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## GENERAL

### Weather Conditions:

Precipitation and temperature records for the fiscal year 1942 give further indication that the drought cycle is passing into history. The following chart shows a marked improvement in precipitation, being 10.81 inches above the 1892-1942 normal. The mean temperature was 4.21 degrees higher than normal for the same period.

Spring snows and rains served to fully restore the water table levels with consequent benefit to range grasses and general vegetative matter. The Niobrara River, flowing through the Refuge, was six feet above its normal high level May 16, 1942, and two feet higher than any previous record.

### TEMPERATURE AND PRECIPITATION RECORDS FISCAL YEAR 1942

	<u>TEMPERATURES</u>			<u>PRECIPITATION</u>	
	<u>1942</u>	<u>Normal</u>		<u>1942</u>	<u>Normal</u>
July, 1941	74.2	73.7	:	3.76	3.01
August	71.7	73.6	:	3.52	2.17
Sept	62.5	62.5	:	3.02	1.30
Oct	49.6	49.3	:	2.79	1.10
Nov	38.2	34.6	:	.45	.56
Dec	29.7	24.6	:	.48	.61
Jan. 1942	24.0	18.9	:	.13	.48
Feb	23.7	21.4	:	.97	.56
Mar	33.8	32.3	:	1.96	1.02
Apr	50.5	45.7	:	3.50	1.85
May	52.7	56.2	:	5.59	2.62
June	65.2	66.9	:	2.98	2.87
Mean	50.85°	46.64°	:	29.15 in.	18.34 in.

Fires:

There were no fires on or immediately adjacent to the Refuge during the year. With the abundant vegetation, combined with the possible but, we hope, remote possibility of fires set by amateur saboteurs, the general public in this section is becoming mindful of this increased danger. Under the Office of Civilian Defense, a program has been initiated whereby all farmers and ranchers have been contacted to ascertain the fire fighting equipment available. The telephone company has just completed a very worthwhile project in spotting on a large wall map in the County Court House, all telephones in the County with different colored threads leading from the location of each telephone to the location of that particular exchange. All switch-board operators have been instructed to give preference to fire calls, to sound a general fire alarm to all subscribers in the vicinity of the fire, to all those believed to be in its path, and to all precinct fire-wardens.

Such a program, especially important during war times, will continue to prove valuable in future years due to there being more incentive now to perfect the organization than would be the case under normal conditions.

Refuge fire equipment has been listed with the committee, and all of the equipment has been checked and put in condition for immediate use. The fire guards are being disced, and it is planned to have all fire lanes mowed in advance of the fire season.

## II. Wildlife

### Waterbirds:

The fall (1941) flight of waterfowl through this general area was noticeably short due, it is believed to the improvement in water conditions along the flight lane. Mallards predominated during the fall, and these were limited to 500 until January when better than 3,000 spent the winter on the Crooked Creek ponds in the eastern part of the Refuge and caused some damage to grain in adjacent fields. Other ducks observed during the fall flight were as follows:

Baldpate	less than 100
Pintails	" " "
Green-winged Teal	very few
Blue-winged Teal	" "
Redheads	50
Canvasbacks	100
Lesser Scaup	100
Ruddy	25

One pair of Canada Geese (Hutchins) wintered at the Refuge and left March 13.

The spring (1942) waterfowl flight was limited in this particular area to Pintails (March 25) 1500 in number, to Blue-winged Teal (April 2) 300 in number. Several large flights of Sandhill Cranes were observed during the week of March 29.

### Upland Birds:

During the year these birds appeared in about the usual numbers, there being an estimated 300 Sharp-tailed Grouse, 150 to 200 Prairie Chickens, and 75 to 100 Chinese Pheasants. No Prairie Chickens

have been observed since late April. One pair of Sharp-tailed Grouse were observed nesting on the Refuge, and hatched 13. The Chinese Pheasants have shown no increase in adult birds over that of last year although the hatch this spring, while considerably late, appears to have been good. The first pheasant brood was checked June 27.

#### Other Birds:

While an opportunity has not been afforded to spend any amount of time in the field on bird checks, practically all of the birds listed in the annual report for 1940 have been observed this year. There has been a noticeable increase in the nesting of small birds in the Headquarters area, particularly of Dickcissels, Phoebe, Lark Sparrows and Robins. There does not seem to be as many Mourning Doves nesting here as in previous years.

