THE INTERIOR

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF BIOLOGICAL SURVEY

ADDRESS REPLY TO
REGIONAL DIRECTOR
AND REFER TO

Crescent Lake
Narrative Report

OFFICE OF REGIONAL DIRECTOR
406 POST OFFICE BUILDING
OMAHA, NEBRASKA

REGION No. 9

NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS

August 7, 1939

Chief, Bureau of Biological Survey
Washington, D. C.

Attention: Mr. Salyer

Dear Mr. Salyer:

Enclosed herewith is Quarterly Narrative Report for months of May, June and July, 1939, as written by Mr. G. E. Wardwell covering the Crescent Lake Migratory Refuge.

You will note that Mr. Wardwell makes certain recommendations relative to the biological development of the area. There appears to be very little use in developing or planting areas now open to grazing since the grazing has destroyed the plantings which have been made. This office concurs with Mr. Wardwell's recommendation in that biological development be withheld from those areas open to grazing and confine plantings to those areas which are closed to grazing at the present time.

Very truly yours,

Burnie Maurek, Regional Director

By F. C. Gillett

F. C. Gillett
Refuge Administrative Assistant

Enclosure

August 7, 1939

Chief, Bureau of Biological Survey
Washington, D. C.

Attention: Mr. Gabrielson.

Dear Mr. Gabriel:

Enclosed herewith is quarterly Narrative Report for months of May, June and July, 1939, as written by Mr. C. E. Mershall covering the Crescent Lake Refuge.

You will note that Mr. Mershall makes certain recommendations relative to the biological development of the area. There appears to be very little use in developing or planting area now open to grazing since the grazing has destroyed the plantings which have been made. This office concurs with Mr. Mershall's recommendation in that biological development be withheld from those areas open to grazing and confine plantings to those areas which are closed to grazing at the present time.

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Regional Director

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E. C. Gillett
Refuge Administrative Assistant

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Crescent Lake

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Burnie Maurek, Regional Director

By

P. C. Gillett
Refuge Administrative Assistant

Enclosure

QUARTERLY NARRATIVE REPORT

for the

Quarter ending

July 31, 1939

CRESCENT LAKE REFUGE

G. E. Wardwell
Refuge Manager

CRESCENT LAKE REFUGE
Quarterly Narrative Report
for the
Quarter Ending

July 31, 1939

Foreword:

Each quarter when we start our narrative report we think of Rhodes,-"So much to do, so little done".

This is especially true, and is forcibly brought to our attention at the close of each nesting season. It might read, "So much to learn, so little known". This we believe will hold good on the entire wildlife problem.

Since the completion of all major construction on the refuge, it has given us more time for thought and study of these game management problems. We were fortunate again this nesting season to have Mr. Imler of the Research Division, conducting nesting studies. His findings, with the work of Mr. Young assisting Mr. Imler, and carrying out a program of research problems, has given us much worthwhile information. We will only endeavor to give the highlights on these problems at this time. We will also submit a separate report of Mr. Young's findings of plantings, both trees and aquatics, at the end of the growing season.

Plantings:-

The following plantings were made during April and May, and during the first week of June:

13750 Willows	2750 Honey Locust
5000 Indigo Bush	1150 Black Locust
100 Clematis SCS	2000 Ash
1000 Red Cedar	6000 American Elm
1000 Russian Olive	1550 Chinese Elm
20,500 Hardstem Bullrush Root Stocks	
800 pounds of Wild Rice	
200 pounds of Smartweed Seed	
8 Bags of Wild Millet	

Most of the tree plantings were made between May 10 and May 24. This lateness was due to some unknown hold-up in the assigning of a W. P. A. crew to this project.

Trees were planted in almost every type of environment, but mostly in meadow type association.

An accurate account was made of each plot, as to number and species. Also soil type, vegetation, and moisture records have been kept. This, we believe, will give us valuable information for future plantings. By this information we should be able to plan future plantings in this area, so as to eliminate the species that do not grow, and at the same time have the information as to the type of soil or moisture best suited for the desired specie.

