

BRANCH OF WILDLIFE REFUGES NARRATIVE REPORTS

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Stenographers

REFUGE MOOSEHORN

PERIOD May-August 1955

Moosehorn National Wildlife Refuge
May - August, 1955

Washington County, Maine
Hq. Calais
Sub. Hq. Dennysville, Me

Personnel

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Clerk	Stanley McConvey
Biologist	Eldon R. Clark
Maintenance- Man (Equip't)	Harold Stanhope
Maintenance- Man	Leslie Bagley
Refuge Aid	Arnold E. Davis

WAE Personnel

Carpenter	Alton Sawyer
Bulldozer Operator	Merton Hatton
Bulldozer Operator	Wallace Graham
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Guy Cook	Fire Tower Man
Lewis Lyons	Recreation Area Man
Ellis Beam	Laborer
Dale Brown	Laborer
Arnold Davis, Jr.	Laborer
Louie Greenlaw	Laborer
Calvin James	Laborer
Elmer James	Laborer
Jack Johnson	Laborer
Joseph McGovern	Laborer
Paul Redding	Laborer
Bertram Ross	Laborer
John H. Smith	Laborer
Carvell Stuart	Laborer

Moosehorn National Wildlife Refuge

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I- GENERAL

A. Weather Conditions

Temperatures were near normal in May with a trend toward warmer weather in June. From mid June through much of August temperatures averaged above normal. Precipitation was below normal throughout the period with near drouth conditions in July. Following is a summary of temperatures and rainfall as recorded at refuge headquarters.

Total				Temperatures		
	Snowfall	Precipitation	Max.	Extremes Min.	Max.	Mean Min.
May	0	2.36	89	30	68	38
June	0	2.58	93	35	71	46
July	0	1.64	96	44	82	53
August	0	2.91	89	38	79	51
Totals		9.49	96	30		

B. Low rainfall during this period has kept streams and flowages at a lowered level thus eliminating any chance of flooding. However sufficient water has been kept on the managed areas where planned to do so.

C. Fires

Fire conditions through the period have been moderately high; one fire on the refuge during a high period was combatted on July 29. This fire on a small island in Little Lake (Burse Lake) is thought to have been caused by fishermen. Evidence points to the fact that the fire had been smoldering about a day and a half in the humus layer. The fire was extinguished in about three and a half hours. The site was checked for a week following the fire to make certain no smoldering sparks again started the blaze.

There was no evidence which might lead to prosecution of the individuals who caused the fire.

Moosehorn National Wildlife Refuge

Edmund's Unit

May - August, - 1955

Ia- GENERAL

A. Weather Conditions

	<u>Precipitation</u>			<u>Mean Temperatures</u>		
	<u>Rainfall</u>	<u>Normal</u>		<u>Min.</u>	<u>Mean.</u>	<u>Normal</u>
May	1.22	2.49	60	41	50	48
June	2.11	2.92	65	47	56	55
July	1.52	2.92	76	53	64	61
Aug.	2.93	2.95	74	57	65	61

The above weather records for this unit are compiled from the Eastport, Me. U.S. Weather Bureau Station records.

Exceptionally good weather has prevailed during most of this period. During July a few very hot days were experienced. A few scattered minor electrical storms occurred during July and August but of no real consequence. No fires were started by lightning. During the latter part of August we had an occasional rainy day.

B. Water Conditions

Due to so little rainfall during the period the water table is very low. Refuge fields show drying and parching and grain crops were slow to start as well as mature. Some of our grazing areas have been without benefit of fertilization in the past and these especially shown severe drying. During August a few scattered showers have occurred but of not enough consequence to cause a rising of water table.

C.. Fires

Although conditions have been favorable for fires we have had none on this unit. A fairly close watch has been kept on visitors entering the refuge by virtue of permit. Close patrolling has been done to eliminate fire building except in designated public fire places.

II WILDLIFE

A. Migratory Birds1. Population and Behavior

(a) Waterfowl - The number of breeding pairs of ducks was somewhat smaller this year than in 1954. This condition was not confined to the refuge but prevailed throughout eastern Maine. However, nesting conditions were close to ideal and a very high percentage of first nests were successful. This resulted in a greater average brood size with an overall production figure equal to or a little in excess of last years. Better coverage was obtained on the 1955 brood counts; a total of twelve areas were checked as compared to ten in 1954. Also nearly all areas were checked three times which gives a much more accurate picture than in the case of single checks. Following is a tabulation of the broods observed with a comparison of 1953 and 1954 and 1955 counts. These of course were only the broods actually observed. In some instances emergent vegetation prevented a full count of all broods present.

Brood Counts - 1953 - 55		1953	1954	1955
Magurrewock -	Black Duck	1	4	5
	Ring-necked Duck	1	2	2
	Hooded Merganser			1
Barn Meadow -	Black Duck	3	5	6
	Ring-necked Duck	2	3	1
Cranberry Lake -	Black Duck	1	1	1
	Ring-necked Duck			1
Bearce Brook Flowage	Black Duck	5	6	3
	Ring-necked Duck	2	0	3
	Wood Duck	2	0	1
	Blue-Winged Teal	0	1	0
	Golden-eye	1	0	0
Mahar Brook	Black Duck	0	2	1
	Ring-neck Duck	0	0	2
	Wood Duck	1	1	1
E. Magurrewock -	Black Duck	1	4	2
Vose Pond	Ring-necked Duck	2	0	0
	Wood Duck	3	0	1
	Green-Winged Teal	1	0	1
Goodell Heath -	Black Duck	1	NC	2
	Ring-necked Duck	1	NC	2
	Hooded Merganser	0	NC	1
	Green-winged Teal	0	NC	1

		1953	1954	1955
Two-mile Meadow -	Black Duck	0	0	2
	Ring-Necked Duck	0	0	1
	Wood Duck	0	0	1
	Hooded Merganser	0	0	1
	American Merganser	1	0	0
	Green-Winged Teal	2	0	0
Moosehorn Stream incl. Cranberry Lake Brook-	Black Duck	1	0	3
Bearce Lake -	Ring-necked Duck	1	NC	NC
Conic Lake Brook-	Black Duck	NC	NC	1
Hobart Bog-	Hooded Merganser	0	1	0
	American Merganser	0	0	1
Nat Smith Marsh -	Black Duck	2	1	1
All areas -	Black Duck	15	23	27
	Ring-necked Duck	9	5	12
	Wood Duck	6	1	4
	Green-wing teal	3	0	2
	Blue-wing teal	0	1	0
	Hooded Merganser	0	1	3
	American Merganser	1	0	1
	Golden Eye	1	0	0
	Total	35	31	49

Again as in 1954 Magurrewack Marsh, Barn Meadow and Bearce Brook beaver flowage were our three principal nesting areas: The increased brood production in Magurrewack in 1954 and 1955 when water levels were drawn down for the dike construction is worthy of note.