#### Food and Cover:

With very favorable weather conditions prevailing throughout the fiscal year, the food and cover for birds has been good. Heavy frosts during the month of May served to retard the development of some of the fruit bearing shrubs, but present indications point to an ample supply. The late frosts apparently affected the grasses in some sections of the Refuge, however, the shortage in such areas is fully compensated by the heavy growths in areas not subjected to the frosts. There is an almost total lack of the Blue grass this year, as compared with the extra heavy development of this grass last year.

The spring moisture has served to retard the development of the thistles, and in such areas, and generally on vacant land in this vicinity, there has been a heavy growth of Cheat Grass (*Bromis cernuatus* ?) also known as Military or Wild Brome grass. While this is not at all desirable, it should keep the thistles under control this year.

Big-game Animals:

As of June 30, 1942, the following big-game animals were on

band:	<u>Adults</u>	<u>Calves</u>	<u>Fawns</u>
Buffalo:	101	23	
Elk:	31	2	
Deer (White-tailed)	8		None observed.
Deer (Mule)	5		None observed.
Texas Longhorns	<u>31</u>	<u>8</u>	<u>        </u>
	176	33	0
			<u>209</u>

Buffalo:

	<u>Disposals</u>	
	<u>Yearlings</u>	<u>Over two-years old</u>
Live shipments	3	0
Butchered	<u>17</u>	<u>9</u>
	20	9
		<u>29</u>

A tabulated list of disposals will be found under "Economic Uses".

The buffalo herd was transferred from the 'North' pasture to the 'East' pasture, December 13, 1941, and held there until after calving and the completion of the vaccinating and branding of the yearlings.

One (1941) calf died during January, apparently having been injured by the herd; one cow with calf died, and one (1942) calf was accidentally killed by the herd during May, 1942.

Despite the fact that the buffalo calving season this year was marked by cold, wet and windy weather and rather a severe blizzard during early May, the calves apparently suffered no ill effects and are making a very satisfactory development.

Neither of the buffalo cows in the Exhibition pastures had a calf



this year, and it is planned to dispose of these next fall and substitute younger animals.

The long-yearlings disposed of during the 1941-1942 disposal season were in excellent flesh, the average weight, quartered and without head or hide, being 325 pounds. One old bull weighed, hog-dressed, 1435 pounds, and quartered, 1090 pounds. Other old animals weighed, hog-dressed, from 700 to 850 for the cows, and 1000 to 1200 pounds for the bulls.

The vaccinating (Brucellosis) and branding of the yearlings was undertaken this year by the Refuge personnel, and apparently handled successfully. These animals fight the corrals and despite every effort being taken to prevent injury, two of the yearlings suffered broken horns. The vaccinated animals were held in the 'trap' area east of the corrals for a week for observation. When it appeared that the horn injuries had healed over, they were released with the main herd in the 'North' pasture.

The buffalo herd was fed hay from December 13, 1941 to May 20, 1942, and with the longhorns and the limited amount fed to the elk and horses, consumed 184 tons of hay. Ordinarily it would not be necessary to feed so late in the spring, but the cold weather this year retarded the growth of green grass.

#### ELK:

	<u>Disposals</u>	
	<u>Yearlings</u>	<u>Over two-years old</u>
Live shipments		1
Butchered	$\frac{1}{1}$	$\frac{4}{5}$
		<u>6</u>

A tabulated list of disposals will be found under "Economic Uses"

With the exception of the elk in the exhibition pastures, all of these animals wintered in the "North" pasture where ample food and good protection against storms was available.

During November, 1941, one four-year old bull was trapped and transferred to the Sullys Hill Game Preserve, Fort Totten, North Dakota.

One of the bulls in the 'Museum' exhibition pasture was transferred to the 'West' exhibition pasture, September, 1941, where one cow and one long-yearling were being held. This cow calved during June, 1942.

A cow, about three years old, was trapped in the North pasture and transferred to the 'Museum' pasture as a mate for the second bull. This cow had considerably difficulty adjusting herself to the new area and was not bred during the rutting season. She has since become accustomed to the new home and is now in good flesh.

Due to the lack of browse in the Museum pasture, these elk are given daily rations of corn and cotton-seed cake during the winter months. This feeding was started December 13, 1941 and continued until April 30, 1942.

