegetation on a small wetland basin near the refuge headquarters. The small sprayer is pulled by the Honda 3-wheeler. August 16, 1984, MJR-16-84

50-WBY-687



The yellowing of the cattail was observed ten days after the application of the chemical Rodeo. August 26, 1984, MJR-18-84.

50-WBY-688

Table 3, 1984 Monthly Water Level Readings - Waubay National Wildlife Refuge

Date Recorded	Water Units					
	Barse Slough	Spring Lake	Hillebrands Lake	Waubay Lake	Centerwoods Pond	Swan Pond
Jan.-Apr. Freeze-up Elevations	1805.78	1785.03	1781.29	1780.56	1794.53	1783.86
May 3	1806.46	1786.08	1782.20	1781.27	1795.51	1784.97
June 8	1805.90	1785.98	1782.15	1781.52	1795.51	1784.87
July 10	1806.00	1786.11	1782.38	1781.52	1795.50	1784.91
August 1	1805.49	1785.86	1782.05	1781.27	1795.08	1784.63
September 11	1805.04	1785.50	1781.73	1780.95	1791.91	1784.26
October 6	1805.04	1785.40	1781.60	1780.87	1791.54-dry	1784.14
Nov.-Dec. Freeze-up Elevations	1805.94	1785.64	1781.96	1781.09	1792.04	1784.41

An experimental crowd graze of cattail was applied on Jailbait Pond, attempting to thin the dense emergent vegetation. The experiment was a research project conducted by South Dakota State University student Bryan Schultz and is discussed in Section D.5.

3. Forests

The refuge contains about 665 acres of native hardwood timber. Oak, basswood, green ash, American elm and cottonwood are some of the major tree species present in the woodlands.

Dutch elm disease is killing many of the American elm trees. The dead trees are valuable to numerous species of wildlife, especially cavity-nesting birds, so only the ones that pose a potential safety hazard are removed. The disease can be slowed by application of insecticide and fungicide but it cannot be stopped.

The Regional tree spade was used to transplant several trees into the refuge picnic area and near the new office building. These trees were watered regularly throughout the growing season to try to give them a good start.

4. Croplands

Farming operations involve 241 acres of which 206 acres is accomplished by two cooperative farmers. The remaining 35 acres is completed by force account. The primary crops are corn, millet, barley and rye (Table 4). The croplands provide a protected feeding area for waterfowl, deer, resident birds and other migratory birds. The refuge share of corn is left standing. The millet is swathed and remains in the field until ten days prior to the hunting season. It is then baled into large round bales and distributed for winter food for resident wildlife.

The force account fields are planted to rye for green browse and millet overseeded with sweet clover. The millet is mowed by sicklebar and is left for waterfowl. The sweet clover will be plowed under as green manure the following spring.

This year, 42 acres (HA-2) that was previously corn was planted to alfalfa with an oats nurse crop. By using alfalfa, this area will be available for farming if a future need arises. During the interim, it will serve as nesting cover as well as adding nitrogen to the soil. The cooperator will be permitted to cut the alfalfa once each year after July 5.

No-till winter wheat was drilled into 25 acres of barley stubble on farm unit HA-2B. Weed control with Roundup herbicide was applied one week prior to planting.

Table 4. Summary of refuge farming operations.

Unit		Acres	Crop	Type of Farming	Gov't. Share	Purpose
HA-1	A & B	31	Corn	C	33%	Left standing
HA-2	A	42	Oats/Alfalfa	C	-0-	Nesting cover
HA-3	A	26	Fallow/Rye	C	-0-	Fall green browse
	B	25	Rye	C	-0-	Cooperator's
	C	31	Millet	C	30 bales	Winter food
HA-4	A	26	Corn	C	50%	Left standing
	B	25	Barley/Fall No-Till Wht.	C	-0-	Nesting cover
HA-5	A	11	Rye	FA	100%	Green browse
	B	11	Millet*	FA	100%	Waterfowl food
HA-7	A	7	Millet*	FA	100%	Waterfowl food
HA-8	A	6	Rye	FA	100%	Green browse

* - Overseeded with sweet clover. Green manure crop for 1985.

C - Cooperative Farming

FA - Force Account Farming

The use of no-till planting of small grains insures that residual standing cover is present for upland bird nesting. There are many types of no-till drills that leave varying amounts of undisturbed stubble. A Lilleston 9680 No-Till disc type drill was used on the refuge barley stubble field. Very little surface disturbance was observed with this drill.

In contrast, a Concorde Air Seeder was used on the Kriech Waterfowl Production Area, Day County, SD, in millet stubble. This type of seeder has a 12 inch row spacing with 10 inch sweeps that under cut the soil except for a two inch space. Very little standing residual vegetation remained for nesting cover. This drill should probably be classed as a conservation-tillage implement rather than no-till. Other no-till drills that were recommended by Soil Conservation Service Conservationists were the Haybuster 1206 and 106 models.



A Lilliston no-till drill was used to plant winter wheat into barley stubble on refuge farm unit HA-2B. Little surface disturbance was observed. August, 1984. MJR-19-84.

SD-WBY-689



No-till winter wheat on Kriech WPA, Day County. The Concorde Air Seeder used on this field left very little residual vegetation standing that can be used by nesting waterfowl next spring. November 13, 1984. RLB-22-84.

SD-WBY-690

5. Grasslands

Refuge grasslands are managed primarily to produce optimum nesting habitat for waterfowl. There are 1,737 acres of native grassland, 39 acres of restored natives, 194 acres of introduced tame grasses and 28 acres of dense nesting cover. Techniques such as grazing, prescribed burning, farming, interseeding and chemical application are used to manipulate the grasslands to achieve the desired plant composition and vigor. Timely rains during the growing season greatly benefit the vegetative growth during the year. The different management practices are discussed in their appropriate sections.

Western wheatgrass was interseeded on July 13 into a one acre low area that is slightly alkaline on the former land strip. The John Deere power no-till drill was used to place the seed in the sod. The entire six acre landing strip received a prescribed burn/Roundup/interseed with switchgrass treatment in 1983 with excellent results except for the low alkaline area.

One-half acre of warm and cool season native grasses was seeded north of the new office over the geothermal well field in November.

7. Grazing

Refuge grazing units G-3 and G-8 were grazed between April 18 and June 15 to put pressure on invading cool season grasses and to remove the matted mulch accumulation. Area G-3 is a 110 acre unit that was grazed at a rate of 1.44 AUM's/acre. G-8 contains 115 acres and was grazed at a rate of 1.2 AUM's/acre. Refuge grazing receipts totalled \$2,922.36. The early grazing increased the attractiveness of temporary and seasonal wetlands to breeding pairs of waterfowl. The warm season native grasses responded favorably to the graze with increased plant vigor and seed production.

The Savory Grazing System was demonstrated at a workshop held at Fergus Falls, MN attended by Assistant Manager Bryant. The short-term rotational system is aimed at increasing forage production and beef production without overgrazing the area. A higher stocking rate with increased weight gains makes this a very useful system to cattle producers. The periodic grazing as the livestock are rotated through the system keeps the grasses in a vegetation producing stage by suppressing seed production. A sufficient amount of cover is present throughout the area which is also beneficial to wildlife.



The portion of this wetland basin in grazing unit G-3 was opened up and more attractive to breeding waterfowl pairs after the early spring graze. June, 1984. JWK-12-84.

9. Fire Management

SD-WBYL 691

None of the prescribed burn areas that were proposed to be completed in 1984 were accomplished. The proposals along with a few additional areas will be re-submitted in 1985.

The refuge staff responded to a fire one-half mile east of the refuge. An R.V. motor home was totally engulfed when we arrived. The Waubay Volunteer Fire Department arrived at the same time and extinguished the blaze.

No wildfires occurred on the refuge in 1984.

10. Pest Control

Fifty-eight acres were sprayed with 2, 4-D to control Canada thistle. The areas were sprayed at a rate of one pound of active ingredient per acre. About five acres of Canada thistle were mowed around the edges of wetland basins to prevent seed spreading.

As previously mentioned in the Wetlands Section the chemical Rodeo (glyphosate) was applied to cattails on a portion of three small wetlands near the refuge headquarters.

Also about 57 acres of cropland was treated with Atrazine by cooperative farming permittees in relation to the planting of corn.

Refuge personnel attended a pesticide update training session at Aberdeen in December.

11. Water Rights

The State of South Dakota has been trying to establish an Ordinary High Water Mark (OHWM) on Waubay Lake (adjacent to the refuge) and three internal meandered lakes for nearly three years.

First, a little history on what's taken place so far:

During 1982, the South Dakota Department of Water and Natural Resources tried to establish an Ordinary High Water Mark on Waubay Lake and three refuge lakes - Spring Lake, Swan Pond, and Hillebrands Lake. Since all are meandered, the FWS does not own the lake beds in fee title.

State law provides that above the high water mark, as set by the State, the riparian owner has absolute right and total use of the land. Below the low water mark, as set by the State, the State has absolute right and total use. The strip of land and/or water inbetween is where things get sticky. State law says that below the OHWM, the riparian owner may use the land at his discretion, but he may not interfere with the public's right to enjoy certain recreational pursuits such as hunting, fishing, fowling, boating, etc.

After careful study of this issue, the Regional Solicitor's office has determined that this state law will apply to lands that we have heretofore considered to be part of the refuge. In other words, uncontrolled public use may result and federal law will not apply because the Systems Administration Act (16 USC 668dd) applies only to land we own in fee title.

The magnitude of the problem that will result depends totally upon where the State sets the mark.

Their original recommendation was to set it at 1799.3 feet msl, nearly 20 vertical feet above the current lake level. A mark at this elevation would enclose approximately 80% of the Waubay Refuge within the OHWM contour. The Board met in Aberdeen to obtain public comment on December 10, 1982. They were met with a barrage of opposition because all riparian landowners around Waubay Lake are similarly affected. The Board adjourned without setting a mark.

They met next in July of 1983 to set the controversial OHWM but now their recommendation was lowered to 1787.0 msl in an attempt to appease the landowners. At this elevation, smaller portions of the refuge adjacent to Waubay Lake will be affected. This elevation also applies

to our three main lakes - Spring Lake, Swan Pond, and Hillebrands Lake (see map in front). However, the 1787' line will close on a contour around the lakes where the public does not have access. Since we own the land around the interior refuge lakes in fee title, the Systems Administration Act does apply. The only way a person could legally hunt on one of the interior refuge lakes is if he came in by parachute.

The Board approved the 1787' elevation; the landowners were happy; the FWS was not happy, but complacent, and everything appeared to be resolved. Next came word that the South Dakota Wildlife Federation (SDWF), with backing from National, was suing the Water Management Board because of the arbitrary methods used to establish the mark.

That's basically where things were at the end of 1983. It was obvious to us that the Federation had a good case and that the resultant mark would probably be established higher than 1787.0. Anything over 1790 would allow uncontrolled access to the internal lakes, which would ruin the refuge.

We decided the best option to solve our problem, at least in the short-run, was to go to the So. Dak. Game Commission and ask them to establish a State Game Refuge.

On March 12, 1984 a proposal was made to the South Dakota Game Commission to obtain state refuge status to protect the portion of Waubay NWR which cannot be protected with Federal law as a result of the Ordinary High Water mark designation on Waubay Lake. The proposal was accepted and the State Game Refuge was established in April.

The Waubay State Game Refuge is described as follows: The land and water below the OHWM associated with Hillebrands Lake, Spring Lake, and Swan Pond; that portion of Waubay Lake lying east of the dike located in Section 36 known as Windgate Arm; and the land (only) below the OHWM of Waubay Lake lying adjacent to Waubay NWR. See map in front.

The law suit finally came to trial in June. As expected, the judge ruled in favor of the Federation and ordered that the mark be moved up to the original elevation of 1799.3. The Water Management Board ultimately appealed the lower court decision to the State Supreme Court. That's where things were at the end of the year. Waubay Refuge is now protected by a combination of State and Federal law. This protection will remain intact regardless of where the OHWM ends up because the description of the State Game Refuge is tied to the OHWM and not a specific elevation.



The land of the Waubay Refuge adjacent to Waubay Lake below the Ordinary High Water Mark was designated as a State Game Refuge and was posted as such in September. November 24, 1984. RLB-7-84.

SP-WBY-692

12. Wilderness and Special Areas

The Hillebrand Lake Research Natural Area was designated as a Natural Area with the Society of American Foresters. The designation noted the exemplary occurrence of a bur oak cover type in the research natural area. Management options are no more restrictive under the SAF designation.

G. WILDLIFE

1. Wildlife Diversity

Waubay Refuge hosts a variety of birds and animals that are both resident and migratory. Wildlife observation is enjoyed by many refuge visitors throughout the seasons. Many of the 232 bird species that are listed as occurring on the refuge were observed during the year.

2. Endangered and/or Threatened Species

Bald eagles are visitors to the refuge each year during spring and fall migrations. Eight bald eagles were seen in March in one tree on a narrow pass between Hillebrand Lake and Waubay Lake. One to five eagles were seen regularly during the fall migration.

A sick bald eagle was found near the edge of Waubay Lake on Helwig Island in November. Initial first aid was administered at the Sisseton Raptor Rehabilitation Center. The bird was then transferred via Republic Airlines to the Raptor Rehab. Center at St. Paul, Minnesota where it died of acute lead poisoning. The bird was autopsied at the Fish and Wildlife Health Lab at Madison, Wisconsin. No visible lead fragments were observed in the gizzard, but extremely high levels were present in the liver and blood.



Assistant Manager Mike Getman holding the sick bald eagle that was found near the refuge on Waubay Lake. The bird was suffering from lead poisoning and died a few days later.
November 26, 1984. JWK-8-84.

SD-WEB-693

3. Waterfowl

The Northeastern South Dakota flock of giant Canada geese continues to grow as indicated by the So. Dak. Game, Fish, and Parks annual spring nesting pair survey figures (Table 5). The increasing population which is near 5,000 birds, according to an August survey, has resulted in an increase of depredation complaints. The most difficult of these complaints to handle occurs during the molting season when the adult birds and young are flightless. The boom guns and depredation flags usually work when the birds can fly, but are nearly useless when they can't.

