

MONTHLY REPORT

Arrowwood Migratory Waterfowl Refuge

October 31, 1937

W.C.  
11-11-37

11/14/37

CAL  
11-12-37

JA  
J. H. B.

new

live  
burn

Earl W. Craven  
Refuge Manager

### GENERAL DISCUSSION

Much to our surprise, October brought us a present of a fine rain, early in the month and Arrowwood Lake came back to its August level, overnight. Some of this water is still with us at the end of the month although one or two sharp freezes will probably finish it off. At present, the water area is approximately one and one half miles long by some fifty to seventy five yards wide.

Another fine surprise was the addition to our camp forces of 144 new enrollees. A fine looking lot of men, many of whom have had no little experience on heavy equipment of one kind or another. A large number of the new men have had earlier experience in the CCC and to date they are making a fine showing on the different projects.

In addition to the above, 33 more WPA laborers have been added to the project, during the last week of the month. These men are all part of our old crews and having had experience on the different jobs on the area, are expressing their pleasure over thier return by turning out some good work. Most of these men have stated that they prefer the work out here, which helps make the wheels go round.

The weather has been mighty fine all the month and with the exception of one night, when the temperature approached the zero mark and a few other days when it hung around the freezing point, it has been an ideal, fall month.

Truck trail construction and marsh developement again held the center of the stage for the month and despite a few breakdowns in the heavy equipment, progress was fairly good.

The two miles from Pelican Point to Highway number 9 along the west side of the Arrowwood Lake was completed and part of the equipment then swung over to the east side of the Lake and started down the home stretch, over the approximate three miles to the Bredahl Dam, where the trail will connect with the completed trail line to the south.

We are not planning any trail construction north of Highway number 9 at this time, due to the unacquired tracts in this unit, plus the railroad grade across the lower part of it and the general contour of the land. However, it may be possible to do some work here at a later date.

With the addition of the new enrollees, we are starting to gravel the trail line on the east side of the lake, north from the camp. With any kind of favorable weather, we hope to complete all, or a good part of it, during the winter months.



It seems our expectation of progress in the DePuy marsh always fall short of actual accomplishment. Some of this may be charged to breakdown and the rest to the fact that our hopes run away with our actual ability to accomplish this dirt work within the time we have set for the completion of the job.

Every effort is being made to complete all channel and island work before the freezeup, as it is unlikely, due to the moisture in the ground, that we will be able to do much dirt work after a few hard freezes.

Practically all of the DePuy marsh islands are up to elevation, but the slopes of two lower islands are still in need of some dirt to bring them to their proper flatness. The elevating grader is used as far as possible on this job and then the LeTourneau comes in and finishes the job while bringing the channel to the proper depth. It is a slow job but should prove its value in the years to come.

At the secondary Headquarters we are just completing the installation of the storm windows in the Residence and as soon as some feasible plan for providing a stable water supply can be worked out, the place will be ready for occupancy. If possible, some landscaping will be done around the buildings this fall, including the construction of the gravel court, but weather and the progress of other projects will determine the amount of this work that can be done this year.

Approximately 18 acres of corn was cut and shocked for use as winter feed. Another 10 acres was disced over, as an experiment, to determine whether it would be used more extensively by our waterfowl, than the patches left standing. Results at present would indicate that the birds prefer a little exercise before feeding, as most of them are flying far and away from the Refuge and seem to be feeding in fields that are used by stock, or other harvested patches. Part of this exodus may also be due to the low ebb of the migration and the fact that the country as a whole is full of feed, left in the fields because of the drouth and the grasshopper invasion, as these pests left many bushels of grain cut off and lying on the ground, behind them.

*much preferred by ducks*  
The shocked corn in some instances, be moved as shocks, to other parts of the Refuge, some left standing in the fields and the rest will be used over log frame works to serve as both food and cover shelters, for a large number of birds. It is still too early for any results to be apparent in one kind of shelter as against another, but this winter should bring out some evidence as to the use and value of the different types.

All piping for Headquarters irrigation system has been laid and backfilled and there remains only the installation of the pump in the boathouse and the digging and piping in the well, to make the system operative, providing, of course, that we have sufficient water in the lake to draw from. It appears questionable that the pump will draw much more than 12 to 14 feet, which is approximately the level of the lake floor.

Some of the materials for the construction of the Headquarters bunkhouse have been hauled in and actual construction of the building was started during the last few days of the month. This building is being erected by our WPA carpenter crew who have done such fine work for us in the past.

