

BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

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REFUGE NATIONAL ELK

PERIOD SEPT - DEC 1957



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National Elk Refuge

September, October, November, December

1957

I. GENERAL

A. Weather Conditions:

The weather report is taken from the records of the Teton Forest Service Headquarters, located on the southwest corner of the refuge, one-half mile west of the refuge headquarters:

	Precipitation	Max.Snow on Ground	Max. Temperature	Min. Temperature
September	.43	none	83°	20°
October	.18	none	79	5
November	.20	6"	56	- 17
December	<u>1.59</u>	<u>16"</u>	<u>49</u>	<u>- 20</u>
Total	2.40	Extremes	83°	- 20°

The precipitation a year ago was 2.14 inches with a ten-year-average of 3.58 inches. The 5-year monthly average was: September-.56"; October-.58"; November-.51" and December -1.93".

In summing up, September, October and November were considerably below normal in the amount of moisture received. The September maximum temperature of 83°, much to every one's surprise, was recorded on the 30th. No snow lay on the refuge lands at the last of October but six inches covered the refuge bottoms on November 30th. Minimum temperatures during November were lower than average for the last half of the month. There were only two nights when the mercury did not dip below zero.

December temperatures were average with one week during mid month characterized by unusually heavy winds which kept a constant ground blizzard raging.

B. Water Conditions:

Precipitation was slightly higher than during the like period a year ago: 2.40 inches as compared to 2.14 inches. There was a considerable difference in the snow pack in the upper country. On Teton Pass, compared with 45.3 inches of snow last year, the pack is 75.6 inches deep along the Idaho-Wyoming line. The snow has water content of 16.1 inches compared with 13.8 last year.

II. WILDLIFE

A. Migratory Birds:

Trumpeter Swans: Only four Trumpeters were in the marsh at the start of the period. This number increased to seven by October 1st; by November 1st there were 24; by December 1st, 35, where the number leveled off. There were 26 present in late December. Supplementary feeding of grain at Miller Spring was carried on during December when the lower portions of the creek froze over.

Ducks and Geese: Duck numbers began increasing on the refuge waters during the first week of the period. A peak of 375 Canadas occurred during the week of October 6-12 while the puddle duck numbers hit their crest during the October 27 to November 9 period with some 1,500 present. Mallards predominated early in the season and then the numbers changed to half-and-half Mallards and Pintails, Green-winged Teal, Goldeneye, Bufflehead and Ringneck combinations in December. A few of the more scarce Barrow's Goldeneye were observed in the vicinity by the close of the period.

With the supplementary feeding of Trumpeters, it did not take long for Mac Mallard and his friends to chisel in on the grub line. At times the surface became a feathered raft of feeding ducks as they gobbled the free grain.

Food and Cover:

Aquatic foods were especially abundant in the lower portions of Flat Creek within the refuge.

Other Birds: Clarke's Nutcrackers made their fall appearance by mid-September and there were many White-crowned Sparrows and Pipits passing through. Large flocks of Starlings were massing in the Mormon Row area at this time. A Bittern was seen on the shop pond on September 9th, while two Brewer's Egrets were seen in the Mormon Row area. Lewis' Woodpeckers put in an appearance on the refuge in early October. Two Sandhill Cranes continued to feed in the refuge oat patch through October 23rd. Evening Grosbeaks made a visit to the headquarters area on November 3rd and 12 Rosy Finches were seen in the Mormon Row area. During early November 50 Coots dabbled in the sego patches of Flat Creek. This is a high number for the Elk Refuge. A Wilson Snipe probed contentedly along the borders of the warm spring at the shop on December 6th while a blizzard howled overhead. He was back on the 18th. A few Snipe generally winter on the refuge.

B. Upland Game Birds:

Five Sage Hens were flushed from a sagebrush patch by a meandering coyote north of the McBride place on September 2nd.

C. Big Game:

Elk: The elk movement into the refuge was characterized by a slow but steady build up beginning in early October. A snowfall in mid-November moved 1,200 onto the bottom lands but failed to move the main herd out of southern Yellowstone Park. One group of 150 elk, most of them bulls, paused in the Mormon Row fields while hunters, sight seers, photographers and game wardens gathered to watch.