Along with the depredation complaints are other pressures from hunters and landowners to liberalize the hunting restrictions that are currently imposed on this restoration flock. A meeting was held in September with 18 SD Game, Fish, and Parks personnel to discuss the management of the restoration Canada geese. It was determined that more biological data were needed before any regulation changes would be made. The refuge staff assisted in the collection of tail fans and weight, culmen and tarsus measurements of birds harvested in the area during the hunting season. An analysis of the samples collected should aid in determining the percent of restoration birds harvested.

The number of nesting pairs of giant Canada geese on the Waubay Refuge has remained fairly constant over the past ten years. This year, 13 of the 42 available platforms were utilized. Two other goose nests were located on nesting islands. Total production was estimated at 70 goslings.

The migrating geese were welcomed with much improved water conditions compared to the past several years. Fall populations of Canada geese peaked at 5,000 in early October. Snow geese were first seen on September 15. The most migration activity observed occurred on October 28. Thousands of white-fronted geese migrated through the area on October 13.

Migrating and breeding ducks also benefitted from the improved water conditions of the area wetlands. It was good to see the prairies speckled with glistening potholes that were hosting improved numbers of ducks. Pair counts recorded a total of 746 duck pairs on the refuge. This compares to an average of 674 pairs over the past 15 years. Duck production was calculated at 2,014 from pair count calculations. Mallard, bluewinged teal and gadwall were the most abundant pairs seen. Canvasback and redhead broods were observed on Barse Slough and Spring Lake.

Table 5. Population trends for NESD Resident Goose Flock.* (Branta canadensis maxima)

Year	NESD Indicated Pairs	Fall Count - Total Birds (Mid-August Count)	Indicated Pairs Refuge**
1984	562	4,940	16
1983	443	5,247	13
1982	Not Flown	3,888	13
1981	383	3,653	11
1980 (A)	342	3,608	18
1979	437	2,871	18
1978	305	2,433	13
1977	377	2,761	16
1976	400	3,354	11
1975	390	2,824	12
1974	381	2,423	15
1973	249	1,944	14

* All counts made by SD Game, Fish, and Parks.

** Count made by refuge personnel.

(A) 1980 count did not cover entire area surveyed in previous years.

A chain search of 173 acres on the refuge in mid-June resulted in the location of 21 duck nests. Thirteen nests were successful for an apparent hatching success of 62%. Predator management was initiated on the refuge in the fall of 1983 by public trapping of furbearers. The above nest density and success compares to nine nests found on 180 acres searched in 1983. Five of these nests hatched for a success of 55%.



Coop. Ed. Student Steve Hicks candling a duck egg during the waterfowl nest drag study. June, 1984. MJR-2-84.

SD-WBY-694

An intensive waterfowl nest dragging study was conducted on the Waubay Management District by refuge personnel. About 10% (1,460 acres) of all upland acres on the district were nest dragged twice at 30 day intervals in June and July. Details and results of the nest drag study are discussed in the Waubay WMD Narrative Report in Section G,3.

4. Marsh and Water Birds

About a dozen species of herons, grebes, egrets and bitterns are commonly seen on the refuge. Three pairs of red-necked grebes returned to the refuge in late April. They were seen regularly throughout the spring and summer. The nesting colony of Western grebes on Spring Lake provided an additional attraction to the refuge visitors and birdwatchers.

The rookery island on South Waubay Lake used by colonial nesting waterbirds was surveyed on June 5. Results were 603 white pelican nests, 280 double-crested cormorant nests, 15 California gull nests and 2 American avocet nests. Last year's totals were 686 pelican, 572 cormorant and 22 California gull nests.

Another small rookery island supporting pelican, cormorant, common tern, and American avocet nests was surveyed on Piyas Lake on June 18. A previously undocumented eared grebe nesting colony consisting of approximately 500 nests was also found.

5. Shorebirds, Gulls, Terns and Allied Species

Various species of shorebirds such as sandpipers, sanderlings, plovers, yellowlegs and killdeer are seen regularly along the shorelines of Spring Lake and Waubay Lake. Thousands of Franklin's gulls roosted on Spring Lake for a few weeks in October. Common terns, Forster's and black terns are also commonly seen during the open water seasons.

6. Raptors

Raptors common to the refuge include bald eagles, kestrels, great horned owls and marsh, red-tailed and Swainson's hawks. Other less frequent raptor visitors include golden eagles, short-eared and long-eared owls, goshawks and ferruginous, Cooper's, sharp-shinned, broad-winged and rough-legged hawks.

7. Other Migratory Birds

Bluebirds were first observed this year on March 31. This was the same day refuge volunteer Kenneth Husmann began erecting bluebird nest boxes. About 100 nest boxes were installed this year as compared to the 54 that were available in 1983. The nest boxes were mounted on steel sign posts. The numbers of bluebirds returning from their wintering grounds was far less than expected. Only nine bluebird nestings were recorded and produced 25 fledglings.

In addition to the bluebird nestings, there were 83 tree swallow nestings and six house wren nestings. Thirty-eight percent of the tree swallow nests were predated. Predator skirts were installed on the nine bluebird nest poles soon after nest initiation. No predation occurred on the bluebird nests.

Refuge personnel participated in two Mourning Dove Coo Counts and two Breeding Bird Surveys.

Seven participants conducted the Christmas Bird Count on Dec. 27. Twenty-seven species were observed for the third highest number since the count began at Waubay in 1969. Recorded for the first time in the 16 year history of the Waubay County were the American Kestrel, long-

eared owl, Northern (yellow-shafted) flicker, and hoary redpoll. Other unusual sightings included a snowy owl, rough-legged hawk, short-eared owl, rusty blackbird and pine grosbeak.

8. Game Mammals

The whitetail deer population in Northeastern South Dakota continues to steadily increase. A pre-season annual deer spotlight count on the refuge has been conducted since 1966 to provide an index which indicates a trend in the deer population. This year a record 142 deer were counted. Last year 96 were counted and the closest to this years total was 103 in 1977. One mule deer doe was seen in November.

10. Other Resident Wildlife

The refuge muskrat population remains at a very low level but a few more houses were seen on the marshes as winter approached. Pheasants and partridge were observed regularly as were fox, raccoon, skunks and woodchucks. Trapping of furbearing predators was initiated in 1983 and was continued this year with a good harvest.

15. Animal Control

Molting Canada geese and their flightless young caused several depredation complaints this year. Feeding ducks and geese in August and September on private croplands that had been swathed also required our assistance for their dispersal. Propane exploders and depredation flags were loaned out on a request basis.

17. Disease Prevention and Control

A sick bald eagle was found November 25 near the refuge on Waubay Lake's Helwig Island. It was sent to the Raptor Rehab. Center, St. Paul, MN where it died. The carcass was sent to the Health Lab at Madison, WI for necropsy. An extremely high level of lead poisoning was the cause of death.

About ten sick shorebirds were found in August along the shore of Waubay Lake but no serious outbreak of botulism occurred.

H. PUBLIC USE

1. General

Substantial progress was made during the year on the refuge public use program. The interpretive program was upgraded; we got a good start on the Outdoor Classroom Program; considerable media attention was focused on the refuge especially the progress of the new building; and plans were made to replace the refuge signs.

In addition to the many news releases we distributed to local newspapers, reporters from various newspapers visited us to obtain information on refuge programs for feature articles. Some of the resultant feature articles were about: the new office/visitor facility, nest dragging activities, the Student Conservation Association Volunteer, volunteers and bluebirds, the cattail grazing study, and the bald eagle death due to lead poisoning.



News reporters Dave Kolpack and Rick Hauffe (center) from the Watertown Public Opinion, get a briefing on nest-dragging operations from Mike Rabenberg (left) and Lonnie Schroeder (right). June, 1984. MJR-2-84.

SD-WBY-695

South Dakota Public Television also came to the refuge for a day to film sequences about our Eastern bluebird project and the Volunteers Program. They sat in a makeshift photo blind for half-a-day getting bluebird footage, then interviewed Manager Koerner and Volunteer Kenneth Husmann. The program will be aired in the spring of 1985.



South Dakota Public Television film crew setting up to interview the Refuge Manager about the Eastern bluebird project on the refuge and the Volunteer Program. The interview took place in the refuge picnic area. July 11, 1984. JWK-(KHH)-13-84.

SD-WBY-696

In addition, members of the staff attended numerous meetings to help foster community relations, to explain FWS programs, or to obtain public input in refuge programs. Following is a summary of those meetings:

- January
 - Exhibit at Day County Farm and Home Show, Jan. 11, 12.
 - Met with Congressman Tom Daschle and his Legislative Aid to discuss refuge management and policies.
 - Met with Senator Pressler's Legislative Aid to discuss refuge programs and policies.
- February
 - Met with Jack Opitz, Regional Supervisor of SD GF&P to discuss refuge programs.

- February - Met with Kay Cool, Jim Salyer and other GF&P personnel at Sand Lake NWR to discuss refuge programs.
- March - Attend Game, Fish, and Parks Commission Meeting in Rapid City to make a presentation on how the Ordinary High Water Mark will affect refuge operations. We also requested the Commission to establish a State Game Refuge. More information can be found in Section F.11,
 - Met with the Waubay Lake Owners Association to explain our position on the High Water Mark process.
- May - Attend Game Commission meeting at Blue Dog State Fish Hatchery.
- June - Attend court hearing on the Ordinary High Water Mark in Webster,
 - Met with Gay Simpson, State Waterfowl Biologist relating to changes in hunting proposals.
- July - Attend the summer meeting of the Wildlife Society at Roy Lake State Park.
- September - Refuge hosted a meeting with Game, Fish, and Parks personnel to discuss Canada goose hunting regulations.
- October - Met with Day County Planning and Zoning Board to obtain a variance to place a recognition sign.

2. Outdoor Classrooms - Students

We almost made it to the point of having an operational outdoor classroom program in 1984, thanks mostly to the efforts of our SCA Volunteer, Therese Cummiskey, with assistance from Carol Lively of Denver.

One of Therese's major responsibilities was to develop a "Guide To Outdoor Classroom Opportunities for Waubay NWR", and to field test the activities for feedback and improvement. During the 4 months Therese worked here, she developed 24 different activities or programs, and got a start on 6 others. The Guide will be completed by next year's SCA and implemented.

We have great potential for an outdoor classroom program. There are summer youth camps in the vicinity as well as a number of schools that have expressed interest in the program.



SCA Volunteer, Therese Cummiskey, orients a group from nearby NE-SO-DAK Bible Camp on some of the program activities that she put together for Outdoor Classroom opportunities.
June 19, 1984. RLB-84

The group partakes in the game "Oh Deer!" an activity developed by "Project Wild" which teaches the principles of habitat requirements of a deer population. The kids on the right are simulating a habitat need (either food, water, or cover), and the deer (kids on the left) are running toward the kind of habitat they need.
June 19, 1984. RLB-84.



SNLWBY-697

4. Interpretive Foot Trails

Work on a new interpreted foot trail was initiated this year. The area, known as the Spring Lake Overlook and Hiking Trail, will lead visitors to a scenic overlook of Spring Lake where the interpretive exhibits will be located.

During 1984, an EA was prepared to help resolve a potential conflict with cultural resources, the path of the trail was laid out, and the vehicle parking lot was constructed. Next year the trail will be finalized and the interpretation added.

6. Interpretive Exhibits/Demonstrations

The visitor contact station was replaced with a modern 3-sided kiosk. The kiosk was constructed for account by Maintenceman Roger Waddel. This structure will display three interpretive panels (one 3 X 6 feet, and two 3 X 4 feet). Roger also made some leaflet dispenser boxes that were installed in the kiosk.



Visitor contact station at the old headquarters as it looked before being replaced. August, 1984. JWK-14-84

This new three-panel kiosk provides a lot more interpretive information about refuge and FWS programs. August, 1984. TCC-1-84



Maintenceman Roger Waddel developed these leaflet dispenser boxes and incorporated them into the kiosk. Even though located at the old HQ site, this area will continue to be used as a public use site. August, 1984. TCC-1-84.

SD-W34-698

Last year we developed plans for 15 different interpretive panels. They were all received in 1984 so we have enough to rotate the displays to keep fresh material. Three of the panels are generic in nature; the other 12 are specifically about Waubay Refuge.

We also exhibited at three area Farm and Home Shows, - Day County, Britton, and Milbank. These activities reach a lot of people and provide them with an opportunity to ask questions about our program. We also reach people who are interested in easements or selling their land. The average draw during the two-day shows is about 2,000 people.

7. Other Interpretive Programs

Many interpretive talks and conducted tours of the refuge were accomplished this year. We obtained a copy of the film "The Duck Stamp Story" and used it many times with the addition of a slide program developed in the regional office, to commemorate the 50th anniversary of the Duck Stamp. We also conduct waterfowl identification clinics prior to the waterfowl season for many sportsmen's groups.

The Waterfowl Management Class from SDSU came to the refuge for a day of on-site exposure to refuge and waterfowl management.

8. Hunting

Archery deer hunting is authorized in South Dakota between October 1 and the end of the year. In years past, archery hunting on the refuge was allowed only after the rifle season because of a potential conflict with perimeter waterfowl hunters. During 1983, the archery season on the refuge was opened two weeks prior to the rifle season. Things went very well; we hosted lots of hunters, they had good success, and there was no conflict with off-refuge waterfowl hunters.

We expected and desired to do the same thing in 1984. However, because of the pending establishment of a State Game Refuge (see F.11 for more information) the archery proposal had to be made in April. We proposed opening the archery season on the refuge, including the State Game Refuge, on November 15. Two months after the archery regulations were set within the State framework, the rifle season was established in Day County. The rifle season was opened on November 17, giving the archers only two days prior to the rifle season.

Next year we will try to get it back to approximately two weeks.

During the two days, inbetween the rifle seasons, and after the rifle seasons, an estimated 110 archery visits harvested an estimated 10 deer.



