

General Considerations for Handling Wildlife

1. Working with wildlife puts individuals at greater risk of being exposed to certain zoonotic diseases. Considering getting the following vaccinations:
 - [Tetanus vaccine](#): protects against spores of the tetanus bacteria that is commonly found in soil. Once vaccinated, a booster is needed every 10 years.
 - [Rabies vaccine](#): protects against the rabies virus which is spread through the saliva of an infected animal. The rabies vaccine consists of a series of three doses: the initial dose, 7 days after the initial dose, and 21 or 28 days after the initial dose. Booster shots are then given as needed.
2. Carry a wallet medical card that explains to medical personnel that you work with wildlife and could have been exposed to a zoonotic disease.
3. Ensure that you have the proper personal protective equipment such as:
 - Latex or nitrile gloves
 - Facemasks/ventilators
 - Eye protection
 - First-aid kit
4. Be aware of your surroundings and ensure that you have the proper equipment to safely handle the situation prior to acting.
5. Wear gloves when handling wildlife regardless of whether the animal is alive or dead.
6. Thoroughly wash hands after coming into contact with an animal.
7. Clothes, shoes, and vehicles should be thoroughly cleaned as they may be contaminated.

General Ways to Prevent Conflicts with Wildlife

Most nuisance complaints about wildlife in urban and suburban areas stem from animals accessing a food source. Wildlife accessing a food source (unsecured garbage, pet food or birdseed) is not considered property damage and a depredation permit should not be issued. Instead recommend securing the food source.

1. Pet food:
 - Feed pets indoors whenever possible.
 - If pets must be fed outside, supervise the food to ensure that wildlife does not have access to it. Do not leave food out overnight or unattended.
 - When the pets are done eating, clean up any excess or spilled food. Bring the food bowls inside or wash the bowls before putting them back outside. Empty bowls that smell like food will still attract animals into the area.
2. Garbage:
 - Keep garbage in metal cans with tight lids.
 - If possible, keep garbage inside a shed or garage where animals will not have access to the trashcans.
 - Use bungee cords, ratchet straps, or latches to modify garbage cans and prevent animals from getting inside.

3. Birdfeeders:
 - As an alternative to using birdfeeders, consider growing native plants that will attract a variety of birds into the area. The Audubon Society created a native plant database (<https://www.audubon.org/native-plants>) that shows which birds are attracted to each plant.
 - Hang birdfeeders in trees away from houses. This will help keep animals from associating houses/porches with a food source.
 - Use baffles, trays, caging, or weight sensitive feeders to prevent non-target animals from having access to the birdseed.
 - Regularly clean birdfeeders with a 10% bleach solution to help prevent spread of diseases.
4. Do not feed any animals by leaving out food scraps.
5. Electric fencing can deter wildlife from beehives, gardens, and other food sources. Ensure that electric fences are properly built for the species you are trying to deter.
6. Maintain lawns by removing debris, structures in disuse, wood piles, or mulch piles which can make ideal shelters for wildlife.
7. Animals will often dig small holes to eat grubs that are in the ground. There are registered pesticides that can be applied to lawn to treat for grubs. Ensure that pesticides are applied properly and in accordance to the directions on the label. Licensing from the North Carolina Department of Agriculture and Consumer Services is required to apply pesticides to an individual's yard for compensation. For questions regarding these licenses call (919) 733-3556.
8. Airhorns, whistles, noisemakers, and banging pots and pans or trashcan lids can scare animals out of the area. For harassment to be effective, it should begin as soon as the animal comes into the area and persistently used every time the animal returns.
9. If animals are going underneath structures, place a radio, tuned to a talk station, near the access point to make animals feel threatened and deter them from returning. Once vacated, use chicken wire or hardware cloth to prevent future access.

Euthanizing Animals

1. The American Veterinary Medical Association (AVMA) has established guidelines on how to humanely euthanize animals. To view this document, click [here](#). Please note that use of inhumane methods of euthanasia (drowning, smothering, freezing, etc.) will result in enforcement action and potential loss of license.
2. Be aware of local ordinances that prevent certain methods of take (ex. discharging a firearm within city limits).
3. Animals in the order Carnivora, armadillos, groundhogs, nutria, and beaver must be released on site or humanely euthanized at the capture site or taken to a facility designed to humanely handle the euthanasia. For animals that can be relocated, they may be released on private property with permission of the landowner. Written permission must be obtained from the appropriate government entity before an animal is released onto public land.

Important Contacts

[Regulated Actives and Permits Section \(RAPS\)](#) – Handles all WCA licenses and can answer questions regarding any regulated activity outside of hunting, fishing, and trapping. RAPS can be contacted Monday- Friday 8 AM - 5 PM by calling (919) 707-0061 or emailing raps@ncwildlife.org.