For the past several years the antlers shed by the two bulls in the Museum pasture had been picked up and weighed. Each time the weight was approximately the same, - between 16 and 17 pounds. This spring the shed antlers of the bull left in this pasture weighed  $16\frac{1}{2}$  pounds, and those shed by the bull transferred to the West pasture weighed 21 pounds. This difference in weight cannot be accounted for as the transfer to the West pasture, where food conditions are much better, was not made until September 23, and after the velvet had been rubbed off. Apparently there is some development in the antler after the velvet is removed.



#### White-tailed Deer:

None of these deer was disposed of during the year. It has been planned, but the opportunity not yet afforded to transfer these deer from the 'East' pasture to the pasture north of the Headquarters. It is believed that better food and cover is available there, but some work in fencing out a water gate must be done before the transfer is effected. No fawns have been observed as yet, but it is believed that there are two. These deer were fed daily rations of corn and cottonseed cake all winter and were in fair condition this spring.

#### Mule Deer:

These deer were left, or rather stayed, on the North pasture during the winter. Apparently they come and go, using the openings under the water gates in the North pasture for exits and entry. There are consistent reports from people living along the Niobrara River that these Mule Deer are increasing very noticeably. This is not due to the Refuge, entirely, but in large part to the better law enforcement by Deputy Game Wardens.

#### Texas Longhorns:

During July, 1941, the longhorn herd was divided into two groups, one in the Stromberg and one in the Miller pasture, and one of the bulls transferred here from Wichita Mountains Preserve November, 1940, put in each pasture. The 1942 calf crop, with 8 calves - three bulls and five heifers - was 100%. The calves were branded and the male calves altered. (Brand numbers from 27 through 34). These animals attract considerable attention, some due to their being Texas longhorns, and others due to the development of the body and horns.

#### Fur-bearing Animals, Predators, Rodents and Other Animals:

Nothing was undertaken toward the taking of fur-bearers during the year. The beaver presented the only problem, and that reached rather important proportions during February and March when the population appeared to increase (adult animals) and the activity and damage was correspondingly intensified. It is believed that the increase in the adult animals on the Refuge is due to their being molested by trappers and poachers along the river on either side of the Refuge. Some preliminary survey work is planned to determine the practicability of setting up a Pittman-Robertson project to reduce the Refuge population <sup>through</sup> ~~for~~ transplanting to other areas in the State.

There has been very little evidence of predators on the Refuge, and while traps were set and close watch kept, but two coyotes and one bobcat were taken.

One colony of prairie dogs has become established in the East pasture, but as it is in a section very little used in drifting animals, no steps have been taken toward eradication, or control.

A few barn rats drifted in during the late spring, and it is believed that all were trapped.

#### FISH:

The Nebraska Game, Fish and Forestation Commission are continuing to use the refuge ponds to supplement the battery of rearing ponds at the local hatchery. This is working out very well from a conservation as well as a public relations standpoint.

#### PHYSICAL DEVELOPMENT:

No WPA or other emergency relief labor was available during the fiscal year, for the first time since the relief program was inaugurated in 1933. The effect was plainly felt and the point made obvious that

highest value in the use of such labor and materials lies in projects designed to reduce future maintenance. Much permanent work was accomplished on this refuge which has and will continue to relieve the maintenance costs, possibly the only exception to this being the trails and bridges. These items are major problems and should receive the first consideration if and when the relief program is again put into operation.

During the past fiscal year, the following development and maintenance work was undertaken by the Refuge personnel:

Bridge Fence: To prevent the escape of elk and other of the game animals, a woven wire fence, 7' 6" high, was constructed on the Refuge river bridge.

Fences: Following the spring run-off and heavy rains considerable repair work was required on boundary fences. One washout alone was 12 feet deep under the fence.

Feed Lot: Following Mr. Gillett's suggestion, a feed lot was provided in the Miller pasture for the longhorns. This required opening the river fence and extending the pasture into the River Strip to embrace a sheltered area, and where water was available.

Hay Rack Extension: The patrolman designed and built a removable extension for use on the hay truck. This has resulted in considerable saving in time, truck miles and truck expense.

Loading Platform: A loading platform was constructed at the North storage barn to replace a set of badly worn steps.