A summer's experience as a YCC enrollee at Waubay paid big dividends for Scott Mikkelson during the refuge deer season. Scott bagged this nice 4-pointer shortly after starting to hunt. November 17, 1984. RLB-22-84.

This was the biggest buck taken on the refuge this year. The deer had a wide, heavy rack, weighed 178 lbs. field dressed, and was aged at 5½ years. November 18, 1984. RLB-22-84.



Goose hunting success adjacent to the refuge was not as good this year. These hunters got a couple of nice honkers thanks to the retrieval zone established a couple of years ago. October 20, 1984. JWK-13-84.

SD-WBY-699

The refuge is also open to rifle deer hunting in conjunction with state regulations. This year Day County had a split season and because of the over abundance of deer, some hunters were permitted to harvest two deer with one license. The two-deer licenses required that the hunter take a doe first, then he could take any deer. A total of 1,400 licenses were available in Day County and with the double licenses, a total of 2,000 deer could have been harvested.

A total of 210 rifle hunters on the refuge harvested 60 deer this year. The voluntary check station was operated during the weekends and hunters stopped by often for a cup of coffee, some advice, and to weigh their deer.

Waterfowl hunting is not permitted on the refuge, but surrounding private lands are hunted quite intensively. In addition, section lines and road rights-of-way are open to hunting. This year, hunting success adjacent to the refuge was slow. Consequently, hunting pressure was down also. Many people had successful hunts, however.

10. Trapping

The year 1984 represented only the second year in recent history that trapping had been allowed on the refuge. The primary objective of the program is to reduce populations of those species which negatively impact waterfowl production.

Trappers are randomly selected from a list of qualified applicants. Each selected trapper is then required to pay a \$100 flat rate to trap his unit. The trapper is allowed 100% of the fur he catches and is also granted a \$5.00 credit for each skunk caught on the refuge.

This year three trappers caught 67 red fox, 35 raccoons, 15 skunks, 11 mink, and 1 badger. This is considerably better than last year's results due primarily to the better weather. We believe that the removal of this number of nest predators will have at least some beneficial impact on waterfowl production, especially the removal of raccoons, skunks, and mink. We also authorize the trapping of 5 beaver from a colony on the refuge to keep damage to a minimum.

11. Wildlife Observation

Opportunities for wildlife observation on the refuge consist of the observation tower, hiking trails, and driving through the refuge. During 1984, 15,500 visits were recorded for this activity. As stated earlier, a new trail was initiated and when completed, it will provide additional observation opportunities.

The new office/visitor facility will have a spotting scope permanently mounted in the public use room and will provide excellent observation opportunities over Spring Lake. Migratory waterfowl, many species of marsh and waterbirds, wading birds, even the red-necked grebe can be observed from the new office.

14. Picnicking

The refuge picnic area was built by the CCC nearly 50 years ago. The majority of people use the picnic area in conjunction with other activities on the refuge. Many family reunions take place there, and the majority of people at the reunion walk the trail to the tower and thereby partake of other refuge opportunities.

17. Law Enforcement

Law enforcement patrols are conducted during the weekends of waterfowl season with special emphasis on the retrieval zones. In addition we check hunters on nearby state public shooting areas. During the deer seasons (both archery and rifle) we patrol the refuge frequently.

This year three persons were apprehended for hunting deer on the refuge during the wrong season, and one person was apprehended for shooting a cormorant on a nearby State Public Shooting Area.

State credentials were obtained for three station officers - John Koerner, Ralph Bryant, and Dennis Okroi. The credentials identify us as Deputy Conservation Officers and authorize us to enforce State Game Laws.

I. EQUIPMENT AND FACILITIES

1. New Construction

The Waubay Refuge received a new office building this year. The structural design is similar to the buildings recently constructed at Lacreek NWR, Bowdoin NWR, and Madison WMD. The new office provides adequate space for the refuge staff and for the visiting public. The old office was crowded and had no room for visiting groups. It will be converted into a bunkhouse for temporary employees, volunteers and law enforcement personnel on assignment in the area.

The new office location is about 300 yards east of the old office on a wooded hillside overlooking Spring Lake to the south. The ideal location will greatly aid in the interpretation potential for the refuge.



The new office at Waubay NWR, constructed in 1984, is ideally located overlooking Spring Lake. December 28, 1984. MHG-1-84.

50-WBY-700

Prior to construction an archaeological survey resulted in a significant finding. Mitigation of the site uncovered numerous artifacts. Pottery sherds, projectile points, pounds of mauled buffalo bones, wolf bones and remains of the extinct passenger pigeon were among the items found. Dating process indicated the site had been occupied by Native Americans almost continuously from 5,000 years ago to 500 years ago.

Another key feature of the new building is its unique heating/cooling system. It is called a closed loop geothermal with solar assist system. Two heat pumps each have their own geothermal loop that have two, 235 foot deep wells spaced 50 feet apart. During the heating season a 30%

calcium chloride brine solution leaves the heat pump at a cold temperature after the heat is extracted. The brine is circulated to the field, goes down and back up the first well, then goes to the second well. It then goes down the second well and back up. The brine has now been warmed by the earth and then is returned to the heat pump.



Left: Subcontractors are drilling one of the four 235' deep wells for the geothermal heating system. Right: The 2½" plastic water lines that run from the geothermal field to the building were spaced 15 inches apart and backfilled with sand. September, 1984. MJR-20-84.

Heat from the solar system is stored in a 1,000 gallon insulated water tank. This warmer water is used to boost the temperature of the brine solution a few degrees through heat exchangers just before the brine enters the heat pumps. This process increases the efficiency of the heat pumps.

It is a complicated system and if for some reason it fails or shuts down, a propane furnace also has been installed as a backup system.

Industrial Builders, Inc. of Fargo, ND, submitted the low bid and was accepted to construct the building. Jack Cantwell, maintenanceman at Sand Lake NWR served as the Service's Construction Inspector. He came to Waubay a couple of times each week during the entire construction period. His assistance was invaluable and greatly appreciated by members of the Waubay staff.

Construction began in April with the excavation for the basement. At that time, the proposed completion date was set at September 30. The hard packed clay was almost like digging through rock but eventually the basement was dug and the concrete footing and walls were poured.

By July the building was framed and many of the subcontractors were doing their respective jobs. Electrical, plumbing, mechanical, domestic well and geothermal well contracts were providing their required services. Progress was behind schedule as many engineering flaws were encountered and numerous change orders were required. Finally in January, 1985 the building was completed, final inspection approved and the refuge staff moved in.



An approaching thunderstorm temporarily halted the backfilling of the basement walls of the new office. June, 1984. JWK-10-84

The new office is taking shape as the framing is nearly complete. July, 1984. JWK-14-84.



SD-WBY-702

2. Rehabilitation

The waterline to the residence and office was replaced in May. A leak in the line between the residence and office had severely curtailed water usage in the office since mid-winter. A sigh of relief was expressed by the refuge staff after the line was repaired.

The waterline from the residence to the old office was replaced in May. May, 1984. JWK-9-84.

SD-W84-703



The tilt-bed equipment truck was modified to tow the new 32-foot, hydraulic-tilt, gooseneck transport trailer. The tilt-bed was shortened and attached solid as a flat-bed. Two 75-gallon fuel tanks, a tool box, winch, draw bar hitch, and side boards were also installed.

3. Major Maintenance

One room of the refuge residence was insulated and panelled. The bathroom received a new stool, medicine cabinet/light and vanity.

4. Equipment Utilization and Replacement

The 32-foot, hydraulic-tilt, equipment transport trailer that was ordered in November, 1983 from Dakota Manufacturing of Mitchell, SD was delivered in January. It was used to haul equipment and large round grain bales on both the refuge and wetland district. Photos of the new trailer in use are found in the WMD Narrative, Section I.4.

A Honda "Big Red" 3-wheeler, and trailer, a riding mower with a 5' wide grading blade, an air jack, portable sprayer, chain saw, six propane exploders and a farm hand loader were purchased during the year to assist with station programs.

5. Communications Systems

An 11-pair telephone cable was buried from the east end of the refuge to the new office building. A 25-pair cable along with a radio remote line was buried from the new office to the old headquarters office. These cables along with new telephones (Merlin) and radio remote units provide two incoming lines and improved internal communications by telephone and radio. Three handicom portable radios were also purchased.



The telephone company installed a buried cable to improve refuge communications. June, 1984.
JWK-9-84.

SD-WBY-704

7. Energy Conservation

The unique heating/cooling system in the new office building is designed to reduce the consumption of fossil fuels by using the solar assisted geothermal heat pumps as described in Section I.1.

Insulation was added to the living room of the refuge's residential living quarters.

8. Other

A considerable amount of office furniture was ordered and received for the new office building. Padded chairs, tables, desks, sound absorbent partition dividers and filing cabinets were among the items purchased. These were all purchased with funds left over from the office contract.

J. OTHER ITEMS

3. Items of Interest

The following training was accomplished this year by station personnel:

<u>Date</u>	<u>Course</u>	<u>Attendee(s)</u>
March	- Beginning Computer Programming Webster, SD	Kurtenbach & Okroi
	- 40 Hr. LE Refresher Denver, CO	Koerner, Bryant, Kurtenbach & Okroi
April	- Fire Training Workshop Jamestown, ND	Waddel, Rabenberg, Dolney & Gruba
	- PAY PERS and FAR Training Denver, CO	Okroi
May	- Defensive Drivers Training Aberdeen, SD	Koerner, Bryant, Kurtenbach, Okroi, Waddel, Dolney & Gruba
June	- Environmental Education Aberdeen, SD	Cummiskey
November	- Pesticide Applicator Refresher Aberdeen, SD	Koerner, Bryant, Getman, Dolney & Gruba

One day last summer, we received a call from a neighbor near the east end of the refuge saying that somebody's motorhome was on fire. We responded with our fire unit, but upon seeing the situation, we decided there was nothing we could do with our small unit. In addition to the roaring fire, the fuel tank was full, and there was nearly 100 pounds of propane. The Waubay Fire Department finally extinguished the blaze. The cause was unknown, but started in the engine compartment. The motorhome was a total loss.



We knew enough to stay away from this situation with our 100-gallon pumper. We were the first fire unit to arrive, and even the owner advised us to stay back because of the propane and fuel tanks. July, 1984. JWK-13-84.

SD-WBY-705

4. Credits

Okroi - Section B, data gathering, typing, and assembly
 Bryant - Sections F, G, and I.
 Getman - Introduction and maps
 Koerner - Sections A, D, E, H, and J.

Credits for photos are designated individually, Captions are written by the authors of the sections.



A summer sunset over Waubay Lake, part of the newly established State Game Refuge, and the Waubay National Wildlife Refuge. September 30, 1984. JWK-7-84.

SD-WBY-706



United States Department of the Interior
FISH AND WILDLIFE SERVICE

IN REPLY REFER TO:

WR-EAN

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

OCT 11 1985

MEMORANDUM

To: Project Leaders, NWR's and WMD's
Wildlife Resources, Region 6

From: Deputy Assistant Regional Director
Wildlife Resources, Region 6

Subject: Refuge Annual Narrative Reports--1984
Feedback Summary

Maureen H. Menard

Attached for your information are printouts of "feedback" issues reported in the 1984 narrative reports. Jim Gillette's memorandum summarizes these reports, and hopefully you will find them worthwhile.

Attachment



INITIAL:

MGR. *me*
ASST. *R*
TRNE. _____
BIOL. *mr*
CLERK _____
MAINT. _____
MAINT. _____



ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

YMB
File narrative reports
1984

Wildlife Res. OCT - 9 1985

OCT 2 1985

Memorandum

To: Regional Director, Regions 1, 2, 3, 4, 5, (6) and 7
Acting Associate
From: Director

Subject: Refuge Annual Narrative Reports - 1984 Feedback Summary

Summaries of refuge "feedback" issues reported in the 1984 Narrative Reports are provided in the attached printouts. Attachment 1 lists codes and categories used; Attachment 2 is the NWRS summary of feedback received by frequency of issues; and Attachment 3 contains regional lists of individual issues reported by each refuge. Feedback was recorded as positive, negative or neutral depending on its tone and intent. "Negative feedback," detailing problems that need corrective action, is most valuable if provided as constructive criticism. A few refuges incorrectly thought the positive or negative recordings in the 1983 Summary Report showed some sort of "grading." The Refuge Manual, 5 RM 7, says feedback can ... "enhance communications" and ... "identify widespread concerns and problems." It also notes that positive and negative feedback are both important for regional and Washington Office use.

As detailed in the attachments, 167 refuges documented one or more feedback issues each in their narratives (a 32% increase over the 127 stations reporting feedback in 1983). The 1984 feedback consisted of: negative-58%, positive-32% and neutral-10%. Comments were most often in the administration, operations, and populations-habitat categories. Negative feedback provided was mostly on payroll, personnel management, O & M budgets, excessive paper work, populations management, and general habitat management issues. Positive feedback was mostly on improved capabilities for meeting operations/habitat project needs, new thrusts on waterfowl priorities, and on the overall dedication of refuge staffs in meeting objectives.

Refuge feedback continues to be helpful in focusing on issues needing more attention. Last year's concerns were recognized and procedural or funding responses were made where possible in administrative, O & M, and habitat management areas. Obviously, further efforts are needed to address some primary concerns noted this year. Such efforts have already begun including closer coordination with Payroll Office; paper work reduction (consolidated data requests, improved ADP use, etc.); revised directives for law enforcement operations and training; new guidelines for wildlife inventories, moist soil units, compatibility determination, and biological management in the Manual; and further improvements in the refuge uniform and sign program areas.

Please distribute copies of this summary report to refuges in your region for their information. We want to continue emphasizing the importance of Annual Narrative Reports as effective communication tools. They are regularly used by Refuge Management, other Service and Department personnel, and sometimes by Congressional committee staffs for background information on briefing statements, field management topics, and site visits. Various reviewers have often commented favorably on their value. The refuge staff efforts in producing high quality Narrative Reports are very much appreciated.

Attachments

A handwritten signature in cursive script, appearing to read "James J. Shultz". The signature is written in dark ink and is positioned to the right of the "Attachments" text.

