

ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: 9-23-47 194

MR. SALYERMR. ARUMESMR. DUMONTMISS BAUM

SECTION OF HABITAT IMPROVEMENT:

Mr. GriffithDr. EburnMiss Cook

SECTION OF OPERATIONS:

Mr. BallMr. Regan

SECTION OF LAND MANAGEMENT:

Mr. KentMr. Ackersbaugh

SECTION OF STRUCTURES:

Mr. Taylor

STENOGRAPHERS:

REMARKS:

SENEY NARRATIVE REPORT

MAY - AUGUST 1947

Return to:

Seney National Wildlife Refuge

LIST OF PERSONNEL

May, June, July and August, 1947

<u>Name</u>	<u>Title</u>
C. S. Johnson	Refuge Manager
Frank R. Martin	Refuge Manager
George Orlich	Dragline Operator
William A. Anderson	Refuge Maint. Man (Gen.)
Axel N. Mortensen	Refuge Maint. Man (Gen.)
Harvey C. Saunders	Scaler and U. S. Deputy Game Warden
Leo E. Von Wald	Refuge Clerk
Elizabeth B. Beard	Refuge Aid (Temporary)

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Forms NR-1, NR-1A and NR-2.

Soney National Wildlife Refuge

NARRATIVE REPORT

May, June, July and August, 1947

I. GENERAL

A. Weather Conditions.

Climatological data for the above indicated period is as follows:

<u>Month</u>	<u>Year</u>	<u>Rainfall Inches</u>	<u>Mean Temperatures</u>	
			<u>Maximum</u>	<u>Minimum</u>
May	1943	3.67	62.7	39.7
	1944	2.97	68.8	43.8
	1945	2.31	56.5	35.4
	1946	2.58	61.9	38.7
	1947	4.28	52.7	35.5
June	1943	7.18	72.9	52.8
	1944	3.82	73.8	50.2
	1945	2.59	70.1	45.7
	1946	3.76	72.0	48.1
	1947	2.63	69.9	46.6
July	1943	1.59	82.4	56.3
	1944	3.66	78.3	54.4
	1945	2.35	75.2	51.4
	1946	3.00	77.5	52.0
	1947	1.99	80.3	52.3
August	1943	3.69	75.6	53.8
	1944	1.83	77.6	53.8
	1945	2.33	77.0	51.9
	1946	3.81	73.7	50.9
	1947	1.09	80.7	57.7

Year by year comparison for the four month period:

May - June - July - August

		<u>Extreme Temperatures</u>	
1943	16.13	96	25
1944	11.28	90	31
1945	9.58	88	26
1946	13.15	89	29
1947	9.99	95	24

The weather for the period may best be described as capricious. May had more than the normal amount of rainfall and was below past-

average temperature. It had 8 freezing nights; 1.5 inches of snow fell on May 8 and 3.5 inches fell on May 29, with the temperature dropping to 24 degrees on the latter date.

Rainfall was below average during June, July and August. June was rather cold as compared to past years, but July and August were above normal in this respect. In August especially, cold blooded natives suffered from the heat. The records show that August had 21 days of 80 degrees or over, 4 days of 90 degrees or above and 1 day of 95 degrees. Here, people start panting at 80 degrees.

B. Water Conditions.

Lack of rainfall, combined with excessively warm weather, created a general subsidence in all water systems this period. Due to the fact that the supply source (the Driggs River) was also deficient, the total amount of diversion was inadequate for Units 1 and 2 and most pools were below level in consequence. In spite of the fact that the entire Driggs flowage was diverted for maintenance purposes, A-2, C-2 and M-2 pools lowered as much as two feet. The impoundments in Unit 1 were given the bulk of the diversion and fell off from .68 to 1.04 feet, except in the case of G pool, which dropped to less than 50% of its normal coverage. As soon as the short supply ditch can be dug from J-1 to G pool and the old open spillway remodeled to spill into the latter, serious dehydration of this pool may be avoided.

C. Fires.

No fires occurred on the refuge this period. Some were expected, for the weather was hot and rainfall very scanty, and fire equipment and detection services were maintained on the alert.

In late August, fully realizing that we were exposed "on all flanks" in attempting to provide public fishing in Units 1 and 3 at the same time, the latter was closed to the public and fishermen using that unit were directed to Unit 1, thus reducing the fire potential.

