

HUTTON LAKE NWR - NARRATIVE REPORT -
1968

N A R R A T I V E R E P O R T

Hutton Lake National Wildlife Refuge

January through December
1968

REFUGE PERSONNEL

Refuge Manager LeMoyne B. Marlatt
(Transferred 2/14/68)

Refuge Clerk Vera M. Collins
(Transferred 12/6/68)

Maintenanceman David E. Heffernan
(Temporary-Intermittent April to October 1968)

Beginning November 15, 1968, Hutton Lake, Pathfinder, and Bamforth
Refuges came under the jurisdiction of Arapahoe National Wildlife
Refuge, headquartered at Walden, Colorado.

REFUGE PERSONNEL

Refuge Manager V. Carrol Donner

UNITED STATES DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife
Walden, Colorado

NARRATIVE REPORT
1968

Hutton Lake National Wildlife Refuge

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NARRATIVE REPORT
January through December
1968

Hutton Lake National Wildlife Refuge

I. GENERAL

A. Weather Conditions

The following table provides a summary of weather conditions during 1968. Information was taken from records kept by the University of Wyoming, which has a weather station on the campus in Laramie. This weather station is located about 10 miles northeast of the refuge.

<u>Month</u>	<u>Snowfall</u>	<u>Precipitation</u>		<u>Temperature</u>	
		<u>This Month</u>	<u>Normal</u>	<u>Max.</u>	<u>Min.</u>
Jan.	2.8	.18	.38	51	-6
Feb.	7.7	.16	.42	45	1
March	2.5	.29	.76	62	5
April	27.8	2.93	1.25	67	2
May	6.6	2.31	1.54	76	25
June		.62	1.46	86	34
July		2.92	1.73	87	36
August		1.26	1.21	84	36
Sept.	T	.20	.81	79	29
Oct.	2.0	.50	.67	73	21
Nov.	6.9	.58	.47	57	3
Dec.	2.3	.20	.44	51	-9
Total	58.6	12.15	11.14		
Extremes				87	-9

<u>Month</u>	<u>Wind (av. mph)</u>	
	<u>This Month</u>	<u>Normal</u>
January	8.5	10.2
February	8.4	10.7
March	10.1	11.5
April	10.4	10.9
May	10.4	10.1
June	9.0	9.4
July	8.1	7.3
August	7.9	8.3
September	7.8	8.3
October	9.2	8.9
November	8.9	10.3
December	11.2	10.3
Av. for year	9.2	9.6

Weather during the year showed some variations from normal, but averaged out near normal. Precipitation for the year was above normal, but not greatly so. The most significant fact regarding the precipitation was that above-normal precipitation occurred during those months just previous to and during the growing season.

Temperatures also followed a mildly erratic pattern, but averaged out very near normal.

The month of April provided the people of the Laramie area with a great conversation piece - some of them with some misery and discomfort. On April 3rd and 4th, a real old-fashioned blizzard moved onto the Laramie plains, causing numerous and extensive power failures, stopping transportation and raising havoc with communications. Pictures and stories occupied lots of room in the local paper and occasional comparisons were made with the "Blizzard of 1949".

On April 17, another storm lashed the Laramie area. This was more intense and vicious than the earlier one, but did not last as long nor cause as much interruption in activities.

In summary, the early months and the last months of 1968 were dry, the spring and summer months quite wet. Temperatures and wind followed a near-normal pattern.

B. Habitat Conditions

1. Water

Water for the Hutton Lake Refuge comes from Sand Creek, the main channel of which meanders across only a small corner of the refuge. Refuge water rights are secondary to those of neighboring ranchers, so getting water for the refuge is a "catch as catch can" proposition. Flows, when available, are small, 1 - 5 cfs.

Water from Sand Creek was available from early March to May 3, when rancher priorities began taking all available water. The next Sand Creek water to reach the refuge arrived on August 10. Water receipts from this date to freeze up in mid-November were intermittent and very small, $\frac{1}{2}$ to $1\frac{1}{2}$ cfs.

The long run of water in early spring filled George, Rush and Hoge Lakes and brought Creighton and Hutton Lakes to favorable levels. Above-normal precipitation in April and May and again in July extended the benefit of Sand Creek

diversion water well into the growing season. Lake levels were all quite low at the end of the waterfowl use period, but the refuge supported respectable populations from spring thaw to fall freeze-up.

2. Food and Cover

Lack of additional water coming into the refuge after the closing of the inlet gates on May 3, caused a reduction in production of aquatic plants on some areas. On the whole, however, production was about average on most areas.

Creighton Lake, which receives the least water from spring runoff, showed a reduced growth of sage pondweed, Potamogeton pectinatus, but an increase in the production of widgeon grass, Ruppia maritima. As the lake level dropped, large mats of this plant were in evidence in shallower portions of the lake. Reduced waterfowl utilization of Creighton Lake during the summer reflected the conditions of the lake, which were dominated by a low lake level and stagnant water.