From the data we now have, the planting anywhere but in the meadow type are doomed. If water levels come back to the height of former years, the plantings that are now alive will be drowned out. From the results of two years plantings, our enthusiasm for the growing of anything but Willows and Cottonwood is at a very low ebb, only under certain conditions.

In areas planted under ideal weather conditions and meadow type land, the loss now stands at about 75% of all species, with the exception of Indigo Bush.

In the willow groves, that have been established for years, plantings were made of all species on hand, with the following results.

Honey Locust.....90% survival

Green Ash.....94% survival

American Elm.....95% survival

Russian Olive, Chinese Elm, and others, are very robust and are making a good growth in these groves. Cedar plantings were

This shows need of some crop for future plantings R.H.L.

a total loss, only where planted in the shade of the Willow groves. Indigo Bush has made a very good growth wherever planted.

On May 9, five bags of Wild Rice were planted in Gimlet Lake. On June 1, this plot was examined, and where a fair growth was found, it was not showing a healthy condition. By July 20, no signs of rice were in evidence.

On May 9, twelve bags of rice were sown in Jones Lake, and in the run at the east end of the lake. In this lake and run, the water seemed to be ideal for the growing of rice, as it was fresh and slowly moving, until July 1. A good healthy growth of rice was observed at each examination until after July 1. At this time the water had receeded to such a point that left the main stocks prone in the mud.

Should have been sown in water deep enough to carry plants thru dry season. Asked WPA

Wild Millett and Smartweed planted also in May, are showing an excellent growth. Also the Millett and Smartweed planted during the season of 1938, is spreading and showing a good growth.

Many Willows and Cottonwoods are coming up and making a good growth, in areas that were not planted. These areas are all in the restricted grazing areas, and these seeds must have blown in from Willows and Cottonwoods planted in years gone by, by ranchers.

The ironical phase of this situation is that these new shoots and trees are more robust and are showing a better growth than any other trees planted by our puny efforts. From these new growths, it would seem that when the present grazing lease expires, new groves would spring up over more of the area. This same situation, with aquatics has taken plane in stock watering tanks. During the summer of 1938, several metal tanks, about 16 feet in diameter, 3 feet in depth, and cement bottoms, were placed over the refuge. These tanks have been in use one year and full of water at all times. They are

now full of several varities of pond weed. All have a heavy matted growth, and are fruiting. From these examples it would seem that many of our problems revert to land management alone.

Undesirable species often take over areas desired for plants of high food value.

Wildlife:-

We are again forced to admit another unsuccessful nesting season.

Our records show approximately the same number of nesting waterfowl, but a pronounced difference in species. Last season, Shovellers were the predominating nesters. This season, Blue Wing Teal were the most abundant, with Shovellers far down the list. While data is not complete on what the loss will be, it may show, and we believe it will, that the loss of non-divers will exceed 85%. Of this enormous loss about 70% was caused by Bullsnakes, the balance, to skunks. The usual amount of Shore birds nested on the area, with the exception of Avocets; we could note a decrease in these birds. Long-billed Curlews were quite plentiful, but it was the writer's belief that there were also a decrease on their numbers. Others, who were here last season believed that no decrease could be noted. A noticeable increase was observed in the numbers of Upland Plover. The usual amount, to the bordering on an increase, of Pheasants nested on the refuge, and many broods were seen. The numbers of Prairie Chicken and Sharp-tail Grouse, remain about stationery. An occaisonal brood is seen, but they are very scarce.

Redheads and Ruddy Ducks were more plentiful this season, and from our records, and the number of large broods seen, these species alone were successful nesters.

Last season the numbers of both Short-eared and ~~Long-eared~~ Owls were often discussed. They were nesters over all the marsh areas. This season, not an owl of either specie has been seen by the writer. One or two birds have been seen on the refuge, and exception rather than otherwise. Also Marsh Hawks are very scarce, an occasional bird has been seen, but very few. Last season, these hawks were plentiful.