One reason we had no fires was the direct result of the action taken by the local railway in abandoning steam locomotives and using diesel-powered engines instead. Most of our summer fires have occurred along the North boundary, which abuts the railway.

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II. WILDLIFE

A. Migratory Birds. (Reported by Elizabeth B. Beard)

1. Population and Behavior.

Waterfowl

Reflecting the well-nigh universal duck decline, the Seney waterfowl population showed a similar drop-off. The Wood Duck exhibited the most striking decrease, falling from 3,000 for 1946 to 150 for 1947. Other species with radical reductions from 1946 estimates were as follows: Mallard 2,000 (1946), 750 (1947); Black Duck 6,000 (1946), 2,500 (1947); Blue-winged Teal 1,200 (1946), 350 (1947). The increases noted for the Baldpate 150 (1946) to 250 (1947) and for the Ring-necked Duck 50 (1946) to 500 (1947) cast but faint flickers of encouragement.

An intensive study of waterfowl broods and of the use of various types of habitat by the ducks was conducted from May 26 to August 15, by the Refuge Aid. A full report covering this work is being prepared and will be submitted in the near future.

That the duck depression has hit Seney is quite apparent. Vacant, silent marshes and pools afford mute testimony to the fact that the number of ducks is insufficient to populate all the favorable habitats to their fullest capacity. The late summer population shift from the surrounding countryside into the pools of the refuge and the preliminary fall build-up materialized but slightly. A concentration of 150 Blacks was the largest flock seen for this period.

The refuge goose flock continues its fine record of gosling production. Making allowance for duplications, it is estimated that approximately 150 geese broods were counted, with the resultant yield of an estimated 550 fliers. Two separate concentrations of non-breeding birds of 200 each were observed in the more remote parts of A and B Pools. It is felt that the figure of 1200 representing the number of geese of all ages using the refuge during this period is quite conservative.

A study of the effects upon waterfowl of the presence of fishermen on the refuge was undertaken by the Refuge Aid, the results of which have already been submitted under separate cover. In brief, the conclusion reached was that the presence of fishermen within the refuge during the all-important breeding period had a serious detrimental effect upon the welfare of the ducks. Broods were frequently scattered and sometimes permanently separated from the attending hen. Abandonment of favored roosting, loafing and feeding spots was the result of this periodic disturbance by the intruding stream of fishermen spreading out along the dikes. If this disturbance of the waterfowl is allowed to continue each year, it is feared that the harm will be both cumulative and permanent.

2. Food and Cover.

The steady increase in the growth of cattail continues. Several

areas in Unit 1 support solid stands of luxuriant growth. It is hoped that the presence of this desirable plant will soon be felt in a reduction of muskrat depredations on other emergent and aquatic plants of major importance to waterfowl.

Impoundments in Unit 1 support a variety of desirable aquatic plants, notably Vallisneria, Potamogeton pusillus, P. natans, P. amplifolius, P. epihydrus, and P. gramineus, Chara, Utricularia, Brasenia, and Polygenum natans. Unfortunately, however, most of the impoundments now have much of their area dominated by dense beds of Anacharis canadensis which choke out other more desirable plants. The pools in Unit II are as yet largely untouched by Anacharis canadensis. They still support a most vigorous and welcome growth of Najas, along with limited amounts of other desirable aquatics. In general, however, they have a much larger amount of bare bottom than the pools in Unit I.

There is a decided lack of emergent and moist-land food plants along the periphery of the impoundments. Such important food plants as Sagittaria, species of Polygenum, Zizania, Scirpus americanus, S. validus, S. acutus, Eleocharis quadrangulata are either entirely lacking or present only in insignificant amounts. It is felt that all possible steps should be taken to correct this deficiency in the waterfowl food resources of the refuge.

The development of grain fields and green feed crops, such as wheat and rye, to afford maximum feed for the increasing refuge goose flock and for migrant geese as mentioned in the Narrative Report for a year ago should be carried out.

An inventory of the aquatic vegetation growing in the impoundments of Units I, II and III was made by the Refuge Aid with the assistance of the Junior Refuge Manager from July 15 to August 15. A report covering the results of this survey and cover maps showing the distribution of the aquatic plants for each pool are being prepared and will be submitted in the near future.

3. Botulism.

None observed.

4. Lead Poisoning and Other Diseases.

None observed.