Hutton Lake again produced a large crop of widgeon grass this year. Waterfowl use was up slightly on this unit, reflecting better food conditions. Pondweed was also produced to some extent on this unit.

Conditions in Hoge Lake appeared to be quite favorable for both transient and summer resident birds. Sago pondweed grew especially thick on the unit this year, and large numbers of birds, including ducks, geese, and coots took advantage of the ideal food conditions. Alkali bulrush, Scirpus paladosus, increased around the perimeters of Hoge this year and provided good food as well as additional cover. Coots used this lake to a much greater extent than other units during the summer months, and large numbers of dabblers were often evident. In addition, the small flocks of introduced Canada geese also found favor with Hoge Lake.

Rush Lake is becoming increasingly infested with marestail, Hippuris vulgaris. This pest plant seems to take root in any shallow water where a seed source is present. In Rush Lake, this source appears to be the inlet of Sand Creek, the main water supply to the refuge. Flooding of infested areas this summer appeared to do little or no good, as the plant is more widespread in Rush Lake than ever. An effective means of controlling this pest has not been discovered by this refuge, as the ever present problem of a nearby seed source nullifies most control measures. Work is continuing on this problem.

Sago pondweed in Rush Lake was again plentiful this year in deeper waters where marestail had not invaded. In addition, a few patches of widgeon grass were present.

Lake George is a favorite unit of several species, not the least of which are the lesser scaup and redhead. These diving species apparently favor the deeper waters of this lake and the good supply of pondweeds and water crowfoot, Ranunculus trichophyllus.

Softstem bulrush, Scirpus validus, again grew in very thick stands in Rush and Hoge Lakes and to a lesser extent in Lake George. Their effectiveness as a source of food and cover is becoming reduced by the fact that they are becoming simply too thick. Burning has been used as a management tool in the past and may be employed again. Pothole blasting is also being considered as a means of opening additional areas in the bulrush. Colonial birds again nested in these thickets this summer, but waterfowl shun the denser areas.

Russian and bull thistles, Cirsium spp, were again sprayed with 2, 4-D in areas where their growth is taking over. However, the hardiness of these species leaves doubt as to the effectiveness of this herbicide. Each year the plants seem to spread to new areas as well as becoming thicker in areas sprayed the previous year. Other control measures may be necessary.

The community of greasewood, Sarcobatus vermiculatus, which surrounds most of the units was found to be furnishing cover for many dabbler nesters, as well as cover for the small numbers of mule deer which frequent the refuge. On the refuge, as a whole, the shrub appears to be quite beneficial for wildlife, despite its adverse effects on humans!

Refuge rangelands reflected the wise use of grazing permits on refuge lands. Growth during the summer on this short-grass community was about average, and appeared quite favorable when compared to surrounding areas, which are grazed year-round. An enclosure on the refuge shows little difference between ungrazed rangeland and regular refuge grazing areas, but a great difference between ungrazed areas and adjacent ranch land. The present policy regarding the number of animal unit months allowed on the refuge is apparently quite sound.

II. WILDLIFE

A. Migratory Birds

1. Ducks

Total use of the refuge by ducks was up 17% from last year. Use by species shifted both up and down, but most of the shifts are not considered significant. The most noticeable changes by species were mallards and redheads. Mallard use was up over 100% from last year. Redhead use increased by 42% over 1967.

Peak recorded duck-use days for Hutton Lake Refuge was 574,196 in 1963. The following four consecutive years showed a steady drop. 1968 is encouraging in that it shows a raise from 232,008 last year, to 272,188 in 1968.

In spite of the increase in overall duck-use of the refuge, production was down. Main species drop was mallard. Diver production stayed nearly the same, with ruddy production up some.

It might be well to point out here that there was not a resident refuge manager during the 1968 season. There is, however, an approved inventory plan. The refuge clerk and a Senior year student in Wildlife Management from CSU hired as a temporary maintenanceman carried out the inventories. The writer believes they are essentially correct.

2. Geese

The number of geese using the refuge is not great, but an increase in days-use from 1,365 in 1967 to 4,606 is encouraging. No large flocks was recorded at any time. Use-days occurred from use made by small groups of from 8 to 30 geese.

Wyoming Fish and Game employees released 22 goslings from the Charles M. Russell game range in early July. This type stocking operation with geese may have some definite possibilities as a means of starting new nesting flocks.

A single brood of six goslings was our total known goose production this year. Apparently the pair of geese that raised 7 last year weren't quite as prolific this year. At any rate, the goose production is encouraging.

