

Narrative Report
for

Waubay National Wildlife Refuge

and
Waubay Wetland Management District
Waubay, South Dakota

July 1, 1973 - June 30, 1974

U.S. Department of Interior
U.S. Fish And Wildlife Service

NARRATIVE REPORT

for

FISCAL YEAR 1974

WAUBAY NATIONAL WILDLIFE REFUGE
and
WAUBAY WETLAND MANAGEMENT DISTRICT
WAUBAY, SOUTH DAKOTA

PERMANENT PERSONNEL

Robert R. Johnson.....	Refuge Manager
Kent F. Hall.....	Ass't. Ref. Mgr.
Edmund J. Fromelt.....	Biological Tech.
Dennis D. Okroi (part-time).....	Refuge Clerk
Donald J. Dargatz (part-time).....	Med. Equip. Operator

SEASONAL (FULL TIME)

Edmund R. Henning.....	Maintenanceman
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TEMPORARY PERSONNEL (WAE)

Bruce T. Atterberg.....	5/14 to 8/17
Richard Dolney.....	4/29 to 10/26
Dennis P. Dargatz.....	4/29 to 10/26
Emil J. Gruba.....	4/29 to 10/26
Alfred J. Miotke.....	4/29 to 10/26

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I GENERAL

A. Weather

Northeastern South Dakota weather highlights included:

1. One of the driest years on record. 1973 precipitation totaled about 16 inches or nearly 5 inches below average.
2. An unusually long growing season. The last killing frost occurred on October 16, or nearly a month later than usual.
3. A relatively mild, blizzard-free winter with below average snow accumulation - about 12 inches.

B. Habitat Conditions

1. Water

Because of drouth, refuge and W.P.A. water conditions slowly deteriorated during the period. By July of 1974 only Type IV and V wetlands retained water and most of these were several feet below their last year's level. All told, not since 1961 have over all water conditions been so poor.

2. Food and Cover

Project lands produced an abundance of vegetative cover of various types and densities which appeared more than adequate for wildlife needs. Wildlife food was also adequate for most species except upland birds during brief periods of heavy snow cover.

C. Status of Acquisition Program

The acquisition goal for the wetland management district is 35,260 fee acres and 120,200 wetland acres under easement. The following table shows progress toward this goal as of June 30, 1974.

*Acquisition goal on easement is no longer
in effect, we take all we can get,
2/25/75 D.O.O. - comment by Jim Turner.*

<u>County</u>	<u>Fee Title</u> <u>No. Mgmt.</u> <u>Units</u>	<u>Acres</u> <u>Acquired</u>	<u>No.</u>	<u>Easement</u> <u>Wetland</u> <u>Acres</u>	<u>Total</u> <u>Acres</u>
Clark	25	2,474.77	320	19,359.00	103,990.45
Codington	15	1,837.04	54	3,466.00	15,400.43
Day	47	5,577.62	287	17,104.00	85,976.56
Grant	20	2,202.93	56	3,137.00	19,123.86
Marshall	19	2,812.36	126	9,038.30	38,967.92
Roberts	33	3,957.93	208	10,400.00	63,726.66
	159*	18,862.65	1,051	62,504.30	327,185.88

* Includes 226 tracts.

II WILDLIFE

A. Migratory Birds

1. Waterfowl - (Anseriformes)

Geese

Once again as in 1973, an unseasonably mild winter triggered an early spring migration. The first day of March arrived with greetings from about 25 returning giant Canadas, instead of the proverbial lion. The big birds seemed unsettled in getting down to business, however, and with good reason. A 10 day siege of sub-zero temperatures beginning March 15, completely halted migration and pushed the birds that were here back to warmer climes.

When the geese returned the second time, most of the breeders remained cautious about nesting. Surprisingly, several hardy pairs managed to hatch their nest by the first week of May, indicating nest initiation during the cold spell in March. But most broods did not come-off until after mid-May, approximately two weeks behind normal. Production, however, was good. The annual nest survey indicated 107 goslings were hatched from 25 nests on refuge and WPA artificial nesting platforms.

This resident flock of giant Canadas has responded dramatically to increased protection since 1972. Post production surveys of about a 1500 square mile area show the population more than tripling in size from 800 in 1972 to nearly 2,500 birds in 1974. The South Dakota Department of Game, Fish and Parks has set a goal of increasing this flock to 5,000 birds. This goal has the support of most area landowners. They like to see the birds around and in a few instances have erected nesting platforms to

attract nesting pairs. All told, the future appears bright for the "prairie honker" in this area.

Other Canada geese (mostly smaller sub-species) and snow geese are common in the area throughout spring and fall migrations.

Many white-fronted geese pass through the area, but few stop.

Ducks

The first arrivals were mallards and pintails on March 5, shortly behind the geese. Migration was well underway until the "cold snap" during mid to late March reversed it. Not until April 10, when green-winged teal were first sighted, had all resident nesters returned from their balmy retreats.

Run-off was light and thus water conditions were considered only fair for duck production.

Breeding populations were down 48% on easement wetlands and 74% on fee areas from 1973. Water conditions steadily deteriorated as most of South Dakota began to weather a full scaled drought. Duck production was the lowest in many years. Survey estimates of 79,436 ducks produced on easements and 17,337 ducks produced on fee areas were 84% and 40% respectively below 1973 production.

Refuge duck production remained relatively stable, dropping only 10% from 1973. The main factor for maintaining production on the refuge was flooding of seven small selected potholes with the Crisafulli pump. Approximately 50 acres of dry wetland basins were transformed into prime waterfowl breeding habitat by pumping.

This was the second year that these wetlands had been flooded and the results are promising. Refuge duck production during the years that the wetlands have been flooded was nearly double any previous year's production, when most of them were dry.

Coot, which are normally quite abundant, were scarce this year, even where water conditions were good. Estimated production on easement, title fee and refuge wetlands totalled just under 11,000 compared to over 67,000 of the ivory billed divers in 1973.

2. Shorebirds - (Charadriiformes)

The spring shorebird migration was nothing less than spectacular from a species diversity stand point. Water conditions were apparently ideal for them. Following is a list of those identified. Known nesters are marked with an asterisk.

- | | |
|---------------------------|----------------------------|
| 1. Semipalmated Plover | 13. White-rumped Sandpiper |
| 2. Killdeer* | 14. Baird's Sandpiper |
| 3. American Golden Plover | 15. Least Sandpiper |
| 4. Ruddy Turnstone | 16. Dunlin |
| 5. Common Snipe | 17. Long-billed Dowitcher |
| 6. Upland Sandpiper* | 18. Stilt Sandpiper |
| 7. Spotted Sandpiper* | 19. Semipalmated Sandpiper |
| 8. Solitary Sandpiper | 20. Marbled Godwit* |
| 9. Willet* | 21. Hudsonian Godwit |
| 10. Greater Yellowlegs | 22. Sanderling |
| 11. Lesser Yellowlegs | 23. Avocet |
| 12. Pectoral Sandpiper | 24. Wilson's Phalarope* |
| 25. Northern Phalarope | |

Gulls and Terns

Species in this group common to the area include: Black Tern, Common Tern and Ring-billed Gull as nesters, and Franklin's and Herring Gulls as transients.

3. Doves - (Columbiformes)

Mourning doves are abundant throughout Northeastern South Dakota. Nesting has been observed on the ground, as well as in the numerous tree and brush groves. Field feeding flocks in the hundreds are common in the fall.

B. Upland Game Birds - (Galliformes)

Indigenous species include sharptailed grouse and prairie chickens. Sharptails are rare but have been seen in Marshall County by refuge personnel. Prairie chickens probably exist as rumors only.

Exotic species found on refuge and WPA land include the Hungarian or Gray partridge and the gaudy Chinese ring-necked pheasant. Both are more abundant in the southern counties of Clark and Codington.

Five "crows" were heard on the refuge pheasant cock call count made on May 15, indicating a very low population.

C. Other Birds - (Falconiformes, Strigiformes, Passeriformes)

Hawks

Transients sighted during migrations include the American Kestrel and Rough-legged, Sharp-shinned and Ferruginous hawks. The Ferruginous hawk was noted on the Kadinger WPA in Clark County in February.

Nesting species include Marsh, Red-tailed and Swainson's hawk.