When storms failed to drive the elk down from the hills, the regular September 10-November 20 hunting season was extended to December 10. The kill from the Jackson Hole herd had been about 2,500 during the regular season, half of the desired total.

Following some -18° weather, a blizzard on December 6th closed the elk hunting roads along the migration routes and intense hunting took place along the refuge's east boundary when some 800 elk left the refuge meadows and sought shelter in the adjacent Teton National Forest. Hunting continued day and night. Elk were killed and wounded in moonlight shooting when the storm cleared. The next day hunters moved into the upper forested areas and a 3-day kill estimated at 200 animals was made. Hunting traffic was heavy within the refuge from headquarters to the Twin Creek ranch road and refuge personnel as well as State game rangers worked the areas. Five arrests were made and seven elk shot illegally were confiscated.

With the close of the elk season on December 10th, State Game and Fish Department officers announced later that 3,200 elk had been taken in the Jackson Hole area. The goal for 1957 had been 5,000-5,500.

At the close of the period 4,500 elk were on the refuge lands with 1,500 in sight on ridges and slopes toward Sheep Mountain --6,000 in all in the immediate area.

The animals were in excellent condition with the normal numbers of scabby bulls and aged and weaker animals present. Refuge losses were seven animals (6 bulls and a cow).

The refuge still faced the problem of the 600 elk which spend the entire year on the refuge and refuse to migrate north in spring. These animals grazed in the Gros Ventre river bottom and the northern hills. Frequently they made night excursions to feed in the Mormon Row cut-over hay fields in October and November. Six of these elk were shot by hunters in this closed area. Five were left to rot. Only one hunter had enough nerve to claim his kill.

An exhibition group of elk in an enclosure along the west border attracted wide attention, despite the road construction

on the nearby Yellowstone Highway. Many hundreds of tourists paused daily to see them. As soon as wintering elk began to arrive in the bottom lands, the captive elk were released.

Moose: As usual, moose were found high on the slopes and ridges around the refuge and did not begin to move into their winter quarters in the willows along the Gros Ventre river until December. Early boarders occupied beaver ponds on the north line in October. About 40 were present in late December.

Mule Deer: A few mule deer moved onto the slope behind the new fish hatchery. In attempting to get to the high ridge west of the refuge, they worried the inside of the big game fence until an opening was made so that they could escape to the browse on the ridge.

Bighorn Sheep: Twelve Bighorn Sheep ventured down from Sheep Mountain to the refuge line in December.

Food and Cover:

Elk: A good stand of sedges and native grasses was produced on the refuge and there was a heavy stand of hay in the irrigated meadows. On Poverty Flat, the plant cover was three times the density of the 1956 summer and experimental stands of crested wheat grass, planted many years ago, showed fine vigor and also made a good stand.

Alfalfa and brome raised on some 200 acres of hay land was baled with the new round-type baler. The bales were left in the field as they dropped and, although no tie strings were used, the bales held their shape well.

In addition some 15 acres of oats in the vicinity of headquarters, on land being prepared for hay crops, was cut and windrowed for elk and waterfowl food.

D. Fur Animals, Predators and Rodents:

Coyotes: Coyote numbers appear higher this period than in recent seasons. Large numbers of coyotes frequently are seen at elk carcasses, but this season, in an hour's afternoon field trip, 17 scattered individuals were counted. This was at a time of day when coyotes are usually "holed-up". Elk carcasses are devoured completely in from 24 to 36 hours.

Badgers: Badgers are uncommon. Diggings and scattered dirt mounds testified to the presence of two or three of these animals.

Weasels: Weasel numbers have increased slightly and might be tied in with the upswing of the field mouse population.

Beaver: All beaver dams on the refuge are in a good state of repair and one new dam was noted in the upper portion of Flat Creek.

Muskrat: The refuge muskrat population remains stable and comparatively low. There is some indication that elk rooting out vegetation on the marshes are a limiting factor in the muskrat numbers.

Rabbits: White-tailed jackrabbits, in their white winter pelage, were seen occasionally and their numbers remain very low. Snowshoe rabbits are seldom seen on the area due to lack of suitable cover.