3. Whistling Swans

A lone swan was seen during the spring migration. On October 28, a small group of 16 swans, 6 adults and 10 immature, were seen on Hutton Lake. They stayed about 2 weeks.

4. Coots

Coot days-use on Hutton Lake Refuge was down only slightly from last year. Production was estimated at 100 in 1968, 150 in 1967.

5. Other Waterbirds

Many different species of waterbirds make use of the Hutton Lake Refuge in varying numbers. Western, eared, and pied-billed grebes are common summer residents and each species reared young here in 1968. Black-crowned night herons produced an estimated 45 young. Snowy egrets produced 4 young.

California gulls occurred on occasion in numbers exceeding 500. Wilson's phalarope though not occurring in numbers as great as last year, were the second-most numerous birds in this category at a peak of 120.

6. Mourning Doves

None noted.

B. Upland Game Birds

No upland game birds are present on or near the Hutton Lake Refuge.

C. Big Game Animals

A small band of antelope uses the refuge on an intermittent basis. Notes for the year indicate that eleven head was the largest group recorded.

From 1 to 3 mule deer were seen occasionally on the refuge.

D. Fur Animals, Predators, Rodents and Other Mammals

Muskrats inhabit the small marsh areas in limited numbers. Earlier estimates place the number at about 40. Present population is probably unchanged.

Sign and sightings indicate that raccoons, coyotes, weasels and badgers are present, but rather scarce.

Wyoming ground squirrels are numerous as usual and the population of white tail prairie dogs remain stable.

Desert cottontails and white tailed jack rabbits are present but not in significant numbers.

E. Hawks, Eagles, Owls, Other Predaceous Birds

Notes and other records indicate little change in the status of the numerous species of predaceous birds using the refuge.

Forms NR-1A reflect data recorded on these birds.

F. Other Birds

Shortage of personnel and lack of continuity in recording data on these birds leaves us with little information for this section in 1968.

G. Fish

No important fish populations exist in the small impoundments on Hutton Lake Refuge.

H. Reptiles

None noted.

I. Disease

None noted.

III. REFUGE MAINTENANCE & DEVELOPMENT

A. Physical Development

There was no actual development this year.

Maintenance carried out was quite limited. Water control structure, fence, and building maintenance consumed most of the efforts of the limited staff. Wiring of the equipment shed, installation of an outdoor toilet at the work center and equipping of the farm tractor with the required roll-bar for safety make up the main list of accomplishments which lend themselves to individual listing.

Some work carried out on Pathfinder Refuge and appropriately reported separately, centered at the Hutton Lake storage shed.

Bamforth Refuge was visited a few times during the summer. Little activity took place there.

B. Plantings

1. Seed and Propogules

None

2. Specimens

Forty cottontail rabbits were collected by student Robert Krumm as a part of his study "A Population Study of Audubon's Cottontail Rabbits of the Hutton Lake National Wildlife Refuge".

After the carcasses had served the purpose for which Mr. Krumm had collected them, the pelts remaining suitable were made up as study skins for the University of Wyoming museum, as were 38 of the skulls.

C. Collections and Receipts

None

D. Control of Vegetation

None

E. Planned Burning

None

F. Fires

None

IV. RESOURCE MANAGEMENT

A. Grazing

1. Hutton Lake Refuge

One special use permit, issued annually to Mrs. Mildred Goetz for grazing cattle covers the resource management program here. This permit is for 225 AUM's during fall and winter months at a rate of \$2.00 per AUM.

2. Bamforth Refuge

Grazing on the Bamforth Refuge is on an off-and-on basis. Ninety-nine AUM'S of grazing at \$1.50 per AUM is permitted.

B. Other Uses

None

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report

Since 1966 when permission was granted to Dr. Larry N. Brown of the University of Wyoming for a student research study, the pressure for this type activity has increased. Several requests were granted and during 1968 four such studies were in progress.

1. Normal Behavior, Social Structure, Activity Patterns, and Population Dynamics of the White-tailed Prairie Dog (Cynomys leucurus) in Southeastern Wyoming.

This study was started in 1966 by student Tim Clark, under the direction of Dr. Larry N. Brown, and was completed in 1968. A copy of the report on this study will be furnished the refuge.

2. A Population Study of Audubon's Cottontail Rabbits of the Hutton Lake National Wildlife Refuge.

Student Robert Krumm, under the direction of Dr. Kenneth Diem, started this study in 1967 and completed it in 1968. As soon as the report on this study is completed, a copy will be furnished the refuge.

3. Analysis of Field Operations and Live Trapping Operations for Determining Sex Ratios of Spring Migrating Redhead Ducks in Southeastern Wyoming.

This study was carried out by student George Wilson, under the direction of Dr. Kenneth Diem.

