

Wildlife Crop Damage Manual

**OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE**



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Bob Taft
Governor, State of Ohio

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April 2001

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Introduction

The Ohio Revised Code authorizes the Division of Wildlife to manage wildlife for the benefit of our citizens. Providing quality service to agricultural producers experiencing wildlife damage is one of the important aspects to meeting this mandate. It is critical that Wildlife Officers and other employees accurately identify and communicate the cause of crop damage. Determining the cause of wildlife crop damage may be easy. Convincing the owner of the crops to accept the evaluation is often more difficult. When employees investigate wildlife damage complaints, it is important they remain open-minded. Evaluate complaints by inspecting the crop with the person making the complaint. Many times, a producer's knowledge about wildlife damage is limited to what he sees in his crops and to what he hears from other producers. Point out how there are many similarities in the appearance of crop damage caused by different species of wildlife. Throughout most of Ohio, deer can regularly be observed in field and sweet corn where damage is found while the corn is in the milk stage. However, unseen birds, raccoons and groundhogs may be causing the majority of the damage. When the corn becomes dry, deer will continue to eat it. On the other hand, raccoons, groundhogs and particularly birds feed on corn much less frequently after it is dry. If damage is blamed on the wrong species of wildlife, the solution applied will not abate the problem.

Wildlife Officers have received significant training in wildlife management and identifying wildlife damage. Unless they grew up on a farm, however, they may have limited knowledge or training about agricultural practices and the crops they often evaluate for damage. On the other hand, crop producers often have extensive training, experience and knowledge about the crops they grow. Their information and knowledge about wildlife is usually limited to what they see and hear. This difference in background and training sometimes makes effective communication difficult.

Evaluating complaints of wildlife damage in agricultural crops is an important part of every Wildlife Officer's job. The photographs and narratives in this manual should be used as tools to help accurately identify the causes of crop damage. It is by no means a complete document. You are likely to encounter damage that is not shown in this manual. By design, we can easily add new information and update the manual.

