A COMPARISON OF TWO IOWA DUCK NESTING SEASONS

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In northwest Iowa, in Clay, Emmet, Palo Alto, and Dickinson counties, there are still to be found a few marshes and sloughs that might be called typical of the once ideal duck nesting country. Drainage from 1910 to 1930 and drought and flood from 1931 to 1934 have caused a complex situation in Iowa as far as nesting waterfowl are concerned.

For the past three years the waterfowl studies (Bennett, 1932) of Iowa's cooperative* wild life research program have been centered in the vicinity of Ruthven, Iowa.

Most of the lakes, sloughs, and marshes in this part of the state withstood very well the drought conditions during the early part of 1934. This area has an excellent supply of natural duck foods. The lakes and sloughs could hold a much greater population of nesting ducks as far as food and rearing cover are concerned. Northwest Iowa's cornfields afford excellent Mallard, Pintail, and Goose feeding grounds during the spring and fall flights. Thousands of these birds linger in these machine-picked corn fields both in the fall and spring.

Nesting Conditions

According to nesting data recorded (Errington and Bennett, 1934 for last year, 1933, the nesting environments in northwest

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Iowa were excellent. Sufficient rainfall and sane grazing practices allowed the vegetation of the pastures, meadows, and sloughs ideal conditions for growth. Rank growths of Bluegrass (12 to 16 inches high) and dense growths of Tall Marsh Grass (24 to 36 inches high) produced adequate duck nesting cover. In 1934 the situation was reversed. Overgrazing and drought destroyed at least seventy-five percent of the nesting cover. The Bluegrass was cropped by cattle and burned by drought to one half inch in height. The Tall Marsh Grasses were mowed before the eggs had hatched.

Predators

Predator conditions in 1933 were normal in northwest Iowa (Errington and Bennett, 1934). As far as could be determined there was little variation in predator conditions of 1934 compared with those of 1933. Red foxes were perhaps more abundant than the preceding year. The lakes and marshes apparently held a substantial population of mink both years. Spotted skunks, striped skunks, badgers, and weasels were noted in about the same numbers as in 1933. Fox squirrels, striped and Franklin's ground squirrels were common over both periods. A decided increase in the muskrat population was noted in 1934. Snapping turtles were present in such small numbers both years that no damage to duck life could be attributed to them. Due to shooting-club practices the great horned owl and marsh hawk populations were reduced locally in certain areas in northwest Iowa in 1934. Crows also suffered to a certain extent from the same cause in 1934.

Number of Nests Studied

The 137 nests of ducks studied during 1933 were as follows: Blue-wing Teal, 79; Mallard, 44; Shoveller, 7; Redhead, 3; Ruddy, 2; Black Duck, 1; Pintail, 1. Of this number of nests only 15.3 percent were total failures. Of the failures, nine were destroyed by mowing, six were deserted, one incubating Teal was killed by a mink, and one nest was destroyed by crows.

Data were obtained on 115 nests in 1934. The writer studied 104 nests, supplemented by 11 found by Paul L. Errington and F. N. Hammerstrom, Jr. of Iowa State College, Ames, Iowa. These were as follows: Blue-winged Teal, 81; Mallard, 3; Shoveller, 2; Lesser Scaup, 2; Redhead, 7; Ruddy, 7. The number of failures was extremely great compared with the nesting attempts of the previous year. A total of 62 nests were either destroyed or deserted, a loss of 71 percent. Flooding was responsible for 50 percent of the nests destroyed. Twenty-one nests were deserted due to mowing and human interference. One incubating duck was killed on the nest by a mink and one other by a hawk. Two nests were filched by crows and two more were destroyed by burning.

Nesting Conditions

Flooding and mowing were in reality secondary factors. Normally northwest Iowa has a rainy season from March 20 to April 1. This year drought conditions prevailed until the first week in June. Until that time the vegetation grew very little and what did grow was promptly cropped off by cattle.

The only places where nesting cover could be found by the ducks were in the extremely low spots that normally would have been submerged. In those places there was still enough moisture left to produce rank growths of Bluegrass, Tall Marsh grass, Sedge, etc. Thus the ducks were forced to nest in these low areas. The first week in June a five inch rain filled all potholes, sloughs, and low places. The result was that a large number of nests were washed away.

Comparative figures demonstrate that absence of nesting cover in 1934 on the uplands forced the nesting ducks to lower elevations which were subject to overflow. In 1933 the average Blue-wing Teal's nest was twenty yards from water. In 1934 the average nest was found but 12 inches from water. This lack of cover on the uplands and meadows and the heavy rainfall that fell in the middle of the nesting season practically eliminated the existing nesting habitats.

At this time another abnormal situation developed. With increasing drought conditions further west it became necessary for western farmers to ship their cattle and sheep. Northwest Iowa farmers bought and contracted large numbers of these western cattle and sheep at low prices. Before the pastures and meadows could recuperate from drought conditions prior to June 7, they were over-loaded with this inrush of drought stricken stock from the west. One pasture of 384 acres in 1933 had 112 cattle, while in 1934 the same pasture had 210 cattle. It is of comparable interest that in 1933 37 duck nests were found in this pasture while only 8 nests were found in 1934. Seven of the eight nests were either washed out or

deserted due to human interference. (This pasture was purchased in August, 1934 by the Iowa Fish and Game Commission for a permanent wild life production.)

During the early summer of 1934 a cattle food shortage was forecast for the entire west. Thus much more mowing than usual was done in the sloughs and marshes in the vicinity of Ruthven. A total of 18 nests under observation were destroyed by mowing. In normal years these marsh grasses are cut later in the season being utilized for packing purposes.

