

General Conditions

Weather conditions have been very favorable during the period February through April; 1.19, 1.46, and 1.49 inches of precipitation were recorded respectively for these three months totaling 4.14 inches for the three-month period. Temperatures were slightly below normal and a good deal of cloudy weather was had. However, late in April and early in May, the temperatures rose and all forms of vegetation started to grow rapidly. This is a much better condition than that of a year ago. At that time above-normal temperatures were recorded in March which started a general growth that was later severely retarded by cool weather in May.

Measurements were made on the two refuge snow courses, one March 4 and another April 9. Generally, these observations showed a water content of 30 and 49 percent respectively over snow averaging 40 and 35 inches in depth at an altitude of 8,000 feet. A series of observations over a period of years will be required to obtain dependable information from measurements taken on the snow courses. It is obvious at the present time that the soil-priming factor will enter the picture in regard to forecasting run-off; this is for the reason that most of the mountainous area which has its drainage into the refuge basin is composed of a series of terminal moraines and alluvial fans which tend to "soak up" the snow water rapidly which accounts for the large number of springs and seeps along the west side of the refuge. (Run-off from the east side of the refuge is small in amount) The rock formations in the mountains along the west side contributes toward the formation of springs for they all dip toward the refuge and it is entirely possible that we pick up some water from the opposite

side of the mountain range on this account. It is planned to install a series of measuring weirs in the largest of the springs; the flow thus recorded can, no doubt, be closely correlated to the amount of water shown by the snow measurements mentioned above. Ruby Lake at the date of this writing is higher than it has been for 12 years according to the local ranchers living nearby. On the other hand, Franklin Lake, to the north, is nearly dry, while at this time last year it contained enough water to make a desirable marsh from the standpoint of utilization by waterfowl. Several species of ducks and a few Canada geese nested there and when the lake dried up in August, about 50 young ducks were rescued and moved to Ruby. This year, there will be but very little nesting on Franklin Lake. We attribute this shortage of water to a deficiency in run-off from the north end of Ruby Valley which feeds the Franklin River and upon which the lake depends for water. We believe the precipitation and run-off in the south end of Ruby Valley, which feeds into the refuge, to have been about normal, and the higher water levels in the lake to have resulted as an accumulation of water over the past three seasons. The range conditions on the Humboldt National Forest west of the refuge are excellent. Approximately 2,000 head of mule deer that wintered near the south end of the refuge came through in fine shape. Mr. John Scharff, Refuge Manager at the Malheur Refuge, visited this refuge in March and took time to inspect the winter range of the mule deer range mentioned. He stated that it was as good as any he had ever seen, and while we have a large concentration of deer on this range during the winter and spring, it should carry even a larger population.

Wildlife

As previously noted in the reports covering this period over the past two years, Ruby Lake does not have a large concentration of waterfowl during the spring migration. This held true this spring; it appears that our nesting population gradually drifts in to gather with small bunches of waterfowl that nest farther north. An exception to this statement appears in the comparatively large flock of lesser snow geese seen late in February; 200 of these birds visited the refuge at that time and pulled out to the south. It was thought that, due to the unusually mild winter, these birds may have wintered within the State and visited the refuge in the course of a local migration. Six whistling swans showed up a day or two after the geese but stayed only a week.

Our observations over the three-month period lead us to believe that there will be about a 15 percent increase in the nesting population of the waterfowl on the refuge among the following species: Canada geese, gadwalls, and shovellers. This is based on the number of paired birds seen late in April and early in May. Most encouraging is the number of canvas-backs remaining on the refuge; early in May 200 pairs were counted together with 50 pairs of redheads. No doubt some of these birds will leave but these numbers show a 50 percent increase in canvas-backs and 10 percent on redheads as compared to last year at the same time. It has definitely been determined that canvas-backs nest here as well as redheads, and it is thought that with the gradually increasing water depth in the lake, in the past two years, the canvas-backs have found the refuge more desirable. It now appears that the numbers of nesting waterfowl

among other species will remain about the same as last year.