Beaver flowages, especially those which have been active several years, play an important part in waterfowl production. This strengthens our belief in the importance of small nesting marshes in the further development of the refuge.

By the end of August ducks began to concentrate in small flocks on some of the more important marshes. Magurrewack, Hobart Bog and Nat Smith Marsh began to show heavier utilization although the change was not great. One flock of 35 teal, primarily green-wings, appeared in Magurrewack on August 20. However, no major movement of waterfowl has been observed.

The wing-clipped Canada geese released in Magurrewack in early April made little use of the area during the period. By the first of June

they had nearly all moved out to the St. Croix River by way of Magurrewack Stream. They made their way down through the rapids to the pool ~~about~~ the cotton mill dam in Milltown. After several days of answering phone calls in regards to the plight of the geese the refuge staff attempted to round up the birds and return them to Magurrewack. The geese proved to be expert divers and maneuverers. Ten of them were caught and transferred to the Edmunds goose pen; of the remainder, ten scattered and made their way back up river and seven made "jungle stew" for the tramps along the river. From one to three geese were observed in Magurrewack at times through the summer. The latter part of August ten geese were seen. Apparently they had spent most of the summer on the St. Croix River.

(b) Other Waterbirds - The usual small numbers of Great Blue Herons, Pied-billed Grebes, Common Loons, and Cormorants were present.

(c) Shorebirds - The woodcock singing ground census started in April was continued through the middle of May. As in previous years Mr. Mendall conducted the census on the public highways through the Moosehorn Unit. Refuge personnel censused interior areas and the public highway on the Edmunds Unit. Several new routes were added to the list this year. Following is a tabulation supplied by Mr. Mendall showing the results of his woodcock counts on refuge areas from 1950 through 1955.

Woodcock Census Studies - Moosehorn Refuge
(Data from H. L. Mendall)

Complete Counts (Original Census Method)

	No. of Singing Grounds					
	1950	1951	1952	1953	1954	1955
Headquarters Road	3	2	3	3	2	1
Howard Mill Road (To Bridge)	4	4	5	5	1	1*
Charlotte Road (Hdq. Rd. to Hanson Pit)	4	4	4	4	5	5
Charlotte Road (Hanson Pit to R.R. Crossing)	11	12	10	13	10	6
Charlotte Road (R.R. Crossing to So. Boundary)	12	13	8	12	9	13
R. 191 (No. Boundary to Hanson's House)	2	5	4	5	9	3
R. 191 (Hanson's House to Crossman's House)	3	3	3	4	3	3
R. 191 (Crossman's House to So. Boundary)	6	3	3	2	0	1
	45	46	40	48	39	33

The results of the interior counts by refuge personnel are as follows:

Route	Occupied singing grounds
Moosehorn Unit	
South Trail	5
Headquarters Road to Tower Road	5
Headquarters - Baring Road	1
Headquarters - Brandy Brook Road	4
Ice House Road	0
Conic Lake Trail	0
Headquarters - Lund Field Pit Road	5
Total	<u>20</u>

Edmunds Unit

Trout Brook Trail (So. Section)	0
Trout Brook Trail (No. Section)	6
Crane Mill Road (So. Trail-No. Trail)	2
Crane Meadow Brook Trail	2
Alder Brook Trail	1
Middle Brook - Flatiron Brook Trail	1
U.S. 1 (Lingley Place - Old North Trail Gate)	3
North Truck Trail*	9
South Truck Trail - South Boundary *	4
Loop Road *	4
Total	<u>32</u>
From Mendall's counts on Moosehorn Unit	33
Total recorded on refuge .	<u>85</u>

* Route censused for Mendall's records annually but not included in his tabulation on preceding page.

While no comparable figures are available for the interior check areas it appears from Mendall's counts that the refuge woodcock population declined in 1954 and again in 1955. This is consistent with his report of a general decline in 1955 throughout the northeast. However, Washington County, in which the refuge is located, showed no appreciable change from last year.

No organized censusing of covers was done during the summer. However, a number of woodcock were flushed in the course of other duties. In mid-summer the birds encountered were in wet areas at the edges of beaver flowages and in old field alders where considerable ground moisture was present.

A number of Wilson's snipe were heard winnowing during the first half of the period. Areas in which they were most frequently heard were Magurrewock Marsh, Barn Meadow and Hobart Bog. There is no appreciable change in their number from last year.

Solitary and spotted sandpipers and some of the smaller "Peeps" were observed from time to time. However, no concentrations of shorebirds were present.

(d) Doves - Several mourning doves were reported during the period. Although not as rare as they were a few years ago, these birds still are uncommon in this locality.

2. Food and Cover

Natural foods are plentiful during the summer months on nearly all waterfowl areas. Feeding conditions were especially favorable on Magurrewock Marsh, the upper end of Barn Meadow and some sections of Bearce Brook flowage. It is significant to note that these three areas produced 22 of the 49 broods of waterfowl observed. Goodell Heath and Two-mile Meadow also are beginning to produce fair quantities of natural foods; these latter areas produced 11 broods. The principal food plants ^{on} ~~are~~ our better marshes are the pondweeds (mainly *P. epihydrus* and *P. natans*), burreed (mainly *S. chlorocarpum* and *S. fluctuans*), wild rice (in Magurrewock marsh) and *Scirpus subterminalis*. Of course considerable insect food is consumed during this period especially by young ducks.

The two main areas which are deficient in food production are Cranberry Lake and Hobart Bog. Even these appear to have more than adequate food for the small number of birds using them. Control structures at both these marshes have been in operation a relatively short time. It is believed that these marshes will improve when more natural food plants become established; however, draining and further conditioning of the areas may be necessary.

Sizeable sections of cover on the refuge are getting past their peak for woodcock usage. Natural type succession combined with heavy deer browsing has eliminated much of the low hardwood reproduction and shrub growth which is preferred by woodcock at certain times of year. In many places conifers are replacing hardwoods as ~~the~~ dominant growth. The woodcock habitat improvement program planned for this year will improve this situation. However, it will be necessary to expand this program if we are to keep up with the deterioration of natural covers.

3. Diseases

No indications of lead poisoning or disease in migratory birds have been noted.

B. Upland Game Birds

1. Population and Behavior

Several broods of ruffed grouse have been reported this period. They appear to maintain a fairly constant population on the refuge. From all reports their number is somewhat higher than on areas outside the refuge. One brood of pheasants was observed during the period. However, adult pheasants are rarely seen. No spruce grouse were observed but it is believed there is no appreciable change in the small population of these birds.