NWRS - NARRATIVE REPORT FEEDBACK CODES

	<u>CODE LIST</u>	<u>CATEGORY</u>
00001	01 VEGETATION MANAGEMENT	WILDLIFE HABITAT/POPUL. RESOURCES
00002	02 MARSH & WATER MANAGEMENT	
00003	03 CROPLAND MANAGEMENT	
00004	04 FIRE MANAGEMENT	
00005	05. POPULATION MANAGEMENT	
00006	06 WILDLIFE INVENTORY	
00007	07 RESEARCH/INFORMATION NEEDS	
00008	08 BIOLOGICAL CAPABILITY	
00009	09 PEST MANAGEMENT	
00010	10 AIR AND WATER QUALITY	
00011	11 OIL, GAS AND MINERALS	
00012	12 GRAZING/HAYING	
00013	13 FOREST MANAGEMENT	
00014	14 WILDLIFE/HABITAT (GENERAL)	
00015	21 INTERPRETATION	PUBLIC USE/SERVICES
00016	22 RECREATION (HUNT, TRAP, SUBSIST)	
00017	23 ENVIRONMENTAL EDUCATION	
00018	24 USE MEASUREMENT	
00019	25 DEDICATED AREAS	
00020	26 FISHING	
00021	27 PUBLIC USE (GENERAL)	
00022	31 BUDGET AND AWP	OPERATIONS
00023	32 RMIS/COMPUTER USE/ADP	
00024	33 LAW ENFORCEMENT	
00025	34 UNIFORMS	
00026	35 SIGNS	
00027	36 TRAINING/CONTINUING EDUCATION	
00028	37 INFORMATION TRANSFER	
00029	38 OPERATIONS & MAINTENANCE	
00030	39 A-76	
00031	40 OPERATIONS (GENERAL)	
00032	41 MASTER PLANNING	PLANNING
00033	42 MANAGEMENT PLANNING	
00034	43 LAND ACQUISITION/ASCERTAINMENT	
00035	44 PLANNING (GENERAL)	
00036	51 REFUGE MANUAL	ADMINISTRATION
00037	52 VOLUNTEER PROGRAM	
00038	53 REGULATIONS & PROCEDURES	
00039	54 PUBLIC INVOLVEMENT	
00040	55 SMALL WETLAND ACQUISITION PRG.	
00041	56 PERSONNEL MANAGEMENT	
00042	57 HOUSING	
00043	58 PAYROLL (PAY/PERS)	
00044	59 ADMINISTRATION (GENERAL)	

NWR SYSTEM 1984 NARRATIVE REPORTS

FEEDBACK SUMMARY

FEEDBACK*	SUBJECT	FREQUENCY
N-ADMINISTRATION (GENERAL)		35
N-PAYROLL (PAY/PERS)		32
N-PERSONNEL MANAGEMENT		29
N-OPERATIONS & MAINTENANCE		26
P-OPERATIONS (GENERAL)		23
P-ADMINISTRATION (GENERAL)		21
N-BUDGET AND AWP		21
N-REGULATIONS & PROCEDURES		17
N-WILDLIFE/HABITAT (GENERAL)		14
N-POPULATION MANAGEMENT		14
N-OPERATIONS (GENERAL)		14
P-WILDLIFE/HABITAT (GENERAL)		11
P-OPERATIONS & MAINTENANCE		10
N-LAND ACQUISITION/ASCERTAINMENT		9
X-OPERATIONS (GENERAL)		9
P-POPULATION MANAGEMENT		8
N-LAW ENFORCEMENT		8
P-A-76		7
N-RESEARCH/INFORMATION NEEDS		7
X-ADMINISTRATION (GENERAL)		7
P-UNIFORMS		6
N-PUBLIC USE (GENERAL)		6
P-VOLUNTEER PROGRAM		6
N-RECREATION (HUNT,TRAP,SUBSIST)		6
X-OPERATIONS & MAINTENANCE		5
P-PERSONNEL MANAGEMENT		5
N-INFORMATION TRANSFER		5
P-RMIS/COMPUTER USE/ADP		4
P-FIRE MANAGEMENT		4
P-RECREATION (HUNT,TRAP,SUBSIST)		4
N-HOUSING		4
P-SIGNS		3
P-LAND ACQUISITION/ASCERTAINMENT		3
N-PLANNING (GENERAL)		3
X-PUBLIC USE (GENERAL)		3
P-REFUGE MANUAL		3
N-CROPLAND MANAGEMENT		3
N-TRAINING/CONTINUING EDUCATION		3
P-PLANNING (GENERAL)		3
X-RMIS/COMPUTER USE/ADP		3
P-LAW ENFORCEMENT		3
X-REFUGE MANUAL		3
P-OIL, GAS AND MINERALS		3
P-INFORMATION TRANSFER		2
X-PLANNING (GENERAL)		2
N-UNIFORMS		2
P-TRAINING/CONTINUING EDUCATION		2
P-PUBLIC USE (GENERAL)		2
P-BIOLOGICAL CAPABILITY		2
P-VEGETATION MANAGEMENT		2

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS

FEEDBACK SUMMARY

FEEDBACK*	SUBJECT	FREQUENCY
N-ADMINISTRATION (GENERAL)		35
N-PAYROLL (PAY/PERS)		32
N-PERSONNEL MANAGEMENT		29
N-OPERATIONS & MAINTENANCE		26
P-OPERATIONS (GENERAL)		23
P-ADMINISTRATION (GENERAL)		21
N-BUDGET AND AWP		21
N-REGULATIONS & PROCEDURES		17
N-WILDLIFE/HABITAT (GENERAL)		14
N-POPULATION MANAGEMENT		14
N-OPERATIONS (GENERAL)		14
P-WILDLIFE/HABITAT (GENERAL)		11
P-OPERATIONS & MAINTENANCE		10
N-LAND ACQUISITION/ASCERTAINMENT		9
X-OPERATIONS (GENERAL)		9
P-POPULATION MANAGEMENT		8
N-LAW ENFORCEMENT		8
P-A-76		7
N-RESEARCH/INFORMATION NEEDS		7
X-ADMINISTRATION (GENERAL)		7
P-UNIFORMS		6
N-PUBLIC USE (GENERAL)		6
P-VOLUNTEER PROGRAM		6
N-RECREATION (HUNT,TRAP,SUBSIST)		6
X-OPERATIONS & MAINTENANCE		5
P-PERSONNEL MANAGEMENT		5
N-INFORMATION TRANSFER		5
P-RMIS/COMPUTER USE/ADP		4
P-FIRE MANAGEMENT		4
P-RECREATION (HUNT,TRAP,SUBSIST)		4
N-HOUSING		4
P-SIGNS		3
P-LAND ACQUISITION/ASCERTAINMENT		3
N-PLANNING (GENERAL)		3
X-PUBLIC USE (GENERAL)		3
P-REFUGE MANUAL		3
N-CROPLAND MANAGEMENT		3
N-TRAINING/CONTINUING EDUCATION		3
P-PLANNING (GENERAL)		3
X-RMIS/COMPUTER USE/ADP		3
P-LAW ENFORCEMENT		3
X-REFUGE MANUAL		3
P-OIL, GAS AND MINERALS		3
P-INFORMATION TRANSFER		2
X-PLANNING (GENERAL)		2
N-UNIFORMS		2
P-TRAINING/CONTINUING EDUCATION		2
P-PUBLIC USE (GENERAL)		2
P-BIOLOGICAL CAPABILITY		2
P-VEGETATION MANAGEMENT		2

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS

FEEDBACK SUMMARY

FEEDBACK★	SUBJECT	FREQUENCY
	P-MARSH & WATER MANAGEMENT	2
	P-CROPLAND MANAGEMENT	2
	P-PUBLIC INVOLVEMENT	2
	N-PEST MANAGEMENT	2
	X-POPULATION MANAGEMENT	2
	N-RMIS/COMPUTER USE/ADP	2
	P-WILDLIFE INVENTORY	2
	N-PUBLIC INVOLVEMENT	2
	N-MANAGEMENT PLANNING	2
	X-RESEARCH/INFORMATION NEEDS	2
	X-WILDLIFE/HABITAT (GENERAL)	2
	N-GRAZING/HAYING	1
	P-FOREST MANAGEMENT	1
	P-RESEARCH/INFORMATION NEEDS	1
	P-INTERPRETATION	1
	X-PERSONNEL MANAGEMENT	1
	P-FISHING	1
	P-REGULATIONS & PROCEDURES	1
	X-MASTER PLANNING	1
	X-MANAGEMENT PLANNING	1
	N-WILDLIFE INVENTORY	1
	X-LAW ENFORCEMENT	1
	X-LAND ACQUISITION/ASCERTAINMENT	1
	X-BIOLOGICAL CAPABILITY	1
	X-FISHING	1
	P-MASTER PLANNING	1
	X-OIL, GAS AND MINERALS	1
	X-FIRE MANAGEMENT	1
	N-MARSH & WATER MANAGEMENT	1
	X-UNIFORMS	1
	N-SMALL WETLAND ACQUISITION PRG.	1
	N-OIL, GAS AND MINERALS	1

★ FEEDBACK : N- negative, P- positive, X- neutral

TOTAL 470

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 1
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
BASKETT SLOUGH NWR	N N	POPULATION MANAGEMENT RESEARCH/INFORMATION NEEDS
CAMAS NWR	N	OPERATIONS & MAINTENANCE
COLUMBIA NWR	N N X N N	ADMINISTRATION (GENERAL) GRAZING/HAYING RMIS/COMPUTER USE/ADP PAYROLL (PAY/PERS) INFORMATION TRANSFER
COLUMBIAN WHITETAILED DEER NWR	N X P	PAYROLL (PAY/PERS) OPERATIONS (GENERAL) WILDLIFE/HABITAT (GENERAL)
KLAMATH BASIN NWR	N N N N N	BUDGET AND AWP OPERATIONS & MAINTENANCE POPULATION MANAGEMENT RESEARCH/INFORMATION NEEDS WILDLIFE/HABITAT (GENERAL)
MALHEUR NWR	N N	REGULATIONS & PROCEDURES ADMINISTRATION (GENERAL)
MODOC NWR	N	LAW ENFORCEMENT
NISQUALLY NWR	N N	RESEARCH/INFORMATION NEEDS BUDGET AND AWP
RIDGEFIELD NWR	P N P N N N	SIGNS BUDGET AND AWP LAND ACQUISITION/ASCERTAINMENT OPERATIONS & MAINTENANCE PERSONNEL MANAGEMENT ADMINISTRATION (GENERAL)
RUBY LAKE NWR	N N	PUBLIC INVOLVEMENT PUBLIC USE (GENERAL)
SALTON SEA NWR	N	HOUSING
SAN FRANCISCO BAY NWR	P P X X P	PUBLIC INVOLVEMENT VOLUNTEER PROGRAM OPERATIONS (GENERAL) ADMINISTRATION (GENERAL) TRAINING/CONTINUING EDUCATION
SHELDON NWR	N N P N N	PAYROLL (PAY/PERS) ADMINISTRATION (GENERAL) OPERATIONS (GENERAL) HOUSING OPERATIONS & MAINTENANCE

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 1
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
STILLWATER NWR	N	LAND ACQUISITION/ASCERTAINMEN
	N	ADMINISTRATION (GENERAL)
	N	PLANNING (GENERAL)
	N	OPERATIONS & MAINTENANCE
	P	A-76
WILLAPA NWR	P	LAND ACQUISITION/ASCERTAINMEN
	P	FOREST MANAGEMENT

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 2
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
ANAHUAC NWR	N	CROPLAND MANAGEMENT
	N	PEST MANAGEMENT
	N	POPULATION MANAGEMENT
	N	WILDLIFE/HABITAT (GENERAL)
ARANSAS NWR	N	BUDGET AND AWP
	N	OPERATIONS & MAINTENANCE
	N	ADMINISTRATION (GENERAL)
	N	REGULATIONS & PROCEDURES
BIG BOGGY NWR	N	OPERATIONS (GENERAL)
	N	ADMINISTRATION (GENERAL)
BOSOUE DEL APACHE NWR	P	RECREATION (HUNT,TRAP,SUBSIST
	P	OPERATIONS (GENERAL)
BRAZORIA NWR	N	OPERATIONS (GENERAL)
	N	ADMINISTRATION (GENERAL)
BUFFALO LAKE NWR	N	REGULATIONS & PROCEDURES
CABEZA PRIETA NWR	P	OPERATIONS (GENERAL)
	X	PLANNING (GENERAL)
CIBOLA NWR	P	VOLUNTEER PROGRAM
	P	LAW ENFORCEMENT
	P	WILDLIFE/HABITAT (GENERAL)
	P	RECREATION (HUNT,TRAP,SUBSIST
GRULLA NWR	P	SIGNS
	P	PLANNING (GENERAL)
HAGERMAN NWR	N	OPERATIONS & MAINTENANCE
	N	BUDGET AND AWP
HAVASU NWR	N	PAYROLL (PAY/PERS)
IMPERIAL NWR	N	PAYROLL (PAY/PERS)
	N	PERSONNEL MANAGEMENT
	N	HOUSING
	N	LAW ENFORCEMENT
	P	LAW ENFORCEMENT
	X	REFUGE MANUAL
LAGUNA ATASCOSA NWR	X	RESEARCH/INFORMATION NEEDS
LAS VEGAS NWR	X	OPERATIONS (GENERAL)
MAXWELL NWR	N	REGULATIONS & PROCEDURES
	N	ADMINISTRATION (GENERAL)
	N	PAYROLL (PAY/PERS)