A flock of 50 sandhill cranes was seen on March 5 which is about their usual time for arriving here. The Canada geese showed up in the last part of February, these two species marking the first resident spring arrivals to the refuge. The long-billed curlews were first seen on April tenth together with Brewster's egrets and black-crowned night herons. Other arrivals were similar to those of last year.

On May 5 a pair of sandhill cranes were seen with three young, which is three weeks earlier than these have ever been noted before. We have some fifty pairs of cranes nesting here which is about the same as for last year. This spring, however, we have noticed groups of from four to ten of these birds which seem to be the young of last year and which are not nesting. They go through the dance customary with this species but remain in groups and do not pair off as the older and larger birds do. It is believed that the sandhill cranes have increased 800 percent since the refuge was established in 1958. This is probably due to the fact that the ranchers formerly living on the area exercised control on these birds with a rifle for the principal reason that a sandhill crane loves to probe about in freshly soaked earth. The ranchers usually built a number of small earthen check dams in their irrigation ditches; the cranes would come along and, while looking the pile of earth over for bits of food, would tear the dam out causing the water to go helter skelter where the rancher didn't want it. Other ranchers in Ruby Valley claim that ht

these birds are destructive to

grain. No doubt, our agricultural program will tend to draw the cranes to the refuge after grain and help this condition.

Summary of spring migration and early nesting indications: Numbers of waterfowl using the refuge this spring were about the same as last year with an increase of 15 percent among probable nesting birds in certain species. Ducks nesting on the area, or that probably will nest here a little later, are in the order of their abundance: Gadwall, mallard, canvas-back, cinnamon teal, shoveller, redhead, ruddy and pintail. Six pairs of Canada geese are now nesting and 50 pairs of sandhill cranes will probably nest. Canvas-backs are far more numerous at this time than they ever have been since the refuge was established.

As was remarked earlier in this report, 2,000 mule deer wintered near the south end of the refuge. There is, possibly, a slight increase in the numbers in this herd over last year. The deer came through the winter in good shape and their range is in good condition. Some of the plants producing browse on this range are: Sarvusberry, bitter-brush, snowberry, mahogany, antelope browse, elderberry, and black current. The dusky grouse wintered well and on one trip to the snow courses, March 4, 58 of these birds were seen in one bunch at about 7,000 feet.

Five mountain lions were known to have frequented the winter range of the mule deer mentioned. However, there was no appreciable decrease in the number of deer that could be traced to the lions. While it is almost a certainty that some deer were taken, no kills were found; on the other hand, lion tracks were always found in the

immediate vicinity of the herd. One lion was seen late in April crossing the road about three miles south of headquarters and it was believed to be a female that had denned in the rimrock west of the refuge in the mountains.

Development and Maintenance

A considerable amount of time was devoted to working up CCC projects, during this period, for the camp to work on which arrived May 8. From now on, a lot more work of this type will be done. As will be recalled, our only other work agency was with the WPA last summer; a start was made in the construction of headquarter buildings.

Work started in April on a 40 acre plot of grain; the land for this plot was summer fallowed last year and will be planted in barley and wheat this spring. This will furnish feed for geese and sandhill cranes.

Public Relations

Considerable progress has been made toward the construction of a fish cultural station on the refuge by the County of Elko. The County Commissioners finally decided to make the necessary funds available and to follow the recommendations of the U. S. Bureau of Fisheries in the construction and operation of this unit. A reconnaissance was made by the Bureau of Fisheries and specifications drawn up in March; contracts for the hatchery building, service building, and residence were let in April and it appears that construction will get under way in May. This project has been followed closely by the local sportsmen and our service has received much favorable comment for its participation through the furnishing

of water and a good building site. With the cooperation of the Bureau of Fisheries in furnishing the plans and specifications and a hatchery superintendent, the project should contribute much to the fishing in northeast Nevada.

Economic Uses

During February and March a grazing plan was worked up for the refuge. Last year grazing on the east side of the refuge was not allowed at all, and on the west side it was cut down to a very small percent of that formerly carried on by the ranchers. No hay was cut last year; this year it is planned to cut and bunch all of the hay and to feed it out of the bunch up through the first of the year. The carrying capacities of the fields have all been stepped up to take care of the accumulation of grass from last year. Grazing will be allowed after the first of August and the hay will be cut late in July and in August.