Chipmunks and Ground Squirrels: Striped chipmunks were out as late as October 7th while the Uintah ground squirrel had already been in hibernation some four weeks. Very few of the latter are ever noticed after the first few frosty nights in early September.

E. Predaceous Birds:

Swainson's hawks were common during the fall migration and a few redtails were present. First Rough-legged hawks were noted in December.

Two Golden Eagles observations were recorded for the lower portion of the refuge. Ravens and Magpies were common.

III. REFUGE MAINTENANCE AND DEVELOPMENT

A. Physical Development:

Roads and Trails: Refuge trucks hauled 50 loads of crushed gravel from the pit at the hatchery site to headquarters drive and parking area. As an unexpected bonus, the county grader planed the seven miles of road to the McBride place and did a ditching job for a half mile in the Twin Creeks section.

Farming, Water Control Structures, Ditches and Fills: Rock material totalling 203 loads was hauled to the fill in the shop area. The General dragline, two dump trucks and a bulldozer were used to rebuild a dam across Nowlin Creek which had washed out several years ago. This formed a pond which is being used by the Swans and other waterfowl and also diverts irrigation water. Water gaps along the Gros Ventre drift fence were repaired.

Reconstruction of the troublesome four-way diversion in the Warm Springs ditch at the Joe May place on Mormon Row was completed.

The Badger crane and General dragline were used to remove willows and clean out the ditch through the Chambers place.

A flume was constructed to carry Lost Springs water across the Longfellow ditch to irrigate lands with a "right" in the former ditch.

The General dragline was trucked to the Longfellow ditch south of the Chambers' area and extensive cleanout and repairs were made as part of the refuge's share of maintenance for irrigation water for the area east of Quarters 3.

Taking advantage of a windfall of available topsoil, two refuge dump trucks, working with city and county equipment, hauled approximately 900 cubic yards of fill material from the new Jackson high school site to the cooperative park.

Land leveling was resumed at Quarters 5 and additional work was done in the Patterson area along the Gros Ventre.

A small supply of Basin wild rye was collected for possible use in future plantings.

Fencing Work and Maintenance: At Mormon Row, two men continued building bucks while two others treated lumber and poles at the penta vat and erected two miles of pole and buck fence. A start was made in razing the old barbed wire fences which were replaced.

Fourteen new pole gates were constructed with penta treated material and installed in refuge fences.

New pole corrals were built at the shop barn and at Quarters 5 and 9.

Massive log gate posts were installed at the main refuge entrance gate.

Pole markers were placed along seven miles of refuge roads in preparation for winter snow removal.

Work harnesses were repaired and oiled in preparation for winter elk feeding.

Tractors and motor vehicles were winterized. The moving and storing of the various farm implements and power equipment was accomplished and repairing and painting of them was done.

Snow fencing was put up in the refuge yard to lessen the work of keeping this area open to vehicle travel. The headquarters' fire plug was housed in a large lumber box to make it readily available in the snow drifts.

The dude sleigh and five hay sleds were repaired or rebuilt and painted.

Building Repairs and Rehabilitation: The water supply system at Quarters 6 (the McBride house) was overhauled. A steel septic tank was installed in the sewage line from Quarters 1 to correct flowage difficulties.

Log bumpers were placed in metal equipment sheds to protect the walls.

Windows were installed in the McBride barn, doors repaired on two other barns and hayshed damage was repaired.

Sperl painted interior walls and made repairs to Quarters 3, overhauled the sewer system, made repairs to the heating systems at three other residences, rewired Quarters 5 and the old refuge shop. Two log outbuildings were chinked with pole-type quarter-round.

The vacant Quarters 6 and 9 were winterized.

Interior painting of the new shop included walls, floors, doors and trim on the upper floor.

Cleanup and Debris Elimination; Fire Prevention: Grass was mowed around buildings at Quarters 3, 5, 6 and 9. All refuge chimneys flues and furnaces were cleaned and repairs made.

Debris from old fences, corrals, structures and out buildings was stacked and burned.