Most of the excavation work has been done on the building site and construction of the forms has begun.

The two WPA carpenters installing storm windows at headquarters were able to complete the job during the month, except for the painting, which, weather permitting, will soon be finished as well. They are unquestionable, a great improvement against a North Dakota winter.

\*\*\* Our snow fence was completed during the month, including the painting and it offers a very nice background to the buildings on the site. We probably will use some of the temporary snow fence in strategic locations and the combination of both permanent and portable fence, should solve our snow problems without much difficulty.

Much rock removal has been done over the past two weeks on trail lines and the rock is hauled into the coulees where the combination, trail fills and dams, are to be riprapped. In addition to rock from the trail lines, one crew is removing rock from the fire lines and disposing of it in the same manner. A very great many square yards of riprap will be done to protect the dam and trail slopes, but it should reduce our trail maintenance to a minimum on these fills as well as saving these small water areas from the danger of washouts. Two fills, or dams, are partly completed at this time.

We have transplanted a few more elms on the Headquarters site this month and expect to transplant a total of twelve of this species, which will about complete the work of this kind, of species available on the Refuge. Some further planting of other species will be necessary to complete the project as a whole, but this will not be attempted before the coming spring.

Because of climatic conditions and the condition of the soil, we did not plant our Rye until the middle part of the month and from the

\*\*\* (Instructions, regarding the discontinuance of this type of fence, did not reach us until after the job was finished.)



present outlook our guess was good. However, crop plantings in this area are as much of a gamble as anything could be, judging from the past few years experiences and we will wait until the crop is in the granary before boasting too strongly of our success.

A small crew has spent the past few days, tying the barb wire on the steel, cement anchored, brace posts of fence line. Large cotter keys are slipped over the wires, pushed through the holes in the posts and clinched on the inside.

The Arrowwood Lake and Foster County units are complete in this work and the rest of the line will be finished as soon as possible, although winter weather will probably not permit its completion over the whole line, before next year.

The Herbert Bauer farm buildings were razed this month and much of the salvaged material was transferred to Headquarters where it will be used in the construction of the Bunkhouse. Only rough lumber could be used in this construction and the balance was hauled to the camp lumber yard for use as needed, except for the lath, which was used in the construction of the portable snow fence, made up in the same manner as the fence constructed last year. The fence was constructed on the grounds.

These buildings would have served no useful purpose on the Refuge and the site will be cleaned up and obliterated.

Four leanto shelters were constructed during the month, of a somewhat different type than those constructed heretofore. A log framework, approximately 18 feet long, six feet high in front and built as a leanto, was first constructed and then willow branches were woven through the logs, over the top and around the sides. The whole affair was then covered with corn stocks which are held in place with wire. ✓ *done*

Three more shocks, hollow in the center, were then set up along the front of the shelter, escape holes provided where needed and with the dumping of a load of gravel around each shelter, the job is pronounced as finished. ✓

There has been no evidence of any migration of ducks, worth mentioning, up to this time and we estimate the highest concentration on the lake, as approximately 10,000 birds. Mallards are, by far, the most numerous and it appears probable that these are local birds that have worked in to the Refuge after the season opened. ✓ *done*

✓  
Fall  
migration

Nearly 250 of the Lesser Canada Geese stopped over around the middle of the month and a few of the big "honkers" came in toward the latter part of the month, which with the approximate 50 swans now present, and the approximate 150 Sand Hill Cranes observed early in the month, were the highlights of the migration, to date.

Hunting parties are slightly more numerous than last year and bags somewhat lower, both by report and actual observation.

Local residents are, in the main, opposed to hunting this year and are very outspoken in regard to a closed season. They are practically unanimous in their estimates of fewer birds, with the possible exception of the Hungarian Partridge and are very desirous that some means be adopted to save the few they have observed.

Their remarks are mostly concerned with the upland birds, regarding the waterfowl concentration, or lack of it, as too obvious to mention.

Our reports on the different species of mammals from last month, might be continued, word for word, this month. However, the much better cover available this year, may possibly be the cause of our lack of observation of some of the species in any large numbers, but it seems very probable that most of the species are fewer in number as against a year ago.

Carded  
11/31/35 - Burn



### TRAIL CONSTRUCTION

The two miles beginning at Pelican Point and ending at Highway number 9 was practically all turnpiking, but the fill across the Pelican Point coulee was the largest yet built. Approximately 2500 cubic yards of dirt was moved in this operation, but we stand to gain a fine, small water area as a clear profit on the job.