The rodent population is somewhat less this season, but still many rodents are in evidence. This, we do not believe, is the solution of the absence of these birds of prey.

Predators:-

From the results of two years nesting studies, it now seems that the control of predators, both reptilian and mammalian, should be the major projects on the refuge. Experiments in the control of Bullsnakes has been carried on by Mr. Imler and Mr. Young, with very satisfactory results. A funnel type trap, using a long drift fence leading to the opening of the trap has proved very efficient. Some 300 Bullsnakes were trapped in this manner. We have requested the purchase of 3000 lineal feet of hail screen for the construction of 25 more of these traps, through W. P. A. We feel with the operati n of 50 of these traps throughout the area, that these reptiles can be held in control. More experiments will have to be carried on, as to the location of traps for the highest efficiency. Seventeen snakes in one set of traps in one day has led us to believe that we can give nesting birds the maximum of protection when a sufficient number of traps are in operation.

Skunk damage was also very noticeable this season. No skunk control was carried on this year from January to the nesting season, due to the shortage of help. As skunk damage was slight during the nesting season of 1938, when control work was carried on, and damage mounted when not carried out, has proved that a relentless warfare must continue.

Coyote damage was negligible; only one case of a nest being destroyed by Coyotes.

Construction:-

A windmill and watertank was erected at our Secondary Headquarters. Much trouble was encountered in drilling a well at this location. Several holes were drilled at different points, endeavoring to locate water on the higher levels, so as to give sufficient pressure without excess height of tank. Rock was encountered at three different points, drilling 115 feet at one location without striking a water sand. It was necessary to drill a well close to the residence, and to erect a 30 foot tower for the windmill, so as to clear the trees. We also erected a 16 foot tower with platform for an 8 x 8 iron tank. The residence building was piped for water, and a stand pipe was placed in the yard. While this work is not completed, the windmill and tank was erected, and there is now water in the house. The water pressure is sufficient for all purposes.

The materials were purchased through W. P. A., with the exception of small pipe fittings, which were purchased from refuge funds. These materials purchased through W. P. A., ~~with~~

arrived at the work on June 30, the date for discontinuance of the project. Through the kindness of two of the W. P. A. foremen, they returned after the close of the project and assisted us in the completion of this work to a point where the water system would operate. This project will be completed upon the return of the W. P. A. crew on August 9.

Water Levels and Weather:-

Precipitation has been below normal during the past quarter, but water levels held up well until the hot weather of July. All lake levels have lowered to a point below the levels of 1938, with the exception of one or two lakes where heavy local rains have held these levels up. Heavy showers over the pot-hole area held these levels until danger of young birds being caught was past. As a whole, we can see no cause for undue concern over lake levels, as they are still up to a point above the 1937 levels. We do not feel that any of the lakes will be dry as was the condition that season.

Botulism:-

A small outbreak of Botulism occurred on Hackberry lake. The first observance was on July 10, and since that time, some 50 birds have been found dead. These were picked up and buried. The sick birds were brought to headquarters and placed in our duck hospital and treated. Under Refuge Manager Young has been in charge of this work, and we believe he has established a record, as not one bird has died after being brought in and treated. A close check of all lakes are being made for a possible outbreak, but only one lake is affected, to date.

Recreation:-

The recreation area was a very popular spot at the beginning of the fishing season, until about July 1. Forty-two cars were counted on one Sunday. Each week-end, many people would visit both Crane and Island lakes to fish. Limit catches were made of Bullheads, during the first part of the season.

As a whole, the visiting public were very considerate of the refuge regulations. It was only necessary on one or two occasions to reprimand anyone, and these were only minor infractions of our rules.

Conclusion:-

We feel that we should, at this time, more fully explain the uselessness of doing biological development under the severe handicap encountered while the present grazing lease is in effect.