A raptor nesting survey was initiated on the refuge in 1973 and on WPAs in 1974. A total of 14 nests were located on the refuge in 1973 of which 6 were active producing 6 red-tailed hawks from 3 nests and 8 Swainson's hawks from 3 nests. Only 2 of the nests were active in 1974 producing 2 red-tailed hawks and 1 Swainson's hawk.

Fifteen nests were located on WPAs in 1974, of which 10 were active. Eight of the nests were red-tailed hawks from which 12 young were produced from 7 nests and 1 was deserted. The other 2 nests produced 5 Swainson's hawks.

Eagles

The only sighting on the refuge was a golden eagle in March. Both species of eagles were seen on private land in the fall and spring.

Owls

Great Horned Owls are common year round residents. Short-eared owls are occasionally seen during migration. Several rare owl sightings were made this year - a screech owl at refuge headquarters in April and a road-killed saw-whet owl in Clark County in May.

Passerines

Continental Breeding Bird Survey routes 18 and 19 were made during June.

Route 18 - Veblen - samples Minnesota River Valley habitat and revealed 41 species of which the grackle, red-winged blackbird and meadow lark were the most abundant.

The Britton route - #19 - sampled Prairie Coteau habitat. The most abundant species were the same as on the Veblen route but 53 species were tallied.

The Audubon Christmas Bird Count was made on the refuge Dec. 20. The following birds were sighted: Ring-necked Pheasant - 1, Gray Partridge - 9, Great Horned Owl - 3, Hairy Woodpecker - 3, Downy Woodpecker - 1, Horned Lark - 25, Blue Jay - 7, Black-capped Chickadee - 12, Brown Creeper - 2, Common Redpoll - 5, and Snow Bunting - 35; a total of 11 species and 103 birds. Last year 7 species and 47 individuals were recorded.

The spring arrival dates for 15 common birds of the refuge are shown in the following table:

<u>Species</u>	<u>1974</u>	<u>Earliest Arrival Date Recorded</u>	<u>Latest Arrival Date Recorded</u>
Canada Goose	3/1	2/24	3/18
Mallard	3/5	3/4	4/5
Gadwall	3/13	3/13	4/16
BW Teal	4/9	3/24	4/23
L. Scaup	3/13	3/13	4/12
Ruddy	4/9	3/29	5/6
Marsh Hawk	2/20	2/20	4/3
Coot	4/7	3/21	4/11
Killdeer	3/12	3/12	4/10
Common Flicker	4/9	3/29	4/16
P. Martin	4/14	4/7	6/6
Robin	2/27	2/27	3/27
Meadow Lark	3/5	3/5	4/1
Y.H. Blackbird	4/15	4/16	4/24
R.W. Blackbird	3/3	3/3	4/5

D. Big Game

White-tailed deer are common on just about all areas. They have adapted very well to the present intensive land use. Most area residents can recall when no deer could be seen in the area.

The refuge spotlight count made in November revealed a 24% drop from the record of 94 animals in 1972, but still a very healthy deer herd.

The following table shows the results of the spotlight surveys since 1966:

<u>Year</u>	<u>Date</u>	<u>No. Deer Observed</u>	<u>No. Deer Per Mile</u>	<u>% Change</u>
1966	11/7	55	2.75	-
1967	11/13	49	2.45	-11
1968	11/6	63	3.15	+28
1969	11/12	58	2.90	- 5
1970	11/13	70	3.50	+22
1971	11/9	91	4.26	+30
1972	11/6	94	4.40	+ 3
1973	11/6	71	3.32	-24
			3.	

Scattered bands of antelope roam the district, but all on private land. The eastern South Dakota habitat is probably saturated since the transplanted herds of these "speedsters" appear to be just holding their own.

E. Fur Animals, Predators, Rodents and Other Mammals

Muskrat

Suitable marsh habitat was considerably down from the previous year for this little fur bearer. Most of the sloughs that held water had good "rat" populations.

Following are the results of the refuge muskrat house count: The last three sloughs were added in 1972 to monitor muskrat activity in wetlands that have been flooded by pumping.

	'62	'63	'64	'65	'66	'67	'68	'69	'70	'71	'72	'73
Dahling Slough	2	8	24	2	0	2	0	0	0	0	5	0
Swan Pond	9	25	26	5	1	2	0	0	0	0	19	10
Barse Slough	1	2	2	1	0	2	0	0	0	0	4	0
Prairie Bulrush	0	1	19	2	0	0	0	0	0	0	34	11
Centerwoods	No data prior to 1972-----										5	8
Jailbait Pond	-----										4	6
Carlson Slough	-----										6	13

Mink

Little is seen of this animal, but sign indicates a fair population.

Beaver

At least one beaver is active once again in Spring Coulee on the refuge. It was released there in the fall of 1973 after having been captured in a farm yard by the local Conservation Officer. Hopefully it will find a mate and make some more beaver.

Beaver are known to inhabit only one WPA - Condrington County Tract 36. Although none were seen there this year the signs of their labors were evident.

Coyote

None heard or seen for quite a few years.

Raccoon

These animals are occasionally seen throughout the area. The abundant sign and tracks that can be found around the edges of most sloughs indicates a higher population than one would believe by sightings alone.

Red Fox

Several active dens were noted on WPA's, but high pelt prices seem to be checking "ol Reynards" reproductive potential, since sightings of him are rare. However, only the most meticulous trappers are able to take fox consistently.

Badger

Usually seen only by where they've been, badgers can be considered common.

Skunk

Because of available cover, all management units are probably inhabited by at least one skunk.

Weasel

The only observation was a road kill, but it's doubtful if they are that rare.

Rabbit

A walk through any management unit with a dog will usually flush at least one rabbit. Jacks appear to be more abundant than cottontails.

Woodchuck

The refuge is the only place in the district where this animal has been observed. Once again this year several were seen in the wooded areas.

Other Small Animals

Fox squirrels are common on the refuge and can be found in most WPAs with a fair sized shelterbelt.

Pocket gophers and three species of ground squirrels - Richardson's, Franklin's and Thirteen-lined, are quite common.

F. Rare and Endangered Species

A lone transient Ferruginous Hawk was observed on the Kadinger WPA in Clark County in February.

G. Fish

Tract 93 in Marshall County attracts some fishing activity for bullheads and northern pike. Most of the large wetlands have abundant minnow populations.

H. Reptiles and Amphibians

Leopard frogs, garter snakes, tiger salamanders and painted turtles are regularly seen during the summer months on nearly all management units with water.

I. Disease

None evident.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

There were no major physical developments on the refuge this period. Those on WPAs included the construction of 8.6 miles of barbed wire fence and posting 28.2 miles of boundary.

B. Plantings

1. Aquatic and Marsh Plants

None

2. Trees and Shrubs

None

3. Upland Herbaceous Plantings

During the period our efforts to provide quality upland nesting cover for waterfowl focused on the establishment of DNC (dense nesting cover consisting of wheatgrasses, alfalfa, and sweet clover).

A total of 513 acres on 19 areas were seeded with a pure live seed mixture containing 3 pounds of Tall wheatgrass, 2 pounds of

Intermediate wheatgrass, 1 pound of Slender wheatgrass, 1 pound alfalfa, and 1 pound of Yellow blossom sweetclover.

Cultural methods varied. Fallow land was seeded with a nesbit drill using a light nurse crop of rye during late July and early August. Most croplands were pony-pressed-in without a nurse crop during early spring or late fall, but some were overseeded with the nesbit drill on a spring seeding of oats. About 95 percent of the plantings became established. The only failure occurred on a field badly infested with wild oats.

The mid-summer seedings provided an abundance of dense cover the following year. In fact, it looked so good 50 acres of it on the refuge were searched for nests using a cable-chain drag. Results were disappointing - not a single nest was found. Possible reasons include the lack of ground litter, refuge birds are not imprinted to this type of cover, or DNC is not particularly attractive to waterfowl when a variety of good cover is available.

4. Cultivated Crops

About 875 acres were devoted to crop production - 250 acres on the refuge and the balance on WPA's. Oats, millet, and rye were the main crops. All were share-cropped except 40 acres on the refuge which were farmed by refuge personnel. Crop yields were near average and the governments' share was left standing in the field for wildlife use.

C. Collections and Receipts

1. Seeds and Propagules

None

2. Specimens

None

D. Control of Vegetation

2,4-D was applied to 785 acres for the control of Leafy Spurge (Euphorbia esula), Canada thistle (Cirsium arvense), and Sow thistle (Sonchus arvensis). These species are primary noxious weeds in South Dakota and their control is required by law. All herbicides were applied at manufacturers' prescribed rates using a terrestrial boom-jet sprayer.