4. Spring Trapping of Redhead Ducks on the Hutton Lake National Wildlife Refuge, Wyoming.

This study was carried out by student Robert Krumm also under the direction of Dr. Kenneth Diem.

The latter two studies were made during the same operation. In 1967, the refuge entered into a cooperative agreement with Dr. Kenneth Diem, Professor of Zoology, University of Wyoming. This agreement covers an annual duck-banding program wherein the refuge furnishes most of the needed materials, including bands. This project is designed at giving a few of Dr. Diem's students some practical experience at trapping and banding ducks and to provide opportunity for various types of study projects in conjunction with the operation.

Dr. Diem is very cooperative and easy to work with on this project and we feel it is quite worthwhile.

No investigations were made by refuge personnel.

VI. PUBLIC RELATIONS

A. Recreational Uses

The form of data reported in this category has been undergoing change during the past few years and all in all has changed considerably. Regardless of the form or type of reporting done, it is obvious that recreational use on public lands is increasing rapidly. Presently, use of the refuge is relatively rather small, but the ratios of increase are great.

The 1,979 total visits in 1968 nearly tripled the 698 reported in 1967. The largest increase again this year was in the category which includes the student activity reported previously. Mail inquiries requesting information about the refuge and other indicators lead us to believe that public use of the Hutton Lake Refuge will continue to increase quite rapidly.

B. Refuge Visitors

There were no official inspections or visitations in 1968. Several personnel from higher level offices of the Bureau including the Central and Regional offices made stops at the refuge office for courtesy calls.

Personnel from nearby field offices of the Bureau stopped by the office occasionally as did personnel of the Wyoming Game and Fish Commission and representatives of other local organizations.

C. Refuge Participation

Refuge Manager Marlatt attended the January meeting of the Laramie chapter of Isaac Walton League. He also met with personnel from the Saratoga Fish Hatchery in setting up a "Federal Career Days" program at the University of Wyoming.

After Mr. Marlatt's departure from this station in mid-February, refuge participation came to a virtual standstill.

D. Hunting

No hunting is permitted on the refuge. Little is known by the writer regarding 1968 hunting activity in the vicinity of the refuge.

E. Violations

No violators were apprehended.

F. Safety

No formal activity in this line. With the total staff being a refuge clerk and a temporary-intermittent maintenanceman from April until October, there was little opportunity for meetings. Last years report made mention of having passed the 12-year mark without a lost-time accident. Nineteen sixty-eight made the 13th year without a lost-time accident.

VII. OTHER ITEMS

A. Items of Interest

After nearly four years here, Refuge Manager Marlatt was promoted and transferred to the Washita Refuge in Oklahoma. He and his family departed Laramie for their new home on February 14.

Mrs. Vera Collins was acting refuge manager from that date until November 15. For her highly effective efforts during this time, she was recommended for and received a \$250.00 Incentive Award.

On December 9, 1968, Mrs. Collins transferred to the Forest Service in Laramie after 10 years as clerk at the Hutton Lake Refuge. Her clerical skills and knowledge of the Hutton Lake and Pathfinder Refuges has been sorely missed by the new refuge manager. However, Mrs. Collins' interest in the refuges and this Bureau did not die with her transfer and she has continued to be very helpful in orienting the new manager.

With the assignment of a Refuge Manager at the new Arapaho National Wildlife Refuge at Walden, Colorado on November 15, administration of the Hutton Lake and Pathfinder Refuges changed. They are now operated as satellite refuges under the Arapaho Refuge.

Mr. David Heffernan, a student in Wildlife Management at CSU in Fort Collins spent his second summer working as a temporary maintenanceman on an intermittent basis. David entered on duty in April and was terminated in October. His steady nature and good work contributed favorably to a worthwhile summer's activities in the absence of a resident manager.

B. Photographs

Photographs appended were taken by refuge personnel with a government camera and film and processing was at government expense.

C. Credits

With the exception of Section I-B-2, this report was written by Refuge Manager Donner with the help of Mrs. Collins and some good notes left by Mr. Heffernan. Section I-B-2, Food and Cover, was written by Mr. Heffernan before his termination in the fall and was included with only very minor editing.

This report was typed by Mrs. Barbara Smith, clerk-typist at the Arapaho Refuge. Mrs. Smith is new with the Bureau and her patience and diligence in typing this report along with learning all phases of refuge clerical work is appreciated.

Submitted by:

May 23, 1969

V. Carroll Donner

V. Carroll Donner
Refuge Manager

H
K

Reviewed by:

W. Schmidt

Assistant Regional Director-Operations

JUN 24 1969



Student going to duck traps on
borrowed snowmobile, following
April storm.



Showing snowdrifts at equipment
storage shed.



Showing more of wind's work on
snow - during April storm.