Decrease in Breeding Birds

Last year 79 Blue-wing Teal nests were observed. This year 81 were studied. This does by no means indicate an increase of Blue-wing Teal. An area at least three times the size of last years was covered to locate approximately the same number of nests. A very radical drop in the nesting Mallard population was noticed. This coincided with the meager spring flight of Mallards in 1934. In 1933 there were ten Mallards to all other species (Bennett, 1933) of ducks combined. In 1934 the spring flight of Mallards could in no way compare in numbers with the flight of the preceding spring. It is of interest that in addition to the shortage in the number of Mallards during the flight of 1934 that all other species of ducks, with the exception of the Pintail, showed a decided decrease. Whether this was due to normal variations in migration or over-shooting, the writer cannot say.

It is rapidly becoming evident that there is a decided

shortage of breeding ducks. Even with a large percentage of this years nesting grounds over-grazed, there was no corresponding concentration of nesting ducks on the nesting areas that were ideal. Before the nesting season began there was no indication that there would be sufficient ducks to approach a near-normal nesting population. Due to continued drought, over-grazing, and drainage it seems that continuing the open hunting season through the present waterfowl crisis is doing nothing but decrease the present breeding stock. If the remaining breeding grounds principally in the prairie Provinces of Canada are not carrying a full nesting capacity at present will there be enough ducks left to stage a comeback if and when the sloughs and marshes are restored?

Juvenile Mortality

The number of young ducks seen was so small that few data could be obtained on juvenile mortality. In northwest Iowa the most difficult stage in the cycle of nesting ducks is in getting sufficient nesting cover to produce ducks. Steps will immediately have to be taken if these remnants of duck breeding grounds are to be perpetuated.

In very few cases did nesting ducks suffer from predation. Of the 115 nests observed, only two incubating ducks were killed, one by a hawk and one by a mink. Damage done to nests by crows might be called incidental. Only two nests observed were destroyed by crows. In both cases the nesting cover had been reduced to such an extent that the nests were in full view to any aerial predator. It was quite common to find eggs that

that had been eaten by crows that had previously been washed by flooding into the open. A week or two previous to the nesting season many eggs were dropped and scattered over the country side. Unquestionably many of these eggs were found and eaten by crows. However, these eggs did not represent nests destroyed. Many misconceptions have arisen from the finding of crow pilfered eggs that had been dropped before the nesting season began. Normally a land-nesting duck covers her eggs with down before leaving the nest. If the cover is suitable it is practically impossible for an aerial visitor to locate a nest. So in spite of the inky coat given to the crow in regard to duck nesting depredations, from data on hand, it seems that if the nesting cover is adequate, little damage can be attributed to the crow.

Renesting

Renesting attempts after destruction evidently occurred. Six nests were found after June 24 with three to six eggs. In all cases these nests were abandoned or destroyed by cattle or interference by man. One area in particular had three full nests before June 7. Then came the five inch rain and the entire area was under water for six days. Two weeks later after the water had subsided, three new nests were located in approximately the same location as before. However, these nests were deserted due to interference by cattle and frog hunters.

Recapitulation

The comparative results of the 1934 nesting season with

that of 1933 apparently indicates that the presence of cover decides whether or not ducks are produced in northwest Iowa. In 1933 with normal grazing and mowing practices, an 86 percent hatch occured. In 1934 with drought, flooding, overpasturing, and early mowing, only a 29 percent hatch resulted.

In reviewing data on five hundred duck nests and noting the outcome of each nest, it becomes an outstanding axiom that where the cover is of sufficient growth to adequately hide the nest, the percentage of nests destroyed by natural enemies is very small. What constitutes ideal duck nesting cover? From our accumulated duck nesting data, a fairly accurate definition can be made. Bluegrass 12 to 16 inches high gave a very high percentage of success. Tall Marsh Grass 24 to 40 inches also proved to be excellent (For specific duck nesting data see Errington and Bennett, 1933). Bluegrass and Tall Marsh Grass made up the most important duck nesting cover in the vicinity of Ruthven. However, many other plants undoubtedly offer as excellent nesting cover as the above plants. This would probably be especially true of the native prairie region. With present agricultural practices in Iowa those native grasses do not occur in sufficient abundance to furnish duck nesting data.

How much land adjoining a slough or marsh can be classed as nesting grounds? From these duck nesting studies we have found a wide variation in the types of locations chosen for nesting sites. In 1933 the writer observed a nest two miles from water. However, the majority of nests were found from

ten to two hundred yards from the edge of the slough.

In affording protection from mowing and grazing to a nesting territory it necessarily will require the expenditure of some money. Naturally there is bound to be a limit to the money available for removing cattle from meadows adjoining sloughs. A tract two hundred yards wide offering protection from grazing and mowing until July 1, would produce many ducks. Many precautions and practices may be made to safeguard and perpetuate the few existing breeding ducks left in Iowa. Unquestionably the only safe and sure way would be for all duck producing marshes to be state or federally owned. Until that time comes, it is of dire importance that conservationists, sportsmen, and bird lovers unite in protecting these breeding grounds in the most feasible way. The leasing of breeding grounds by organizations, each spring until July 1, would be a sound investment and would undoubtedly stem the depleted flocks.

A more rigid control of the promiscuous burning of sloughs and marshes is another way in which a great savings may be affected especially during the nesting season. In most instances there are no basicly sound agricultural justifications for burning of this sort.

Summary

Keep in mind that there are three essential requirements for a duck producing environment. (1) There must be cover on the water for rearing ducklings. (2) There must be food plants in the slough or marsh. (3) There must be meadows with the

grasses for nesting cover. An area cannot produce the maximum number of ducks without all three.

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