Control of about 100 acres of quackgrass (*Agropyron repens*) was initiated on Marshall County WPA 47a as the result of a congressional complaint from Mr. Robert Schuster of Eden, South Dakota. The infested area was summer fallowed in 1974 and will be seeded to dense nesting cover in 1975.

E. Planned Burning

None

F. Fires

None

IV RESOURCE MANAGEMENT

A. Grazing

Grazing was permitted on 9 units containing about 2,500 acres. A total of 830 AUM's were used. Revenue amounted to \$3,616.48 or the greatest in refuge history. Reasons for the increase are high grazing fees (\$4.00 per AUM in 1973 and \$5.50 in 1974) and providing about 400 AUMs of grazing for Northern Prairie Wildlife Research Center's land use study on the Augustana WPA in Day County (see Part V for details).

Despite the drought, most units provided an abundance of forage throughout the May 15 - September 30 grazing season. This is attributed to the light stocking rate - 2 acres per AUM. Stockwater, however, became a problem in some units and several permittees were forced to remove their stock before the end of the grazing season.

During the period, grazing permittees were notified by certified letter that beginning in 1977 grazing will be permitted only for management purposes. So far, we've received little permittee response to the change in policy.

B. Haying

Day and Marshall Counties were declared a drought disaster area in 1973 because of the acute hay shortage. To help alleviate the situation haying was permitted on project lands in these counties where it could possibly provide management benefits such as the

removal of heavy duff to encourage more desirable vegetation.

All told the demand for hay was light. Fourteen inquiries were received, but only 9 of the applicants decided they wanted hay. Those refusing thought the \$6.00 per acre price too high for the quality of the hay or wanted more than the 40 acres allowed per individual. Income from the 144 acres cut amounted to \$864.00.

C. Fur Harvest

There was no fur harvest on the refuge, but WPAs were open to trapping in accordance with state regulations. Because of poor water conditions the harvest of fur-bearers on these areas was probably lower than in previous years.

D. Timber Harvest

The Enemy Swim Indian Church was given a free special use permit to gather 10 cords of down and dead timber for firewood. Their harvest amounted to 1 cord.

E. Commercial Fishing

None

F. Other Uses

Stock water access permits were issued to Steve Street of Marietta, Minnesota, and Walter Ninke of Webster, South Dakota. The first involved Grant County WPA 54; the second involved Day County WPA 319. The fee for each 5 year permit was \$10.00.

V FIELD INVESTIGATIONS AND APPLIED RESEARCH

A. Cooperative Study of the NESD Resident Goose Flock

This cooperative study with the South Dakota Dept. of Game, Fish and Parks was completed in 1968. Several activities have been continued on a cooperative basis to provide up to date information for making management decisions.

In 1974 a new 6 year research study was initiated by the Game, Fish and Parks Department using Pittman-Robertson funds to annually finance research by two graduate students from South Dakota State University at Brookings. The new study concerns investigations of landowner tolerance, pioneering and movement, census techniques and related growth factors of a resident giant Canada goose flock in northeastern South Dakota. Involvement of refuge personnel in this study will be limited to banding assistance and providing production data on project lands.

Data for the following 1974 surveys were provided by graduate research assistants Tom Tacha and J. David Hilley.

1. Spring Pair Count

<u>Year</u>	<u>Indicated Pairs (Original Areas)</u>	<u>*Indicated Pairs (Original & New Areas)</u>
1964	101	
1965	111	
1966	121	
1967	111	
1968	157	
1969	201	
1970	169	
1971	197	
1972	172	
1973	202	249
1974	317	381

* Due to flock expansion and pioneering, coverage of the survey area was increased in 1973.

2. Banding

Drive trapping of young and moulting adults on selected large water bodies was very successful this year. A three day effort in

July netted 639 geese on 5 areas. Of the total, 80 were locals and 559 were adults, of which 85 were recaptures. Banding locations included Spring and North Waubay Lakes on the refuge and Opitz Lake all in Day County and Piyas and Cattail Lakes in Marshall County.

3. Pre-hunting Season Census

This aerial survey is made prior to the arrival of migrant geese, and early enough to eliminate complaints of hazing the geese into the refuge before the hunting season. Game, Fish and Parks Pilot Joe Marbach and Assistant Regional Supervisor Jerry Streckfuss made this years count on Aug. 15 and 16.

<u>Year</u>	<u>Number of Geese Observed</u>
1964	614
1965	621
1966	840
1967	721
1968	571
1969	1,056
1970	1,340
1971	1,501
1972	798
1973	1,944

B. Intensive Study of the Vascular Vegetation of Northeastern Day County

This study was undertaken in 1971 and concluded on September 30, 1973 by Ms. R. Evelyn Roberts of the Department of Natural Sciences, Northern State College, Aberdeen, S. Dak. A special use permit was issued Ms. Roberts to conduct some of her study on the refuge.

Objectives of the study were 1) to provide a representative sample of the vascular vegetation found in northeastern Day County, 2) to compare such findings with previous collections of observations in the same area, 3) to extend the known distribution of some species, and 4) to note the effects of certain kinds of disturbance of natural areas upon species survival.

Following is a summary of conclusions reached thus far.

It is not supposed that every vascular species had been found in the field, herbaria, or in reported listings. It is believed, however, that a sufficiently representative sample of Day County's vascular

species had been assembled. The total species findings are summarized in the following table:

<u>Plant Category</u>	<u>Families</u>	<u>Genera</u>	<u>Species Found</u>	<u>Species Listed</u>	<u>Total</u>
Equisetaceae	1	1	2	1	3
Monocotyledonae	16	68	127	1	128
Woody Dicotyledonae	20	37	61	4	65
Herbaceous Dicotyledonae	53*(55)	80	321	7	328
Total	90	186	511	13	524

* Two families in the woody dicots were also represented in the herbaceous dicots.

The 524 species presented in the species tables include 90 per cent of those which Van Bruggen (1972) had estimated to be common over the state and 77 percent of those frequent over the state.

Twenty-two western species and 5 southeast species were found in this northeast area, as well as 26 species not previously listed by Van Bruggen (1972).

About 180 species remain undiscovered among those which Van Bruggen considered infrequent and occasional over the state, and those from common to rare in the east or northeast. About one-third of these remaining species are grasses and sedges. One-third had also been classed as rare, and 68, some what over one-third, were considered to be infrequent in the same area.

The list of potential natural vegetation in the study area has been shown to be greater than the previous records suggested. Some of the species found may not be native to the area. Nevertheless, their presence reflects the soil and climate potential at the present time.

Observations pertaining to the last named objective and to the frequency of species were not included in information obtained from Ms. Roberts. A complete listing of the species found is available at refuge headquarters. The work described appears in complete form in a master's thesis available in the Botany-Biology Department at South Dakota State University.

C. Effects of Land Use on Waterfowl and Other Wildlife Populations

Project NA-421 by the Northern Prairie Wildlife Research Center.
Principal Investigator: Tom Klett.

This study was initiated in the spring of 1973 to determine the effects of four common cover manipulation treatments on the physiognomy of seeded grass/legume nesting habitat.

The Augustana Waterfowl Production area was selected as a study area. This tract contains 122 acres of former cropland that were seeded with a native grass/legume mixture in 1965. Although no grazing or haying was permitted after seeding, the quality of the cover appeared to be deteriorating.

Four cover manipulation treatments (grazing - early, midseason, and late; burning; mowing and scarification) were applied to determine their relative effectiveness for re-establishing vegetative vigor. The study area was divided into three pastures which were grazed to remove about 80 percent of the forage during the following periods:

Pasture 1 - April 13 - May 15
Pasture 2 - May 16 - August 30
Pasture 3 - August 31 - October 23

The burning, mowing, and tillage treatments were applied within each pasture on 16' square plots in randomly located clusters. Each cluster consisted of four treatment plots and one control plot spaced 16' apart in a row parallel to the slope contour. Treatments were randomly assigned within each cluster which were replicated ten times in each pasture. All plots except those scheduled for the grazing treatment were protected by exclosures. A standard cover board located at the center of each plot was photographed before treatments were applied and prior to the initiation of new vegetative growth.

Exclosures were removed in the spring of 1974. No further treatments are scheduled. Cover board photographs and appropriate range survey methods will be used to measure the quality of vegetation each year until treatment effects are no longer discernible.