2. Food and Cover

Food and cover are more than adequate for all upland game birds using the refuge at this time of year.

3. Disease

There is no evidence of disease in our upland game birds.

C. Big Game Animals

1. Population and Behavior

Deer were not as plentiful along public highways and the main refuge trails as they were in previous years. This was to be expected since the greatest hunting pressure in the 1954 removal was in those localities. In interior sections, especially in the vicinity of marshes and beaver flowages, there appeared to be little change in the number of deer seen this year. Also about the same number of fawns were observed as last year.

One moose was reported in the field near Headquarters early in the period. No further signs of moose were recorded and it is evident that this was just another wandering animal which happened to pass this way.

One bear was observed during the latter part of the period. However, these animals are more common on the refuge than sight records would indicate. They are extremely wary and although their signs are seen the animals themselves are very difficult to locate.

2. Food and Cover.

During summer food is plentiful for all our big game animals. Winter deer food however is in very short supply. This situation was fully covered in the report on our deer herd and range conditions submitted earlier in the period.

3. Disease.

No indications of disease in big game animals was reported during the period.

D. Fur Animals, Predators, Rodents and Other Mammals.

1. Fur Animals

The muskrat population appears unchanged from last year. They are well distributed over all marshes and flowages with no great concentration in any one area.

Beaver likewise are abundant and well distributed along all refuge streams. The removal on Moosehorn Stream last winter greatly reduced the population there. Also a few of the older flowages have been abandoned. However we still have over 30 active beaver colonies on the refuge.

Mink, weasel, otter and skunks are occasionally seen. The first three are not too plentiful and their numbers change but little. The latter species are locally abundant but are not as widely distributed over the refuge.

2. Predators

The red fox population continues rather high. No dead or diseased animals have been seen since the spring and summer of 1954. Raccoons also are plentiful. Just how much damage these two predators cause is not known. Since we do not have the heavy concentrations of nesting game birds that are present in some areas it is probable that predation by foxes and 'coons is not too great and may be considered normal.

No bobcats were observed during the period. We have no reason to suspect any great change in our population of 'cats.

3. Rodents and Other Mammals

Porcupines are still very plentiful. In some places they have damaged a small amount of young timber.

Snowshoe hares are frequently observed along the road sides in the evening and a few have been seen in the interior. They are slowly increasing in number but are still far below their peak of the early thirties.

Gray squirrels are seldom seen but red squirrels are abundant. In some of the old pine and spruce stands several can be seen at one time.

E. Predaceous Birds

Crows and ravens are the most abundant species in this group. The **latter** have increased notably in the last ten years; they seem to be fully as numerous as the crows at the present time. Marsh hawks and sparrow hawks are the most common of the hawk group. Neither is overly abundant. Occasional broad-wings; red-shoulders or other hawks are observed but they are not plentiful.

Bald eagles have been noted on several parts of the refuge. It appears that we now have 3 or 4 resident pairs.

F. Fish.

Although some streams were rather low during the period there was no indication of fish losses. Fishermen have been quite successful and apparently conditions are favorable for brook trout, bass, pickerel, perch, and bullhead in refuge waters.

II-a WILDLIFE (Edmund's Unit)

A. Migratory Birds

1. Population and Behavior

(a) Waterfowl - Regular waterfowl brood checks were made following the nesting season. In addition to the regularly checked areas several additional areas were included and found in most instances to hold broods. New beaver flowages, however small proved good potential. As usual our salt water areas showed a marked decline in waterfowl for the period. Nat Smith Marsh which is a fresh water, 30 acre marsh created three years ago by building a dike across the inlet to a salt water bay has had more waterfowl than at any time for the period since it was built. Most of these were blacks, two hundred having been flushed at one time.

Ten additional wing clipped Canada Geese were transferred from the primary unit to our exhibition pool making a total of thirty. They have attracted much attention from the visiting public. There has been no indication of nesting.

(b) Other Water birds - This area has been visited by more Great Blue Herons than usual for the period. Most of them have been seen in salt water areas but eight were observed at one time in Nat Smith Marsh. The greater number occurred in August. Several have been common visitors to the headquarters pool.

A very unusual occurrence a Black Crown Night Heron visited the headquarters pool two Sunday's in succession June 19 and 26. No nests are known to exist for many miles and none of these birds have been observed on the refuge for at least the last six years.

About the usual number of American Bitterns have visited the area during the period.

(c) Shorebirds, Gulls and Terns- The annual ^{woodcock} census was taken and data indicates the population ~~is~~ about normal.

Herring Gulls and Great Black Back make up our Gull population. Both species appear about normal, although there has been a rapid increase in Black-back gull population during the past six years.

Several flocks and varieties of shorebirds have visited the recently constructed headquarters pool, among them being Greater and Lesser Yellowlegs, Sanderlings, Spotted and Solitary Sandpiper and one Upland Plover.

(d) Other Migratory Birds - A smaller number of migrating Mourning Doves than usual have been observed during this period than ^ayear ago but on three occasions single birds were seen in the same general locality during July.

2. Food and Cover

Food and cover has been ample to supply the needs of all migratory birds.

3. Disease

No indication of disease in migratory birds has been noted.

B. Upland Game Birds

1. Population and Behavior

Populations of our two species of upland game birds, Ruffed Grouse and Spruce Grouse, compare favorably with those of areas outside the refuge. Several broods of Ruffed Grouse have been observed. Each of these were quite large.

2. Food and Cover

Ample food and cover are present to support a much larger population of upland game birds than are now present.

3. Disease - No indication of any disease.

C. Big Game Animals

1. Population and Behavior

Our only big game animal of consequence the "White Tail Deer" has been of relatively low occurrence around refuge fields and vehicular trails due undoubtedly to the hunting pressure during the open season last fall in these accessible areas. Inland blocks show deer density figures almost as before.

One doe with twins has been seen occasionally near headquarters, plus one set near Hobart bog.

No signs of predation among young has been observed. One yearling buck was killed by an automobile during this period.

No moose signs have been observed but definite signs of bear have been seen in various parts of the refuge closer to # 1 highway than usual for this time of year.

2. Food and Cover

We have an abundance of summer food for all species of big game animals native to the area. Winter food supply however continues in short supply. The Hobart Bog area is adapted to Moose while cuttings provide raspberries and blueberries for bear. This is an exceptionally good year for apples so the trees, both wild and in orchards arrangement, make for

an abundance of fall deer food.

3. Disease - None

D. Fur Animals, Predators and Rodents

Fur Animals

Muskrats and Beaver are the most important fur animals from the standpoint of market value on this unit. Beaver seem to be slightly on the decrease on this unit due no doubt to the scarcity of available food. In Hobart Stream the population always seems to remain more or less constant.