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 2
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
MULESHOE NWR	P	POPULATION MANAGEMENT
	P	RESEARCH/INFORMATION NEEDS
	P	RMIS/COMPUTER USE/ADP
	N	REGULATIONS & PROCEDURES
RIO GRANDE VALLEY NWR	P	REFUGE MANUAL
	P	RMIS/COMPUTER USE/ADP
	P	INFORMATION TRANSFER
SALT PLAINS NWR	N	PUBLIC USE (GENERAL)
SAN BERNARD NWR	N	OPERATIONS (GENERAL)
	N	ADMINISTRATION (GENERAL)
SEOUOYAH NWR	P	RMIS/COMPUTER USE/ADP
TISHOMINGO NWR	P	OPERATIONS & MAINTENANCE
WASHITA NWR	N	PAYROLL (PAY/PERS)
	P	A-76
WICHITA MOUNTAINS NWR	P	A-76
	N	PAYROLL (PAY/PERS)
	N	BUDGET AND AWP
	N	OPERATIONS & MAINTENANCE
	N	ADMINISTRATION (GENERAL)
	P	FIRE MANAGEMENT
	P	INTERPRETATION
	P	SIGNS

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 3
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
AGASSIZ NWR	N N	PERSONNEL MANAGEMENT ADMINISTRATION (GENERAL)
CHAUTAUQUA	N N	REGULATIONS & PROCEDURES OPERATIONS (GENERAL)
CRAB ORCHARD NWR	P X N P	A-76 PERSONNEL MANAGEMENT PAYROLL (PAY/PERS) UNIFORMS
DESOTO NWR	N P P P	UNIFORMS PUBLIC USE (GENERAL) FISHING CROPLAND MANAGEMENT
HORICON NWR	N N P P	PERSONNEL MANAGEMENT PAYROLL (PAY/PERS) INFORMATION TRANSFER OPERATIONS & MAINTENANCE
LITCHFIELD WMD	X X	WILDLIFE/HABITAT (GENERAL) PLANNING (GENERAL)
MINGO NWR	P P N	PERSONNEL MANAGEMENT REGULATIONS & PROCEDURES ADMINISTRATION (GENERAL)
MINNESOTA VALLEY NWR	P P N P N N N	WILDLIFE/HABITAT (GENERAL) OPERATIONS (GENERAL) PERSONNEL MANAGEMENT LAND ACQUISITION/ASCERTAINMENT OPERATIONS & MAINTENANCE BUDGET AND AWP OPERATIONS & MAINTENANCE
NECEDAH NWR	N P N N N	TRAINING/CONTINUING EDUCATION UNIFORMS ADMINISTRATION (GENERAL) INFORMATION TRANSFER RECREATION (HUNT, TRAP, SUBSIST)
OTTAWA NWR	N N	OPERATIONS & MAINTENANCE PERSONNEL MANAGEMENT
RICE LAKE NWR	N X X X N P P	BUDGET AND AWP OPERATIONS & MAINTENANCE MASTER PLANNING MANAGEMENT PLANNING OPERATIONS (GENERAL) OPERATIONS (GENERAL) POPULATION MANAGEMENT

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS

REGION 3
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
SENEY NWR	N	LAW ENFORCEMENT
SHERBURNE NWR	N	OPERATIONS (GENERAL)
	N	ADMINISTRATION (GENERAL)
	P	A-76
	N	TRAINING/CONTINUING EDUCATION
	N	POPULATION MANAGEMENT
	N	ADMINISTRATION (GENERAL)
	P	UNIFORMS
	X	OPERATIONS & MAINTENANCE
SHIAWASSEE NWR	P	PERSONNEL MANAGEMENT
SOUAW CREEK NWR	N	PERSONNEL MANAGEMENT
	X	POPULATION MANAGEMENT
	N	PAYROLL (PAY/PERS)
	P	OPERATIONS & MAINTENANCE
	X	RMIS/COMPUTER USE/ADP
TAMARAC NWR	P	WILDLIFE/HABITAT (GENERAL)
	P	OPERATIONS (GENERAL)
	P	ADMINISTRATION (GENERAL)
TREMPEALEAU NWR	P	OPERATIONS & MAINTENANCE
	N	ADMINISTRATION (GENERAL)
	P	UNIFORMS
	N	UNIFORMS
UNION SLOUGH NWR	N	OPERATIONS & MAINTENANCE
UPPER MISS. RIVER COMPLEX	N	PERSONNEL MANAGEMENT
	N	ADMINISTRATION (GENERAL)
	N	WILDLIFE INVENTORY
	N	PLANNING (GENERAL)
	N	WILDLIFE/HABITAT (GENERAL)
	N	RESEARCH/INFORMATION NEEDS
	N	POPULATION MANAGEMENT
	N	RESEARCH/INFORMATION NEEDS
	N	LAW ENFORCEMENT

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS

REGION 4

FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
BIG LAKE NWR	N X	OPERATIONS & MAINTENANCE OPERATIONS (GENERAL)
BOGUE CHITTO NWR	N	BUDGET AND AWP
BON SECOUR NWR	X	LAW ENFORCEMENT
CABO ROJO NWR	N N	POPULATION MANAGEMENT RESEARCH/INFORMATION NEEDS
CAPE ROMAIN NWR	N N	PAYROLL (PAY/PERS) ADMINISTRATION (GENERAL)
CARIBBEAN ISLANDS NWR	N N	PERSONNEL MANAGEMENT RMIS/COMPUTER USE/ADP
CAROLINA SANDHILLS NWR	N N	PERSONNEL MANAGEMENT ADMINISTRATION (GENERAL)
CATAHOULA NWR	X P N	OPERATIONS (GENERAL) ADMINISTRATION (GENERAL) INFORMATION TRANSFER
CEDAR ISLAND NWR	N N	PLANNING (GENERAL) OPERATIONS (GENERAL)
CHASSAHOWITZKA NWR	N N	PAYROLL (PAY/PERS) PERSONNEL MANAGEMENT
CHOCTAW NWR	P X	OPERATIONS (GENERAL) LAND ACQUISITION/ASCERTAINMENT
CROSS CREEKS NWR	P N P X P	REFUGE MANUAL PAYROLL (PAY/PERS) TRAINING/CONTINUING EDUCATION BIOLOGICAL CAPABILITY RMIS/COMPUTER USE/ADP
CRYSTAL RIVER NWR	N N	BUDGET AND AWP OPERATIONS & MAINTENANCE
CULEBRA NWR	N N	LAND ACQUISITION/ASCERTAINMENT LAW ENFORCEMENT
D'ARBONNE NWR	P N N	OIL, GAS AND MINERALS WILDLIFE/HABITAT (GENERAL) BUDGET AND AWP
DELTA NWR	N	POPULATION MANAGEMENT

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 4
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
EUFAULA NWR	P P	BIOLOGICAL CAPABILITY POPULATION MANAGEMENT
FELSENTHAL NWR	N P	ADMINISTRATION (GENERAL) LAW ENFORCEMENT
HOBE SOUND NWR	N N N	BUDGET AND AWP LAW ENFORCEMENT OPERATIONS (GENERAL)
HOLLA BEND NWR	N P	PERSONNEL MANAGEMENT OPERATIONS (GENERAL)
J.N. DING DARLING NWR	P P N P	OPERATIONS (GENERAL) ADMINISTRATION (GENERAL) REGULATIONS & PROCEDURES PUBLIC USE (GENERAL)
LACASSINE NWR	N N N	REGULATIONS & PROCEDURES OPERATIONS (GENERAL) ADMINISTRATION (GENERAL)
LAKE WOODRUFF NWR	P N	OPERATIONS (GENERAL) PAYROLL (PAY/PERS)
LOWER SUWANNEE NWR	P P	OPERATIONS & MAINTENANCE OPERATIONS (GENERAL)
LOXAHATCHEE NWR	N X N	WILDLIFE/HABITAT (GENERAL) PUBLIC USE (GENERAL) OPERATIONS (GENERAL)
MATTAMUSKEET NWR	N N	PAYROLL (PAY/PERS) REGULATIONS & PROCEDURES
MERRITT ISLAND NWR	P	FIRE MANAGEMENT
MISSISSIPPI SANDHILL CRANE NWR	P	FIRE MANAGEMENT
NOXUBEE NWR	P P	A-76 RECREATION (HUNT, TRAP, SUBSIST)
OKEFENOKEE NWR	N P	OPERATIONS & MAINTENANCE FIRE MANAGEMENT
PIEDMONT NWR	X X N N P P P	OPERATIONS & MAINTENANCE PUBLIC USE (GENERAL) BUDGET AND AWP PAYROLL (PAY/PERS) OPERATIONS (GENERAL) WILDLIFE/HABITAT (GENERAL) POPULATION MANAGEMENT

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 4
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
PUNGO NWR	N N	PAYROLL (PAY/PERS) REGULATIONS & PROCEDURES
REELFOOT NWR	P X N	PLANNING (GENERAL) FISHING WILDLIFE/HABITAT (GENERAL)
SABINE NWR	P P N	OPERATIONS (GENERAL) ADMINISTRATION (GENERAL) PERSONNEL MANAGEMENT
SANDY POINT NWR	P X	VOLUNTEER PROGRAM RESEARCH/INFORMATION NEEDS
SANTEE NWR	P N	A-76 PAYROLL (PAY/PERS)
ST. MARKS NWR	N N	PERSONNEL MANAGEMENT ADMINISTRATION (GENERAL)
ST. VINCENT NWR	N N N	BUDGET AND AWP PERSONNEL MANAGEMENT OPERATIONS (GENERAL)
TAMPA BAY NWR	N	PUBLIC USE (GENERAL)
TENNESSEE NWR	N N X N P P P N	MANAGEMENT PLANNING OPERATIONS & MAINTENANCE PUBLIC USE (GENERAL) RECREATION (HUNT, TRAP, SUBSIST) VEGETATION MANAGEMENT MARSH & WATER MANAGEMENT POPULATION MANAGEMENT PAYROLL (PAY/PERS)
UPPER OUACHITA NWR	N	PAYROLL (PAY/PERS)
WAPANOCCA NWR	N P P	PERSONNEL MANAGEMENT OPERATIONS (GENERAL) ADMINISTRATION (GENERAL)
WHEELER NWR	P P X N	WILDLIFE/HABITAT (GENERAL) OPERATIONS (GENERAL) ADMINISTRATION (GENERAL) PAYROLL (PAY/PERS)
WHITE RIVER NWR	N	PAYROLL (PAY/PERS)
YAZOO NWR	P P P P N	OPERATIONS (GENERAL) ADMINISTRATION (GENERAL) WILDLIFE INVENTORY BIOLOGICAL CAPABILITY PAYROLL (PAY/PERS)

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 5
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
BACK BAY NWR	N	PAYROLL (PAY/PERS)
	N	REGULATIONS & PROCEDURES
	N	RECREATION (HUNT,TRAP,SUBSIST
BARNEGAT NWR	P	OPERATIONS (GENERAL)
	P	RECREATION (HUNT,TRAP,SUBSIST
	P	ADMINISTRATION (GENERAL)
BLACKWATER NWR	N	POPULATION MANAGEMENT
	N	RECREATION (HUNT,TRAP,SUBSIST
	N	WILDLIFE/HABITAT (GENERAL)
BOMBAY HOOK NWR	N	PAYROLL (PAY/PERS)
	X	OPERATIONS & MAINTENANCE
EAST NECK NWR	N	PAYROLL (PAY/PERS)
	N	OPERATIONS & MAINTENANCE
GREAT SWAMP NWR	P	REFUGE MANUAL
	N	REGULATIONS & PROCEDURES
	P	ADMINISTRATION (GENERAL)
	N	LAND ACQUISITION/ASCERTAINMEN
IROOUOIS NWR	N	PAYROLL (PAY/PERS)
	P	ADMINISTRATION (GENERAL)
	P	MASTER PLANNING
	P	VEGETATION MANAGEMENT
	P	MARSH & WATER MANAGEMENT
	P	VOLUNTEER PROGRAM
	P	OPERATIONS (GENERAL)
MACKAY ISLAND NWR	P	ADMINISTRATION (GENERAL)
	N	PERSONNEL MANAGEMENT
	N	INFORMATION TRANSFER
MASON NECK NWR	P	OPERATIONS & MAINTENANCE
	N	PERSONNEL MANAGEMENT
MISSISSQUOI NWR	X	REFUGE MANUAL
	X	ADMINISTRATION (GENERAL)
MONTEZUMA NWR	N	PERSONNEL MANAGEMENT
	N	ADMINISTRATION (GENERAL)
MOOSEHORN NWR	N	PAYROLL (PAY/PERS)
NINIGRET NWR	P	ADMINISTRATION (GENERAL)
PARKER RIVER NWR	N	PAYROLL (PAY/PERS)
	P	OPERATIONS (GENERAL)
	P	ADMINISTRATION (GENERAL)

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 5
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
PETIT MANAN NWR	P	POPULATION MANAGEMENT
TINICUM NWR	X	OPERATIONS (GENERAL)
	X	ADMINISTRATION (GENERAL)
TRUSTOM POND	N	PUBLIC USE (GENERAL)
	N	POPULATION MANAGEMENT
	N	WILDLIFE/HABITAT (GENERAL)

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 6
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
ALAMOSA-MONTE VISTA NWR	N	ADMINISTRATION (GENERAL)
ARROWWOOD NWR	N	CROPLAND MANAGEMENT
	P	CROPLAND MANAGEMENT
ARROWWOOD WMD	P	POPULATION MANAGEMENT
	N	REGULATIONS & PROCEDURES
	X	ADMINISTRATION (GENERAL)
AUDUBON NWR	N	POPULATION MANAGEMENT
	N	WILDLIFE/HABITAT (GENERAL)
BOWDOIN NWR	N	POPULATION MANAGEMENT
	N	WILDLIFE/HABITAT (GENERAL)
	N	OPERATIONS (GENERAL)
	N	LAND ACQUISITION/ASCERTAINMEN
BROWNS PARK NWR	P	OPERATIONS (GENERAL)
	P	ADMINISTRATION (GENERAL)
CROSBY WMD	X	OIL, GAS AND MINERALS
	N	PERSONNEL MANAGEMENT
	N	LAW ENFORCEMENT
	X	FIRE MANAGEMENT
	N	POPULATION MANAGEMENT
	N	CROPLAND MANAGEMENT
	N	MARSH & WATER MANAGEMENT
	X	OPERATIONS & MAINTENANCE
	N	RECREATION (HUNT, TRAP, SUBSIST
	X	OPERATIONS (GENERAL)
DES LACS NWR	X	ADMINISTRATION (GENERAL)
	N	BUDGET AND AWP
	P	PERSONNEL MANAGEMENT
	P	POPULATION MANAGEMENT
	N	OPERATIONS & MAINTENANCE
	N	PUBLIC USE (GENERAL)
	N	ADMINISTRATION (GENERAL)
	N	PAYROLL (PAY/PERS)
DEVILS LAKE WMD	X	OPERATIONS (GENERAL)
	P	VOLUNTEER PROGRAM
J. CLARK SALYER NWR	N	LAND ACQUISITION/ASCERTAINMEN
	N	OPERATIONS & MAINTENANCE
	N	PERSONNEL MANAGEMENT
	P	OPERATIONS (GENERAL)
	P	ADMINISTRATION (GENERAL)