B. Upland Game Birds.

1. Population and Behavior.

A. Several well sized broods of ruffed grouse have been observed in the hardwood-hemlock areas on the refuge this period, which leads to the belief that the bird has made a slight increase over last year

and a favorable increase over 1945. The bird is not yet plentiful, especially in the sparsely timbered marsh areas in Unit 3, but there are undoubtedly more birds than during the low cycle period of 1943-44. Coveys are larger, indicating a favorable hatching season.

B. Sharptailed Grouse and Prairie-Chicken

Refuge employees made a point of censusing the prairie-chicken and sharptailed grouse this period, in connection with some studies being made on controlled burning by this agency and the Conservation Department. The preferred habitat of the two birds on the refuge was thoroughly strip censused with the aid of two bird dogs. Nine sharptails and two prairie-chicken were seen.

If the census is to be accepted as conclusive, it would appear that the formerly abundant prairie-chicken has gone with the dodo bird, and the recent newcomer, the sharptail, has declined drastically since last year. The true status of both species must be determined a little later, say in October when they concentrate in the areas investigated, for it is almost certain that the drop in the sharptail population would not be accounted for by last fall's hunting pressure entirely. There is some indication in a shift in population, for sharptails are on the increase in the burned over old pineries some miles to the North. Nevertheless, it is plain that the sharptail grouse has made no progress on the refuge this year.

The prairie-chicken has become a rare bird. As one who has seen it decline from its peak to virtual obscurity, we must admit a feeling of both personal and official regret that this must be. What are golden October days without the attendant thrills of the thunder of wings, the alarmed cackling of great coveys of chicken, and of course the heady aroma of powder smoke on unforgettable occasions? And we may not forget the other principal, who had more friends than many a man--Old Duke, the pointer. His "working" was perfection, his loyalty and staunchness beyond the ken of mankind. A man may grieve unashamed at the passing of a true friend, but for the Duke of Seney it was apparently fitting that dog and game should exit together.

C. Spruce Grouse.

From observations made this period, previous statements on the status of the spruce hen are considered verified. The population remains more or less static, like that of the Sandhill Crane. Good distribution, protection from man and preservation of adequate habitat seem to be the main factors in perpetuating this scarce bird.

2. Food and Cover.

Some attempts have been made to improve grouse habitat by selective cuttings, whereby the all-inclusive term edge would result. In all but the aspen cuttings this has really occurred. In the latter the soil was so well saturated with seed potential that it is evident that best results will require some consecutive burnings.

This matter was discussed with Dick Griffith of the Central Office during his visit here, in connection with formulating a general controlled burning program which would also include marsh and willow areas. It was stated to Mr. Griffith that the opportunities for effective burning were almost unlimited, but it seemed doubtful that a plan could be made which would cover the official requirements for such a plan, for time, place and opportunity seldom achieve the proper combination desired; and therefor it would be imperative that the local personnel be authorized to recognize and act on any opportunity that might occur at any particular time. All will concur in the thought that fire is a dangerous tool, and its use should be carefully scrutinized. Nevertheless, the task of cover-mapping all the hundreds of small areas in need of burning, justifying the action, detailing the exact time, method, all protective measures, (and expense) of each is too stupefying to consider. This stalemate, then, cui bono?

No progress has been made on the controlled burning project for the 17.5 square mile area comprising the main chicken and sharptail habitat. Last spring, when it was too wet, the State attempted to take the initiative more because the job was delegated to fire suppression units than with the idea of consummating an objective. Results were negative. At this time, with everybody jittery about fires, it may be expected that there will be considerable reluctance on the part of our cooperator to join in a controlled burning effort. However, there is some prospect of bringing public opinion to bear at the next joint meeting of the Upper Michigan Sportsmens Clubs--if we can find a messenger for that purpose. If so, and the results are favorable, it may be that the project will get under way in October.

3. Disease.

None observed or reported, unless the "cycle" may be considered a disease.

C. Big Game Animals.

There is no appreciable change in the refuge deer population and the fawn crop has been excellent.

Black bear are now common thruout the refuge and the surrounding district as well. Last week, while Patrolman Mortensen and the writer were repairing the Grays' Creek bridge, a good sized bear crossed and recrossed the road three times, all within 200 feet of us, before deciding to climb the goose pen fence into what seems to be his chosen front yard. He finds good pickings in the old apple orchard and does not seem to bother the geese.

2. Food and Cover.

No comment.

3. Disease.

None observed.