Jan-April

3-17.
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Hutton Lake

MONTHS OF January TO April, 19 68

[illegible]

1750

Cont. NR-1

(Rev. March 1953)

WATERFOWL (Continuation Sheet)

REFUGE Hutton LakeMONTHS OF January TO April, 19 68

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	3/10-16 11	3/17-23 12	3/24-30 13	3/31-4/6 14	4/7-13 15	4/14-20 16	4/21-27 17	18		
Swans:										
Whistling			1						7	
Trumpeter										
Geese:										
Canada			1	4	4	8	4		168	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	8	27	175	240	550	300	380		11,816	
Black										
Gadwall		8	3	235	430	310	320		9,142	
Baldpate			15	25	235	50			2,275	
Pintail		106	80	85	330	160	175		6,552	
Green-winged teal	8	33	35	45	120	75	65		2,667	
Blue-winged teal				12					84	
Cinnamon teal		1		3	12	5	12		231	
Shoveler			4	15	60	75	30		1,288	
Wood										
Redhead		54	475	420	700	600	500		19,243	
Ring-necked				20	20		15		385	
Canvasback		2	65	125	350	220	160		6,454	
Scaup		26	140	630	700	700	800		20,972	
Goldeneye		1	3	20	65	20	7		812	
Bufflehead		3	30	40	60	35	25		1,351	
Ruddy				130	120	100	100		3,150	
Other C. Merganser					10		3		91	
Total ducks	16	261	1,025	2,045	3,762	2,650	2,592		86,513	
Coot:		250	280	500	300	410	400		14,980	
				(over)						

	(5)	(6)	(7)	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	7	1		Principal feeding areas Divers on deeper lakes;
Geese	168	8		dabblers on shallow lakes and edges of deeper lakes
Ducks	86,513	3,762		Principal nesting areas No duck nesting observed;
Coots	14,980	500		possible goose nesting on Rush Lake.
				Reported by Vera M. Collins, Acting Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

FO. NR-
(Aug. 1952)

MIGRATORY DS
(Other than Waterfowl)

Refuge Hutton Lake

Months of January to April, 19 68

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u> No notes for period.										
II. <u>Shorebirds,</u> <u>Gulls and</u> <u>Terns:</u> No notes for period.										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons: Mourning dove White-winged dove					
IV. Predaceous Birds: Golden eagle Duck hawk Horned owl Magpie Raven Crow					
Reported by _____					

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) **Species:** Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Oiconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) **First Seen:** The first migration record for the species for the reporting period.
- (3) **Peak Numbers:** Estimated number and inclusive dates when peak population of the species occurred.
- (4) **Last Seen:** The last refuge record for the species during the season concerned.
- (5) **Production:** Estimated number of young produced based on observations and actual counts.
- (6) **Total:** Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Hutton Lake Months of January to April, 19 68

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
None observed.						

* Only columns applicable to the period covered should be used.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*
 88 19 88 April 1946 to January 1946 Months of Hutton Lake Refuge

(1) SPECIES:	Use correct common name.
Remarks	Total
(2) DENSITY:	Applies particularly to those species considered in removal programs (public
Pertinent information not specifically requested. List introductions here.	hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
(3) YOUNG PRODUCED:	Estimated number of young produced, based upon observations and actual counts
	in representative breeding habitat.
(4) SEX RATIO:	This column applies primarily to wild turkey, pheasants, etc. Include data on
	other species if available.
(5) REMOVALS:	Indicate total number in each category removed during the report period.
(6) TOTAL:	Estimated total number using the refuge during the report period. This may
	include resident birds plus those migrating into the refuge during certain seasons.
(7) REMARKS:	Indicate method used to determine population and area covered in survey. Also
	include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3- 54
Form NR-4
(June 1945)

SMALL MMA

Refuge Hutton Lake

Year ending April 30, 1968

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Popula- tion
								Permit Number	Trappers Share	Refuge share				
No notes for period.														
* List removals by Predator Animal Hunter														

* List removals by Predator Animal Hunter

REMARKS:

Reported by Vera M. Collins, Acting Refuge Mgr.

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

May-Aug.

3-1750

Form NR-

(Rev. March 1953)