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 6
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
J. CLARK SALYER WMD	P P	OIL, GAS AND MINERALS PUBLIC INVOLVEMENT
KARL E. MUNDT NWR	N	POPULATION MANAGEMENT
KIRWIN NWR	P X	ADMINISTRATION (GENERAL) UNIFORMS
KULM WMD	N P	PERSONNEL MANAGEMENT PERSONNEL MANAGEMENT
LACREEK NWR	N N N	PERSONNEL MANAGEMENT HOUSING PEST MANAGEMENT
LAKE ILO NWR	P P	ADMINISTRATION (GENERAL) OPERATIONS (GENERAL)
LEE METCALF NWR	N	OPERATIONS & MAINTENANCE
LONG LAKE NWR	P P	WILDLIFE/HABITAT (GENERAL) OPERATIONS & MAINTENANCE
LONG LAKE WMD	X	POPULATION MANAGEMENT
LOSTWOOD NWR	N N P	OPERATIONS (GENERAL) ADMINISTRATION (GENERAL) UNIFORMS
LOSTWOOD WMD	P P	PERSONNEL MANAGEMENT OPERATIONS & MAINTENANCE
MADISON WMD	N	LAND ACQUISITION/ASCERTAINMEN
NATIONAL BISON NWR	N X N N N N N	TRAINING/CONTINUING EDUCATION ADMINISTRATION (GENERAL) PAYROLL (PAY/PERS) ADMINISTRATION (GENERAL) RMIS/COMPUTER USE/ADP BUDGET AND AWP OPERATIONS & MAINTENANCE
OURAY NWR	P	ADMINISTRATION (GENERAL)
RAINWATER BASIN WMD	N N P	LAND ACQUISITION/ASCERTAINMEN WILDLIFE/HABITAT (GENERAL) UNIFORMS
RED ROCK LAKES NWR	N N N P P	LAND ACQUISITION/ASCERTAINMEN REGULATIONS & PROCEDURES ADMINISTRATION (GENERAL) WILDLIFE INVENTORY WILDLIFE/HABITAT (GENERAL)

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 6
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
SULLYS HILL NGP	X	REFUGE MANUAL
SWAN RIVER NWR	N	BUDGET AND AWP
	N	OPERATIONS & MAINTENANCE
	N	ADMINISTRATION (GENERAL)
TEWAUKON WMD	P	OPERATIONS & MAINTENANCE
	P	ADMINISTRATION (GENERAL)
	N	REGULATIONS & PROCEDURES
	N	ADMINISTRATION (GENERAL)
	N	PERSONNEL MANAGEMENT
UPPER SOURIS NWR	P	OPERATIONS (GENERAL)
	N	BUDGET AND AWP
	P	WILDLIFE/HABITAT (GENERAL)
VALLEY CITY WMD	N	LAND ACQUISITION/ASCERTAINMEN
	N	SMALL WETLAND ACQUISITION PRO
	N	PUBLIC INVOLVEMENT
	N	INFORMATION TRANSFER
	N	OPERATIONS & MAINTENANCE
	P	WILDLIFE/HABITAT (GENERAL)

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 7
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
ALASKA PENINSULA NWR	N	ADMINISTRATION (GENERAL)
ALEUTIAN ISLANDS NWR	P	VOLUNTEER PROGRAM
	N	PERSONNEL MANAGEMENT
	N	MANAGEMENT PLANNING
ARCTIC NWR	N	BUDGET AND AWP
	N	OPERATIONS & MAINTENANCE
	P	OIL, GAS AND MINERALS
	N	OIL, GAS AND MINERALS
	X	WILDLIFE/HABITAT (GENERAL)
BECHAROF NWR	N	ADMINISTRATION (GENERAL)
INNOKO NWR	N	PERSONNEL MANAGEMENT
	P	ADMINISTRATION (GENERAL)
IZMEBEK NWR	N	REGULATIONS & PROCEDURES
	N	ADMINISTRATION (GENERAL)
	N	WILDLIFE/HABITAT (GENERAL)
	N	OPERATIONS (GENERAL)
KANUTI NWR	P	PLANNING (GENERAL)
	X	OPERATIONS (GENERAL)
KENAI NWR	N	BUDGET AND AWP
	N	OPERATIONS & MAINTENANCE
	N	PUBLIC USE (GENERAL)
	N	LAW ENFORCEMENT
	N	RECREATION (HUNT, TRAP, SUBSIS)
KODIAK NWR	N	REGULATIONS & PROCEDURES
	N	WILDLIFE/HABITAT (GENERAL)
NOWITNA NWR	N	BUDGET AND AWP
	N	OPERATIONS & MAINTENANCE
	N	WILDLIFE/HABITAT (GENERAL)
	P	ADMINISTRATION (GENERAL)
SELAWIK NWR	P	WILDLIFE/HABITAT (GENERAL)
	N	ADMINISTRATION (GENERAL)
	P	OPERATIONS & MAINTENANCE
	N	PERSONNEL MANAGEMENT
	N	RESEARCH/INFORMATION NEEDS
	N	POPULATION MANAGEMENT
	X	RMIS/COMPUTER USE/ADP
TETLIN NWR	P	ADMINISTRATION (GENERAL)
	N	PERSONNEL MANAGEMENT

* FEEDBACK: N-negative, P-positive, X-neutral

NWR SYSTEM 1984 NARRATIVE REPORTS
REGION 7
FEEDBACK SUMMARY

STATION	FEEDBACK*	ISSUE
YUKON DELTA NWR	N	PERSONNEL MANAGEMENT

REGISTER OF RMIS REPORTS
 12 REPORTING MONTHS OF FY-85

REPORT NAME	REFUGE NUMBER	REFUGE NAME												
	64590	WBY	WAUBAY											
		OCT	NOV	DEC	JAN	FEB	MARCH	APR	MAY	JUNE	JULY	AUG	SEPT	
PUBLIC USE REPORT		REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	
PROFESSIONAL SERVICES													REC'D	
ENVIRONMENTAL PRESERVATION	***												REC'D	
MONTHLY WATERFOWL POPULATIONS		REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	REC'D	
ANNUAL WATERFOWL PRODUCTION													REC'D	
MISCELLANEOUS WILDLIFE OUTPUTS	***												REC'D	
ECONOMIC BENEFITS AND LAND USE													REC'D	
LAND TYPE INVENTORY	***												REC'D	
MARSH & WATER BIRDS				REC'D			REC'D			REC'D			REC'D	
SHOREBIRDS,GULLS,TERNS & ALLIED SPECIES				REC'D			REC'D			REC'D			REC'D	
RAPTORIAL BIRDS				REC'D			REC'D			REC'D			REC'D	
OTHER BIRDS-MIGRATORY & RESIDENT													REC'D	
MAMMALS													REC'D	
REPTILES,AMPHIBIANS,FISH&OTHER WILDLIFE													REC'D	

Ec Benefits Report was
 completed 10/7/85.
 Will send another copy to Wash. office. R

***: SUBMISSION OF THIS REPORT IS OPTIONAL



INITIAL: *W*
 MGR. _____
 ASST. *R*
 TRNE. _____
 BIOL. _____
 CLERK. _____
 MAINT. _____
 MAINT. _____

DATE 11/08/85

NATIONAL WILDLIFE REFUGE SYSTEM

PA 401

AVERAGE MONTHLY WATERFOWL POPULATIONS

WAUBAY
6-4590-WBY

SPECIES NAME	OCT 83	NOV 83	DEC 83	JAN 84	FEB 84	MAR 84	APR 84	MAY 84	JUN 84	JUL 84	AUG 84	SEP 84
WATERFOWL MAINTENANCE												
SWANS												
WHISTLING SWAN	100	25	0	0	0	0	0	0	0	0	0	15
GEESE												
SNOW GOOSE	25	30	0	0	0	20	0	0	0	0	0	5
CANADA GOOSE	600	100	0	0	0	0	0	0	0	0	0	150
GIANT CANADA GOOSE	800	90	0	0	30	50	50	110	125	140	150	400
DUCKS												
COMMON MERGANSER	0	0	0	0	0	0	5	0	0	0	0	0
MALLARD	600	150	0	0	0	40	30	140	200	200	300	400
GADWALL	600	10	0	0	0	0	6	110	150	150	250	350
AMERICAN WIGEON	800	10	0	0	0	0	5	10	20	10	50	200
GREEN-WINGED (COMM.) TEAL	75	5	0	0	0	0	15	10	10	20	25	50
BLUE-WINGED (CINN.) TEAL	400	10	0	0	0	0	15	160	250	400	500	600
NORTHERN SHOVELER	100	10	0	0	0	5	20	50	75	75	100	125
PINTAIL	300	10	0	0	0	25	10	40	60	60	75	125
WOOD DUCK	20	5	0	0	0	0	10	10	15	20	20	20
REDHEAD	300	50	0	0	0	5	30	75	100	125	150	200
CANVASBACK	50	10	0	0	0	10	15	10	10	20	25	50
LESSER SCAUP	75	100	0	0	0	10	500	350	25	20	10	100
RING-NECKED DUCK	15	5	0	0	0	0	20	20	20	10	5	10
COMMON GOLDENEYE	0	0	0	0	0	15	10	0	0	0	0	0
BUFFLEHEAD	5	5	0	0	0	20	40	20	5	5	5	5
RUDDY DUCK	50	0	0	0	0	0	200	60	80	350	400	200
OTHER MIG. BIRD MAINT.												
MARSH & WATER BIRDS												
AMERICAN COOT	3000	70	0	0	0	0	25	25	40	40	100	1500
TOTAL SWANS	100	25	0	0	0	0	0	0	0	0	0	15
TOTAL GEESE	1425	220	0	0	30	70	50	110	125	140	150	555
TOTAL DUCKS	3390	380	0	0	0	130	931	1065	1020	1465	1915	2435
TOTAL WATERFOWL	4915	625	0	0	30	200	981	1175	1145	1605	2065	3005

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NATIONAL WILDLIFE REFUGE SYSTEM

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PEAK MONTHLY WATERFOWL POPULATIONS

WAUBAY
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SPECIES NAME	OCT 83	NOV 83	DEC 83	JAN 84	FEB 84	MAR 84	APR 84	MAY 84	JUN 84	JUL 84	AUG 84	SEP 84
WATERFOWL MAINTENANCE												
SWANS												
WHISTLING SWAN	120	120	0	0	0	0	0	0	0	0	0	25
GEESE												
SNOW GOOSE	150	150	0	0	0	20	0	0	0	0	0	20
CANADA GOOSE	1500	500	0	0	0	0	0	0	0	0	0	300
GIANT CANADA GOOSE	2000	500	0	0	30	50	70	140	160	200	200	1600
DUCKS												
COMMON MERGANSER	0	0	0	0	0	0	10	0	0	0	0	0
MALLARD	800	400	0	0	0	40	50	200	250	250	350	600
GADWALL	800	75	0	0	0	0	10	150	250	250	300	500
AMERICAN WIGEON	1500	80	0	0	0	0	10	20	30	20	75	400
GREEN-WINGED (COMM.) TEAL	100	20	0	0	0	0	25	20	15	30	50	100
BLUE-WINGED (CINN.) TEAL	700	50	0	0	0	0	25	250	350	500	600	1000
NORTHERN SHOVELER	200	90	0	0	0	5	30	75	90	100	125	150
PINTAIL	400	50	0	0	0	25	15	60	80	80	100	200
WOOD DUCK	25	10	0	0	0	0	20	20	25	30	30	30
REDHEAD	600	200	0	0	0	5	80	100	150	150	175	250
CANVASBACK	100	30	0	0	0	10	20	20	20	30	40	75
LESSER SCAUP	150	150	0	0	0	10	700	500	100	30	20	250
RING-NECKED DUCK	30	10	0	0	0	0	30	40	25	15	10	20
COMMON GOLDENEYE	0	0	0	0	0	15	20	0	0	0	0	0
BUFFLEHEAD	20	10	0	0	0	20	75	40	10	5	5	10
RUDDY DUCK	100	0	0	0	0	0	300	100	120	500	500	300
OTHER MIG. BIRD MAINT.												
MARSH & WATER BIRDS												
AMERICAN COOT	4000	500	0	0	0	0	40	40	50	50	125	2000
TOTAL SWANS	120	120	0	0	0	0	0	0	0	0	0	25
TOTAL GEESE	3650	1150	0	0	30	70	70	140	160	200	200	1920
TOTAL DUCKS	5525	1175	0	0	0	130	1420	1595	1515	1990	2380	3885
TOTAL WATERFOWL	9295	2445	0	0	30	200	1490	1735	1675	2190	2580	5830