D. Mourning Dove Call Count Survey

This survey is made annually in cooperation with the Migratory Bird Populations Station. The survey route is number 2030 located in south-central Day County.

The route is 20 miles long and consists of 20 stops made at 1 mile intervals. All mourning doves seen and heard for a period of 3 minutes at each stop are recorded.

The data gatered are used to monitor breeding populations of this bird. The following table shows results since the survey began in 1963.

<u>Year</u>	<u>No. of Doves Seen</u>	<u>No. of Doves Heard</u>
1963	25	77
1964	18	72
1965	28	77
1966	20	87
1967	13	61
1968	31	67
1969	12	49
1970	23	35
1971	49	64
1972	58	69
1973	58	76

VI PUBLIC RELATIONS

A. Recreation Use

Project lands received an estimated 65,000 recreational visits during the period, or about 18 percent more than in 1973.

Most of the increase occurred on the refuge. Based on traffic recorder data, 14,672 cars entered the refuge, compared with 12,374 in 1973. Of these 3,442 stopped at headquarters and 1,414 at the recreational area. Nearly 5,000 people walked the hiking trail and another 4,600 climbed the observation tower.

A total of 1,387 visitors registered at headquarters. They came from 30 states and 5 foreign countries - Venezuela, England, Mexico, Japan, and China.

WPA visitations consisted mainly of sight-seeing; hunting for water-fowl, ring-necked pheasants, white-tailed deer, and varmits; and trapping.

B. Refuge Visitors

Nothing significant to report.

C. Refuge Participation

Refuge participation included National Wildlife Week Programs, Refuge tours, Service Club presentations, and a conservation teach-in. Number-wise, these totalled 21. In addition, 16 news releases were prepared during the period.

D. Hunting

1. Waterfowl

Geese

The refuge serves as a fall staging area for the NESD Giant Canada goose flock and thus the boundary and adjacent private land traditionally receive heavy goose hunting pressure. A shortened Canada goose season of 15 days beginning Oct. 6 and a restriction on the use of "dark goose" type decoys resulted in a very low kill this year.

Snow geese were also available in the refuge area, but most hunters concentrate on the "honkers". Several small flocks of snows were known to be using WPAs in other parts of the district, but no hunter success information is available. The snow goose season opened October 6 and closed December 2 statewide.

Ducks

The point system was once again adopted allowing a maximum bag limit of 10 birds and a 70 day season beginning October 6. The dry conditions, however, concentrated the birds and the hunters, making ducks and limits scarce after opening weekend.

2. Upland Game

Ring-necked Pheasant

The Department of Game, Fish and Parks reported a 33% increase in the pheasant population over the previous year and set the most liberal pheasant hunting season since the tail end of the soil bank era of the early 1960's.

The season opened for 15 days beginning October 20 in Day, Marshall, Grant and Roberts Counties. In Clark and Codington Counties, which are considered to be in the main pheasant range of the state, the season ran from October 20 to November 23 and December 3-31. The daily bag limit was 3 cock birds.

Most WPA's received heavy hunting pressure the first two weekends. Many hunters, however, complained that the birds weren't as plentiful as predicted, since success was not exceptional, and by the second weekend birds were hard to find.

3. Big Game

Deer

a. Archery

Archers were given a 50 day split season from November 3-23 and December 2-31 to bag their venison in the east river management zone of the state. The refuge was also open during the December season for the first time in many years. Even though deer are common, few people participate in archery hunting. Hunting activity ranged from light on WPAs to moderate on the refuge. To our knowledge, no archers connected on project lands.

b. Rifle

Nimrods had the traditional 9 day deer hunt from November 24 - December 1. A total of 2,720 permits were issued for the six WMD Counties. From data gathered on public use surveys, the refuge and WPA's hosted approximately 160 deer hunters. Statistics compiled by the Game, Fish & Parks Department indicate a 75% success ratio for East River rifle deer hunters this year. There were a minimum of 37 deer taken on the refuge, where hunters are requested to check in their kill, of which over 50% were bucks.

E. Violations

1. Easements

A total of 19 easement violations - 1 filling, 6 draining, and 12 burning - were confirmed during the period (see following table for details).

Most of the violations were detected by aerial inspections during November. The others were discovered during routine travels or brought to our attention by concerned individuals, mostly adjoining easement owners.

All violators were personally contacted. Where draining and filling occurred restitution was requested; where burning was involved, the owner was advised of the violation and warned about future burning. As a follow-up on the 2 drainage violations we were unable to resolve, Special Investigator Fisher tried to obtain restitution. He was unsuccessful and the cases have been referred to the U.S. Attorney for consideration.

1973 Easement Violations and Their Status

Easement Number

42X	Day	Draining	1
215X	Day	Draining	2
161X	Day	Draining	2
36X	Day	Draining	2
130X	Day	Draining	1
142X	Day	Burning	3
174X	Day	Burning	3
181X	Day	Burning	3
25X	Day	Burning	3
301X	Day	Burning	3
214X	Day	Burning	3
11X	Day	Burning	3
69X	Day	Burning	3
78X	Day	Burning	3
70X	Day	Filling	4
120X	Day	Draining	5
181X	Clark	Burning	3
176X	Clark	Burning	3
145X	Roberts	Burning	3

- 1 - Easement owner refuses to restore wetlands - case referred to U.S. Attorney for civil action.
- 2 - Easement owner restored wetlands.
- 3 - Easement owner sent warning via certified mail.
- 4 - Easement owner removed fill.
- 5 - Easement owner consented to stop pumping.

2. Other Violations

Two littering violations involving the dumping of garbage along refuge roads by Indian families were investigated and referred to Sisseton-Wapeton Tribal Authorities. The guilty parties were not prosecuted but were required to clean up the trash.

F. Safety

Safety meetings were held monthly throughout the year. Safety films shown were followed by group discussion. Films presented are listed below:

1. Burns
2. Shock
3. Danger is Your Companion
4. It's All in Knowing How
5. Nose, Throat, and Ears
6. Eyes and Their Care
7. First Aid Now
8. Rescue Breathing
9. First Aid on the Spot
10. Firefighting for Householdors
11. Safe Use of Pesticides
12. Heads Up (life saving and water safety)

We are happy to report no lost-time accidents since 1971. Our present record stands at 790 working days as of June 30, 1974.

VII OTHER ITEMS

A. Items of Interest

1. 1974 Payments to Counties under the Refuge Sharing Act PL. 88-523 are listed below. Payments represent $\frac{3}{4}$ of 1% of the adjusted cost of tracts in each county. Fiscal Year 1973 payments totalled \$11,693.92.

<u>County</u>	<u>Payment</u>
Clark	\$1,037.75
Codington	1,020.30
Day	4,754.55
Grant	1,566.67
Marshall	1,301.26
Roberts	2,299.24
	<u>\$11,979.77</u>

2. A potentially serious problem has arisen in NESD concerning the former Sisseton-Wahpeton Indian Reservation. Although this reservation was supposedly eliminated in the late 1800's most of the Sioux Indians of this tribe still reside within its boundaries, which covers portions of Day, Marshall, Roberts, and Codington Counties. There are also many non-Indians who live within the boundaries, who have bought and developed land.

Court action was recently taken by the Indians, alleging the reservation had been eliminated illegally and that they were a sovereign nation. A Circuit Court of Appeals ruled in their favor by stating that the reservation in question was in fact no different than any other Indian reservation. As it pertains to wildlife, the Indians now have the right to hunt and fish for food without restriction, though they have been advised by the tribal council not to trespass on non-Indian land that is posted.

So far the activities have been non-violent, but issues such as non-Indian land holdings and jurisdiction make for a complicated situation to be worked out by the courts.

Approximately 1,000 acres of of the refuge and 5,000 acres of fee title Waterfowl Production Areas lie within the boundaries of the reservation.

3. Biological Technician Edmund Fromelt received his 30 year service pin from Regional Director Marston in September.
4. The 444 hours of training completed by station personnel is listed in the following table:

American Red Cross Multi-Media First Aid Course	Fromelt, Dargatz, Hall	8
Introduction to Supervision	Johnson	40
Effective Letter Writing for Management	Okroi	16
Law Enforcement Workshop (Arden Hills)	Hall, Okroi	40
Law Enforcement Workshop (Pierre)	Hall, Okroi, Dargatz	8
Supervisory Safety Training	Johnson	40
Emergency Medical Technical Training	Johnson, Okroi	22
Defensive Drivers Training	Johnson, Fromelt, Okroi, Henning, Dolney, Gruba, Miotke, Dennis Dargatz, Donald Dargatz	8
Area Office Detail	Johnson, Fromelt Okroi	40 24

B. Photographs

None

Credits:

Okroi: Typing.