WATERFOWL

REFUGE Hutton LakeMONTHS OF May TO August, 19 68

(1) Species	(2) Weeks of reporting period									
	4/28-5/4	5/5-11	5/12-18	5/19-25	5/26-6/1	6/2-8	6/9-15	6/16-22	6/23-29	6/30-7/6
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	11	11	8	8	8	8	8	8	8	8
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	300	300	250	200	150	100	35	35	30	30
Black										
Gadwall	300	200	150	150	100	50	25	25	80	60
Baldpate	50	40	40	30	20	20	20	20	20	20
Pintail	150	120	50	50	25	15	15	15	15	15
Green-winged teal	60	50	50	40	30	30	5	5	6	6
Blue-winged teal		5	10	10	10	10	8	8	2	2
Cinnamon teal	10	10	10	5	5	5	3	3	2	
Shoveler	25	25	20	20	20	10	10	10	10	10
Wood										
Redhead	400	350	350	250	250	200	150	150	200	200
Ring-necked										
Canvasback	100	100	40	40	30	30	20	20	10	10
Scaup	500	400	200	200	100	50	10	10	10	10
Goldeneye	7	10								
Bufflehead	25	20	10	10						
Ruddy	90	70	70	40	40	40	20	20	40	40
Other C.Merganser	5	5	5	5	5	5	5	5	5	5
Total ducks	2,022	1,705	1,255	1,050	785	565	326	326	430	408
Coot	450	400	350	350	300	150	80	80	120	120

3 -1750a

Cont. No-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Hutton LakeMONTHS OF May TO August, 19 68

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/7-13 11	7/14-20 12	7/21-27 13	7/28-8/3 14	8/4-10 15	8/11-17 16	8/18-24 17	8/25-31 18			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	8	30	30	30	30	30	30	30	2,128	1	6
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	30	30	180	180	180	180	180	180	17,990	10	150
Black											
Gadwall	60	60	75	75	75	75	75	75	11,970	1	30
Baldpate	20	45	70	70	60	60	60	60	5,075		10
Pintail	15	15	30	30	25	25	25	25	4,620	1	15
Green-winged teal	8	8	15	15	15	15	15	15	2,716		10
Blue-winged teal	5	5	15	20	20	20	15	15	1,260	2	10
Cinnamon teal		4	20	20	5	5	5	5	819		
Shoveler	10	8	15	15	15	15	15	15	1,876	1	10
Wood											
Redhead	150	150	180	180	180	180	170	150	26,880	3	80
Ring-necked											
Canvasback	10	10	30	30	30	30	30	30	4,200	2	20
Scaup	10	10	15	15	2	4			10,822		
Goldeneye									119		
Bufflehead		6	2	2	2	2			553		
Ruddy	140	140	160	160	160	160	160	160	10,570	14	140
Other C. Merganser	5	5	6	6	7	5			588		
TOTALS	363	396	813	818	776	776	750	730	100,058	35	475
Coot:	120	150	150	120	120	120	150	150	24,360		100
				(over)							

	(5)	(6)	(7)		SUMMARY
	Total Days Use	Peak Number	Total Production		
Swans	:	:	:	Principal feeding areas	All refuge lakes
Geese	2,128	31	6		
Ducks	100,058	2,022	475	Principal nesting areas	At and near refuge lakes and
Coots	24,360	450	100	West 40.	
				Reported by	Vera M. Collins, Acting Refuge Manager

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

For NR
(Aug. 1952)

Refuge Hutton Lake Months of May to August, 19 68

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
I. <u>Water and Marsh Birds:</u>										
Western grebe	6	6/10	14	8/7	Still present				10	1,000
Eared grebe	50	6/10	107	6/24	" "				40	10,000
Pied-billed grebe	5	6/24	15	7/29	" "				10	1,000
White-faced ibis	4	6/10	4	6/10	3	6/24				100
Snowy egret	1	6/10	13	8/13	Still present				4	800
Black-crowned night heron	16	6/10	60	7/29	" "		2	20	45	5,000
Virginia rail	Present		10		" "					1,000
Sora	Present		20		" "					2,000
II. <u>Shorebirds, Gulls and Terns:</u>										
California gull	130	6/10	530	6/24	Still present					40,000
Franklin's gull	17	7/15	25	7/29	" "					1,000
Forster's tern	2	6/24	2	6/24	2	6/24				14
Black tern	18	6/10	18	6/10	6	7/29				1,200
Wilson's phalarope	10	6/24	120	7/29	Still present					7,500
American avocet	6	6/10	15	7/29	" "					1,200
Killdeer	8	6/10	9	8/13	" "					800

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie	Present	2	Still present		100
Raven					
Crow	Present	2	" "		100
Marsh hawk	Present	5	6/15-7/30	" "	400
Swainson's hawk	Present	5	6/1-8/30	" "	510
Ferruginous hawk	1 7/29	1	7/29	" "	7
Reported by Vera M. Collins, Acting Refuge Mgr.					

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Hutton Lake For 12-month period ending August 31, 1968

Reported by Vera M. Collins Title Acting Refuge Manager

(1) Area or Unit Designation	(2) Habitat		(3) Use-days	(4) Breeding Population	(5) Production
	Type	Acreage			
	Crops		Ducks		
	Upland	1,368	Geese	300	175
	Marsh	200	Swans	2	6
	Water	400	Coots	80	100
	Total	1,968	Total	382	581
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding
Population: An estimate of the total breeding population of each category of birds for each area or unit.
- (5) Production: Estimated total number of young raised to flight age.