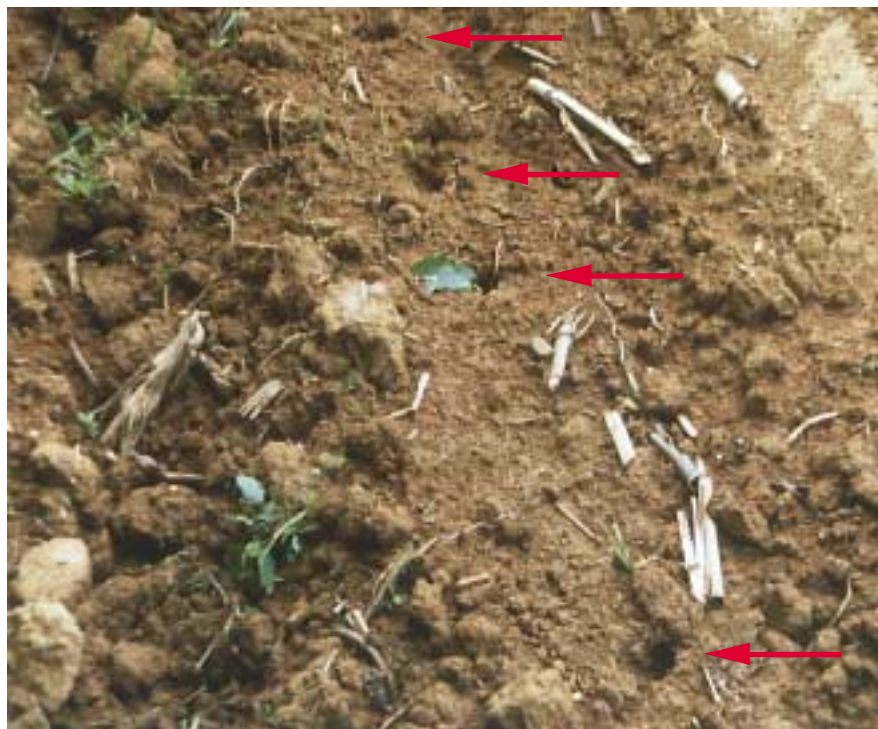


Wildlife Species Causing Damage: Small mammals

Crop: Corn seedlings

Description: Raccoons, skunks, squirrels, chipmunks, and mice feed on the developing seed of corn seedlings. Damage appears as a row of small holes where corn seedlings are planted. This type of damage can begin immediately after the seed is planted and continue until the seed disappears from the seedling. Photograph number 1 shows the typical pattern of small holes found in cornfields. This kind of damage is most frequently found along the edges of fields with heavy brush or woody cover.

1



Fred Dierkes

Wild turkey like to forage in newly plowed and cultivated fields and farmers assume they are digging the holes and eating the corn seed and seedlings. The Division of Wildlife has found no evidence to indicate that wild turkeys cause this kind of damage.

Wildlife Species Causing Damage: Small mammals

Crop: Corn seedlings

Description: Chipmunks and mice are too small to dig a large hole and pull the soil in one direction. They often dig in a circle around the plant as shown in photograph 2. They dig down to the seed, eat it, and many times leave the plant intact.

2



Fred Dierkes



Fred Dierkes



3

Wildlife Species Causing Damage: Squirrel

Crop: Corn seedlings

Description: Both of these photographs show the results of squirrels digging in cornfields. Squirrels dig holes that are two to five inches in diameter and the soil is often pulled in one direction. Squirrels can find corn seeds before the plant emerges through the surface. Raccoons and skunks may dig holes that are similar in appearance. Raccoons sometimes dig a continuous trench along the row searching for seeds. Division of Wildlife employees have observed and collected squirrels digging in seedling cornfields. The squirrels' stomachs contained masticated corn seeds.

Fred Dierkes



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Wildlife Species Causing Damage: Squirrel

Crop: Corn seedlings

Description: Another example of squirrel damage.



**Wildlife Species
Causing Damage:**
Small mammal

Crop: Corn

Description: Small mammal damage in seedling corn can result in reduced stand density where the damage occurred. This type of damage is usually found in cornfields adjacent to good squirrel habitat.



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Fred Dierkes



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Wildlife Species

Causing Damage: Crow

Crop: Corn seedlings

Description: Like small mammals, crows like to eat the planted seeds in cornfields. Crows dig around the stem of the corn seedling with their bill and attempt to pull the seedling and the attached seed out of the ground. In wet or sandy soils this strategy works moderately well. In dry or heavy soils, the seedlings often break off at the stem just above the roots. If the plant breaks before they can dislodge the seed, crows will usually stop digging and move to another plant. Crows do not appear to eat the plant. Like mammals, crows target the seed attached to the plant. This photograph shows the hole dug by a crow, the discarded corn seedling, and tracks made by the tips of the crow's feet (see arrows).

Fred Dierkes



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Wildlife Species

Causing Damage: Crow

Crop: Corn seedlings

Description: In dry or heavy soils the holes crows dig are sometimes difficult to find (bottom-center of photograph – note red arrow). Holes dug by crows are usually not as neat or as deep when compared to the holes dug by mammals.



Sean Murphy



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Wildlife Species Causing Damage:
Wireworm

Crop: Corn seedlings

Description: Wireworm damage is most common in May and June. They are most common in muck soils or soils that contain high amounts of organic matter. Wireworms damage corn by hollowing out the seeds before they germinate and by drilling holes into the base of the plant. The upper photograph shows wireworm damage (the holes in the leaves) that happened before the plant emerged. The lower photograph shows wireworms and the seeds they were feeding on.

Sean Murphy



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Wildlife Species Causing Damage:
Wire worm

Crop: Corn seedlings

Description: Wireworms also attack the seedlings and seeds.



**Wildlife Species
Causing Damage:**
None—Water Damage

Crop: Corn seedlings

Description: This photograph illustrates an example of water damage in seedling corn. Note where the corn seeds have emerged beyond the water saturated soil.