Fromelt: VI-F, VII-A1.

Hall: II, V, VI-D, VII-A2

Johnson: Balance of report and editing.

SIGNATURE PAGE

Submitted by:

Robert H. Blum
(Signature)

Ref. Mgr.
Title

Date: _____

Approved, Area Office

Date: _____

(Signature)

Approved, Regional Office

Date: _____

(Signature)

NATIONAL WILDLIFE REFUGE SYSTEM
PEAK MONTHLY WATERFOWL POPULATIONS

WAUBAY

06-3545-90-WBY

SPECIES NAME	JUL 73	AUG 73	SEP 73	OCT 73	NOV 73	DEC 73	JAN 74	FEB 74	MAR 74	APR 74	MAY 74	JUN 74
SPECIAL RECOGNITION BIRDS												
AMERICAN COOT	4300	25070	23600	16290	0	0	0	0	0	9940	3375	3375
WATERFOWL MAINTENANCE												
SWANS												
WHISTLING SWAN	0	0	0	39	23	0	0	0	0	14	0	0
GESE												
SNOW GOOSE	0	0	0	5000	0	0	0	0	0	0	0	0
WHITE-FRONTED GOOSE	0	0	0	50	0	0	0	0	0	40	0	0
CANADA GOOSE	0	0	0	1685	600	0	0	0	0	0	0	0
GIANT CANADA GOOSE	220	490	1720	1685	600	0	0	0	50	85	125	200
DUCKS												
COMMON MERGANSER	0	0	0	0	0	0	0	0	42	1035	0	0
MALLARD	5500	12750	18900	18680	630	0	0	0	0	6915	850	1200
BLACK DUCK	0	45	0	2	0	0	0	0	0	0	0	0
GADWALL	3100	4475	5370	1690	0	0	0	0	0	6295	1150	1185
AMERICAN WIGEON	120	1000	13235	2210	0	0	0	0	0	5230	55	0
GREEN-WINGED (CINN.) TEAL	700	100	2195	685	0	0	0	0	0	2070	200	0
BLUE-WINGED TEAL	14000	15900	5290	4370	0	0	0	0	0	750	2000	2930
NORTHERN SHOVELER	1500	9200	4735	1450	0	0	0	0	0	1190	210	210
PINTAIL	2200	4200	10495	6790	0	0	0	0	10	9235	260	280
WOOD DUCK	10	45	25	0	0	0	0	0	0	0	10	0
BUFFLEHEAD	4000	1420	1135	1690	0	0	0	0	0	14300	1150	745
CANVAS BACK	1100	55	400	845	0	0	0	0	0	18115	520	10
LESSER SCAUP	2240	0	0	8890	120	0	0	0	31	9650	830	220
RING-NECKED DUCK	600	0	0	0	0	0	0	0	0	1765	105	130
COMMON GOLDENEYE	0	0	0	0	0	0	0	0	83	260	40	0
BUFFLEHEAD	0	0	5	850	85	0	0	0	0	155	0	0
RUDDY DUCK	3000	685	935	500	0	0	0	0	0	85	20	350
TOTAL SWANS	0	0	0	39	23	0	0	0	0	14	0	0
TOTAL GESE	220	490	1720	8420	1200	0	0	0	50	125	125	200
TOTAL DUCKS	37870	49875	62720	48652	835	0	0	0	166	77550	7400	7260
TOTAL WATERFOWL	38090	50365	64440	57111	2058	0	0	0	216	77689	7525	7460

NATIONAL WILDLIFE REFUGE SYSTEM
LAND USE INVENTORY REPORT
FY - 74

WAUBAY
06-3545-90-WBY

LAND CLASSIFICATION

ACREAGE

I. DETAILED CLASSIFICATIONS

WETLAND TYPES

INLAND FRESH AREAS

SEASONLY FLOOD BASIN/FLAT	148.3
SHALLOW FRESH MARSHES	860.6
DEEP FRESH MARSHES	6,352.2
OPEN FRESH WATER	1,894.0

UPLAND TYPES

CROPLANDS

NONIRR-GRN BROWSE, ANNUAL	18.5
NONIRR-GRN BROWSE, PERANL	19.0
NONIRRIGATED - HOT FOODS	162.5
NONIRRIGATED - OTHER	674.6

GRASSLANDS

NATIVE GRASSLANDS	3,955.5
NATIVE GRASSLANDS-RESTORD	2,848.4
GRASSLANDS INTRODUCED	4,549.0
DENSE NESTING COVER	622.0

FORESTLANDS

NON-COMMERCIAL FORESTS	727.5
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BRUSHLANDS

BRUSH	237.5
-------	-------

OTHER LAND TYPES

ADMINISTRATIVE

GENERAL	15.5
---------	------

OTHER

RUCKS	5.0
-------	-----

TOTAL ACRES

23,090.1

II. SUMMARY CLASSIFICATIONS

INLAND FRESH AREAS
WETLAND TYPES

9,255.1
9,255.1

CROPLANDS
GRASSLANDS

874.6
1,974.9

NATIONAL WILDLIFE REFUGE SYSTEM
LAND USE INVENTORY REPORT
FY - 74

WAUBAY
06-3545-90-WBY

LAND CLASSIFICATION	ACREAGE
FORESTLANDS	727.5
BRUSHLANDS	237.5
UPLAND TYPES	13,814.5
ADMINISTRATIVE	15.5
OTHER	5.0
OTHER LAND TYPES	20.5

NATIONAL WILDLIFE REFUGE SYSTEM

WATERFOWL USE DAYS

WAUBAY

06-3545 90-WBY

SPECIES NAME	JUL 1973- SEP 1973	OCT 1973- DEC 1973	JAN 1974- MAR 1974	APR 1974- JUN 1974	12 MONTH TOTAL
SPECIAL RECOGNITION					
BIRDS					
AMERICAN COOT	1,500,900	165,000	0	261,450	1,927,350
WATERFOWL MAINTENANCE					
SWANS					
WHISTLING SWAN	0	720	0	300	1,020
GEESSE					
SNOW GOOSE	0	42,000	0	0	42,000
WHITE-FRONTED GOOSE	0	600	0	1,200	1,800
CANADA GOOSE	0	40,050	0	0	40,050
GIANT CANADA GOOSE	61,200	40,050	1,500	11,100	113,850
DUCKS					
COMMON MERGANSER	0	0	300	13,650	13,950
MAILLARD	932,100	315,600	0	147,450	1,395,150
BLACK DUCK	750	60	0	0	810
GADWALL	325,350	14,400	0	182,700	522,450
AMERICAN WIGEON	173,700	20,550	0	70,650	264,900
GREEN-WINGED (CINN.) TEAL	39,300	4,950	0	30,900	75,150
BLUE-WINGED TEAL	878,250	33,750	0	136,050	1,048,050
NORTHERN SHOVELER	375,300	15,300	0	31,500	422,100
PINTAIL	336,900	52,500	300	115,650	505,350
WOOD DUCK	1,500	0	0	150	1,650
REDFEED	155,250	25,500	0	204,750	385,500
CANVASBACK	31,800	11,100	0	366,000	408,900
LESSER SCAUP	65,550	90,000	300	243,900	399,750
RING-NECKED DUCK	15,150	0	0	39,750	54,900
COMMON GOLDENEYE	0	0	930	2,850	3,780
RUFFLEHEAD	30	6,600	0	2,550	9,180
RUDDY DUCK	65,250	4,500	0	12,300	82,050
TOTAL SWANS	0	720	0	300	1,020
TOTAL GEESSE	61,200	122,700	1,500	12,300	197,700
TOTAL DUCKS	3,396,180	594,810	1,830	1,600,800	5,593,620
TOTAL WATERFOWL	3,457,380	718,230	3,330	1,613,400	5,792,340