3-1752

Form NR-2

(April 1946)

UPLAND GAME BIRDS

Refuge Hutton LakeMonths of: May to August, 1968

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
None observed.						

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES:	Use correct common name.
(2) DENSITY:	Applies particularly to those species considered in removal programs (public
	hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
(3) YOUNG PRODUCED:	Estimated number of young produced, based upon observations and actual counts
	in representative breeding habitat.
(4) SEX RATIO:	This column applies primarily to wild turkey, pheasants, etc. Include data on
	other species if available.
(5) REMOVALS:	Indicate total number in each category removed during the report period.
(6) TOTAL:	Estimated total number using the refuge during the report period. This may
	include resident birds plus those migrating into the refuge during certain seasons.
(7) REMARKS:	Indicate method used to determine population and area covered in survey. Also
	include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Sept.-Dec.

3-1750

For VR

(Rev. March 1953)

WATERFOWL

REFUGE Hutton LakeMONTHS OF September TO December, 1968

(1) Species	(2) Weeks of reporting period									
	9/1-7 1	9/8-14 2	9/15-21 3	9/22-28 4	9/29-10/5 5	10/6-12 6	10/13-19 7	10/20-26 8	10/27-11/2 9	11/3-9 10
Swans:									16	16
Whistling										
Trumpeter										
Geese:										
Canada	30	30	30	30	30	30	30	30	30	30
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	180	200	300	400	450	400	300	250	250	200
Black										
Gadwall	75	70	70	50	50	40	30	20	20	
Baldpate	60	100	300	400	400	400	300	300	250	200
Pintail	25	50	50	100	125	50	30	30	10	
Green-winged teal	15	50	100	100	125	50	40	10		
Blue-winged teal	15	15	10	10	10					
Cinnamon teal	5	5	5	5	4					
Shoveler	15	20	50	50	60	40	20	20	20	10
Wood										
Redhead	150	150	150	150	155	150	100	100	100	20
Ring-necked				5	7	10	10	10	10	
Canvasback	30	30	50	50	55	20	10			
Scaup		100	100	100	125	150	200	200	200	150
Goldeneye										
Bufflehead					23	50	150	200	300	200
Ruddy	160	140	100	100	85	80	80	80	80	
QUAK Com. Merg.					2					
TOTAL DUCKS	730	930	1285	1520	1676	1140	1270	1220	1240	780
Coots	150	150	100	100	100	50	50	50		

3-17

Cont. W-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Hutton LakeMONTHS OF September TO December, 19 68

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total	
	11/10-16 11	11/17-23 12	11/24-30 13	12/1-7 14	12/8-14 15	12/15-21 16	12/22-28 17	12/29-31 18			
Swans:											
Whistling									224		
Trumpeter											
Geese:											
Canada	30								2,310		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	200	10							21,980		
Black											
Gadwall									2,975		
Baldpate	150	50							22,370		
Pintail									1,200		
Green-winged teal									1,100		
Blue-winged teal									1,200		
Cinnamon teal									168		
Shoveler	10								2,805		
Wood											
Redhead	20	10							8,785		
Ring-necked									361		
Canvasback									1,715		
Scaup	150	20							10,165		
Goldeneye											
Bufflehead	250	50							8,561		
Ruddy									4,335		
OTHER Com. Merg.									11		
TOTAL DUCKS:	780	140							91,077		
Coot:									5,250		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	224	16		Principal feeding areas <u>Refuge lakes and mud flats</u>
Geese	2,310	30		
Ducks	91,077	1,676		Principal nesting areas _____
Coots	5,250	150		
				Reported by <u>V. Carrol Donner</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751

Fol NR

(Aug. 1952)

MIGRATORY BIRDS

(Other than Waterfowl)

Refuge **Hutton Lake**Months of **September** to **December**, 19 **68**

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total Estimated Use
	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	
I. Water and Marsh Birds:										
Western grebe	14	9/1	14	9/1-10	11	10/5				300
Lared Grebe	100	9/1	100	9/1-10	2	10/5				2,000
Pied-billed grebe	15	9/1	35	10/1-15	35	10/5				500
Snowy egret	13	9/1	13	9/1-15	7	10/5				200
Black-crowned night heron	60	9/1	60	9/1-15	0					800
II. Shorebirds, Gulls and Terns:										
California gull	50	9/1	50	9/1-30	9	10/5				1,800
Franklin's gull	25	9/1	25	9/1-30	10	10/5				250
Wilson's phalarope	120	9/1	120	9/1-15	5	10/5				2,000
American avocet	15	9/1	15	9/1-30	2	10/5				500
Killdeer	9	9/1	9	9/1-15	1	10/5				150

(over)

3-1750c
Form NR
(Sept. 1960)

WATERFOWL JNT KILL SURVEY

NR-10

Refuge Hutton Lake

Year 1968

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
			Refuge Closed to Hunting.					

