

# Duck Damage

By

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**D**uck damage to cereal crops has become a problem of increasing magnitude in several sections of North Dakota in recent years. Great increases in our duck population, late or delayed harvesting periods, and changes in harvesting methods are among the major factors that have tended to influence this loss within the past few years. The North Dakota Game and Fish Department has at various times made reference to duck damage in its annual reports (1) and in the "North Dakota Outdoors" (2). Numerous local newspaper accounts have appeared within the state relative to this problem.

During the late summer of 1944, the writer had an opportunity to observe and record a rather typical instance of duck damage to a field of red durum wheat located several miles east of Minot, North Dakota. This field was strip cropped with six strips of red durum wheat alternated with three strips of barley and two of millet. The strips averaged 20 rods in width.

On August 17 and 18, the strip of durum on the east side of the field was straight combined. The remaining strips, including the barley, were windrowed on August 18 and 19. Rather damp weather prevailed for some time following. Although the total amount of precipitation was not great, there were several showers and a considerable amount of cloudy, damp weather. In the thirty day period after August 19, it was sufficiently dry to combine on 13 different days.

Throughout the summer, several sloughs in this field contained water at all times. Several broods of ducks were hatched and raised in the area. Species observed throughout the summer included mallards, pintails, blue-winged teals, and shovelers. As of August 18, there were perhaps between 60 and 80

ducks of the above species that appeared to be resident on the area. Some of the standing wheat had been eaten around one of the sloughs in the strip that was straight combined. Although ten bushels or more had been either eaten or trampled down, the actual loss was perhaps not more than five bushels, since some of the damaged grain was on the ground too wet to support a tractor and combine.

On September 12 and 13, the two strips of millet between the strips of durum wheat were cut for hay. The operator, an experienced farmer, did not notice at that time any damage to the windrows of wheat adjoining the strips of millet, although it is probable that extensive feeding was then in progress on the strips to the east of the millet. It so happened that no farm operations were taking place on or near this particular field between August 19 and September 18 except for the cutting of the millet. Since it was felt that there might be some danger from duck depredations, several inspections were made of this windrowed field, paying particular attention to the barley, since it was thought

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that it would be the preferred food of the ducks. On one or two occasions, the windrowed barley was inspected for some little distance into the field. No indication of duck damage was noted.

On September 17, an inspection was made to determine whether or not the wheat was sufficiently dry to permit combining. It was soon evident that ducks had been feeding extensively in all of the strips of the windrowed wheat. Even then, the damage was difficult to discern when driving around the outer edges of the field in a car.

On the evening of September 17, two men, armed with shotguns, awaited the appearance of the marauding ducks. Just before dark, hordes of mallards and pintails began to alight in this field. The incoming flight lasted for about one-half hour. Almost two hours were spent in ridding this field of its unwelcome visitors. During this period, there was more or less constant shooting toward the greatest concentrations of the ducks in the attempt to disperse them. It was impossible to estimate the number of birds present at that time. When first fired upon, the feeding flocks would arise, fly a comparatively short distance, and again resume their foraging.

The following morning, September 18, it was estimated that there were some ten to fourteen thousand ducks in the two main flocks that came to this field. On the evening of this same day, several large flights of ducks passed over the field. Comparatively few attempted to alight from the milling flocks as a combine was operating in one portion of the field and two men with shotguns were discouraging them from other points. On September 19, about half as many ducks appeared as on the previous morning. Only a few hundred attempted to come in that evening. On September 20, the opening date of the legal hunting season, three hunters were able to bag three ducks, all pintails, from a

total of about two hundred ducks that attempted to feed. By this time, virtually all of the grain had been combined and, consequently, no further effort was necessary to prevent the ducks from feeding here. Sporadic flights of ducks into this field were noted at later dates, but never in flocks of more than 50 to 75 ducks.

The main flights observed September 17 and 18 appeared to be composed exclusively of mallards and pintails in nearly equal numbers. The direction of the principal flights of the ducks to and from this field were in the general direction of the Lower Souris National Wildlife Refuge, whose nearest boundary is about 36 miles distant. Whether or not these ducks were from this refuge, is open to question.