Muskrats appear about normal everywhere on the unit except in Nat Smith Marsh where during the past winter twenty two new houses were counted. This figure represents an increase from twelve of the previous year.

There appears to be a slight decrease in the number of Red foxes. However no sick animals have been reported of late.

The Skunk population seems about normal on the unit.

No otter, mink or weasel have been seen during this period.

Raccoon tracks are ever present along the waterways. Their abundance compares with that of areas outside the refuge.

2. Predators:

With the exception of a few scattered house cats working from nearby areas we have very few predator problems. Wildcats are present but we have no evidence of more than normal predation from them.

3. Rodents

The area contains a normal supply of rodents. Woodchucks are scarce on this unit, but porcupines are very numerous.

The abundance of snowshoe hares seems normal. No young have been observed.

E. Predaceous Birds, Including Crows and Ravens

Crows and Ravens are present on all parts of this unit. Ravens have been continually increasing over the past few years until now their abundance is nearly equal to the crow.

A few Great Horned Owls have been heard on the area during the summer.

Sparrow Hawks were not as abundant as usual during the spring migration.

Broad Winged Hawks ~~are~~ scattered over the unit, one pair nesting near the North Trail.

F. Fish

Most of the fish caught on this unit ^{are} ~~is~~ trout. The catch during this period per fisherman appears slightly above that of the same period last year. If we are successful in keeping fires from occurring on the waterways our watershed management should prove conducive to better fishing over the years.

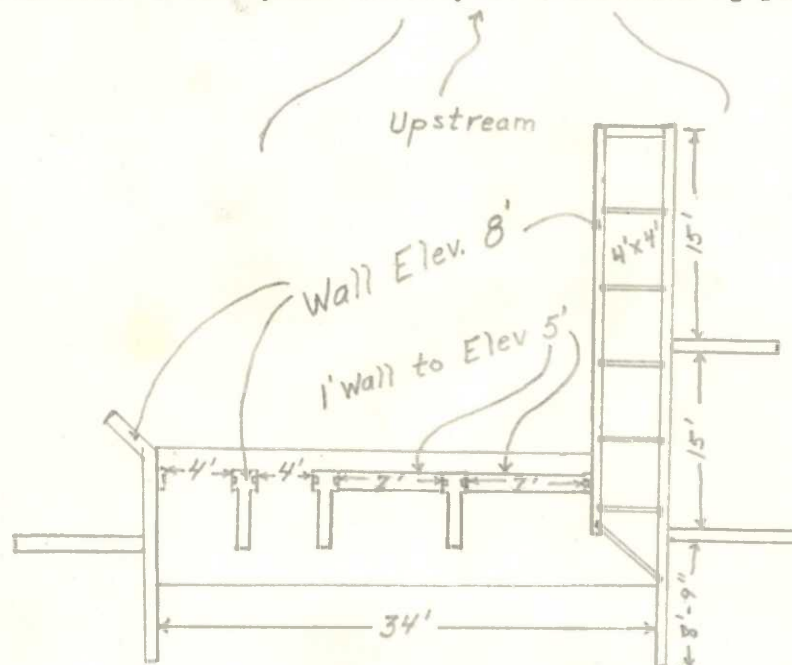
III Refuge Development and Maintenance

A. Physical Development

1. Howard Mill Dam Project

During May and June of this period the Howard Mill dam project, impounding ~~forty-five~~ ^{fifty-seven} acres of waterfowl nesting marsh was completed.

The project consisted of the construction of a cement mechanical spillway and fishway of the following plan:



In addition, an earthen and rock dam to an elevation 10 ft. above the former West Magurrewock stream level tied in the structure with the banks; the earthen dike was seeded to grass; and the section of the old road under flood easement from Mr. Lloyd Clark^{W43} raised to permit access beyond the flowage area.

2. Burnt Cove Dike

During the period the earthen dam on each side of the Edmunds Burnt Cove structure built by former Manager Radway was completed to grade, seeded, and a contour emergency sod spillway built.

3. Magurrewock Dike

Start on the raising of the Magurrewock dike to grade, sloping, etc. did not start until late in the period (Aug. 15th) due to lack of equipment and difficulties experienced with personnel hiring regulations.

However progress in the past three weeks has been good --approximately 60% of the necessary additional fill needed on the dike having been applied.

At the periods end, the washed out channel had been plugged and truck hauling was being accomplished from both ends of the dike. A log bridge built below the dikes control structure permitted access from the west side of the dike.

4. Lower Barn Meadow

The control structure, long proposed and held back because of reticence on the part of the Maine Central Railraod were in process of construction at the periods end. Of the two structures the double unit on the Main line culvert has been completed and the form work readied on the structure on the St. Croix junction.^{inc}

This construction will permit the holding of an additional 1 foot of water over the Lower Barn Meadow Marsh thus permitting year around utilization of the area by waterfowl.

5. Road and Trails

During the period the following road construction and repair work has been accomplished.

(A) Snare Heath Road.

1 mile of road has been built in the northeast corner of the refuge (Hdqts. unit) from the mile bridge on the Charlotte Road to Snare Heath. This road has been built primarily for access to development areas as laid out in the "Woodcock Management Plan" and also to permit access for future impoundment of Snare Heath. Of secondary importance this road opens up additional areas for fuel wood cutting and pulp operations. These operations are being coordinated with the woodcock work.

(b) Baring Road.

1 mile of road has been constructed (partly new work--partly reconstruction of a rough bulldozed trail) behind headquarters heading in the direction of Barn Meadow and U.S. # 1. In addition two spurs totally $\frac{1}{2}$ mile off this road, one which will eventually lead west past the Conic Lake outlet to Rt. 191 and one circling out into Stanhope's Pit have been reconstructed from previous bulldozed trails.

(c) Lunn Pit Road.

The Lunn pit truck trail has been reconstructed and graded. This road 2 miles in extent, leads from headquarters to the Charlotte Road at the Lunn Field Pit.

(d) Tit Brook Road

The Tit brook Road giving access to the Permanent Forest Plot at Edmunds has been cut out and brushed for 3/8 of one mile. Bulldozing of stumps etc. has not been done as yet.

Note -----All roads currently being constructed at this station are being cut out first with saw and axe to facilitate brush removal, slash burning, etc. and eliminating the hazardous slash condition caused by bulldozing trees and brush out of a road right-of-way and leaving debris along the finished roadside.

(e) Roadside cleanup

Brush and slash has been cleaned up from 5 miles of the North Trail at Edmunds, 1 mile on the Edmunds South Trail and 1 mile on the Headquarters South Trail.

(f) Burnt Cove Road

The road behind Edmunds Headquarters was graded and leveled and 2 culverts installed.

(g) Burnt Cove Trail.