NATIONAL WILDLIFE REFUGE SYSTEM
AVERAGE MONTHLY WATERFOWL POPULATIONS

WAUBAY

C6-3545-90-WBY

SPECIES NAME	JUL 73	AUG 73	SEP 73	OCT 73	NOV 73	DEC 73	JAN 74	FEB 74	MAR 74	APR 74	MAY 74	JUN 74
SPECIAL RECOGNITION BIRDS												
AMERICAN COOT	4135	23550	22345	5500	0	0	0	0	0	5585	1565	1565
WATERFOWL MAINTENANCE												
SWANS												
WHISTLING SWAN	0	0	0	18	6	0	0	0	0	10	0	0
GEESE												
SNOW GOOSE	0	0	0	1400	0	0	0	0	0	0	0	0
WHITE-FRONTED GOOSE	0	0	0	20	0	0	0	0	0	40	0	0
CANADA GOOSE	0	0	0	835	500	0	0	0	0	0	0	0
GIANT CANADA GOOSE	180	430	1430	835	500	0	0	0	50	85	85	200
DUCKS												
COMMON MERGANSER	0	0	0	0	0	0	0	0	10	455	0	0
MALLARD	4830	10550	15690	10310	210	0	0	0	0	3115	600	1200
BLACK DUCK	0	25	0	2	0	0	0	0	0	0	0	0
GADWALL	2800	3965	4080	480	0	0	0	0	0	4145	760	1185
AMERICAN WIGEON	100	525	5165	685	0	0	0	0	0	2300	55	0
GREEN-WINGED (CINN.) TEAL	680	75	555	165	0	0	0	0	0	830	200	0
BLUE-WINGED TEAL	10190	15200	3885	1125	0	0	0	0	0	370	1235	2930
NORTHERN SHOVELER	1185	7820	3505	510	0	0	0	0	0	630	210	210
PINTAIL	1780	3380	6070	1750	0	0	0	0	10	3325	250	280
WOOD DUCK	10	25	15	0	0	0	0	0	0	0	5	0
REDHEAD	3275	865	1035	850	0	0	0	0	0	5530	550	745
CANVASBACK	955	25	80	370	0	0	0	0	0	11750	440	10
LESSER SCAUP	2185	0	0	2970	30	0	0	0	10	7420	490	220
RING-NECKED DUCK	505	0	0	0	0	0	0	0	0	1120	75	130
COMMON GOLDENYE	0	0	0	0	0	0	0	0	31	80	15	0
RUFFLEHEAD	0	0	1	200	20	0	0	0	0	85	0	0
RUDDY DUCK	1345	460	370	150	0	0	0	0	0	50	10	350
TOTAL SWANS												
TOTAL GEESE	180	430	1430	3090	1000	0	0	0	50	125	85	200
TOTAL DUCKS	29840	42915	40451	19567	260	0	0	0	61	41205	4895	7260
TOTAL WATERFOWL	30020	43345	41881	22675	1266	0	0	0	111	41340	4980	7460

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

WAUBAY

06-3545-90-WBY

TYPE OF BENEFIT	JUL-SEP 73	OCT-DEC 73	JAN-MAR 74	APR-JUN 74	FY TOTAL
REFUGE RECEIPTS					
HAYING	864.00	0.00	0.00	0.00	864.00
GRAZING	0.00	2,541.48	0.00	1,075.00	3,616.48
OTHER RECEIPTS	20.00	0.00	0.00	0.00	20.00
BY COOPTR, FOR SELF	0.00	0.00	0.00	0.00	0.00
BY COPTTR, FOR BSFW	0.00	0.00	0.00	0.00	0.00
BY BSFW	0.00	0.00	0.00	0.00	0.00
TOTAL	884.00	2,541.48	0.00	1,075.00	4,500.48

NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE USE REPORT
PRODUCTION AND HARVEST
(WATERFOWL ONLY)
FY-74

HAUBAY
C6-3545-90-WBY

*****-----USE DAYS-----***** FY-NO. FY-NO. FY-PEAK
LINE CODE JUL-SEP 73 OCT-DEC 73 JAN-MAR 74 APR-JUN 74 FY TOTAL PRODUCED HARVESTED POPULATION DATE

WATERFOWL PRODUCTION

NON-OUTPUT SPECIES

AMERICAN COOT

080 2210 0 0 0 0 0 67435 0 0

SPECIAL RECOGNITION

BIRDS

AMERICAN COOT

711 2210 1500900 165000 0 261450 1927350 0 0 25070 08/15

WATERFOWL MAINTENANCE

SWANS

WHISTLING SWAN

731 1800 0 720 0 300 1020 0 0 39 10/25

GEESE

SNOW GOOSE

732 1690 0 42000 0 0 42000 0 130 5000 10/00

WHITE-FRONTED GOOSE

732 1710 0 600 0 1200 1800 0 0 50 10/10

CANADA GOOSE

732 1720 0 40050 0 0 40050 0 0 1685 10/07

GIANT CANADA GOOSE

732 1723 61200 40050 1500 11100 113850 0 10 1720 09/15

DUCKS

COMMON MERGANSER

733 1290 0 0 300 13650 13950 0 0 1035 04/10

MALLARD

733 1320 932100 315600 0 147450 1395150 0 1260 18900 09/15

BLACK DUCK

733 1330 750 60 0 0 810 0 0 45 08/31

GADWALL

733 1350 325350 14400 0 182700 522450 0 200 6295 04/15

AMERICAN WIGEON

733 1370 173700 20550 0 70650 264900 0 110 13235 09/09

GREEN-WINGED (CINN.) TEAL

733 1390 39300 4950 0 30900 75150 0 170 2195 09/15

BLUE-WINGED TEAL

733 1400 878250 33750 0 136050 1048050 0 310 15900 08/15

NORTHERN SHOVELER

733 1420 375300 15300 0 31500 422100 0 110 9200 08/15

PINTAIL

733 1430 336900 52500 300 115650 505350 0 140 10495 09/15

WOOD DUCK

733 1440 1500 0 0 150 1650 0 0 45 08/23

REDHEAD

733 1460 155250 25500 0 204750 385500 0 0 14800 04/15

CANVASBACK

733 1470 31800 11100 0 366000 408900 0 0 18115 04/15

LESSER SCAUP

733 1490 65550 90000 300 243900 399750 0 140 9650 04/15

RING-NECKED DUCK

733 1500 15150 0 0 39750 54900 0 110 1765 04/15

COMMON GOLDENEYE

733 1510 0 0 930 2850 3780 0 0 260 04/23

BUFFLEHEAD

733 1530 30 6600 0 2550 9180 0 140 850 10/10

RUDDY DUCK

733 1670 65250 4500 0 12300 82050 0 110 3000 07/15

NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE USE REPORT
PRODUCTION AND HARVEST
(WATERFOWL ONLY)
FY-74

HAUBAY
06-3545-90-WBY

SPECIES NAME		*****-----USE DAYS-----*****						FY-NO.	FY-NO.	FY-PEAK	DATE
		LINE CODE	JUL-SEP 73	OCT-DEC 73	JAN-MAR 74	APR-JUN 74	FY TOTAL				
WATERFOWL PRODUCTION											
GEESE											
GIANT CANADA GOOSE	802 1723	0	0	0	0	0	152	0	0		
DUCKS											
MALLARD	803 1320	0	0	0	0	0	59185	0	0		
GADWALL	803 1350	0	0	0	0	0	64410	0	0		
AMERICAN WIGEON	803 1370	0	0	0	0	0	15	0	0		
GREEN-WINGED (CINN.) TEAL	803 1390	0	0	0	0	0	1035	0	0		
BLUE-WINGED TEAL	803 1400	0	0	0	0	0	242440	0	0		
NORTHERN SHOVELER	803 1420	0	0	0	0	0	25970	0	0		
PINTAIL	803 1430	0	0	0	0	0	20810	0	0		
WOOD DUCK	803 1440	0	0	0	0	0	0	0	0		
REDHEAD	803 1460	0	0	0	0	0	53640	0	0		
CANVASHACK	803 1470	0	0	0	0	0	6800	0	0		
LESSER SCAUP	803 1490	0	0	0	0	0	4145	0	0		
RING-NECKED DUCK	803 1500	0	0	0	0	0	15540	0	0		
COMMON GOLDENEYE	803 1510	0	0	0	0	0	0	0	0		
BUFFLEHEAD	803 1530	0	0	0	0	0	0	0	0		
RUDDY DUCK	803 1670	0	0	0	0	0	25900	0	0		
TOTAL		4958280	883230	3330	1874850	7719690	587477	2940			