Post and wire salvaged from the Yellowstone road reconstruction job was hauled from the fish hatchery site.

The pole and buck fence around the city park was raised to keep elk out of town.

B. Cultivated Crops:

A total of 5,449 tons of hay now is in storage in the twelve hay sheds. At \$21 a ton, the present value of hay locally, it is worth \$114,429.

IV. ECONOMIC USE OF THE REFUGE

A. Grazing:

Grazing on the refuge was only by game animals, refuge stock and Park Service horses. One special use permit is held by Clifford Hansen for grazing of horses on a parcel of land outside the main refuge--Permit WR-2-64, March 1, 1955 to February 28, 1960.

E. Other Uses:

One Special Use Permit, No. 23401, is in effect with

the Wyoming Highway Department for removal of 60,000 tons of gravel at \$.025 per ton. This permit is effective December 1, 1955 through November 30, 1958.

Royalty paid when seasonal operations ended in December was \$1,158.46 for 46,338 tons.

VI. PUBLIC RELATIONS

A. Refuge Visitors:

Among those who visited the refuge were:

- Sept. 12 Mr. and Mrs. Clarence E. Spencer
(Southern Pacific Railroad, Tucson, Arizona).
- " 12 S. G. Sallenburg, Asst. Supt. Gettysburg
National Military Park, Gettysburg, Pa.
- 15 Walter Berlet Wildlife Photographer
Casper, Wyoming
- 25 J. Clark Salyer, Refuge Chief, Washington D.C.
to 28 George E. Barclay, Refuge Supvr. Albuquerque, N.M.
- Oct. 6 Messrs. Hager, Chipman, Tuttle: USFWS, Fisheries
Washington D.C. & Region 1
- 10 Ned Payne Wildlife Photographer, Chicago, Ill.
- Clint L. Endicott, State Conservation Eng. Casper, Wyo.
Louis M. Moos, SCS Biologist, Billings, Mont.
Albert P. Thatcher, Range Fieldman, Laramie, Wyo.
Harlan Tully, Range Specialist, Sheridan, Wyo.
Don Lewis, Area Soil Specialist, Kemmerer, Wyo.
Thomas E. Doughty, Area Conservationist, Jackson, Wyo.
Roy W. Buchmeier, Area Leader, Jackson, Wyo.
- 11 Don Riley
Dean Carlson USFS. Ogden, Utah
- 30 Lewis R. Garlich and Lynn Hutchens, FWS Fisheries
Albuquerque, N.M.
- Dec. 9 R. B. St. John, Realty Officer, Albuquerque, N.M.
to 11
- 19 Anthony Opstedal, FWS, Engineer, Albuquerque, N.M.
True Hagendeffer, FWS, Architect, Washington, D.C.

B. Recreational Use:

More than a million and a quarter visitors passed along

the western boundary of the refuge during the summer and early fall tourist season. A great many of these stopped at the roadside turnouts to view the exhibition elk herd despite the road construction under way. Others made trips onto the refuge proper and drove the roads and trails. Included were the many sightseers, photographers, hikers, horseback riders, bird watchers and elk horn hunters. September fishermen used Flat Creek extensively.

From September 10th to December 10th, elk hunters traversed the refuge daily in getting to hunting areas north and east of the refuge.

The December spectacle of wintering elk spread out on the refuge meadows attracted many sightseers.

C. Refuge Participation:

Members of the Refuge staff furnished movies and attended the regular meetings of the Izaak Walton League; met with Forest Service, Soil Conservation Service, and State Game and Fish Commission officials; with Park Service representatives; State and County highway officers; and attended general game and fish meetings in Jackson.

On October 10 and 11, the refuge staff met with seven State and area SCS technicians and range specialists on formulating a basic SCS plan for the Elk Refuge.

D. Fishing:

Fly fishermen reported fair to good catches in the upper reaches of Flat Creek above the mouth of Nowlin Creek. One grasshopper user took three fine catches of cutthroats up to one and one-half pounds from the spring inlets near the Gros Ventre cut. Many catches of smaller trout were reported from the brushy waters of the upper stream.