Dan Smith

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Keith Morrow

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Keith Morrow

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Wildlife Species Causing Damage: Squirrel

Crop: Ripening corn

Description: Photographs on this page show typical feeding patterns of squirrels in corn. The two upper photos show views often encountered in the field. Right and lower photos show how squirrels usually eat only the germ (seed bud) from each kernel. Squirrel damage in mature corn usually occurs along wooded field borders.



Closer view of squirrel cuttings shown in upper left photo.

Keith Morrow

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Wildlife Species Causing Damage: Squirrel and small mammals

Crop: Mature corn

Description: This photograph is typical of squirrel and small mammal damage to mature corn. This kind of damage may occur while the stalk is still standing. It often occurs after the stalk is knocked over.



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Keith Morrow



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Wildlife Species

Causing Damage: Deer and birds

Crop: Mature corn

Description: The ear of corn in this photo illustrates bird and deer damage. Birds often sit on top of the ear and pull away narrow strips of husk until they reach the kernels. They feed by pecking the pulp out of the kernel, leaving the hollow shell behind. The shredded husks and hollowed kernels are typical of bird damage. Most bird damage happens when the corn is soft in the milk stage. Crows, red-winged blackbirds, boat-tailed grackles, and starlings will cause this kind of damage.

A deer also bit off the end of this ear. Generally the deer damage occurs before the bird damage.

Keith Morrow



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Wildlife Species

Causing Damage: Raccoon and woodchuck

Crop: Mature corn

Description: Woodchucks and especially raccoons will climb on cornstalks to reach the ears. This kind of damage almost always occurs during the milk stage of ear formation. Healthy mature corn plants can support the weight of small raccoons and woodchucks. Larger animals will cause the cornstalk to break and fall. Note the mud on the husk and leaves of the standing plant and the masticated corncob on the ground (see arrow).



Keith Morrow

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Wildlife Species Causing Damage: Deer

Crop: Milk stage corn

Description: White-tailed deer prefer to eat the ears of field and sweet corn plants. Usually, deer do not cause measurable economic losses by eating the leaves and stems of mature corn plants. Typically, deer take one or two bites from individual ears and move on to another ear. Deer will eat corn beginning when the ears form until the crop is harvested. Peak damage usually occurs while the ears are in the milk stage. This photograph illustrates an ear bitten by a deer. This is fresh damage.



Keith Morrow

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Wildlife Species Causing Damage: Deer

Crop: Mature corn

Description: This photograph shows an ear of corn where the tip of the ear was bitten off (probably one bite). The ear shows some new growth after the damage occurred. This ear will produce corn if the damage occurred after germination was complete. The damage exposes the ear to weather and other kinds of wildlife and insect pests. This damage probably occurred three to five days before the photograph was taken. This is recent damage.



Wildlife Species Causing Damage: Deer

Crop: Mature field corn

Description: This photograph shows an ear of corn where the tip was bitten off just as the ear began to form. After the damage, the ear continued to grow as indicated by the staggered husk. The outer husks stopped growing while the inner husks continued to grow with the ear. This ear will likely be smaller than normal and may not develop kernels. This is old damage.



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Keith Morrow

Wildlife Species Causing Damage: Deer

Crop: Mature corn

Description: This photograph shows an example of deer damage that occurred after the ear stopped growing. Note how the inner husks did not grow after the damage, indicating the ear had stopped growing. Cattle and horses can also cause damage that looks like this. Cattle and horses will leave obvious tracks.



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Keith Morrow



Wildlife Species Causing Damage: Deer

Crop: Mature corn

Description: This photograph shows two different types of deer damage to mature corn. After it stopped growing, a deer bit off the end of this ear (blue arrow). Note the black center of the cob. The center of a freshly exposed cob is white. Mold or fungus eventually causes the center of the cob to turn black after it is exposed.

Deer will eat the loose kernels from drying corn (red arrow).



Keith Morrow

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Wildlife Species Causing Damage:
Deer

Crop: Mature corn

Description: Several fresh deer tracks were found at the base of the corn plant in this photograph. Deer can easily remove the loose dry kernels.