NATIONAL WILDLIFE REFUGE SYSTEM
PUBLIC USE REPORT

VISITS BY MONTH

WAUBAY
06-3545-90-WBY

ACTIVITY NAME	JUL-73	AUG-73	SEP-73	OCT-73	NOV-73	DEC-73	JAN-74	FEB-74	MAR-74	APR-74	MAY-74	JUN-74	12 MONTH TOTAL
NO. VISITS TO REFUGE	10511	9441	7455	10649	6741	1142	360	275	275	2648	7523	7843	64863

NATIONAL WILDLIFE REFUGE SYSTEM
PUBLIC USE REPORT

VISITS BY MONTH

WAUBAY
06-3545-90-WBY

ACTIVITY NAME	JUL-73	AUG-73	SEP-73	OCT-73	NOV-73	DEC-73	JAN-74	FEB-74	MAR-74	APR-74	MAY-74	JUN-74	12 MONTH TOTAL
INTERPRETATION													
OTHER PROGRAMS										4230			4230
EDUCATION													
STUDENTS				36									36
TEACHERS				2									2
PROF SERVICES RENDERED				2									2
RECREATION-WILDLIFE WILDLANDS													
HUNTING MIGRATORY BIRDS													
DUCKS				1980									1980
GESE				100									100
HUNTING RESIDENT GAME													
UPLAND GAME BIRDS				400	600								1000
BIG GAME, DEER-GUN													
WHITE-TAILED DEER					228	88							316
BIG GAME, DEER-BOW													
WHITE-TAILED DEER						111							111
SMALL GAME							25	25	25				75
OTHER GAME	15	15	15	15			75	50	50				235
FISHING													
WARMWATER											5	10	15
OTHER CONSUMPT W/W REC					225	100	60						385
WILDLIFE OBSERVATION													
FOOT	1949	1162	122	145						147	879	478	4882
AUTO	900	900	900	900			100	100	100		150	150	4200
OTHER	1943	1073	288	161	13					70	317	744	4609
WILDLANDS APPRECIATION													
AUTO	7647	7428	6540	7254	5871	960	100	100	100	2431	7368	7683	53482
RECREATION NON-WILDLIFE													
PICNICKING	1593	1377									400	750	4120
TOTAL INTERPRETATION										4230			4230
TOTAL EDUCATION			40										40
TOTAL HUNTING	15	15	15	2495	828	199	100	75	75				3817
TOTAL FISHING											5	10	15
TOTAL OTHER W/W RECREATION	12439	10563	7850	8460	6109	1060	260	200	200	2648	8714	9055	67558
TOTAL WILDLIFE ORIENTED	12454	10578	7905	10955	6937	1259	360	275	4505	2648	8719	9065	75660
TOTAL NON-WILDLIFE ORIENTED	1593	1377									400	750	4120
TOTAL PUBLIC USE	14047	11955	7905	10955	6937	1259	360	275	4505	2648	9119	9815	79780

NATIONAL WILDLIFE REFUGE SYSTEM
PUBLIC USE REPORT

ACT HRS BY MONTH

WAUBAY
06-3545-90-WBY

ACTIVITY NAME	JUL-73	AUG-73	SEP-73	OCT-73	NOV-73	DEC-73	JAN-74	FEB-74	MAR-74	APR-74	MAY-74	JUN-74	12 MONTH TOTAL
NO. VISITS TO REFUGE	10511	9441	7455	10649	6741	1142	360	275	275	2648	7523	7843	64863

NATIONAL WILDLIFE REFUGE SYSTEM
PUBLIC USE REPORT

ACT HRS BY MONTH

WAUBAY
06-3545-90-WBY

ACTIVITY NAME	JUL-73	AUG-73	SEP-73	OCT-73	NOV-73	DEC-73	JAN-74	FEB-74	MAR-74	APR-74	MAY-74	JUN-74	12 MONTH TOTAL
INTERPRETATION													
OTHER PROGRAMS										2290			2290
EDUCATION													
STUDENTS				288									288
TEACHERS				8									8
PRF SERVICES RENDERED				8									8
RECREATION-WILDLIFE WILDLANDS													
HUNTING MIGRATORY BIRDS													
DUCKS				3960									3960
GESE				200									200
HUNTING RESIDENT GAME													
UPLAND GAME BIRDS				1600	600								2200
BIG GAME, DEER-GUN													
WHITE-TAILED DEER					684	264							948
BIG GAME, DEER-BOW													
WHITE-TAILED DEER						333							333
SMALL GAME							25	25	25				75
OTHER GAME	15	15	15	15			75	50	50				235
FISHING													
WARMWATER											10	20	30
OTHER CONSUMPT W/H REC					450	200	120						770
WILDLIFE OBSERVATION													
FOOT	974	581	61	72						74	220	114	2096
AUTO	225	225	225	225			25	25	25		37	37	1049
OTHER	486	268	72	40	3					18	79	186	1152
WILDLANDS APPRECIATION													
AUTO	1689	1634	1412	1591	1468	240	12	12	12	585	1619	1698	11972
RECREATION NON-WILDLIFE													
PICNICKING	3186	2754									800	1500	8240
TOTAL INTERPRETATION										2290			2290
TOTAL EDUCATION				304									304
TOTAL HUNTING	15	15	15	5775	1284	597	100	75	75				7951
TOTAL FISHING											10	20	30
TOTAL OTHER W/W RECREATION	3374	2708	1770	1928	1921	440	157	37	37	677	1955	2035	17039
TOTAL WILDLIFE ORIENTED	3389	2723	2089	7703	3205	1037	257	112	2402	677	1965	2055	27614
TOTAL NON-WILDLIFE ORIENTED	3186	2754									800	1500	8240
TOTAL PUBLIC USE	6575	5477	2089	7703	3205	1037	257	112	2402	677	2765	3555	35854

NATIONAL WILDLIFE REFUGE SYST.
WILDLIFE SE REPORT
SPECIAL RECOGNITION SPECIES
(EXCLUDING WATERFOWL)
FY-74

AUBAY
6-3545-90-WBY

SPECIES NAME	LINE CODE	*****-----USE DAYS-----*****					FY-NO. PRODUCED	FY-NO. HARVESTED	FY-PEAK POPULATION	DATE
		JUL-SEP 73	OCT-DEC 73	JAN-MAR 74	APR-JUN 74	FY TOTAL				
ROUGH-LEGGED HAWK	711 3470	390	0	0	0	390	0	0	10	08/22
GOLDEN EAGLE	711 3490	0	10	0	0	10	0	0	2	11/10
BALD EAGLE	711 3520	0	0	5	0	5	0	0	1	03/14
AM. KESTREL (SPARROW HAWK)	711 3600	3360	200	150	2280	5990	0	0	110	04/10
SHORT-EARED OWL	711 3670	0	150	0	15	165	0	0	5	11/01
SAW-WHET OWL	711 3720	0	0	0	5	5	0	0	1	05/15
SCREECH OWL	711 3730	0	0	0	50	50	0	0	5	04/20
GREAT HORNED OWL	711 3750	3600	2500	2500	1130	9730	5	0	40	08/15
TOTAL		494240	23695	2970	67471	1024961647	59891	3307		

NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE USE REPORT
SPECIAL RECOGNITION SPECIES
(EXCLUDING WATERFOWL)
FY-74

WAUBAY
06-3545-90-WBY

*****-----USE DAYS-----***** FY-NO. FY-NO. FY-PEAK
LINE CODE JUL-SEP 73 OCT-DEC 73 JAN-MAR 74 APR-JUN 74 FY TOTAL PRODUCED HARVESTED POPULATION DATE

THREATENED SPECIES

PERIPHERAL

SPECIES NAME	LINE CODE	JUL-SEP 73	OCT-DEC 73	JAN-MAR 74	APR-JUN 74	FY TOTAL	PRODUCED	HARVESTED	POPULATION	DATE
FERRUGINOUS HAWK	703 3480	0	0	15	15	30	0	0	2	03/01