D. Fur Animals, Predators, Rodents and Others.

If a census of muskrats were made at this time, it would seemingly indicate that the animal is rather scarce. However, it is a very poor time to make an estimate, for it has not begun to make houses and it is probably working and living far away from what will be it's winter home. Few tracks are seen on the beaches and few rats are seen afloat. However, we note a lone animal or so occasionally and observe also that the bulrush stands are being continuously cropped--so we must have a fair number.

It is fortunate that the rats are not attempting to build their lodges at this time. The pool levels are so low that the houses would be inundated, if not submerged entirely, when fall rains restore pool levels. Thus there seems to be two ways of exterminating rats on this refuge if the need ever arises (1) drain the pools in the winter after the ice forms (2) flood them out by raising pool levels after the ice forms.

The same statement applies to beaver, for these valuable cooperators are not working on their dams or houses at this season of the year. However, we observe that they have been cutting a tree down now and then on the various dikes and here and there will appear a freshly peeled stick of aspen. During the airplane reconnaissance made in July, an opportunity was found to check on the status of beaver in Unit 3 (which is accessible mostly on foot). The writer was surprised at the number of beaver dams in hidden away places which we had not known about. It can be said that previous trappings, both legal and otherwise, have depleted the beaver in the large streams which are considered public thoroughfares. There are several colonies in Units 1 and 2 which should be reduced to a breeding pair to preserve the dwindling local food supply. In Unit 3 there is plenty of room for expansion and this statement does not therefor apply generally. However, the advance information on the next State beaver season seems to point to a closed season in 1948.

Mink, which have been increasing for several years, are numerous enough to present a factor in need of control. Even though rats may be too few to justify a share-trapping program, it is obvious that mink trapping should be permitted. One finds their tracks and other sign every place.

Coon, as previously reported, are too numerous for a refuge and should be drastically reduced. So far as is known here, the State has taken no action on our request for a local trapping season.

Bobcats have increased to the point where their depredations are assuming noteworthy recognition. Timber Scaler Saunders found a deer carcass which carried all the signs of bobcat work. Permittee Baumgarten's

jobber reports his pet deer (fawn) killed by a cat. The proprietor of the Oasis (cabins, beer and pop) on our North boundary reports his pet fawn also killed by a bobcat.

Coyotes remain, as usual, common and ubiquitous.

E. Predaceous Birds, including Crows, Ravens, etc.

The crow population seems to be up this year, with flocks resident on the refuge. Why they have settled here this year is a mystery to us. True, grasshoppers are here in plague proportions and the ~~down~~berry crop is a bountiful one. This should give Ducks Unlimited a break.

Bald Eagles are a permanent part of the picture with three or four pairs nesting on the refuge. With no disrespect to our National bird, we hope for an act of God soon. If that don't happen we still have faith in our Detroit deer hunters who have fertile minds when it comes to shooting objects which very faintly resemble a deer (with horns).

F. Fish.

Five pools in Unit 1 and C-3 (Unit 3) were open to public fishing this year.

For the first several weeks Unit 1 produced in good quantity, then the takes dropped off. The largest pike reported weighed 20 and 17 pounds, with a goodly number of 10 and 12 pounds specimen. However, from what the writer has seen, most of the pike were in the three year age class, showing that the heavy fishing of 1945 reduced the big fellows considerably.

The C-3 pool has furnished good fishing consistently over a period of years, and again this year some large pike were taken in the 10-12 pound class. Marsh and Walsh Creeks apparently supply the foundation for good fishing, since they are ideal for spawning and rearing young pike.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development.

In reviewing the accomplishments for the period, it becomes evident that considerable time was spent "burying dead horses". Thus, when the CCC Camp buildings were finally disposed of, there was the matter of removing all stored refuge property to other storage places on the station. It would take more space than the work justifies to relate the material salvaged, the lumber, pipe, stoves, plumbing equipment, gravel crusher, hoppers, escalators, sawmills, etcetera, etcetera moved to other storage. Even the water tower and tank, and the drop pipe and sand screen from the well, were packed away where we hope the spying eyes of acquisitive co-workers in the vineyard will not find them. Much of the stuff had to be stacked outside, such as the hundreds of doors and windows we have no use for.