In addition to the above mentioned two miles, one mile of turnpiking was completed on the east side of Arrowwood Lake, working south from highway number 9.

Two more miles to go from there and the trail is around the whole Refuge except for the piece across the Travellers Insurance and the Guenther tracts. All praise to the dirt crews for a good job, well done.

One half mile of gravel has been dumped and leveled on the trail road during the past week and as soon as the dragline is in place and working, this work will go forward at a faster pace as we will be able to load the gravel much more rapidly than by hand.

### ISLAND AND CHANNEL CONSTRUCTION

We hope to complete two more small islands and channels in the DePuy Marsh before the winter closes in and halts the work.

Another two, even smaller islands could probably be used in this unit, but if we are successful in completing the first mentioned pair we will feel that the Marsh is ready to go into production next spring without too much of it left unfinished.

Approximately 5000 cubic yards of dirt was moved on this project during October.

### SECONDARY RESIDENCE RENOVATION

The work here was confined mostly to clean up jobs. Such as the storm windows, some painting of basement walls and stairs and odds and ends of touching up.

One of the cisterns is full of soft water and the only thing needed to make the place habitable, is a stable supply of drinking water.

### FOOD PATCHES

Of the approximate 50 bushels of corn harvested probably 20 bushels will make good seed for next year. The balance of the crop was left in the field for food patches and nearly 100 shocks are available for use as needed in any part of the Refuge.

Some of the shocks have already been used in the combination food and cover shelters and the rest will be distributed in chosen locations before the winter sets in.

Nearly 50 acres of Rye has been seeded this month in the Arrowwood Lake unit, under fairly favorable conditions. The seed was obtained from the lower Souris Refuge.

#### HEADQUARTERS IRRIGATION

600 feet of pipe was laid during the month and is already to hook on to the pumping unit as soon as it is installed. Practically all of the Headquarters site will be covered by the sprinklers and the few odd corners can be covered with a minimum amount of hose line. The installation of the pump in the boathouse and the construction of a suitable well will offer some difficulties, but we expect to have it ready for next seasons watering.

#### HEADQUARTERS SNOW FENCE

320 feet of permanent snow fence was constructed this month to complete the job. This fence is painted the standard the white color and makes a nice appearance against the hilly background.

It will be necessary to use either this, or the portable type of snow fence, until such time as our trees and shrubs make sufficient growth to from a natural snow fence and even then they would probably be of some value in piling up the snow for as extra supply of moisture.

#### DAM AND FILL RIPRAP

100 square yards of riprap has been placed on two of the combination trail fills and dams. A WPA crew is working in the Jim Lake unit and a camp crew in the Arrowwood Lake unit, on this job.

These are class A riprap jobs and the rocks are laid on a 4 inch layer of gravel and then gravel is filled in around the placed rock to complete the work.

The crews are showing every necessary care in this work as we expect it to last for many years.

#### RAZING UNDESIRABLE STRUCTURES

The Herbert Bauer buildings, consisting of a house, barn, chicken coop and granary and a couple of leanto sheds, were razed and as much slavage recovered as possible.

The house was in fairly good condition, but the other buildings were only fair and consequently such lumber as was recovered can



be used for rough construction, only.

#### UPLAND GAME SHELTERS

The four shelters constructed this month were built to a slightly higher elevation than those previously constructed. The reason for this was in the nature of an experiment to determine the correct elevation to prevent the snow drifting over and covering them as was the case in a few instances last year. We hope to avoid this in these higher shelters, with at least some opening available to the birds for escape, or entrance to the shelter.

*noted  
JWC*

Four different types of location were selected for the sites and we expect to keep the different locations of these and the other shelters under observation, to see which locations are favored and to determine, if possible, why they are used in preference to the others.

TRAIL CONSTRUCTION



Crossing two coulees on the west side of Arrowwood Lake.





TRAIL CONSTRUCTION



Picking rock from the trail line.

ISLAND AND CHANNEL CONSTRUCTION



A central view of the DePuy Marsh

ISLAND AND CHANNEL CONSTRUCTION



Views from north and south.





RAZING AND CONSTRUCTION



Materials from the Bazer buildings will be used in the construction of the Headquarters bunkhouse.



UPLAND GAME FOOD AND SHELTERS



Some of the shocks are used to cover the log shelters.



*Too low & shallow  
J. L. M.*



FOOD PATCHES



Seeding rye in the Arrowwood Lake unit.

UPLAND GAME BIRDS



The exploding covey of Partridge were too fast for the camera.