Keith Morrow

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**Wildlife Species****Causing Damage:** Beaver**Crop:** Mature corn

Description: Cornfields planted near rivers, large streams, wetlands, and lakes are susceptible to damage from beaver. Beaver damage usually coincides with the ears developing on the stalk and may continue through harvest. Both photographs show typical beaver damage in corn. The height above the ground at which the stalk is cut off can be an indicator of the size of the beaver. The clean angular cut stalks are conclusive for beaver damage. Beaver will often drag the stalk to their lodge, near water or adjacent to some other kind of cover before they begin to feed.



Jerry Meyer

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Wildlife Species Causing Damage: Beaver**Crop:** Mature corn

Description: A closer view of beaver damage—note the clean angular cut.



Jerry Meyer

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Wildlife Species Causing Damage: Corn borer

Crop: Mature corn

Description: Corn borers feed in the whorls and joints of maturing corn plants. They embed into the stalks as the tassels begin to emerge. This photograph shows how corn borers feed inside the stem joint. Note the dark stains around the edge and the small hole in the middle of the stem.



Keith Morrow

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Wildlife Species Causing Damage:
Corn borer

Crop: Mature corn

Description: This photograph shows typical corn borer damage. Corn borers feed on corn weakening the plant at the stem joints. Storms and high winds often cause the plant to break off at the weakened joints.



Keith Morrow

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Keith Morrow



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Description: This photograph shows a good example of poor seed germination and plant health due to flooding after the corn was planted. The light green color of the corn plants indicate a nitrogen deficiency condition.

**Wildlife Species
Causing Damage:**

None—
Water Damage

Crop: Mature corn

Description:
Another example of
water damage in
maturing corn.



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USDA-ADC



Wildlife Species
Causing Damage: None

Crop: Sweet Corn

Description: Scare tactic.
Example of stringing
mylar tape over sweet
corn to scare blackbirds.

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USDA-ADC



Wildlife Species Causing
Damage: None

Crop: Sunflowers

Description: Scare tactic.
Mylar tape strung over
sunflowers frightening
blackbirds.

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Keith Morrow



Wildlife Species

Causing Damage: Deer

Crop: Soybeans

Description: Deer feed in random patterns in soybeans, usually grazing on the uppermost (new growth) leaves of the plant. Deer seldom feed on the pods or beans. Continuous grazing, especially to young or stressed plants, can have an impact on developing beans. This photograph illustrates light grazing on young soybean plants.

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Jerry Meyer



Wildlife Species

Causing Damage: Deer

Crop: Soybeans

Description: This photograph illustrates moderate deer grazing on maturing soybean plants. Notice the loss of upper leaves and the numerous leafless stems.

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Jerry Meyer



Wildlife Species

Causing Damage: Deer

Crop: Soybeans

Description: This photograph illustrates heavy deer grazing on soybeans. Heavy grazing on the leaves reduces each plant's ability to produce a normal yield of beans. Note how the ends of the grazed stems are black. Freshly grazed stems are green. The black tipped stems indicate the damage is not fresh.



Fred Dierkes



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**Wildlife Species
Causing Damage:**
Turkey

Crop: Soybeans

Description: Most complaints of turkey crop damage in corn and soybeans are actually caused by other animals. This photograph shows a turkey dusting area in a soybean field. This kind of damage is usually insignificant. Turkeys used dusting areas in this field regularly, prompting the landowner to conclude they were feeding on his soybean crop.

Fred Dierkes



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**Wildlife Species
Causing Damage:**
None

Crop: Soybeans

Description: This photograph shows a turkey's gizzard and its contents. Division of Wildlife employees observed this turkey apparently feeding in a soybean field before it was killed. The landowner felt that turkeys were feeding on his soybeans. Laboratory analysis concluded the gizzard contents were waste grain from the previous growing season, Japanese beetles, and wild plant seeds. Additional evaluation determined that Japanese beetles were clinging to the underside of the soybean plant leaves.