As soon as the described work was completed the refuge force hurried thru the construction of four parking areas for the fishermen. Plots were bulldozed flat, covered with a thin layer of hay, then topped with gravel. Toilets (1 each) as needed were constructed and installed. Four table-bench combinations were built and installed on the site. By the opening date of July 1 directional and informational signs were placed and the closed areas blocked off. Parking space for 100 cars was assumed to be the requirement, and after the first rush this was found to be ample.

The badly eroded dikes were considered next in line for our small force and every man who could be spared was assigned to a dump truck for hauling earth fill and rip-rap. After removing the old pine logs which floated into the Pine Cr.-M dike bridge, the washed out abutments were repaired and filled with earth. The basement of the CCC wash house was also filled with sand to prevent someone from falling into the place and getting hurt. 185 yards of sand and 235 yards of stone rip-rap were hauled and placed on the eroded portions of B dike. 55 yards of earth were hauled to and placed on the washed out sections of G dike. Minor road repairs, requiring 12 yards of gravel, were made in the course of the operation. This work will continue thru September.

During the summer, T pool was drained and a plot of 6.4 acres was selected as a test plot for the use of fertilizers on aquatic and marginal vegetation. 19,440 pounds of 0-12-12 commercial fertilizer and 12 tons of pulverized limestone was applied in preparation for subsequent planting experiments. 8,640 pounds of similar fertilizer was applied to 28.8 acres of goose pasture near Secondary Headquarters for purposes of rejuvenating these worn out fields.

Major repairs were made to the Gray's Creek bridge during the period. The decking on this (about 10 years old and badly decayed) was removed and new cross members, decking and running plank installed.

All were brush creosoted after placement. The railings are 75% completed at this time.

The annual aquatic inventory was taken this period by Refuge-Aid Betty Beard and Manager Frank Martin. The work, which covered the entire water systems in all three units, was greatly aided by the employment of one of the new aluminum canoes, which was at first borrowed, then later purchased.

Mrs. Beard, who has been employed for the summer months, carried on detailed waterfowl studies in an attempt to establish the habitat preferences of the local species of ducks.

Refuge Clerk Von Wald, in such spare time as he found available from his principal commitments, painted the remaining one-fourth of the Service Building and retouched parts of other main buildings which were painted (not too well) last year. Other paint jobs included the East and West faces of the Secondary Headquarters residence, the dining room, kitchen, basement, bathroom and halls of the headquarters residence. The latter was taken care of by employment of the local preacher, who also paints, carpenters and farms to keep the wolf from his door.

Dragline Operator Orlich, with sporadic but little help from others, was able to keep our fleet of trucks going on regular maintenance and in addition made major repairs to the 5 ton Autocar, one concrete mixer and two pickups. Several trucks were re-tired all around and all but three of the 15 vehicles were given the 3000 and 5000 mile checkups. Our fire equipment was given the once over test and prepared for action. The Hudson sedan was cured of its past poor behavior by having a new motor installed. Mr. Orlich's other duties, and the lack of funds, forestalled what might have been a thorough reconditioning of all equipment, including the dragline and three old dump trucks.

Forest inventories, as carried on by Scaler Saunders, continued in such spare time as he found left after fulfilling his scaling, inspections and tree marking duties. The information compiled indicates a pulpwood inventory of 24,181 cords and a timber stand of 20,539,000 bd. ft., of which 14,107,500 feet are in White and Norway pine. Much of the timber is over-mature.

B. Plantings.

Mixed grass seed (10 lbs.)

1. J dike open spillway (West side) to I spillway.
2. H dike from J open spillway past 3 barrow pits.

Smartweed - Polygonum (25 lbs.)

1. H dike from point where it turns West to J dike.
2. F dike - lower side of long fill from H dike.

Smartweed plus Arrowhead - *Polygonum Sagittaria* (75 lbs.)

1. South of spillway from J to I for 800 ft. in I pool.
2. West side of H pool.
3. In H pool East of new J open spillway for 100 yards.
4. Placed 2 pounds in running water of spillway.
5. In E pool North of ridge in E pool where G turns West.
6. From above ridge along lower side of G dike across long fill for entire distance (about 400 yards).
7. Just below D in B pond in upper end of beaver pond.
8. Lower end of same beaver pond.
9. Goose pen - all borders (mud flats) except East side.

Panic grass (20 lbs.)

1. C-2 dike from A dike East.

Brasenia schreberi - root stock collected in upper F pool North of boat house.

1. West end of J pool.
2. D pool in corner of pool South of E spillway.
3. E pool - same as No. 5 above under Smartweed.
4. D pool - Northwest corner.