F. Violations:

The following named violators were picked up on the refuge:

12/7 Thomas Wall: Shot an elk on the refuge for his grandfather Evanston, Wyo. after he had obtained his own elsewhere.

\$100 fine
\$ 10 costs

Guy Bush: Shooting from inside the refuge, he killed an elk just outside the boundary.

\$50 fine
\$ 5 costs

12/7 Alvin Clark: He opened fire on a group of elk
returning to the Refuge and in 16 shots
killed four. \$50 fine
\$ 5 costs

12/10 John E. Blaisdell: He shot and wounded an elk on
Casper, Wyo. the refuge; then chased it a mile,
hit it again within the refuge, and
then abandoned the wounded animal.
\$50 fine
\$ 5 costs

VI ITEMS OF INTEREST

Reconstruction of the five miles of Yellowstone Highway along the west boundary was stopped in December to be resumed next spring as soon as weather permits. The domestic supply power line to refuge buildings, also was halted by winter; it is in the process of bracing up and new poles set. Fencing operations around the Twin Creek ranches near completion with poles up and big game fence wire strung. Final installation of gates, cattle guards and stapling of wire is scheduled when weather permits.

The local hospital board, seeking a site for a new hospital, is negotiating with the Fish and Wildlife Service for an exchange of lands. The desired site is 12.88 acres adjoining the headquarters to the west. A 160-acre tract on the east refuge boundary is under consideration as an exchange offer.

The Elk Refuge has entered into an arrangement with the SCS for a Soil Conservation Plan for the area. Technicians have made necessary field investigations and are working on various phases of the report.

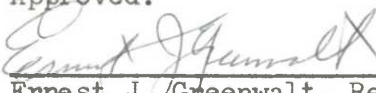
Almer P. Nelson, former Refuge Manager, nearing the end of a six-months' stint of building a residence in Jackson for resale, laid down his hammer long enough to send his regards to you-all. Troy W. Pratt, 65, who retired October 30, is getting the Jackson Hole chill from his blood on the beach at Guaymos, Mexico. He mails back word that he is living on fish, frijoles and wimmin! Jim McInelly, 65, who retired November 30th, is in Jackson sittin' and rockin'.

January 24, 1958

Respectfully submitted,


Willard E. Blanchard
Asst. Refuge Manager

Approved:


Ernest J. Greenwalt, Refuge Manager.

Approved:

 2-4-58

W A T E R F O W L

REFUGE National Elk Refuge

MONTHS OF September TO December, 1957

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
<u>Swans:</u>	<p>Only four trumpeters were in the marsh at the start of the period. This number increased to seven by October 1st; by November 1st there were 24; by December 1st 35, where the number leveled off. There were 26 present in late December.</p>									
Whistling Trumpeter										
<u>Geese:</u>	<p>Duck numbers began increasing on the refuge waters during the first week of the period. A peak of 375 Canadas occurred during the week of October 6-12 while the puddle duck numbers hit their crest during the October 27 to November 9 period with some 1,500 present. Mallards predominated early in the season and then the numbers changed to half-and-half Mallards and Pintails, Greenwinged Teal, Goldeneye, Bufflehead and Ringneck combinations in December. A few of the more scarce Barrow's Goldeneye were observed in the vicinity by the close of the period.</p>									
Canada Cackling Brant White-fronted Snow Blue Other										
<u>Ducks:</u>										
Mallard Black Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveler Wood Redhead Ring-necked Canvasback Scaup Goldeneye Bufflehead Ruddy Other										
<u>Coot:</u>										

3 -1750a

Cont. NR-1

(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE National Elk RefugeMONTHS OF September TO December, 1957

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total
	11	12	13	14	15	16	17	18		
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
<u>Coot:</u>										

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	2506	26	
Geese	22464	374	
Ducks	82158	1,500	
Coots			

SUMMARY

Principal feeding areas _____

Principal nesting areas _____

Reported by Ernest J. Greenwalt

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
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge National Elk Refuge Months of September to December 1952

(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>										
Sandhill Crane	2	9/5	2	9/5	2	10/29				
American Bittern	1	9/9	1	9/9	1	9/9				
II. <u>Shorebirds, Gulls and Terns:</u>										
Wilson's Snipe	1	12/6			1	12/18				

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove					
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow	1 50 50	12/15 12/8 resident during period resident during period	1 1 1	12/15 12/8 12/22 12/8	
Reported by Ernest J. Greenwalt					

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.