Wildlife Species Causing Damage:
None—Planter Malfunction

Crop: Soybeans

Description: This photograph shows an area in a soybean field where the planter malfunctioned and failed to drop seeds. Equipment malfunction can sometimes appear as wildlife damage. Note the varied densities of the soybean plants around the bare area. This crop was planted late in the planting season and the soils contained high amounts of shale.

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Fred Dierkes

Wildlife Species Causing Damage:
None—Chemical Burn

Crop: Soybeans

Description: This photograph shows the effects of excessive chemical application. Note the blisters and deformed leaves.

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Ken Ritchie



Wildlife Species Causing Damage: Deer

Crop: Winter wheat

Description: All three photographs show a partial view of a winter wheat field taken from the same vantage point on three different occasions. Grazing was heaviest immediately adjacent to wooded areas and virtually absent from the center of the field. The upper photo shows moderate grazing in late January.



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Jerry Meyer

Description: The middle photo shows the same view of the same field taken in late March. New grazing was extremely light and there were no obvious differences in the wheat plants when comparing the previously grazed and ungrazed areas.



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Jerry Meyer



Description: The lower photo is the same view of the field, taken in early July. The previously grazed areas appeared just as healthy and vigorous as the ungrazed areas. In most instances, winter wheat can withstand moderate grazing without impacting the yield. Heavy grazing in conjunction with severe cold and no snow cover can damage winter wheat stands.

Jerry Meyer

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Jerry Meyer



41

Wildlife Species Causing Damage:

None—
Crop Residue

Crop: Winter
wheat

Description: Harvesting machines often leave piles of crop residue in fields. When minimum and no-till planting practices are followed in the next crop, these piles of old residue can retard the growth of the new crop. In many instances the seeds will germinate and the plants eventually grow normally. This photograph, taken in late March, shows a winter wheat field with a large area of soybean crop residue. On a subsequent visit in early July, Division of Wildlife employees could not find any indication the crop residue had impacted the plants.

Sean Murphy



42

**Wildlife Species
Causing Damage:**
None—Crop Residue

Crop: Oats

Description: This photograph shows an area of corn crop residue in oats. Based on the shape and the well-defined edges, the area may have been missed when the crop was planted.



**Wildlife Species
Causing Damage:**

None—

Wind Damage

Crop: Wheat

Description: Wind, heavy rain, and hail damage in mature grain crops is relatively common. High winds, rain, and hail cause individual plant stems to break under the weight of ripening grain.



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Jerry Meyer



Wildlife Species

Causing Damage: Raccoon

Crop: Watermelon

Description: Raccoons are opportunistic and feed on a variety of plants, animals, and insects. This photograph shows raccoon damage to a watermelon. Note the fruit and seeds on the outside of the melon and the leaves.



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Wildlife Species

Causing Damage:

Raccoon / Deer

Crop: Watermelon

Description: The thick tough rind on watermelons makes it difficult for most wildlife to reach the fruit. Deer and raccoons are capable of breaking through the rind. Note the raccoon tracks on the undamaged melon. Deer probably fed on the two damaged melons causing them to rot.



45



Wildlife Species Causing Damage: Deer

Crop: Christmas Trees

Description: Deer will occasionally browse on newly emerged growth on young conifers, especially the leader. In many cases, this type of damage is observed on trees along the outer edge of a plantation and usually found on other trees nearby. This photo is a good example of the tearing and rough edges left behind when deer feed on woody vegetation.



Matt Ortman

48

Wildlife Species Causing Damage: Deer

Crop: Apple Trees

Description: Deer will browse on the twigs and buds of small trees most of the year, but this sort of damage is most prevalent during the winter and early spring. Stems of fruit trees are very sturdy and tough for deer to chew through. When the twig is bitten, deer tend to pull on the bud with their lower teeth to tear it off. When this happens the end of the twig will exhibit a frayed, uneven cut. This photo depicts typical deer damage (note arrow).