WATERFOWL USE DAYS

WAUBAY

6-4590-WBY

SPECIES NAME	OCT 1983- DEC 1983	JAN 1984- MAR 1984	APR 1984- JUN 1984	JUL 1984- SEP 1984	12 MONTH TOTAL
WATERFOWL MAINTENANCE					
SWANS					
WHISTLING SWAN	3,750	0	0	450	4,200
GEESE					
SNOW GOOSE	1,650	600	0	150	2,400
CANADA GOOSE	21,000	0	0	4,500	25,500
GIANT CANADA GOOSE	26,700	2,400	8,550	20,700	58,350
DUCKS					
COMMON MERGANSER	0	0	150	0	150
MALLARD	22,500	1,200	11,100	27,000	61,800
GADWALL	18,300	0	7,980	22,500	48,780
AMERICAN WIGEON	24,300	0	1,050	7,800	33,150
GREEN-WINGED (COMM.) TEAL	2,400	0	1,050	2,850	6,300
BLUE-WINGED (CINN.) TEAL	12,300	0	12,750	45,000	70,050
NORTHERN SHOVELER	3,300	150	4,350	9,000	16,800
PINTAIL	9,300	750	3,300	7,800	21,150
WOOD DUCK	750	0	1,050	1,800	3,600
REDHEAD	10,500	150	6,150	14,250	31,050
CANVASBACK	1,800	300	1,050	2,850	6,000
LESSER SCAUP	5,250	300	26,250	3,900	35,700
RING-NECKED DUCK	600	0	1,800	750	3,150
COMMON GOLDENEYE	0	450	300	0	750
BUFFLEHEAD	300	600	1,950	450	3,300
RUDDY DUCK	1,500	0	10,200	28,500	40,200
OTHER MIG. BIRD MAINT.					
MARSH & WATER BIRDS					
AMERICAN COOT	92,100	0	2,700	49,200	144,000
TOTAL-SWANS					
TOTAL-SWANS	3,750	0	0	450	4,200
TOTAL-GEESE	49,350	3,000	8,550	25,350	86,250
TOTAL DUCKS	113,100	3,900	90,480	174,450	381,930
TOTAL WATERFOWL AND COOTS	258,300	6,900	101,730	249,450	616,380

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NATIONAL WILDLIFE REFUGE SYSTEM
REPORT OF MISCELLANEOUS OUTPUTS
FY-84

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TYPE OF OUTPUTS	UNITS	FY TOTAL
PROFESSIONAL SERVICES		
REFUGE ORIENT, UNPUBLSD BY NON-REFUGE PERSNL	EACH	2
TOTAL REFUGE ORIENT, UNPUBLSD		2
ECOLOGICAL MONITORING BY REFUGE PERSONNEL		14
TOTAL ECOLOGICAL MONITORING		14
ENVIRONMENTAL PRESERVATION		
NATURAL AREAS OTHER RES NAT AREAS		1
TOTAL NATURAL AREAS		1

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NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE USE REPORT
ENDANGERED SPECIES REPORT
FY 84 SURVEYS
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SPECIES NAME		*****-----USE DAYS-----*****						FY-NO.	FY-NO.	FY-PEAK	DATE	
LINE	CODE	OCT-DEC 83	JAN-MAR 84	APR-JUN 84	JUL-SEP 84	FY	TOTAL	PRODUCED	HARVESTED	POPULATION		
THREATENED SPECIES												
ENDANGERED												
SOUTHERN BALD EAGLE		701 3521	90	150	0	15	255	0	0	10	02/25	
TOTAL ENDANGERED			90	150	0	15	255	0	0			
TOTAL THREATENED SPECIES			90	150	0	15	255	0	0			
GRAND TOTAL			90	150	0	15	255	0	0			

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ACT HRS BY MONTH

WAUBAY
6-4590-WBY

ACTIVITY NAME	OCT-83	NOV-83	DEC-83	JAN-84	FEB-84	MAR-84	APR-84	MAY-84	JUN-84	JUL-84	AUG-84	SEP-84	12 MONTH TOTAL
INTERPRETATION													
WILDL TRAILS-NONMOTOR													
SELF GUIDED	0	0	0	0	0	0	0	0	0	0	0	50	50
CONDUCTED	0	0	0	0	0	0	0	86	0	0	0	0	86
OTHER ON-REFUGE PROGRAM	0	0	0	0	0	0	0	20	442	415	82	110	1069
ENVIRONMENTAL EDUCATION													
STUDENTS	0	0	0	0	0	0	0	0	0	0	270	0	270
TEACHERS	0	0	0	0	0	0	0	0	0	0	30	0	30
RECREATION-WILDLIFE CONSUMPTIVE													
HUNTING RESIDENT GAME													
BIG GAME, DEER-GUN													
WHITE-TAILED DEER	0	800	600	0	0	0	0	0	0	0	0	0	1400
BIG GAME, DEER-BOW													
WHITE-TAILED DEER	0	448	120	0	0	0	0	0	0	0	0	0	568
TRAPPING	0	0	25	30	0	0	0	0	0	0	0	0	55
RECREATION-WILDLIFE NON-CONSUMP													
PICNICKING	0	0	0	0	0	0	0	150	700	700	600	150	2300
WILDL/WILDLANDS OBSERV													
FOOT	250	0	0	0	0	0	0	175	500	400	500	250	2075
LAND VEHICLE	400	100	150	25	50	75	100	500	1250	1000	1200	1200	6050
RECREATION - NON-WILDLIFE													
PICNICKING	0	0	0	0	0	0	0	0	200	0	200	100	500
TOTALS													
TOTAL INTERPRETATION	0	0	0	0	0	0	0	106	442	415	82	160	1205
TOTAL EDUCATION	0	0	0	0	0	0	0	0	0	0	300	0	300
TOTAL HUNTING	0	1248	745	30	0	0	0	0	0	0	0	0	2023
TOTAL FISHING	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER CONS WILDL. REC	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL NON-CONSUMPTIVE REC	650	100	150	25	50	75	100	825	2450	2100	2300	1600	10425
TOTAL NON-WILDLIFE REC	0	0	0	0	0	0	0	0	200	0	200	100	500
TOTAL PUBLIC USE	650	1348	895	55	50	75	100	931	3092	2515	2882	1860	14453
TOTAL WILDLIFE ORIENTED	650	1348	895	55	50	75	100	931	2892	2515	2682	1760	13953

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ACT HRS BY MONTH

WAUBAY
6-4590-WBY

ACTIVITY NAME	OCT-83	NOV-83	DEC-83	JAN-84	FEB-84	MAR-84	APR-84	MAY-84	JUN-84	JUL-84	AUG-84	SEP-84	12 MONTH TOTAL
TOTAL NON-WILDLIFE ORIENTED	0	0	0	0	0	0	0	0	200	0	200	100	500
NO. VISITS TO REFUGE	1050	512	350	110	150	200	400	2574	3742	2958	3637	3087	18770

VISITS BY MONTH

WAUBAY
6-4590-WBY

ACTIVITY NAME	OCT-83	NOV-83	DEC-83	JAN-84	FEB-84	MAR-84	APR-84	MAY-84	JUN-84	JUL-84	AUG-84	SEP-84	12 MONTH TOTAL
INTERPRETATION													
WILDL TRAILS-NONMOTOR													
SELF GUIDED	0	0	0	0	0	0	0	0	0	0	0	50	50
CONDUCTED	0	0	0	0	0	0	0	54	0	0	0	0	54
OTHER ON-REFUGE PROGRAM	0	0	0	0	0	0	0	20	192	208	37	37	494
ENVIRONMENTAL EDUCATION													
STUDENTS	0	0	0	0	0	0	0	0	0	0	90	0	90
TEACHERS	0	0	0	0	0	0	0	0	0	0	10	0	10
RECREATION-WILDLIFE CONSUMPTIVE													
HUNTING RESIDENT GAME													
BIG GAME, DEER-GUN													
WHITE-TAILED DEER	0	200	200	0	0	0	0	0	0	0	0	0	400
BIG GAME, DEER-BOW													
WHITE-TAILED DEER	0	112	40	0	0	0	0	0	0	0	0	0	152
TRAPPING	0	0	10	10	0	0	0	0	0	0	0	0	20
RECREATION-WILDLIFE NON-CONSUMP													
PICNICKING	0	0	0	0	0	0	0	150	350	350	300	150	1300
WILDL/WILDLANDS OBSERV													
FOOT	250	0	0	0	0	0	0	350	500	400	500	250	2250
LAND VEHICLE	800	200	100	100	150	200	400	2000	2500	2000	2500	2500	13450
RECREATION - NON-WILDLIFE													
PICNICKING	0	0	0	0	0	0	0	0	200	0	200	100	500
TOTALS													
TOTAL INTERPRETATION	0	0	0	0	0	0	0	74	192	208	37	87	598
TOTAL EDUCATION	0	0	0	0	0	0	0	0	0	0	100	0	100
TOTAL HUNTING	0	312	250	10	0	0	0	0	0	0	0	0	572
TOTAL FISHING	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL OTHER CONS WILDL: REC	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL NON-CONSUMPTIVE REC	1050	200	100	100	150	200	400	2500	3350	2750	3300	2900	17000
TOTAL NON-WILDLIFE REC	0	0	0	0	0	0	0	0	200	0	200	100	500
TOTAL PUBLIC USE	1050	512	350	110	150	200	400	2574	3742	2958	3637	3087	18770
TOTAL WILDLIFE ORIENTED	1050	512	350	110	150	200	400	2574	3542	2958	3437	2987	18270

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VISITS BY MONTH

WAUBAY
6-4590-WBY

ACTIVITY NAME	OCT-83	NOV-83	DEC-83	JAN-84	FEB-84	MAR-84	APR-84	MAY-84	JUN-84	JUL-84	AUG-84	SEP-84	12 MONTH TOTAL
TOTAL NON-WILDLIFE ORIENTED	0	0	0	0	0	0	0	0	200	0	200	100	500
NO. VISITS TO REFUGE	1050	512	350	110	150	200	400	2574	3742	2958	3637	3087	18770

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NATIONAL WILDLIFE REFUGE SYSTEM
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WILDLIFE USE REPORT - WATERFOWL
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WAUBAY
6-4590-WBY

		*****-----USE DAYS-----*****					FY-NO.	FY-NO.	FY-PEAK	
SPECIES NAME	LINE CODE	OCT-DEC 83	JAN-MAR 84	APR-JUN 84	JUL-SEP 84	FY TOTAL	PRODUCED	HARVESTED	POPULATION	DATE
WATERFOWL PRODUCTION										
NON-OUTPUT SPECIES										
AMERICAN COOT	080 2210	0	0	0	0	0	405	0	0	
TOTAL NON-OUTPUT SPECIES		0	0	0	0	0	405	0		
TOTAL WATERFOWL PRODUCTION		0	0	0	0	0	405	0		
WATERFOWL MAINTENANCE										
SWANS										
WHISTLING SWAN	711 1800	3750	0	0	450	4200	0	0	120	10/31
TOTAL SWANS		3750	0	0	450	4200	0	0		
GEESE										
SNOW GOOSE	712 1690	1650	600	0	150	2400	0	0	150	10/31
CANADA GOOSE	712 1720	21000	0	0	4500	25500	0	0	1500	10/15
GIANT CANADA GOOSE	712 1723	26700	2400	8550	20700	58350	0	0	2000	10/15
TOTAL GEESE		49350	3000	8550	25350	86250	0	0		
DUCKS										
COMMON MERGANSER	713 1290	0	0	150	0	150	0	0	10	04/10
MALLARD	713 1320	22500	1200	11100	27000	61800	0	0	800	10/15
GADWALL	713 1350	18300	0	7980	22500	48780	0	0	800	10/15
AMERICAN WIGEON	713 1370	24300	0	1050	7800	33150	0	0	1500	10/01
GREEN-WINGED (COMM.) TEAL	713 1390	2400	0	1050	2850	6300	0	0	100	10/01
BLUE-WINGED (CINN.) TEAL	713 1400	12300	0	12750	45000	70050	0	0	1000	09/20
NORTHERN SHOVELER	713 1420	3300	150	4350	9000	16800	0	0	200	10/15
PINTAIL	713 1430	9300	750	3300	7800	21150	0	0	400	10/01
WOOD DUCK	713 1440	750	0	1050	1800	3600	0	0	30	07/31
REDHEAD	713 1460	10500	150	6150	14250	31050	0	0	600	10/15
CANVASBACK	713 1470	1800	300	1050	2850	6000	0	0	100	10/15
LESSER SCAUP	713 1490	5250	300	26250	3900	35700	0	0	700	04/15
RING-NECKED DUCK	713 1500	600	0	1800	750	3150	0	0	40	05/10
COMMON GOLDENEYE	713 1510	0	450	300	0	750	0	0	20	04/10
BUFFLEHEAD	713 1530	300	600	1950	450	3300	0	0	75	04/15
RUDDY DUCK	713 1670	1500	0	10200	28500	40200	0	0	500	07/31
TOTAL DUCKS		113100	3900	90480	174450	381930	0	0		
TOTAL WATERFOWL MAINTENANCE		166200	6900	99030	200250	472380	0	0		

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SPECIES NAME		*****-----USE DAYS-----*****					FY-NO.	FY-NO.	FY-PEAK	DATE	
		LINE CODE	OCT-DEC 83	JAN-MAR 84	APR-JUN 84	JUL-SEP 84	FY TOTAL	PRODUCED	HARVESTED		
OTHER MIG. BIRD MAINT.											
MARSH & WATER BIRDS											
AMERICAN COOT	721 2210	92100	0	2700	49200	144000	0	0	4000	10/15	
TOTAL MARSH & WATER BIRDS		92100	0	2700	49200	144000	0	0			
TOTAL OTHER MIG. BIRD MAINT.		92100	0	2700	49200	144000	0	0			
WATERFOWL PRODUCTION											
GEESE											
GIANT CANADA GOOSE	802 1723	0	0	0	0	0	70	0	0		
TOTAL GEESE		0	0	0	0	0	70	0			
DUCKS											
MALLARD	803 1320	0	0	0	0	0	338	0	0		
GADWALL	803 1350	0	0	0	0	0	351	0	0		
AMERICAN WIGEON	803 1370	0	0	0	0	0	113	0	0		
GREEN-WINGED (COMM.) TEAL	803 1390	0	0	0	0	0	14	0	0		
BLUE-WINGED (CINN.) TEAL	803 1400	0	0	0	0	0	413	0	0		
NORTHERN SHOVELER	803 1420	0	0	0	0	0	62	0	0		
NORTHERN PINTAIL	803 1430	0	0	0	0	0	135	0	0		
WOOD DUCK	803 1440	0	0	0	0	0	14	0	0		
REDHEAD	803 1460	0	0	0	0	0	103	0	0		
CANVASBACK	803 1470	0	0	0	0	0	14	0	0		
RUDDY DUCK	803 1670	0	0	0	0	0	108	0	0		
TOTAL DUCKS		0	0	0	0	0	1665	0			
TOTAL WATERFOWL PRODUCTION		0	0	0	0	0	1735	0			
GRAND TOTAL		258300	6900	101730	249450	616380	2140	0			