The raising of small grains has been the principal agricultural pursuit in this locality since about 1900. No farmer in this immediate area, insofar as could be determined, had ever previously suffered any appreciable loss due to ducks feeding on his crops. In the fall of 1944, two additional farmers in this immediate vicinity reported that ducks had fed in sufficient numbers in their fields to cause material damage.

As previously mentioned, one strip of the durum wheat had been straight combined prior to the time that the ducks had begun feeding. This strip averaged 25 bushels per acre. The remaining strips averaged just under 12 bushels per acre. At the time of windrowing, the stand of wheat on all strips appeared to be quite uniform. Thus, it is probable that all of the strips would have averaged 25 bushels per acre had it not been for the duck damage. Nor is there any evidence that the wet weather would have had any deleterious effects on the windrowed grain, since the rows or portions of rows where the ducks had not fed showed no moisture damage other than loss of color and test weight.

Obviously, the most important consideration to the farmer is the loss of grain resulting from the duck depredations. In this instance, the yield was reduced by 12 or 13 bushels per acre over an area of nearly 100 acres. The local market value of the wheat at the time it was combined was \$1.22 a bushel. This then would represent a monetary loss of approximately \$1400.00.

The ducks did not actually consume a large portion of the wheat that was lost. Much of the grain was shattered out of the heads and left on the ground, especially where the windrows contained a considerable volume of straw. The windrows on which the ducks had fed extensively were trampled down to such an extent that the straw was in close contact with the ground. This, in turn, had serious after effects. These windrows dried out much more slowly than those held up from the ground by the stubble. This resulted in some deterioration of the grain still remaining in the heads. Windrows in this condition are much more difficult to pick up with a combine. On a basis of the amount of straw and grain present, a normal operating speed of from 3 to 3½ miles per hour should have been possible. In order to pick up this trampled grain, the rate of travel had to be reduced to 2 miles per hour or less.

A still more serious complication was the effect resulting from the sprouting and growing of the shattered kernels lying on the ground beneath the windrows. Where this had progressed to the extent that the sprouted wheat had developed a considerable root system, it was most difficult or impossible to pick up the windrow. Even when it was possible to pick up the windrow, the threshed grain was of such poor quality that it was scarcely worth saving.

Another problem, the physics of which the writer will not attempt to explain but which is familiar to many threshers, is that certain types of grain separators when fed

quantities of straw from which the grain has been removed, some of the straw will be broken into short pieces which, in turn, will clog the sieves. When an insufficient or uneven volume of straw is fed into the separator, as occurs when attempting to pick up the trampled windrows, this same condition often prevails. Unless the sieves are kept relatively clean, much of the threshed grain is, of course, lost. It was usually necessary to clean the sieves after every half hour of operation while threshing the grain upon which the ducks had fed. Besides being a disagreeable task at best, this incurred an additional 10% to 20% time loss. It took about twice as long to combine the strips on which the ducks had fed as it would have otherwise in spite of the fact that the yield had been reduced by one-half. An additional item of importance was the loss of man hours and use of equipment expended in the attempt to drive the ducks away from this area.

For the benefit of those who might be exposed to this type of damage, there are several points worth noting. The ducks evidently began feeding near the center of the field and on the higher ground. Then they worked out toward the edges but in no instance was the damage readily discernible when driving around the edge of the field in a car. The only periods of the day that the ducks appeared in great numbers were early dawn and well after sundown in the evening. In this instance, the ducks fed almost exclusively on the strips of windrowed red durum wheat, leaving the intervening strips of windrowed barley almost untouched.

1. **Migratory Waterfowl**, North Dakota State Game and Fish Department Annual Report, July 1, 1942 to June 30, 1943, p. 9.
2. **1945-Longer Duck Season and Hunting on Refuges Being Studied**, North Dakota Outdoors, Volume VII, No. 8, p. 14.



Fig. 1. Windrowed red durum wheat unmolested by ducks. September 19, 1944. Photo by Stanley Saugstad. Note the heads showing in the windrow.



Fig. 2. Windrowed red durum after duck damage. September 19, 1944. Photo by Stanley Saugstad. Note the almost total disappearance of the heads in the windrow.