Sweet Clover (300 lbs.)

1. All roadsides of Units 1, 2 and 3.

Trees and Shrubs.

Sub Headquarters

- *1. 104 Spirea
2. Snow tree transplanted from old farm site.

Headquarters Office

- *1. 4 Phitzer Juniper
- *2. 2 Irish Juniper

Headquarters Entrance Gate

- *1. 12 Phitzer Junipers

Headquarters Residence

- *1. 8 Spirea
- *2. 3 Phitzer Juniper
- *3. 2 Irish Juniper

Pine Creek Road

1. 200 oak

C. Collections.

12 pounds Brasenias from local waters.

D. Receipts of Seed and Nursery Stock.

By purchase, items asterisked above.

IV. ECONOMIC USE OF THE REFUGE.

A. Grazing.

None.

B. Haying.

The goose pasture was let for haying, more to remove the mature hay than as a consideration of income. Permittee Lawrence paid 75¢ a ton for ten tons of hay taken from the premises. The same action mowed the old orchard and roadsides and saved the refuge force some many days.

C. Fur Harvest.

None.

D. Timber Removal.

Eight timber removal permits were in effect during the period and two dead-and-down timber permits were issued by the local office. The purpose of the cuttings is to maintain suitable openings for wildlife, remove mature timber with the thought of perpetuating the forest by allowing young healthy stands to become established, and (not incidentally) to have a few well-distributed operations going on the refuge from which fire-fighters might be drawn in case of an emergency. All operations at present are in pulpwood stands. Total receipts this period were \$4,841.84.

E. Other uses.

Miscellaneous income of other types are listed below:

Rental of guest cabin	\$72.00
Land rental	3.00
Sale of junk	12.50
	<hr/> 87.50

V. FIELD INVESTIGATION AND APPLIED RESEARCH.

Elodea eradication experiment using 2-4D in the West end of upper F pool.

The lowering of the water in F pool through normal summer evaporation exposed a large amount of waterweed (*Elodea* sp.) and apparently made conditions excellent for spraying with a weed killer.

The stand itself appeared in good condition and showed no drying of the exposed leaves, which might weaken the plants and make them more susceptible to a "poison".

Plant associates in the stand were as follows:

Potamogeton pusillus - common, usually not closely interspersed with the elodea, but found in the open patches.

Naiss flexilis - common, often mixed with the elodea, but frequently in small pure stands several feet in diameter.

Utricularia sp. - common, mixed with the elodea, but more common in the openings.

Chara sp. - present, seen along the shore line.

Myriophyllum sp. - trace.

The 2-4D powder was mixed with pool water and sprayed thru an Indian back pump. The one-acre plot was completely covered with the solution at the rate of 35 gallons per acre, applied at 2000 parts per million. Photographs of the stand of elodea, in fact the whole plot, were taken and these should be of use in checking the area for plant mortality a short time after the spraying and again in the spring of the following year.

As of date there is no evidence that the experiment was effective.

VI PUBLIC RELATIONS.

A. Recreational Uses.

Such recreational facilities as the refuge affords were used to capacity during the last three months of this period. The public shelter, which has fireplaces, tables and overhead shelter, was used by tourists and local people alike. The wigwams are deteriorating rapidly and will soon be in such a state that they may be burned without much loss to the Government. What is needed is a complete replacement of the heavy canvas originally used. This material has been rotting away since the last paint job. Some paintings of deer, birds, Indian maids and chiefs are still legible as a reminder of its past dramatic appearance. Vandals stole the best of the two fireplace iron works--namely, the steak grid and cover. New initials appear carved in the tables and benches. Names and cartoons have also been scrawled on the canvas with what, we regret to say, appears to be lipstick.

The fishing area in Unit 1, comprised of 5 pools, was a popular

attraction to local and out of state anglers from July 1 to early August. Then, their vacations over, people began going home. The Central Office took action to extend the fishing period from August 15 to September 15. Relatively few fishermen used the place after September 1. The pool open for fishing in Unit 3 was similarly popular but the attendance much less, though consistently used in that degree. From occasional checks made on the number of cars and occupants parked on the lots, it is estimated that 8200 man days of recreational use was made of the refuge in this activity.