UPLAND GAME BIRDS

1613

Refuge National Elk Refuge

Months of September to December, 1957

(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.
Sage Grouse	sage brush flats hills and green meadow lands 15,000 acres	600			50-50				25	
Ruffed Grouse	aspen areas, creek bottoms, along Gros Ventre river 2,000 acres	135			50-50				15	
Dusky Grouse	timbered areas east boundary 500 acres	100			50-50				5	

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.

Refuge National Elk RefugeYear 1947

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population as of Dec. 31	(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Losses	Number	Source		Percentage
Elk	23,648 acres; entire refuge area	15.85% of total	0	*	0	0	0	0	86**	0	0	6,000***	60.72 cows 16.83 bulls 6.6 spils 15.85 calves ****
Moose	15,000											35	

*96 calves removed by State Department on Permit No.55-924

**86 for calender year; 80 Jan. 1, 1957 to April 30 and 6 dead during Sept. -Dec. 1957 period

***Refuge and immediate vicinity (4,500 on refuge proper)

****Figures from previous herd counts

INSTRUCTIONS

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: Applies particularly to those species considered in removal programs (public hunts, etc.) exclusive of fenced herds. 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 as of December 31.
- (8) SEX RATION: Indicate the percentage of males and females of each species as determined from field observations or through removals.

DISEASE

Refuge National Elk Refuge Year 1957

Botulism

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
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(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 No indications of botulism noted on the refuge during year.

Kind of disease _____

Species affected _____

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

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks No dead or sick ducks or geese noted on refuge.
No Trumpeter losses during year.

PUBLIC USE

Refuge National Elk Refuge

Calendar Year 1957

Total Use Visitor-Days	Hunting Use	Fishing Use	Miscellaneous Use
24,630	None	1,300	23,330*

Where practical, by means of occasional spot checks, or other methods, show by percent and visitor-days the breakdown of the above figures and other related information:

Hunting (on refuge lands):	Percent	Visitor-Days	Acres	Miscellaneous:	Percent	Visitor-Days
Waterfowl		None		Recreation *		19,124
Upland Game		None		Official		1,456
Big Game		None		Economic Use		
Supervised by refuge _____ by State _____ No. of blinds _____				Other		2,750

Hunting (off
refuge lands): Estimated man-days of hunting on lands
adjacent to the refuge 2,550 (These figures
should not be included in hunting-use totals above).

Fishing:

Acres of ponds or lakes None and miles of streams

9 open to fishing.

Comments:

*Estimated breakdown of previous 15,300 miscellaneous
use figure for January through August use included.

Miscellaneous use for Sept-Dec. period as follows:

Recreation	4,980
Official	500
Other	2,550
	<u>8,030</u>

*(including picnicking, swimming, boating,
camping, viewing wildlife, and photographing)

3-1757

Form NR-7

(April 1946)

PLANTINGS

(Marsh - Aquatic - Upland)

Refuge National Elk RefugeYear 1945

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Plant- ing	Survival	Cause of Loss	Remarks
No plantings of this type made during year								

TOTAL ACREAGE PLANTED:

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

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - MAYING - GRAZING

Refuge ~~National Elk Refuge~~

Teton

Wyoming

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure Cover and Water- fowl Browsing Crops Type and King	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
Oats (90 day)					15	300 bu.*	15		15
* Cut and windrowed or rolled baled w/o strings and left in fields for elk herd									Fallow Ag. Land

No. of Permittees: Agricultural Operations None Haying Operations All Grazing Operations None

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	ADP'S	Cash Revenue	ACREAGE
Hay crop; alfalfa, brome, clover	2,769	1180		1. Cattle	None	None	None	None
Mormon Rew Hay crop: alfalfa brome, orchard	400*	200		2. Other (Elk)	8,500 max.	41,700		25,000
Oats (Elk Refuge)	2270 tons & 300 bu.	15		1. Total Refuge Acreage Under Cultivation				3,775
Hay-Wild				2. Acres Cultivated as Service Operation				3,775