The Burnt Cove trail in the Recreation Area was brushed out to facilitate school class usage for science and nature purposes.

(h) Edmunds South Trail.

Work has been started and almost completed rebuilding the Edmunds South Trail, blowing ledges from the roadway and leveling out the grade.

6. Soil and Moisture

Agricultural development has been slower than desired on fields adjacent to Magurrewock and Barn Meadow fields due to the lack of a second farm tractor and implements and the roughness of fields trying to be rehabilitated.

This periods work has comprised the following:

a) The planting of buckwheat and millett ⁱⁿ ~~at~~ all fields between Magurrewock Marsh and the Charlotte Road to Buckwheat and Japanese Millet (Fields 19, 17, 13, 16,9)

b) The planting of the field adjacent to the Nat Smith Marsh (at Edmunds to Buckwheat (Field 19)).

c) The clearing, plowing and discing of fields 18 and 20 (except central alder woodcock cover) and the periphery of field 38 is underway. These are the fields respectively between the Maine Central Railroad U.S. #1 and the Charlotte Road and adjacent to Lower Barn Meadow.

7. Small Marshes

Coincident with the road construction work on the Baring road two small black spruce bog areas have been impounded with control structures of the trickle tube type. These two areas total approximately four acres each. At the periods end a small marsh site in Tract 53-II adjacent to U.S. 1 was in process of development through use of a small stop log structure at the highway culvert. This marsh site will flood about $2\frac{1}{2}$ acres and should be particularly adaptable to teal usage.

8. Barn Meadow Marsh.

Dynamited 1200 ft. of new channel ditches in areas too vegetatively tight for maximum waterfowl usage.

9. Miscellaneous Construction, Repair and Maintenance.

a) At the Edmunds Recreation area.

1. New latrine at camping area.
2. New signs at camping area.
3. Two new fireplaces in picnic area.
4. New guard railing at Cabin 4 in the picnic area.
5. The erection of a new flagpole on a rocky crag in the picnic area.
6. Constructed a new log cabin storage building in the picnic area to replace the former shack used for storage which was moved to the Salmon Weir for storage at that site.
7. Painted interior of Littles Mt. fire tower.
8. Applied preservation to Fire tower legs.
9. Cleaned up parking area below fire tower.

b) At Edmunds Headquarters.

1. New railing erected and painted at junction of Headquarters road and U.S. # 1.
2. Built storage cupboards in work shop.
3. Repaired renovated and painted fire trailer.
4. Erected new office sign.
5. Repaired headquarters pool control structure.
6. Painted guard rail at office and quarters # 2.
7. Built bookcase and magazine rack for office.

c) At Baring Headquarters.

1. Changed gasoline storage facilities from 500 to 1000 gallon capacity and mounted 500 gal tank on platform for fuel oil storage.
2. Painted the exterior of the entryways on Quarters #1 and the office.
3. Laid a drainage system and filled in the lawn hollow at Quarters # 1.

4. Renovated sanded, stained and varnished two of the large refuge roadside signs.

5. Improved and enlarged refuge storage facilities.

6. Renovated to some extent the interiors of the Lunn and Stewart barns.

7. Expanded the headquarters lawn area kept mowed. This was made possible thru use of a towed gang mower acquired from surplus sources.

8. Numerous vehicle and tractor repairs too numerous to bother mentioning were made during the period.

9. The manager to some extent remodeled the cellar of Quarters

1. 10. *Completed goose pen adjacent to Maguire's marsh.*

d) Surplus Material Acquired

Major items of surplus equipment acquired from the military thru GSA this period include the following:

- 1.- Willy-Jeep, 1949, $\frac{1}{4}$ ton
- 1 - Chev. Stake Truck, 2 ton.
- 1 - Dodge Carryall, 1942.
- 1 - 3 gang tow mower.
- 1 - 12" pneumatic "Skillsaw".
- 1 - Johnson portable fire pump, 500 g.p.m. on 6 $1\frac{1}{2}$ " lines

D. Planting's

- 1 - Aquatic and Marsh - none.
- 2 - Trees and Shrubs - none.
- 3 - Upland Herbaceous - none.
- 4 - Cultivated Crops.

There is no cooperator cropping on this refuge. The following is a statement of crops planted this spring by refuge personnel.

Headquarters Unit.

Field 19 }
 Field 17 } 32 acres buckwheat with Jap Millet along marsh periphery.
 Field 13 }
 Field 16 - 4 acres buckwheat.
 Field 9 - 5 acres buckwheat.

Edmund's Unit.

Field 19 - 7 acres buckwheat.

C. Collections - None

D. Receipts of Seed and Stock- None

IV - Economic Use Of Refuge

A. Grazing

During the period a total of 7 Special Use Permits were in effect permitting the following grazing for the period.

Spec. Use Permit No.	Permittee	AUM grazed	Rate AUM	Amount Rec'd
Mooseh-389	Wellington James	56	.50	20.00
Mooseh-385	Calvin James	10.5	.50	7.50
Mooseh-5-91	Bernard Cox	105	.30	12.50
Mooseh-384	Wellington Cookson	28	.50	10.00
Mooseh-382	Wallace Gillespie	7	.50	5.00
Mooseh-381	Stewart Hanson	3.5	.50	2.50
Mooseh-5-83	Ellis Bell	56	.30	12.00

B. Haying

During the period 3 Special Use Permits were in effect for haying with returns as follows:

Spec. Use Permit #	Permittee	Ton of Hay Cut	Rate/Ton	Am't Rec'd
Mooseh-5-22	Foster Higgins	5 acres	\$5.00 p/Acre	\$ 25.00
Mooseh 393	Wellington Cookson	11 ton	3.00	33.00
Mooseh 397	Bernard Cox	2.3 ton	4.00	9.20

C. Fur Harvest

None this period.

D. Timber Removal

This period was as usual a slack time for timber, pulp and fuel-wood cutting. However some activity was underway, as follows:

Spec. Use Permit #	Permittee	Quarterly Product Removed			Am't Rec'd
		Pulp	Fuel	Timber	
Moo Mooseh-388	Calvin James			1062Ft.	10.62
Mooseh-396	Raymond Burns	65.92			263.68

E. Other Uses

During the period numerous free use permits were issued to local residents for small lots of gravel, loam, etc., berry picking, etc.

V. Field Investigation or Applied Research

A. Howard Mill Flowage Survey

During the period Student Assistant Bauchspies made a survey of the new Howard Mill Flowage as his major assignment. The area was mapped with major types shown. Permanent transects were established and the plant cover was recorded on milacre plots at 100 foot intervals along these lines. The complete report on this project will be submitted in the near future.