B. Refuge Visitors.

Of the many who called this period, those whose names and official connection may be of interest are listed below:

B. C. Jenkins, State Biologist, and Otto DeWaard, State District Game Manager, May 5. Visited for two hours discussing game management policies.

A. Amman, State Conservation Dept. on prairie chicken studies on the refuge and vicinity. Three days in May at various dates.

Tom Kelly, In Charge of Mails and Filing, Central Office, May 31. Overnight stop.

Mr. Ruecker, Asst. District Supervisor, MCD, June 17th, routine visit.

James Berry, MCD, State Fire Warden on June 30 to discuss cooperative actions on local fires.

O. DeWaard, District Game Manager, discussed taking of coon and Service reaction to upland game bird season and bag limits. June 30

Carl Mackel, District State Forester, July 1, to discuss timber practices and in particular the sale of Sec. 25, T-44, R-14 to one of the refuge permittees.

Mr. Mason, Executive Director of Mass. Audobon Society, 2 days, July 19 and 20 studying birds. Accompanied by wife.

Richard Griffith, Central Office, refuge inspection and habitat studies, July 10-14.

Michigan State College, group of conservation students and foresters, field class, July 15.

Dr. Clarence Cottam, Asst. Director FWS, and family, vacation, July 22-29.

Refuge Supervisor Gillett, Region 3, routine visit, July 28-30.

Arthur C. Elmer, Director of State Parks, July 29, in the interest of procuring waterfowl for Ford Dearborn Park.

A. B. Cook, Asst. Chief, Fish Division, Michigan Conservation Department, July 28-29. Visiting fisherman.

Michigan State College Ornithology Class, July 29, for obvious purpose.

Otto DeWaard, State District Game Manager, routine visit, July 30.

Elmer Graham, in Charge Personnel Classification Section, Central Office, August 1-14. Vacation with family.

Otto DeWaard, State District Game Manager, with Mr. Brule on routine visit, August 6.

Dr. O. Haugen and group of Michigan State College students to inspect refuge, August 7.

Mr. Crouch and family, Central Office, vacation, August 16-23.

Dr. G. A. Amman, State Biologist, studying status of chickens and sharptail grouse. August 16.

Mr. W. R. Dillon and family, Chief Administration FWS, vacation, August 24 - September 5.

C. Refuge Participation.

It is believed that the refuge responsibilities in the way of establishing good public relations were adequately fulfilled by giving good local service. As witness the number of college student groups visiting the place, the parade of officials from the State Conservation Department, uncounted persons interested in conservation and possibly 50,000 man hours of fishing. Since we are not very familiar with the policies and objectives of the Service (these don't filter down to us) it is not deemed a wise thing to appear before civic groups and attempt to speak the mind of those who do the planning or make the laws, at least not until we know what is going on. A Refuge Manager may, however, make friends for his refuge in many ways and this in turn reflects some credit on the parent organization. The public seems to be more touchy about the status of fish and game than about taxes. One has to proceed so cautiously, in issuing public statements, there is little to say at the present time.

The recent donations of CCC buildings to churches, schools, ex-servicemens organizations and local Governmental units, throughout the district, should do much to cement good public relations. The writer's position on the Memorial Hospital Board, which furnishes contact with a large number of the influential big-wigs in the district will make friends for the refuge and indirectly the Service, provided it is handled with discretion and Service policies are kept on an independent and respectable level.

This year we are avoiding attendance at the annual convention of

the Northern Michigan Associated Sportsmens Clubs. The outfit once backed us in an important issue with the State, and we got what we wanted. Their action on our plea for assistance was justified as time and events have proven. We won't knock on that door again until we have a similar case.

The fire fighting film, which made the circuit of all the refuges in Region 3, was shown at the local theater on the evening of August 8. This film was shown just prior to the regular (weekly) movie and we can therefor report a good attendance.

D. Hunting.

There was no open season on game this period.

E. Fishing.

This subject has been discussed in previous paragraphs, and there is little to add except to comment on the winter kill. In this connection we have been puzzled by the fishing success in some of the pools. C-3 pool for instance has been producing good fishing over a period of years inspite of heavy public use. The pools in Unit 1, which were opened this year after being closed for one to two years, produced bountifully for several weeks and then slumped. Apparently the winter kill is a prime factor in this contrast. In C-3 the pool is fed by two small streams which supply considerable mileage of spawning area, as well as fine habitat for young fish. Apparently this combination of constant flowage and suitable habitat in Unit 3 maintains good fishing, whereas the Unit 1 ponds have too little in the way of oxygen renewal and too little escape area for best results. The trouble might be remedied somewhat by running the diversion ditches at top capacity all winter, but it would be difficult to reach the spillways when the refuge is snowbound unless proper equipment were provided.