Matt Ortman

49



Ken Swickard



50

Wildlife Species Causing Damage: Deer

Crop: Pumpkin

Description: Deer occasionally bite into ripening vegetables and fruit. Note the large chunks that were removed and eaten. Deer have no top teeth and only have the use of their lower incisors. The imprint of these lower incisors can be seen along the edges of the area damaged (note arrow). Once the flesh of the plant is exposed, it will then attract birds, insects, and other mammals to feed on it. One bite in such a product will make it unmarketable.

Matt Ortman



51

Wildlife Species Causing Damage: Deer

Crop: Cantaloupe

Description: Another example of deer damage to fruits and vegetables. This is an excellent photograph showing the imprints left by the lower incisors. This is fresh damage since the flesh of the cantaloupe is not dried out or discolored.



Matt Ortman

Wildlife Species Causing Damage:
Deer

Crop: Grapes

Description: This browse was only found on the new, tender shoots and leaves. Most of the damage was scattered along the outside edge of the vineyard and at a height of 3-4 feet from the ground. This indicates that the deer were feeding as they moved along. Note the nipped stem is still green indicting fresh damage.

52



Matt Ortman

Wildlife Species Causing Damage:
Deer

Crop: Sweet Potatoes

Description: This damage occurred when deer began feeding on the top of the plant and pawed out the exposed sweet potato. Deer tracks were evident all around the plant. The discoloration in the damaged area indicates that this is old damage.

53



Gary Ludwig

Wildlife Species Causing Damage:
Goose

Crop: Soybeans

Description: The majority of soybean damage cases involve young, tender plants located next to ponds or golf courses that are intensively mowed. This incident involved Canada geese consuming maturing plants just beginning to bloom. Some plants were damaged when they were small and continued to grow and recover from daily feeding. Note how all the leaves and portions of the stems were consumed.

54



Gary Ludwig

Wildlife Species Causing Damage: Goose

Crop: Soybeans

Description: Another photograph showing extensive goose damage to maturing soybeans.

55

**Wildlife Species Causing Damage:**

Canada Goose

Crop: Soybeans

Description: This photo shows the standard pattern for crop damage involving Canada geese. Note the bare ground near the edge of the field and how the plants progressively get larger as they move away from the edge of the pond. Typically the plants turn yellow due to the stress. A distinctive yellow to green color can be observed.



John Rockenbaugh

56

**Wildlife Species
Causing Damage:**

Canada Goose

Crop: Soybeans

Description: Close-up from previous photo showing leaves and stems browsed by geese. Droppings and feathers are other good indicators that geese have caused the damage.



John Rockenbaugh

57



Wildlife Species Causing Damage: Birds

Crop: Tomatoes

Description: Most bird damage is easily spotted in fruits and vegetables from the holes pecked into their skins. Small, deep holes, 1/4 - 1/2 inches in diameter, with rough, serrated edges usually are good indicators of bird damage.



Dave Schott

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Wildlife Species Causing Damage: Birds

Crop: Peaches

Description: Ripening fruit is a target for a wide variety of bird species. Most damage can be recognized by the spearing and jabbing marks left by the bills. Extensive damage occurs as the bird feeds on the soft flesh inside the skin of the fruit. Note the "deer track" impression left behind on the upper peach when the bird took two swipes with its bill.



Matt Ortmann

59



Matt Ortman



Wildlife Species Causing Damage: Deer

Crop: Field Corn

Description: Deer will occasionally bite off the tops of corn less than one foot high. This example shows the normal tearing exhibited along the leaf blades. This plant will eventually mature, but will be stunted.

60

Wildlife Species Causing Damage:
Crows

Crop: Field Corn

Description: Crow damage in corn occurs the majority of the time in the outer 3 or 4 rows of a field. Note that almost all of the ears display the classic "firecracker" look exhibited when birds pull back the husk in strips to expose the kernels. Blackbird damage to corn is more likely to occur in the interior of the field.



Dave Schott

61



Dave Schott



62

Wildlife Species Causing Damage: Turkey

Crop: Christmas Wheat

Description: This is the first photo in a series of five showing an area of newly planted wheat in which turkeys were dusting and scratching. This photo defines the small depressions (dark areas) left behind when the turkeys dusted themselves. This corner of the field exhibited a large amount of small stones which were possibly sought out by the turkeys for grit.