B. Deer Browse Survey

Surveys of six deer wintering areas were made during the period using the Aldous deer browse survey method. These studies supported by our general observations indicate a **distinct** shortage of winter deer foods. The report on the deer herd and range conditions has been submitted. In view of the findings it was considered necessary to open the refuge to deer hunting again in the fall of 1955; recommendations to that effect were made.

C. Timber Cruise and Type Mapping.

Approximately 1735 acres of the Edmunds unit have been cruised and type mapped this period. In typing the area special note was made of the location and extent of areas suitable for development as woodcock covers or small waterfowl marshes. For this purpose such features as slope, moisture, soil conditions and existing cover were recorded at each plot on the cruise lines. This will provide necessary information for planning the development program for the coming years.

D. Survey of Small Marsh Sites

Several small marsh sites (two to ten acres in extent) were surveyed for development during the period. Those which are primarily in cleared land areas were completely surveyed and mapped with contour lines shown. Those in wooded areas were cruised without the aid of instruments; timber which would be flooded was roughly tallied and recorded on the file cards prepared for each tract. They will be added to our inventory of saleable wood products.

E. Woodcock Census

All permanent refuge personnel participated in the woodcock singing ground census which was started in April and completed in mid-May. The results of those checks are discussed above under Migratory Birds.

F. Waterfowl Brood Counts

Considerable time was spent on waterfowl brood counts. Twelve areas were checked,- nearly all of them three times. Due to the lack of roads in some areas some of these checks are quite time consuming. Special emphasis was given this part of the work this year in order to determine the value of the many small beaver flowages to nesting waterfowl as well as to evaluate marsh improvements completed to date. The results of the checks on beaver flowages support our theory that a program of small marsh development would materially add to the value of the refuge.

Since every refuge flowage area regardless of size or status as a "check" area was checked, this year's counts will serve as an index to brood production in coming years. It will be possible to correlate increased production with the development of additional nesting marshes on the refuge.

G. Mapping and Recording Data.

Watershed compartment maps were prepared for several aspects of the refuge development program. Timber management areas, waterfowl, development both present and potential, and woodcock habitat were colored in on these maps; these will show the development status as the work progresses. Each area is given a number and all pertinent information for that area is being recorded on 5 x 8 file cards. This information has been completed for some of the impoundments and some of the timber tracts.

H. Deer Exclosure Survey.

A survey was conducted to determine the amount of reproduction present on the four fenced deer exclosures as compared to adjacent areas. All reproduction on a plot one chain square within the exclosure was tallied; this was repeated on an adjacent area outside the exclosure as a check. All four exclosures were checked in this manner. This survey showed that reproduction was more numerous and more vigorous on the exclosures than on the check areas in all cases except one. Plot No. 2 is located in an area that was clear-cut several years before the exclosure was fenced; the reproduction on that area had been almost completely eliminated before the area was fenced.

A report on this survey is being submitted separately.

VI Public Relations

A. Recreational Use

During this period consisted primarily of campers, picnic outings, limited hiking, ^{and} general observation of wildlife by many visitors. Also the construction activity on the Magurrewack Marsh dike, and land clearing activities was noted to have created interest, among motorist riding by and local residents.

B. Refuge Visitors

An estimated 4000 persons during the period visited the refuge for various purposes with camping and picnicing the foremost activities.

Usage of the Edmunds Recreation area includes some ten schools from elementary to college levels present for class day picnics as well as various local and county organizations who held their annual clam bake on the unit.

During June 18th and 19th the Washington County Boy Scout Camporee was held at the Edmunds Recreation area with 5 troops entering and several hundred adults in attendance.

At the Edmunds Unit there has also been an increase in school class usage for science and nature trips. This is believed due to Refuge Aid Davis' excellent school contacts and talks and the manner in which he has personally stimulated school children interest in conservation in general.

Official Visitors this period are as follows:

Date	Name and Title	Purpose of visit
5-28	Merton Radway, ass't Reg. Ref. Sup.	Inspection
5-28	Arthur F. Miller, Reg. Ref. Sup.	Refuge plans and operations.
7-7	Reginald Johnson, State Highway Eng.	Discussing US #1 road job.
7-13	George E. Kenny, Capt. USAF, GOC	GOC discussion.
7-13	Malcolm Coulter, Ass't leader of Me. Coop. Res. Unit.	Collecting duck traps.
7-19	Arthur Hoar, M/Sgt.	GOC, Bangor Filter Center
7-25-27	Arthur F. Miller, Reg. Ref. Sup.	Inspection trip.
7-26	Dr. L.R. Wilson, Prof. Geology Un. of Mass.	Visit
7-27	L.W. Austin, Flying Officer, RCAF	Visit
7-31	GMA, White and Van Weeldon	Collect trapping gear for St. Lawrence trip.
8-2	GMA. Ed Baker	Delivered equipment.

C. Refuge Participation

Discussions of refuge programs and operations were held at the following:

Date	Place	Refuge Speaker	Attendance
7/21	University of Maine, Forestry Summer Camp at Princeton	- Clark & Hickok	30
5/20	Northfield Grade School of Parents	- Davis	40
5/24	Milbridge, P.T.A., Milbridge, Me.	- Davis	35
6/5	Eastport Rotary, Eastport, Me.	- Davis	40

D. Hunting - None this period

E. Fishing

Stream fishing for trout on the refuge has been very successful not withstanding an increased fishing pressure this period. Fishing for bass and pickerel has been successful with fishing pressure normal.

F. Violations - None this period.

VII Other Items

A. Items of Interest

1. The employment of two Biological Aids in addition to the Student Assistant this period permitted an expansion of our program of gathering and assembling biological, ecological and geological data on the refuge. Information gathered this summer plus the coordination of the information of previous years gives us the necessary broad base upon which to continue our biological studies and intelligently base our future programs of refuge development.

B. Acknowledgements

Sections I and II the "General" and "Wildlife" sections of this report were prepared by Biologist Clark and Refuge Aid Davis respectively for the Primary and Edmunds Units.

Biologist Clark prepared Section V "Field Investigations and Applied Research"

The remaining sections were prepared by the manager.

C. Appendix

1. Photographs of period activities.
2. N.R. Forms

Respectfully submitted

David M. Hickok

David M. Hickok,
Ref. Manager

September 7, 1955

Approved:

Arthur Miller

Regional Refuge Supervisor

Regional Director

9-9-55

date

date

3-7150a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Moosehorn (Primary Unit)

MONTHS OF May TO August, 19 55

(1) Species	(2) Weeks of reporting period								(3) Estimated to 2000	(4) Estimated to 2000
	5-1-7	5-8-14	5-15-21	5-22-28	5-29-6-4	6-5-11	6-12-18	6-19-25		
	21	22	23	24	25	26	27	28		
Swans:									6/28-7/2	7/3-9
Whistling									9	10
Trumpeter										
Geese:										
Canada *	23	21	1	2						
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black	175	165	162	180	190	225	310	315	325	320
Gadwall										
Baldpate										
Pintail										
Green-winged teal	25	18	25	15	16	20	30	30	40	45
Blue-winged teal	4	2	3	2	2					
Cinnamon teal										
Shoveler										
Wood	15	12	10	19	32	20	25	30	32	30
Redhead										
Ring-necked	35	30	32	25	20	22	28	50	100	125
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Hooded Merganser	6	8	8	10	8	14	20	30	32	28
Am. Merganser	10	8	8	8	6	8	15	20	25	25
Coot:										
* All released wing-clipped birds.										