On this refuge, at the present time, we have three tracts of land where all grazing is prohibited. On two of these tracts the land has been left idle since 1934 and 1935. On these lands and in the lakes on these lands, both new growths of trees and shrubs on the land, and aquatics in the waters have made a remarkable comeback. Willows and Cottonwoods have started, as mentioned earlier in the report, and are making groves of such an extent that more would be a detriment to nesting waterfowl. On the sand-hill areas of these lands Wild Rose and Sand Cherries, Choke Cherries, Wild Currant, are growing again. In the waters, Sago Pond Weed is growing in profusion, and a border of rushes have started. On the other tract this same thing is taking place on a smaller scale, and this land has been idle only one year.

Last season we made several test plot plantings of different aquatics, by transplanting root stocks, and whole plants to barren waters in the grazing areas. That is, in areas not grazed last season, but subject to use by the lessee. These plantings made a rapid growth and when the stock was turned into these a areas, we almost felt they might survive, as they were so well started. As soon as the weather turned warm, stock moved into these areas and could be seen standing in these lakes and small ponds eating this vegetation. At this time, not the smallest sign can be seen of these plantings.

We have our three tracts of land so well planted with trees of several variaties, even though only a small percentage grows it would be sufficient. On the areas covered by the present lease, it is useless to plant until the expiration of the lease on 1942.

This seems logical R.H.S.

These facts and recommendations are not being submitted with any idea of dictating planting policy, but only as an endeavor to give a true picture of conditions as they now exist.

We fully believe every effort should be directed toward the control of predators, while the present lease in in effect. When these predators are under control, and this lease expires, we can at that time begin our biological developments. Crescent Lake should then take its place as one of the important duck producing areas, a reputation it should rightfully be entitled.

Respectfully submitted,

G. Wardwell

Hard-stem Bullrush in Island Lake Marsh

Another view of Bullrush-----Note
Heavy Fruiting

Nests of Western Grebe

Nest of Blue-Wing Teal

Nest of Mallard in Garden at
Headquarters.
---A successful hatch was made---

Mallard Nest in Russian
Thistle.
First Nest of Season, April 19
---Destroyed by Skunk.--

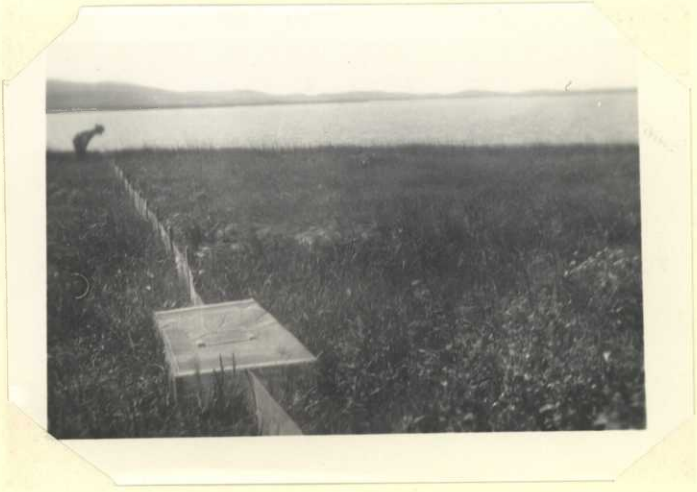
Tar paper wings leading to Pit-type Snake Trap.
---Not as successful as Funnel-type traps...

Tar paper wings leading to funnel-type snake traps.
---This type not successful---

Typical pot-hole. Many broods of ducks raised here.

Funnel-type trap with wire wing.

Double set ~~of~~ with wire wings.



This double set has been very successful. Wings leading from water's edge to abrupt Sand Hill.

Reading test wells.

Part of post supply.

Soft-stem Bullrush planted
Season of 1938 from root stock.

Canadian Geese on Hackberry Lake

Canada Goose on Nest at Gimlet Lake