Dave Schott



63

Wildlife Species Causing Damage: Turkey

Crop: Christmas Wheat

Description: This fall photo is an expanded view of the wheat field edge which experienced the bulk of the dusting and scratching. Note the number of small broken rocks in the soil.

Dave Schott



64

Wildlife Species Causing Damage: Turkey

Crop: Christmas Wheat

Description: This photo, taken the following spring, shows areas where some of the dusting areas failed to grow any wheat. This site showed no other sign of disturbance since the initial investigation.



Dave Schott



65

Wildlife Species Causing Damage: Turkey

Crop: Christmas Wheat

Description: This photo was taken prior to harvest. Damage to the wheat appears to be minor in this corner of the field.

Dave Schott



66

Wildlife Species Causing Damage: Turkey

Crop: Christmas Wheat

Description: This is the final photo showing one of the more extensive dusting areas. The dusting areas did affect the growth of the wheat in small spots but the majority of the plants in this particular incident did germinate.



Wildlife Species Causing Damage:

Japanese Beetles

Crop: Sweet Corn

Description: Japanese beetles begin feeding on maturing sweet corn by clipping off the silk and working down to the kernels. Note the cluster of beetles at the top of this cob. The silk is usually found laying on the ground or on the leaf as shown here.



Luther Miller

67

Wildlife Species Causing Damage:

Japanese Beetles

Crop: Sweet Corn

Description: This photo shows how cleanly the silk has been chewed off by Japanese beetles. Deer are sometimes blamed for this type of damage to sweet corn. Again, note the silk laying next to the ear.



Luther Miller

68



Barb Graves

**Wildlife Species
Causing
Damage:**
Raccoon

Crop: Field Corn

69

Description: These ears of milk stage field corn illustrate the incomplete chewing pattern typical of raccoons. Note the "bite-out" areas and skips.



Wildlife Species Causing Damage: Skunk

Crop: Lawn

Description: This photo shows severe damage to a golf course fairway. Skunks actively forage for insects, earthworms, and grubs by peeling back layers of sod. The results can be extremely costly. Deer are occasionally blamed for this kind of damage.

70



Jason Snyder

Wildlife Species Causing Damage: Skunk

Crop: Lawn

Description: This photo shows additional skunk damage in which hundreds of holes were dug instead of peeling back the sod. This type of damage commonly occurs primarily in the fall.

71



Jason Snyder



Wildlife Species Causing Damage: Squirrel

Crop: Field Corn

Description: This damage was determined to be a squirrel since several ears had been removed from the stalks and dragged up into the tree. Numerous ears of corn were found hanging in the tree limbs and a pile of cobs was found at the base of the tree.



Matt Orman

72



Dave Schott

Wildlife Species Causing Damage: Groundhog

Crop: Apple Tree

Description: Damage to the trunk of this tree was caused by a groundhog chewing on the bark. The fresh damage is indicated by the exposed orange colored cambium layer. This caused the overall growth of the tree to be stunted. Note the groundhog den at the base of the tree.

73



Ken Swickard



74

Wildlife Species Causing Damage: Vultures

Crop: Baled Hay

Description: Rolled bales of hay that are wrapped in air-tight plastic are sometimes damaged by turkey vultures. Decaying hay or possibly dead animals trapped in these bales emit enough of an odor that vultures, and occasionally crows, will peck holes and tear away sections of plastic. The holes allow moisture and air into the bales which can deteriorate the hay. Because of the similarity in size, vultures are often mistaken as wild turkeys.

75

Dave Schott



Wildlife Species Causing Damage: Crows

Crop: Baled Hay

Description: This photo shows the red and green discoloration that can possibly develop from a fungus that develops when air and moisture come in contact with the hay. The fungus will render a large portion of the hay unusable for forage. The plastic on this particular bale was punctured by crows, although turkey vultures will tear plastic as well.