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	:	:	:
Geese	:	:	:
Ducks	:	:	:
Coots	:	:	:

SUMMARY	
Principal feeding areas	
Principal nesting areas	
Reported by	<i>D. M. Michael</i>

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).

WATERFOWL
(Continuation Sheet)

MONTHS OF May TO August . 1955

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen : total	
	7/10-18	7/17-23	7/24-30	7/31-8-6	8/7-13	8/14-20	8/21-27	8/28-31			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada •			2	3	3	10	10		525		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard							1	1	11		
Black	320	325	510	510	315	320	330	330	33541	27	275
Gadwall											
Baldpate											
Pintail											
Green-winged teal	45	45	40	40	45	50	60	60	4293	2	30
Blue-winged teal				4	10	10	15	15	417		
Cinnamon teal											
Shoveler											
Wood	30	30	28	28	25	28	28	28	2863	4	20
Redhead											
Ring-necked	25	120	110	115	120	120	115	119	9439	12	100
Canvasback											
Scaup											
Goldeneye											
Bufflehead											
Ruddy											
Other											
Hooded Merganser	30	26	23	23	25	25	25	25	2543	3	20
Am. Merganser	22	20	22	20	20	22	20	20	2053	1	15
Coot:											

• All released wing-clipped birds.

(over)

	(5)	(6)	(7)
Total Days Use	: Peak Number	: Total Production	
Swans	:	:	
Geese	525	23	
Ducks	55185	594	460
Coots			

SUMMARY

Principal feeding areas Magurrewook Marsh, Bearce Brook
Flowage, Barn Meadow Beaver Flowage.

Principal nesting areas Magurrewook Marsh, Barn Meadow,
Bearce Brook Flowage, Goodell Heath.

Reported by D. M. Shalish
Eldon R. Clark

* All released wing-clipped birds.

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).

3-7150a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Moosehorn (Edmund's Lake)

MONTHS OF May TO August, 1955

(1) Species	(2) Weeks of reporting period								(3)	(4)
	5/1-7	5/8-14	5/15-21	5/22-28	5/29-6/4	6/5-11	6/12-18	6/19-25	6/26-29	7/3-9
Swans:									6/26-29	7/3-9
Whistling									9	10
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black	73	71	90	45	38	48	48	49	57	79
Gadwall										
Baldpate										
Pintail						8				
Green-winged teal	10			4		1		2		
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood			2							
Redhead										
Ring-necked	12	1	6	2		2		2		
Canvasback										
Scaup										
Goldeneye	4									
Bufflehead										
Ruddy										
Other										
Am. Merganser	2	1	4		2	2		2	2	
Coot:										

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	:	:	:
Geese	:	:	:
Ducks	:	:	:
Coots	:	:	:

SUMMARY

Principal feeding areas

Principal nesting areas

Reported by

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).

3-7150a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Moosehorn (Edmund's Unit)

MONTHS OF May TO August, 1955

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production : Broods: Estimated : seen : total	
	7/10-13	7/17-23	7/24-30	7/31-8/6	8/7-13	8/14-20	8/21-27	8/28-31			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard											
Black	220	176	39	8	110	149	190	120	11263	2	15
Gadwall											
Baldpate							1		21		
Pintail									110		
Green-winged teal						13	2	11	119		
Blue-winged teal	4										
Cinnamon teal											
Shoveler											
Wood									14		
Redhead									175		
Ring-necked											
Canvasback											
Scaup											
Goldeneye									28		
Bufflehead											
Ruddy											
Other											
Am. Merganser									106	2	20
Coot:											

(over)

(5) (6) (7)
 Total Days Use : Peak Number : Total Production

Swans	:	:	:
Geese	:	:	:
Ducks	11844	363	36
Coots	:	:	:

SUMMARY

Principal feeding areas Nat Smith Marsh, Hobart Bog,Burnt Cove,

Principal nesting areas _____

Reported by Arnold E. Davis

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
(Nov. 1945)

MIGRATORY BIRDS
(Other than waterfowl)

Refuge Moosehorn (Primary Unit) Months of May to August 1955

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total	
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number	
I. <u>Water and Marsh Birds:</u>											
Common Loon			Several single observation , Summer resident								10
Pied-billed Grebe										15	
Great Blue Heron										50	
American Bittern										50	

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	Several single observations				10
IV. <u>Predaceous Birds:</u> Bald Golden eagle Duck hawk Horned owl Magpie Raven Crow Saw-whet Owl Barred Owl Broad-winged Hawk Red shouldered Hawk Marsh Hawk Sparrow Hawk	Several single observations 15 150 200 10 15 Several single observations " " " " " "	(constant) " " " " " "			6 15 150 200 10 15 6 6 15 25
				Reported by.....	Eldon R. Clark

INSTRUCTIONS

- (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 refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (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 total number of the species using the refuge during the period concerned.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS

(Other than waterfowl)

Refuge Moosehorn (Edmund's Unit)

Months of May to Aug. 195 52

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Number
I. Water and Marsh Birds:										
Common Loon			8	8/30						12
Pied-billed Grebe			3	8/30						8
Double Crested Cormorant			20	8/30						20
Great Blue Heron			50	8/30						50
Black Crown Night Heron	1	8/19	--	8/26	—	6/26				1
Am. Bittern			10	8/30						10
II. Shorebirds, Gulls and Terns:										
Woodcock			200	8/30						200
Black backed Gull			20	8/30						25
Herring Gull			200	8/30						500

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove		2	5/4	1	7/20
White-winged dove					
IV. Predaceous Birds:					
Bald eagle		8	Constant		10
Duck hawk			"		
Horned owl		8	"		10
Magpie			"		
Raven		100	"		100
Crow		300	"		400
Osprey		4	Have not migrated		8
Broad wing Hawk		6	"		10
Marsh Hawk		6	"		10
Sparrow Hawk		10	"		20
Reported by <i>Arnold B. Davis</i>					

INSTRUCTIONS

- (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 refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (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 total number of the species using the refuge during the period concerned.