Saddle Room: The saddle room in the barn was enlarged, a window installed, and iron bars fastened to prevent or discourage theft of harness or saddles.

Gasoline Pump: This pump was moved from its location east of the oil house and barn to a point east of the garage, and in the court.

It is planned to remodel the present pump house (brick building north of the garage) for use as an oil house and use the present oil house for paints, varnishes, etc.

Shop Building: To better utilize the shop-garage space, the shelving was removed, the heating stove moved from the center of the room to one side, a brick chimney constructed, a work bench installed, and in conjunction with moving the gasoline tank which, in its former location was but 18" above the sewer line, this line was tapped and connection made for a drain pipe from the garage floor. A concrete floor drain was installed and connected.

Museum Building: The wood work in the entry room of the building was repainted. The transom, formerly installed in the office door, was removed and installed above the door; an oak book case was remodeled for supply forms, and the old cabinet moved to the basement; the office floor was oiled following removal of the floor paint, and the interior wood work painted.

Miscellaneous: Repairs were made at the corral, slaughterhouse, and to trails, bridges and culverts.

#### Public Relations:

The major public relations work of the year was in connection with National Wildlife Week when we took the initiative and with the Nebraska Game, Forestation and Parks Commission representative in this locality, and local sportsmen arranged for window displays, newspaper articles, and wildlife pictures shown before the Rotary, Chamber of Commerce, and the schools. Every effort has been made to work in harmony with the State Department, local sportsmen and Forest Service - a very healthy condition exists at this time.

The Museum and Exhibition Pastures attract many local visitors and tourists. During the year, the following number of parties registered at the Museum, - this represents about 25% of the total number because of the fact that many families register only the name of the parents and family, - the family often consisting of 6 to 8 children, too many overlook, or for other reasons, do not register:-

July	420	January	40
August	500	February	51
September	314	March	36
October	127	April	157
November	104	May	260
December	51	June	158
	<u>1516</u>		<u>702</u>

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What might be considered as public relations work was granting permission to the State Highway Commission, Cherry County Board of Commissioners, and the Rosebud Indian Agency to store dynamite and caps in the refuge magazine during the period of the war emergency. The Highway Commission and County Commissioners were of the opinion that explosives stored at the Refuge would serve to discourage any one who might otherwise undertake to damage railroad or highway bridges.

Too, an active part has been taken in the Civilian Defence organization, particularly regarding fire fighting.

#### Economic Uses of Refuge:

##### Grazings:

<u>Permit</u>	<u>Permittee</u>	<u>Animal Months</u>	<u>Revenue</u>
3995	University of Nebraska	180	N/C (Cooperative)
4259	H. R. Sprague	25	\$11.25



Haying:

<u>Permit No.</u>	<u>Permittee</u>	<u>Harvested (tons)</u>	<u>Revenue</u>
4251	Jelly & Rettinger	78.97	\$19.74
4252	Matt Jelly	15.10	15.10
4253	Nick Rettinger	18.83	18.83
4258	Henry R. DeMaeyer	59.86	59.86
4262	Henry Ornesher	135.39	135.39
4265	John L. Taylor	123.50	123.50
4268	Clarence B. Peterson	24.61	24.61
4274	James Swanson	30.32	30.32
4277	T. M. Roman	57.64	Share-crop
4282	Froman & Taylor	637.87	"
4288	John A. Swanson	126.73	126.73
4307	J & O Cattle Co.	449.31	449.31
4326	Robert H. Stevenson	20.00	5.00
4347	Robert H. Stevenson	34.77	Share-crop
4371	J. O. Cherry	6.75	6.75
4941	Will Marshall	10.00	2.50
	Total	1829.65	\$1017.64

Of the 730.28 tons harvested on share basis, the Refuge share was 162.59 tons, and the permittees, 547.59 tons

Timber:

4942	A. J. Simons	6 cords	10.50
4943	George Richardson	10 "	17.50
	Total	16 cords	\$28.00

FURS:

## Seattle Fur Exchange:

2 coyotes		
1 bobcat	Estimate	\$5.50

Disposition of Big-game Animals:

Buffalo: (Over two-years old)