SPECIAL RECOGNITION

BIRDS

WESTERN GREBE	711 0010	29040	450	0	3440	32930	25	0	450	08/22
RED-NECKED GREBE	711 0020	150	0	0	210	360	4	0	6	06/30
HORNED GREBE	711 0030	0	0	0	114	114	0	0	7	04/17
EARED GREBE	711 0040	3000	0	0	2010	5010	15	0	50	08/15
PIED-BILLED GREBE	711 0060	117450	6450	0	12252	136152	60	0	1740	08/15
COMMON LOON	711 0070	10	0	0	10	20	0	0	2	09/15
RING-BILLED GULL	711 0540	31410	1000	100	0	32510	0	0	2100	09/22
FRANKLIN'S GULL	711 0590	133790	3000	0	0	136790	0	0	5250	03/29
COMMON TERN	711 0700	10260	0	0	0	10260	0	0	150	08/18
BLACK TERN	711 0770	15900	0	0	0	15900	0	0	205	08/18
DOUBLE-CRESTED CORMORANT	711 1200	65760	1500	0	12360	79620	0	0	1810	08/22
WHITE PELICAN	711 1250	12360	4950	0	15960	33270	0	0	300	06/30
AMERICAN BITTERN	711 1900	2880	25	0	1105	4010	4	0	50	07/18
LEAST BITTERN	711 1910	0	0	0	15	15	2	0	5	06/30
GREAT BLUE HERON	711 1940	2070	100	0	2050	4220	4	0	50	08/27
GREAT (COMMON) EGRET	711 1960	630	0	0	15	645	0	0	25	08/22
GREEN HERON	711 2010	0	0	0	10	10	0	0	2	05/20
BLACK-CROWNED NIGHT HERON	711 2020	5280	0	0	1650	6930	12	0	55	07/18
LESSER SANDHILL CRANE	711 2050	0	0	0	25	25	0	0	25	04/10
SORA	711 2140	0	0	0	2700	2700	5	0	50	06/30
WILSON'S PHALAROPE	711 2240	1350	0	0	0	1350	0	0	35	07/31
AMERICAN AVOCET	711 2250	480	0	0	0	480	0	0	15	07/15
COMMON SNIPES	711 2300	750	100	0	0	850	0	0	10	08/31
UNIDENTIFIED DOWITCHER	711 2321	9330	1000	0	0	10330	0	0	500	08/15
UNIDENTIFIED SANDPIPER	711 2467	6000	0	0	0	6000	0	0	50	09/01
SANDERLING	711 2480	600	0	0	0	600	0	0	25	03/31
MARBLED GODWIT	711 2490	2040	0	0	0	2040	0	0	100	08/31
GREATER YELLOWLEGS	711 2540	690	0	0	0	690	0	0	25	08/15
LESSER YELLOWLEGS	711 2550	7590	500	0	0	8090	0	0	75	08/15
WILLET	711 2580	860	0	0	0	860	0	0	25	07/31
UPLAND (PLOVER) SANDPIPER	711 2610	1050	0	0	0	1050	0	0	30	07/31
KILLDEER	711 2730	14340	1200	50	0	15590	0	0	250	07/31
MOURNING DOVE	711 3160	0	0	0	0	32711	250	0	500	08/22
MAKSH HAWK	711 3310	3840	50	100	2860	6850	10	0	50	08/15
GOSHAWK	711 3340	0	10	0	0	10	0	0	5	10/25
RED-TAILED (HARLAN) HAWK	711 3370	5970	400	25	6830	13225	25	0	150	09/12
SWAINSON'S HAWK	711 3420	2010	0	25	360	2395	5	0	35	07/31
BROAD-WINGED HAWK	711 3430	0	100	0	0	100	0	0	10	10/09

NATIONAL WILDLIFE REFUGE SYSTEM
WILDLIFE REPORT
SPECIAL RECOGNITION SPECIES
(EXCLUDING WATERFOWL)
FY-74

WAUBAY
C6-3545-90-WBY

SPECIES NAME		LINE CODE	*****--USE DAYS-----*****				FY-NO.	FY-NO.	FY-PEAK	DATE	
			JUL-SEP 73	OCT-DEC 73	JAN-MAR 74	APR-JUN 74	FY TOTAL	PRODUCED	HARVESTED	POPULATION	
NON-OUTPUT SPECIES											
OTH BIRD-MIG & RES											
HUNGARIAN PARTRIDGE	071 2883	0	0	0	0	0	67000	400	75	700	08/15
SHARP-TAILED GROUSE	071 3080	0	0	0	0	0	2975	5	0	15	08/15
RING-NECKED PHEASANT	071 3091	0	0	0	0	0	504500	1500	1000	2300	08/15
BELTED KINGFISHER	071 3900	0	0	0	0	0	675	0	0	5	05/15
COMMON NIGHTHAWK	071 4200	0	0	0	0	0	250	5	0	10	08/15
BLACK-BILLED MAGPIE	071 4750	0	0	0	0	0	40	0	0	2	12/15
COMMON CROW	071 4880	0	0	0	0	0	5420	20	10	85	04/10
MAMMALS											
COTTONTAIL	072 8020	0	0	0	0	0	189500	0	50	770	09/01
WHITE-TAILED JACKRABBIT	072 8085	0	0	0	0	0	57750	0	10	160	09/01
BLACK-TAILED JACKRABBIT	072 8090	0	0	0	0	0	36500	0	10	100	09/01
BEAVER	072 8100	0	0	0	0	0	1500	0	0	5	09/01
WOODCHUCK (GROUND HOG)	072 8110	0	0	0	0	0	1500	0	0	4	09/01
RICHARDSON'S GRND SQUIRREL	072 8130	0	0	0	0	0	316000	0	100	1050	09/01
13-LINED GROUND SQUIRREL	072 8140	0	0	0	0	0	536500	0	100	1700	09/01
FRANKLIN GROUND SQUIRREL	072 8150	0	0	0	0	0	508000	0	100	1525	09/01
FOX SQUIRREL	072 8180	0	0	0	0	0	23000	0	5	100	09/01
GOPHER	072 8210	0	0	0	0	0	5000000	0	100	15000	09/01
MUSKRAT	072 8235	0	0	0	0	0	5030000	0	1000	15100	09/01
RED FOX	072 8290	0	0	0	0	0	6500	0	5	20	06/01
RACCOON	072 8355	0	0	0	0	0	10000	0	5	35	06/01
WEASEL	072 8380	0	0	0	0	0	10000	0	0	35	06/01
MINK	072 8400	0	0	0	0	0	11000	0	5	40	06/01
BADGER	072 8415	0	0	0	0	0	20200	5	5	101	09/01
STRIPED SKUNK	072 8430	0	0	0	0	0	21500	10	5	105	09/01
WHITE-TAILED DEER	072 8540	0	0	0	0	0	156000	40	97	495	09/01
AMPHIB. REPT. FISH											
SNAPPING TURTLE	073 9200	0	0	0	0	0	3750	10	0	12	06/01
PAINTED TURTLE	073 9215	0	0	0	0	0	168000	150	0	550	09/01
GARTER SNAKE	073 9295	0	0	0	0	0	186500	150	0	600	06/01
LEOPARD FROG	073 9305	0	0	0	0	0	3650000	55000	0	3010000	09/01
TIGER SALAMANDER	073 9325	0	0	0	0	0	715000	1000	0	2000	06/01
SUNFISH	073 9610	0	0	0	0	0	3500000	500	100	5000	06/01
LARGEMOUTH BLACK BASS	073 9620	0	0	0	0	0	30000	30	10	100	06/01
PERCH	073 9720	0	0	0	0	0	3500000	500	500	5000	06/01
NORTHERN PIKE	073 9740	0	0	0	0	0	1000	10	5	30	06/01
WALLEYE PIKE	073 9750	0	0	0	0	0	35000	30	10	100	06/01
CARP	073 9820	0	0	0	0	0	35000	100	0	100	06/01

NATIONAL WILDLIFE REFUGE SYSTEM
REPORT OF MISCELLANEOUS OUTPUTS
FY-74

JAN 02 1975

WAUBAY
06-3545-90-WBY

TYPE OF OUTPUTS	UNITS	FY TOTAL
PROFESSIONAL SERVICES		
ECOLOGICAL MONITORING		
BY REFUGE PERSONNEL	PROGRAM	23
BANDING		
BY REFUGE PERSONNEL	PROGRAM	1
OTHER COOPERATIVE PROG	PROGRAM	3
ENVIRONMENTAL PRESERVATION		
NATURAL AREAS		
OTHER RES NAT AREAS	AREA	1
MISCELLANEOUS WILDLIFE OUTPUTS		
WILDLIFE DIVERSITY	NO. SPECS	328

Initials

Mgr. RM

Ass. Mgr. RFH

Biol. Tech.

Clerk

Maint

Maint