F. Violations.

No violations were observed on the refuge this period. For obvious reasons the average violator is reluctant to be trapped within the confines of the refuge, especially in deer "shining", for the chances of making a get-away are much less than outside. So the gunfire we hear in the evenings and at night is along the County highways and back in the farmers fields.

C. S. Johnson
C. S. Johnson
Refuge Manager

Regional Office Acceptance

APPROVED
[Signature]
ADJUTANT REGIONAL DIRECTOR

SEP 19 1947



Utilization of mud flat SW A-1 pool.



Unit One pool system.



Typical dike cover - mature Norway pine
overshadowing the ever present jackpine.



Goose pen pool showing constructed islands for goose
nesting.

WATERFOWL

Refuge Soney Months of May to August 1947

(1) Species Common Name	(2) First Seen Number Date		(3) Peak Concentration Number Date		(4) Last Seen Number Date		(5) Young Produced Broods Seen Estimated Total		(6) Total Estimated for Period
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose			287	July 17			150	550	1200
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Wood duck Red head Ring-necked duck Canvas-back Scaup (<u>Lesser</u>) Golden-eye Buffle-head Ruddy duck Hooded Merganser American Merganser			25 150 22 4 1 7 14 13 15 3 5 1 25 15	July 31 July 31 May 28 July 25 May 27 May 30 June 1 Aug. 1 July 31 June 12 May 29 June 17 Aug. 5 May 28			17 43 5 1 9 2 14 1 2 45 46	250 800 75 2 190 30 280 5 5 450 600	750 2500 250 4 8 350 150 500 6 5 1 700 800
IV. <u>Coot:</u>									

(over)

SUMMARIES

Total Production:

Geese 550Total waterfowl usage during period 7,224

(6) Ducks <u>2677</u>	(5) Young Produced	(4) Last Seen	(3) Peak Concentration	(2) First Seen	(1) Species
Coots <u>0</u>	Broods	Date	Number	Date	Common Name
	Seen				
	Total				
	Estimated for Period				

Peak waterfowl numbers 581

Areas used by concentrations A & B for Geese; Ducks; G & D and to a lesser extent C, E, F, H, I and J.

Principal nesting areas this season Whistling swan

Reported by Elizabeth B. Beard, Refuge Aid

INSTRUCTIONS

- (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) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: 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 in the reporting period.
- (5) Young Produced: 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.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)Refuge SennyMonths of May to August

1947

(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			6	July				3	5	20
Pied-billed Grebe										200
Great Blue Heron										250
American Bittern										200
Sandhill Crane			7	July 30						75
Virginia Rail	1	May 29								
Sora Rail	1	May 26								
II. <u>Shorebirds, Gulls and Terns:</u>										
<u>Terns:</u>										
Semi-palmated Plover			6	July 31						750
Killdeer										
Black-bellied Plover			6	Aug. 8						1500
Wilson's Snipe										1500
Upland Plover	1	July 2								
Spotted Sandpiper										
Solitary Sandpiper	1	July 15			1	Aug. 3				
Greater Yellowlegs					1	July 31				
Lesser Yellowlegs					5	July 31				
Least Sandpiper	1	July 20								
Semipalmated Sandpiper	4	May 29	4	May 29						
Red-backed Sandpiper	25	May 29	25	May 29						
Herring Gull										150
Common Tern	Sev.	May 26						1	3	
Caspian Tern	2	May 26								6
Black Tern	1	May 26								2
(over)										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl					
Magpie					
Raven					
Crow					
Bald Eagle					
Marsh Hawk					
Cooper's Hawk					
Osprey					

Reported by Elizabeth B. Beard, Refuge Aid

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.

Refuge SentryMonths of May to August, 1947

(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 specifically requested. List introductions here.
Ruffed Grouse	Upland & swamp fringe								400	25% increase apparent
Canada Spruce Grouse	Coniferous woods								75	No change noted
Prairie Chicken	Semi-dry barrens								7	Only two birds seen during the period
Sharp-tailed grouse	Semi-brushy areas								150	No change noted
Woodcock	Alder fringes								100	No change noted

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.