<u>Date</u>	<u>Sex</u>	<u>To</u>	<u>Address</u>	<u>Schedule</u>	<u>Revenue</u>
8-27-41	Bull	Rosebud Sioux Fair	Rosebud, So. Dak.	4	Gift
9-10-41	"	" " "	" " "	4	"
9-19-41	" (2)	Milford C of C.	Milford, Neb.	3	110.00
12-5-41	Cow	McCormick Market	Valentine, Neb.	4	50.00
12-5-41	Bull	" "	" "	4	50.00
12-15-41	Cow	O. E. Foster	Millington, Mich.	3	55.00
12-26-41	Bull	J. J. Kocer	Tabor, So. Dak.	4	50.00
12-30-41	<del>H</del>	Rosebud Indian Agency	Rosebud, So. Dak.	4	Gift
1-14-42	"	Paul S. Brown	Emetsburg, Iowa	3	55.00
<u>Total</u>					<u>\$360.00</u>

(Buffalo Long-Yearlings)

11-7-41	Bull	Sullys Hill Preserve	Fort Totten, No. D.	2	Transfer
11-10-41	"	Frank L. Fetzer	Denver, Colo.	3	45.00
11-15-41	"	W. H. Volberding,	Humboldt, Iowa	2	40.00
11-15-41	Heifer	W. H. Volberding,	Humboldt, Iowa	2	40.00
12-4-41	"	Hugh D. Schooley,	Alliance, Neb.	3	45.00
12-6-41	"	Sioux City Fur Co.,	Sioux City, Iowa	3	45.00
12-6-41	Bull	E. B. Kepfinger	Valentine, Neb.	3	45.00
12-7-41	"	Rex Jewett,	Ord, Nebraska.	3	45.00
12-7-41	H <sup>fr</sup> .	Richard Albers,	Ord, Nebraska.	3	45.00
12-15-41	Bull	J. G. Davidson,	Alliance, Neb.	3	45.00
12-17-41	H <sup>fr</sup> .	John W. Harvey,	Valentine, Neb.	3	45.00
12-17-41	"	Frank Hinderick,	Columbia, S.D.	3	45.00
12-17-41	Bull	Jack Ransel,	Waubay, So. Dak.	3	45.00
12-18-41	H <sup>fr</sup> .	John A. Swenson,	Valentine, Neb.	4	40.00
12-18-41	"	L. D. Sanders,	Marango, Iowa	3	45.00

<u>Date</u>	<u>Sex</u>	<u>To</u>	<u>Address</u>	<u>Schedule</u>	<u>Revenue</u>
12-20-41	Bull	Dr. O. A. Ralston,	Valentine, Neb.	3	45.00
12-24-41	H*fr.	Wm. Bell Wait	New York, N. Y.	3	45.00
12-24-41	Bull	McCormick Market	Valentine, Neb.	4	40.00
12-26-41	Bull	J. J. Koser	Tabor, So. Dak.	4	40.00
1-4-42	H*fr.	A. E. Jones	Footville, Wis.	4	40.00
		Total			<u>\$1185.00</u>

ELK:

11-7-41	Bull	Sullys Hill Preserve	Fort Totten, N.D.	2	Transfer
12-15-41	Bull	Junction City Lodge	Junction City, Kas.	3	50.00
12-17-41	Cow	Frank Hinderks	Columbia, So. Dak.	3	45.00
* 12-19-41	Bull	H. C. Steen	Minneapolis, Minn.	3	45.00
12-26-41	Cow	J. J. Koser	Tabor, So. Dak.	4	45.00
1-4-42	Bull	A. E. Jones	Footville, Wis.	4	45.00
		* (Under two years old)			<u>\$230.00</u>

Longhorn:

8-2-41	Cow	McCormick Market	Valentine, Neb.		30.00
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SUMMARY OF BIG-GAME ANIMAL DISPOSALS

Buffalo	(Old animals)	360.00
Buffalo	(Long-yearlings)	825.00
Elk		230.00
Longhorn		<u>30.00</u>
		<u>\$1445.00</u>

Receipts for Fiscal Year, 1942

Hay	\$1017.64
Buffalo	1185.00
Elk	230.00
Longhorns	30.00
Trophies	6.50
Grazing	11.25
Timber	28.00
Rubber	.75
Furs	estimate 6.50 \$10.21
	<u>\$2514.04</u>
	\$ 2519.35

Respectfully submitted:

*Kenneth F. MacDonald*

KENNETH F. MACDONALD  
REFUGE MANAGER