UPLAND GAME BIRDS

1613

Refuge Moosehorn (Primary)

Months of May to Aug., 1945

(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.
Spruce Grouse	800 A Coniferous Growth	20							40	
Ruffed Grouse	18000 A Woodland and reverting agricultural land	30	4	32					800	
Ring-necked pheasant	1000 A fields Marsh and brush land	25	1	8					40	

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.

UPLAND GAME BIRDS

1613

Refuge Moosehorn (Edmund's Unit)

Months of May to Aug., 1945

(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'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specificoally requested. List introductions here.
Ruffed Grouse	Timber 5000 A Brush and Edges 1000 A	50	8	450					,200	No specific studies made. Broods observed in regular routine work program.
Spruce Grouse	Coniferous Forest Area	40	9	60					25	No specific studies made. Broods observed in regular routine work program.

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 GRAIN REPORT

Refuge MoosehornMonths of May through August, 1955

(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
Corn	0	26	26					26		26	
Winter Wheat	23		23			3		20		20	
Winter Rye	42	21	63					63	63		
Barley	40		40					40	40		
Buckwheat	12		12		12		12	0			

(8) Indicate shipping or collection points Calais, Maine (Maine Central Railroad)(9) Grain is stored at Granery at Refuge Headquarters.

(10) Remarks

*See instructions on back.

(10) Remarks

NR-8a

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	Received During Period	Total	Disposition	Seeded	Fed	Other	On Hand End of Period	Proposed for Seeding	Other	Remarks
(1)	(2)	(3)	(4)	Grain Disposed of				(8)	Proposed for Seeding (5)		(11)

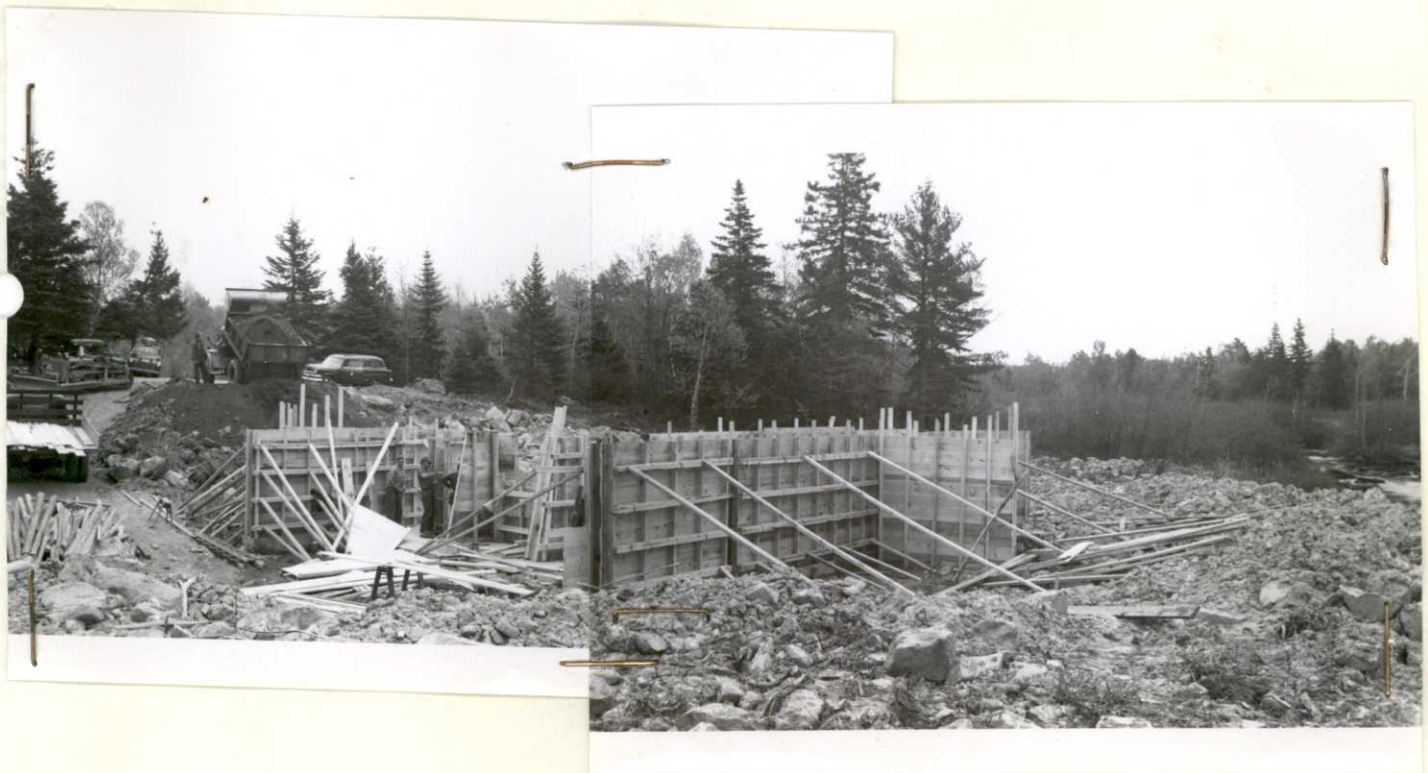
Refuge _____ Month of _____ Year _____

REFUGE GRAIN REPORT



Howard Mill Dam - Top: - Looking upstream at earthen dam and cement spillway and fishway at completion of cement work. Prior to seeding etc.

Lower: Downstream view.



Howard Mill Dam Construction:

Two views of form construction work.



Howard Mill dam and flowage:
 Top - Axis view prior to seeding and catwalk construction.
 Center - Axis view after full completion.
 Lower - General view of Howard Mill flowage, 57 acres of nesting habitat.



Howard Mill dam.

Two views of fishway details.



• Magurrewock Dike.

Top - General construction view.

Lower - Detail of log bridge (left above built to permit truck access.



Magurrewock Dike.
Two general construction views.



Marsh Improvement

Top: One of the charges blowing 1200 ft. of ditches in upper Barn Meadow Marsh.

Lower: Construction of small control structure at culverts In Maine Central Railroad tracks - Lower Barn Meadow.



Edmunds Recreation Area - Storage Log Cabin.



Burnt Cove dike - Downstream view of control structure
and seeded earthen dam.



Top - Fireplace built in Edmonds Recreation area this period.

Lower - Boy Scouts at Washington Co. Camporee - Edmonds Unit 6/18-19



Flagpole erected in
Edmonds Recreation area



Diesel fuel oil tank
installed at Hdqts.



Top - Goose pen adjacent to Magurrewock marsh; -
buckwheat in foreground.

Lower - Construction of Snare Heath road with D-7 dozer



Two views of buckwheat and millet croplands
adjacent to Magurewock marsh.