REFUGE GRAIN REPORT

Refuge National Elk RefugeMonths of September through December, 1957

(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
Barley*	5	227	232			18	18	214		214	
Oats	71		71			8	8	63		63	
Wheat	168		168			59	59	109		109	

(8) Indicate shipping or collection points _____

(9) Grain is stored at Quarters 2; wheat, barley and wheat, in steel grain bin; oats in cold storage bldg.(10) Remarks *227 bu. of "Breb" w/mixture of Morvarian barley received from Monte Vista Refuge, Colorado.

*See instructions on back.

(10) Remarks

NR-8a

(8) Grain is stored at

(8) Indicate shipping or collection points

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.

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Variety	On Hand Beginning	Period Received	Total	Grain Disposed of			Period End of On Hand	Proposed or Salvage Use		Shipping
	(1)	(2)	(3)	Transferred	Seeded	Feed	(4)	(5)	(6)	(7)

Period: _____ Months of _____ through _____, 1923

REFUGE GRAIN REPORT

COLLECTIONS AND RECEIPTS OF PLANTING STOCK
(Seeds, rootstocks, trees, shrubs)

Refuge National Elk Refuge Year 1957

[illegible]

TIMBER REMOVAL

Refuge National Elk Refuge Year 1957

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
				NO TIMBER REMOVAL				

Total acreage cut over.....

Total income.....

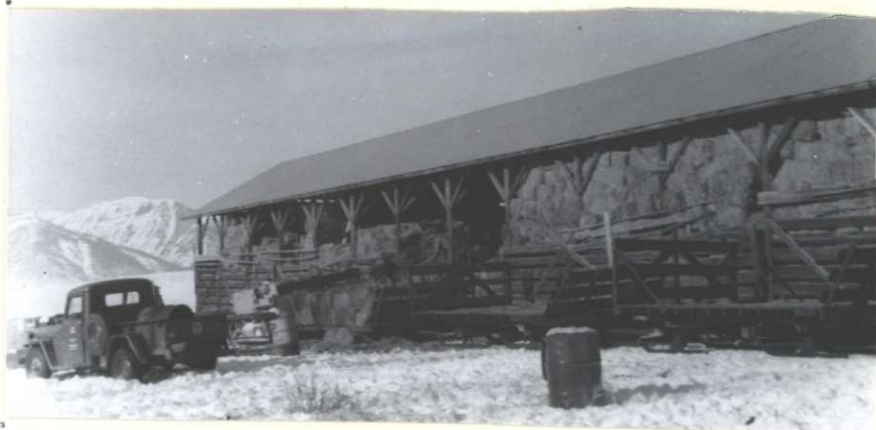
No. of units removed B. F.

Method of slash disposal.....

Cords.....

Ties.....

.....



Sleighs are pulled alongside the sheds and are loaded with a bale elevator. Tie-wires are removed before the hay is broadcast to the elk. In blowing snow at 20° below, the hay crew earns its pay.



The Tetons above the tractor



Sheep Mountain in the distance



The Jackson Hole Express makes a four mile round trip onto Poverty Flat with ten tons of hay for the wintering elk assembled at the McBride feed grounds. The four sleighs are towed by a TD-18 tractor.



The "express" moves along Flat Creek, covering a wide area to get good distribution of the resulting elk "berries".



Soon the sleighs are engulfed in a forest of legs and antlers.



Here's part of a herd of 5,000 elk skittering away from the dude traffic which disturbed them at the roadside. They'll come back!



The first of the incoming wintering elk clean up the hay left for them in the hayfields near the headquarters area. The hay here had been baled into round bales. Although no strings or tie wires were used in baling, the bales remained firm and tight until the elk tore them apart.



Elk hunters gaped at these weird tracks in the snow in Jackson's Hole. The tracks started at a trail-side, made a wide swing through foot-deep snow, and ended again at the road. An abominable snowman? A visitor from outer space? Nope. Just a one-legged pedestrian, swinging his crutches. Or maybe you want to guess.