Wade Dunlap



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Wildlife Species Causing Damage: Turkeys

Crop: Oat Hay Bales

Description: These bales were rolled out of an oat cover crop that was just cut prior to ripening. The turkeys attempted to remove the oat kernels that were still attached to the stalks and pulled out portions of the bales on the open ends. The tops of the bales were also damaged by turkey scratchings. Tracks, droppings, and feathers were found along the base of the bales.

Wade Dunlap



77

Wildlife Species Causing Damage: Turkeys

Crop: Oat Hay Bales

Description: Another view showing the extent of the damage to the ends and tops of the bales. This type of damage can make it difficult to lift and haul each bale without it falling apart. It should be noted that this damage wasn't noticed until after a heavy snowfall.



Wade Dunlap



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Wildlife Species Causing Damage: Turkeys

Crop: Oat Hay Bales

Description: Photograph of turkey dropping found on the top of hay bales.

Wade Dunlap



Wildlife Species Causing Damage: Turkeys

Crop: Oat Hay Bales

Description: Photograph of turkeys scratching bales on the same farm shown in photographs 76 and 77. These turkeys were most often seen on top of or near the bales during the late morning hours.

**Wildlife Species Causing Damage: Raccoon****Crop:** Market Turkeys

Description: This incident involved a fenced in free ranging turkey operation that was experiencing five to seven turkey kills a night. Most of the turkeys were eaten where they were killed and in most cases picked clean as noted in this photo. Coyotes were first suspected, but a nighttime investigation confirmed that a small group of raccoons were attacking individual turkeys that were singled out of the flock.

80



Matt Orman

Wildlife Species Causing Damage: Raccoon**Crop:** Market Turkeys

Description: This photo illustrates how the carcasses were picked clean of any flesh. Predators typically focus efforts on the soft organs of birds first and then to their muscle tissue.

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Matt Orman

Wildlife Species Causing Damage: Raccoon**Crop:** Market Turkeys

Description: Some of the carcasses were dragged to a nearby fence. The raccoons attempted to pull them under this fence with little success. The farmer in this particular instance utilized shooters, with permission from the Division of Wildlife, to spotlight and kill some of the raccoons to reduce the number of turkeys killed.

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[illegible]

A map of Ohio divided into five numbered regions, each with a distinct color and a star marking a specific county. The regions are:

- Region 1 (Central):** Shaded red. Includes counties Marion, Morrow, Knox, Delaware, Licking, Franklin, Madison, Clark, Fayette, Pickaway, and Fairfield. A star is located in Franklin County.
- Region 2 (Northwest):** Shaded blue. Includes counties Williams, Fulton, Lucas, Wood, Ottawa, Sandusky, Erie, Defiance, Henry, Seneca, Huron, Paulding, Putnam, Hancock, Van Wert, Allen, Hardin, Wyandot, Crawford, Richland, Mercer, Auglaize, Shelby, Logan, Union, Champaign, Miami, Darke, Preble, Montgomery, Greene, Butler, Warren, Clinton, Hamilton, Clermont, Highland, Brown, Adams, Pike, Jackson, Scioto, Lawrence, and Gallia. A star is located in Hancock County.
- Region 3 (Northeast):** Shaded orange. Includes counties Ashtabula, Lake, Geauga, Trumbull, Cuyahoga, Lorain, Portage, Medina, Summit, Mahoning, Stark, Wayne, Ashland, Columbiana, Carroll, Tuscarawas, Holmes, Coshocton, Harrison, Jefferson, Belmont, Guernsey, Noble, Monroe, Morgan, Washington, and Athens. A star is located in Stark County.
- Region 4 (Southeast):** Shaded yellow. Includes counties Ross, Vinton, Athens, Meigs, and Lawrence. A star is located in Athens County.
- Region 5 (Southwest):** Shaded green. Includes counties Preble, Montgomery, Greene, Butler, Warren, Clinton, Hamilton, Clermont, Highland, Brown, Adams, Pike, Jackson, Scioto, Lawrence, and Gallia. A star is located in Greene County.

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