80-8-50

(over)

Year 1960

Refuge

INSTRUCTIONS

- | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|------------------|---------------------|--------------|---|--------------|---------------|------------|---------------------|-----------------|
| Weeks of Hunting | No. Hunters Checked | Hunter Hours | Waterfowl Species and Nos. of Each Bagged | Total Bagged | Gripping Loss | Total Kill | Est. No. of Hunters | Est. Total Kill |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
- (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.
 - (2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.
 - (3) Record the total number of hours the hunters spent hunting on the refuge.
 - (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Green-winged Teal (1).
 - (5) Record total numbers of waterfowl bagged.
 - (6) Record total numbers of waterfowl reported knocked down but not recovered.
 - (7) Total of Columns 5 and 6.
 - (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
 - (9) Kill sample projected to 100 percent. $\text{Column 9} = \frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}.$

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

Refuge Hutton Lake

Months of September to December, 1968

(1) Species	(2) Density		(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
	None observed.						

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- | (1) SPECIES: | Use correct common name. | (2) DENSITY: | (3) YOUNG PRODUCED: | (4) SEX RATIO: | (5) REMOVALS: | (6) TOTAL: | (7) REMARKS: |
|--------------|--|--------------|---------------------|----------------|---------------|------------|--------------|
| | Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. | | | | | | |
| | Estimated number of young produced, based upon observations and actual counts in representative breeding habitat. | | | | | | |
| | This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available. | | | | | | |
| | Indicate total number in each category removed during the report period. | | | | | | |
| | Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons. | | | | | | |
| | Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested. | | | | | | |

* Only columns applicable to the period covered should be used.

3-1753
Form 3
(June 1945)

BIG GAME

Refuge Hutton Lake

Calendar Year 1968

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss		At Period of Greatest Use	As of Dec. 31	
Common Name	Cover Types, Total Acreage of Habitat	Number								Number	Source		
Antelope	1,250 Acres of grassland interspersed with greas- ewood flats	0									25	20	20:100
Male deer	1,300 acres grassland, greasewood flats and marsh										10	5	20:100

Remarks:

Reported by V. Carrol Donner

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

DISEASE

Refuge Hutton Lake

Year 19 68

Botulism None noted

Lead Poisoning or other Disease

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.)

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks _____

3-1757
Form NR-
(Rev. June 1960)

(1)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Hutton Lake

Year 19 68

Collections and Receipts (Seeds, rootstocks, trees, shrubs)							Plantings (Marsh - Aquatic - Upland)						
Species	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
none													

- (1) Report agronomic farm crops on Form NR-8
- (2) C = Collections and R = Receipts
- (3) Use "S" to denote surplus

Total acreage planted:

Marsh and aquatic _____
Hedgerows, cover patches _____
Food strips, food patches _____
Forest plantings _____

Remarks: _____

3-17⁵⁹Form R-2
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Button LakeCounty AlbanyState Wyoming

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage	Green Manure, Cover and Water- fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested Acres	Bu./Tons	Unharvested Acres	Bu./Tons			
None									
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations 0 Haying Operations 0 Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	75	225	150.00	1200
				2. Other				
				1. Total Refuge Acreage Under Cultivation				None
Hay - Wild				2. Acreage Cultivated as Service Operation				None

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

REFUGE GRAIN REPORT

INR-500a WFO WASH D C Y1092

Refuge Hutton LakeMonths of September through December, 1956

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Sweetclover, yellow	2	0	2					2	2		
Corn (Unknown)	5	0	5					5		5	
Millet, Siberian	23	0	23					23		23	
Milo, Redfern	50	0	50			10	10	40		40	
Milo, Redbine	15	0	15			10	10	5		5	
Wheat (Unknown)	4	0	4					4		4	
Barley, Otis	14	0	14					14		14	

(8) Indicate shipping or collection points _____

(9) Grain is stored at _____

(10) Remarks _____

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

AVAILABILITY	OF GRAIN REMAINING ON HAND	GRAIN TRANSFERRED TO OTHER REFUGES	TOTAL	GRAIN RECEIVED OR DISPOSED OF				GRAIN ON HAND AT END OF PERIOD	DISPOSED OF OR SHIPPED TO		
				FROM OTHER REFUGES	FROM TRANSFER	FROM SHARE CROPPING	FROM HARVEST		TO OTHER REFUGES	TO TRANSFER	TO SHIPPING
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

REFUGEE GRAIN REPORT

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
None								

10. Summary of results (continue on reverse side, if necessary)