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LAND CLASSIFICATION

ACREAGE

I. DETAILED CLASSIFICATIONS

WETLAND TYPES	
INLAND FRESH AREAS	
SEASONLY FLOOD BASIN/FLAT	15
SHALLOW FRESH MARSHES	156
DEEP FRESH MARSHES	238
OPEN FRESH WATER	1,313
UPLAND TYPES	
CROPLANDS	
NONIRR-GRN BROWSE, ANNUAL	43
NONIRRIGATED - HOT FOODS	198
GRASSLANDS	
NATIVE GRASSLANDS	1,737
NATIVE GRASSLANDS-RESTORD	39
GRASSLANDS INTRODUCED	194
DENSE NESTING COVER	28
FORESTLANDS	
NON-COMMERCIAL FORESTS	581
OTHER LAND TYPES	
BRUSH	84
ADMINISTRATIVE LANDS	
BLDGS.,RDS.,PARKING LOTS,	23
TOTAL ACRES	4,649

II. SUMMARY CLASSIFICATIONS

INLAND FRESH AREAS	1,722
WETLAND TYPES	1,722
CROPLANDS	241
GRASSLANDS	1,998
FORESTLANDS	581
OTHER LAND TYPES	84
ADMINISTRATIVE LANDS	23
UPLAND TYPES	2,927

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WILDLIFE USE REPORT
SPECIAL RECOGNITION SPECIES
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WAUBAY
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SPECIES NAME	LINE CODE	*****-----USE DAYS-----*****					FY-NO. PRODUCED	FY-NO. HARVESTED	FY-PEAK POPULATION	DATE
		OCT-DEC 83	JAN-MAR 84	APR-JUN 84	JUL-SEP 84	FY TOTAL				
NON-OUTPUT SPECIES										
OTH BIRD-MIG & RES										
GRAY PARTRIDGE	071 2881	0	0	0	0	10000	0	0	50	09/01
RING-NECKED PHEASANT	071 3091	0	0	0	0	9000	0	0	40	09/01
TOTAL OTH BIRD-MIG & RES		0	0	0	0	19000	0	0		
MAMMALS										
EASTERN COTTONTAIL	072 8040	0	0	0	0	50000	0	0	300	09/30
WHITE-TAILED JACKRABBIT	072 8085	0	0	0	0	3500	0	0	25	09/30
BEAVER	072 8100	0	0	0	0	2500	0	0	10	09/30
WOODCHUCK (GROUND HOG)	072 8110	0	0	0	0	5000	0	0	30	09/30
RICHARDSN'S GRND SQUIRREL	072 8130	0	0	0	0	27000	0	0	150	09/30
13-LINED GROUND SQUIRREL	072 8140	0	0	0	0	130000	0	0	700	09/30
FRANKLIN GROUND SQUIRREL	072 8150	0	0	0	0	3500	0	0	25	09/30
FOX SQUIRREL	072 8180	0	0	0	0	40000	0	0	250	09/30
GOPHER	072 8210	0	0	0	0	250000	0	0	1500	09/30
MUSKRAT	072 8235	0	0	0	0	9000	0	0	50	09/30
RED FOX	072 8290	0	0	0	0	5000	0	0	40	09/30
GRAY FOX	072 8315	0	0	0	0	300	0	0	2	09/30
RACCOON	072 8355	0	0	0	0	4500	0	0	35	09/30
LONG-TAILED WEASEL	072 8385	0	0	0	0	4000	0	0	25	09/30
MINK	072 8400	0	0	0	0	6000	0	0	50	09/30
BADGER	072 8415	0	0	0	0	3500	0	0	15	09/30
SPOTTED SKUNK	072 8425	0	0	0	0	200	0	0	2	09/30
STRIPED SKUNK	072 8430	0	0	0	0	5000	0	0	40	09/30
WHITE-TAILED DEER	072 8540	0	0	0	0	25000	0	0	125	09/30
TOTAL MAMMALS		0	0	0	0	574000	0	0		
AMPHIB, REPT, FISH										
SKINKS (GENERAL)	073 9136	0	0	0	0	100000	0	0	500	09/30
SNAPPING TURTLE	073 9200	0	0	0	0	2000	0	0	10	09/30
PAINTED TURTLE	073 9215	0	0	0	0	50000	0	0	250	09/30
GARTER SNAKE	073 9295	0	0	0	0	200000	0	0	1000	09/30
GREEN SMOOTH SNAKE	073 9296	0	0	0	0	5400	0	0	25	09/30
LEOPARD FROG	073 9305	0	0	0	0	200000000	0	0	2000000	09/30
CALIFORNIA NEWT	073 9329	0	0	0	0	2000000	0	0	10000	09/30
TOADS (GENERAL)	073 9499	0	0	0	0	30000000	0	0	300000	09/30
STICKLEBACK SP.	073 9505	0	0	0	0	18250000	0	0	500000	06/01
TOTAL AMPHIB, REPT, FISH		0	0	0	0	250607400	0	0		

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NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE USE REPORT
SPECIAL RECOGNITION SPECIES
(EXCLUDING WATERFOWL)
FY-84

PA 1,040

WAUBAY
6-4590-WBY

SPECIES NAME		LINE	CODE	*****-----USE DAYS-----*****				FY-NO. TOTAL	FY-NO. PRODUCED	FY-NO. HARVESTED	FY-PEAK POPULATION	DATE
				OCT-DEC 83	JAN-MAR 84	APR-JUN 84	JUL-SEP 84					
NON-OUTPUT SPECIES												
TOTAL	NON-OUTPUT SPECIES			0	0	0	0	251200400	0	0		
THREATENED SPECIES												
ENDANGERED												
	SOUTHERN BALD EAGLE	701	3521	90	150	0	15	255	0	0	10	02/25
	TOTAL ENDANGERED			90	150	0	15	255	0	0		
STATUS-UNDETERMINED												
	WHITE-FACED IBIS	704	1870	0	0	7	0	7	0	0	1	05/04
	PRAIRIE FALCON	704	3550	0	0	0	10	10	0	0	1	09/15
	OSPREY	704	3640	0	0	7	0	7	0	0	1	05/14
	TOTAL STATUS-UNDETERMINED			0	0	14	10	24	0	0		
TOTAL	THREATENED SPECIES			90	150	14	25	279	0	0		
OTHER MIG. BIRD MAINT.												
MARSH & WATER BIRDS												
	WESTERN GREBE	721	0010	900	0	2000	5000	7900	0	0	100	09/01
	RED-NECKED GREBE	721	0020	35	0	270	300	605	0	0	6	06/15
	HORNED GREBE	721	0030	250	0	150	400	800	0	0	10	10/01
	EARED GREBE	721	0040	320	0	3500	5000	8820	0	0	100	05/15
	PIED-BILLED GREBE	721	0060	4500	0	900	7500	12900	0	0	150	10/01
	COMMON LOON	721	0070	0	0	30	50	80	0	0	5	04/25
	DOUBLE-CRESTED CORMORANT	721	1200	6000	0	4500	20000	30500	0	0	500	09/30
	WHITE PELICAN	721	1250	800	0	3500	9000	13300	0	0	200	05/10
	AMERICAN BITTERN	721	1900	90	0	300	300	690	0	0	10	06/10
	GREAT BLUE HERON	721	1940	295	0	225	400	920	0	0	10	10/01
	GREAT (COMMON) EGRET	721	1960	290	0	120	800	1210	0	0	20	09/15
	SNOWY EGRET	721	1970	300	0	135	300	735	0	0	10	10/01
	GREEN HERON	721	2010	5	0	90	100	195	0	0	5	06/30
	BLACK-CROWNED NIGHT HERON	721	2020	55	0	450	700	1205	0	0	20	05/25
	LESSER SANDHILL CRANE	721	2050	0	0	25	0	25	0	0	25	04/06
	SORA	721	2140	0	0	350	500	850	0	0	20	09/15
	TOTAL MARSH & WATER BIRDS			13840	0	16545	50350	80735	0	0		
SHRBIRDS, GULLS, TERNS												
	RING-BILLED GULL	722	0540	4500	600	2500	15000	22600	0	0	500	09/01
	FRANKLIN'S GULL	722	0590	7500	0	750	37000	45250	0	0	2500	09/01
	FORSTER'S TERN	722	0690	0	0	400	900	1300	0	0	30	09/01

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NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE USE REPORT
SPECIAL RECOGNITION SPECIES
(EXCLUDING WATERFOWL)
FY-84

PA 1,041

WAUBAY
6-4590-WBY

SPECIES NAME	LINE CODE	*****-----USE DAYS-----*****					FY-NO. TOTAL PRODUCED	FY-NO. HARVESTED	FY-PEAK POPULATION	DATE
		OCT-DEC 83	JAN-MAR 84	APR-JUN 84	JUL-SEP 84	FY				
OTHER MIG. BIRD MAINT.										
SHRBIRDS, GULLS, TERNS										
COMMON TERN	722 0700	0	0	400	700	1100	0	0	20	09/01
BLACK TERN	722 0770	0	0	900	1500	2400	0	0	100	09/01
NORTHERN PHALAROPE	722 2230	0	0	250	40	290	0	0	50	06/01
WILSON'S PHALAROPE	722 2240	0	0	1500	6000	7500	0	0	200	08/15
AMERICAN AVOCET	722 2250	0	0	500	1000	1500	0	0	25	08/15
AMERICAN WOODCOCK	722 2280	0	0	150	450	600	0	0	5	09/01
COMMON SNIPE	722 2300	0	0	300	750	1050	0	0	20	09/15
LONG-BILLED DOWITCHER	722 2320	0	0	50	50	100	0	0	10	05/31
STILT SANDPIPER	722 2330	0	0	20	150	170	0	0	5	08/15
PECTORAL SANDPIPER	722 2390	0	0	50	400	450	0	0	20	08/15
WHITE-RUMPED SANDPIPER	722 2400	0	0	0	400	400	0	0	30	08/15
BAIRD'S SANDPIPER	722 2410	0	0	400	1200	1600	0	0	50	05/01
LEAST SANDPIPER	722 2420	0	0	50	600	650	0	0	20	08/15
DUNLIN	722 2430	0	0	300	300	600	0	0	25	05/25
SEMIPALMATED SANDPIPER	722 2460	0	0	0	3500	3500	0	0	150	08/15
SANDERLING	722 2480	0	0	250	300	550	0	0	25	08/15
MARBLED GODWIT	722 2490	0	0	100	300	400	0	0	5	09/01
GREATER YELLOWLEGS	722 2540	0	0	200	500	700	0	0	10	05/01
LESSER YELLOWLEGS	722 2550	0	0	1200	2000	3200	0	0	50	05/01
SOLITARY SANDPIPER	722 2560	0	0	0	300	300	0	0	5	08/01
WILLET	722 2580	0	0	250	400	650	0	0	10	09/01
UPLAND (PLOVER) SANDPIPER	722 2610	0	0	1000	1000	2000	0	0	25	09/01
SPOTTED SANDPIPER	722 2630	0	0	150	150	300	0	0	5	06/30
BLACK-BELLIED PLOVER	722 2700	0	0	100	50	150	0	0	20	05/15
AMERICAN GOLDEN PLOVER	722 2720	0	0	20	20	40	0	0	5	05/01
KILLDEER	722 2730	875	350	2200	8000	11425	0	0	150	08/15
SEMIPALMATED PLOVER	722 2740	0	0	3050	200	3250	0	0	253	05/31
RUDDY TURNSTONE	722 2830	0	0	500	100	600	0	0	100	05/25
TOTAL SHRBIRDS, GULLS, TERNS		12875	950	17540	83260	114625	0	0		
RAPTORIAL BIRDS										
MARSH HAWK	723 3310	460	100	550	750	1860	0	0	15	09/30
SHARP-SHINNED HAWK	723 3320	60	0	60	100	220	0	0	4	09/30
COOPER'S HAWK	723 3330	30	0	90	25	145	0	0	3	05/15
RED-TAILED (HARLAN) HAWK	723 3370	225	200	400	600	1425	0	0	10	09/20
SWAINSON'S HAWK	723 3420	150	0	450	600	1200	0	0	10	05/28
BROAD-WINGED HAWK	723 3430	0	0	30	25	55	0	0	2	04/30
AM. KESTREL (SPARROW HAWK)	723 3600	600	350	540	1000	2490	0	0	20	10/01
GREAT HORNED OWL	723 3750	680	525	450	800	2455	0	0	12	09/30

DATE 11/13/85

NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE USE REPORT
SPECIAL RECOGNITION SPECIES
(EXCLUDING WATERFOWL)
FY-84

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WAUBAY
6-4590-WBY

SPECIES NAME	LINE CODE	*****-----USE DAYS-----*****				FY-NO. PRODUCED	FY-NO. HARVESTED	FY-PEAK POPULATION	DATE
		OCT-DEC 83	JAN-MAR 84	APR-JUN 84	JUL-SEP 84				
OTHER MIG. BIRD MAINT. TOTAL RAPTORIAL BIRDS		2205	1175	2570	3900	9850	0	0	
OTHER BIRDS MIG & RES MOURNING DOVE	724 3160	0	0	0	0	100000	0	0	1000 09/01
TOTAL OTHER BIRDS MIG & RES		0	0	0	0	100000	0	0	
TOTAL OTHER MIG. BIRD MAINT.		28920	2125	36655	137510	305210	0	0	
GRAND TOTAL		29010	2275	36669	137535	251505889	0	0	