Wildlife Helpline – The Wildlife Helpline is staffed by three biologists that can answer questions about identification, behavior/biology, injured/orphaned, or nuisance wildlife. Individuals can call the Helpline Monday-Friday 8AM- 5PM at (866) 318-2401 or email at wildlifehelpline@ncwildlife.org.

[Wildlife Enforcement Officers \(WEO\)](#) – There are usually 1 or 2 WEOs per county. WEOs can write depredation permits for all species except for black bears.

[District Biologists \(DB\)](#) - There are 9 DBs that each cover 9-12 counties. DBs can write state depredation permits for every species and are the only individuals that can write permits for black bear.

[United States Department of Agriculture Wildlife Services \(USDA WS\)](#) – USDA WS aids in the procurement of federal depredation permits for migratory birds through the United States Fish and Wildlife Services (US FWS) in Atlanta, Georgia. USDA WS also has assistance programs for certain species such as vultures, feral swine, Canada geese, and beavers.

[Wildlife Rehabilitators](#) – There are licensed wildlife rehabilitators across the state that can take in injured or orphaned wildlife. Always contact a rehabilitator prior to bringing them an animal to ensure they are able to take it in.

[County Health Department](#) – If removing a potentially rabid animal that a person or unvaccinated pet was exposed to contact the County Health Department to determine how to get the animal tested.

Armadillos

Nine-banded armadillos have slowly started expanding their range northward into North Carolina. NC WRC is tracking this expansion by taking reports of sightings. If you have a sighting, please report it to the Wildlife Helpline at (866) 318-2401 or wildlifehelpline@ncwildlife.org. To learn more about armadillos click [here](#).

What kind of damage is caused by armadillos? Armadillos can cause lawn and turf damage from burrowing or digging for food. Burrows may be 8-10 inches in diameter and an average of 3-4 feet long. When they root for food they create shallow holes which are typically 1-3 inches deep and 3-5 inches wide.

Can a WCA write a depredation permit? Yes, if property damage has occurred a depredation permit can be issued by a WCA.

Can they be relocated? No, armadillos cannot be relocated. They must be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia.

What can I do with sick or injured armadillos? Armadillos cannot be rehabilitated. Advise individuals to leave the animal alone. An armadillo with a life-threatening injury or illness should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there any safety concerns? Armadillos can carry the bacteria that causes leprosy, but the [CDC](#) considers them to be low risk for transmitting the disease. Additionally, 95% of people have a natural immunity to the disease. It is a good practice to wear gloves when handling any animal.

Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- Fencing can be effective at excluding them if it is partially buried and slanted outward.

Lethal Options:

- Armadillos can be hunted year-round with a state hunting license. A landowner is not required to purchase a hunting license to hunt on his/her own property.
- Armadillos may be trapped during the trapping season with a valid trapping license. A landowner is not required to purchase a trapping license to trap on his/her own property.
- If property damage has occurred, armadillos can be taken with a depredation permit.
 - The individual that has incurred the property damage can obtain a depredation permit from a wildlife enforcement officer or district biologist if they would like to take the animal themselves.

Bats

There are 17 species of bats found in North Carolina. Three of which are listed as federally endangered and one is listed as federally threatened. Five other species of bats are listed as threatened and special concern in North Carolina. A list of all of the protected species in North Carolina can be found [here](#). Due to the protection of bats, most damage situations must be resolved using non-lethal methods such as exclusion.

What kind of damage is caused by bats? Bats can roost in attic spaces, vents, chimneys, shutters and on the side of homes. Accumulation of guano and urine can cause damage to structures and sometimes create health concerns when roosting inside buildings.

Can a WCA write a depredation permit? No, WCAs are not authorized to write depredation permits for bats.

Can they be relocated? No, bats cannot be relocated in North Carolina. They must be excluded, released on site or humanely euthanized in situations where the bat carcass is needed for rabies testing.

What can I do with sick or injured bats? Bats can be rehabilitated. There are licensed rehabilitators across the state that can take in injured or orphaned wildlife. If no one has come into contact with the bat and there is no risk of exposure, advise individuals to leave the animal alone. If the caller has a concern about rabies, contact the County Health Department. If the animal is suffering and will not recover, it can be humanely euthanized. Place dead bats in a sealed plastic bag and dispose of them in a safe and sanitary manner.

Are there any safety concerns? Yes. Less than 3% of bats tested in NC have the rabies virus. However, it is important to remember that bats can become infected with rabies, so it is recommended to wear heavy gloves or use a shovel to handle the animal and prevent direct contact.

If an individual or pet has come into direct contact with the bat, contact the County Health Department to determine how to have the animal tested for rabies. If a bat has been found in a room where people have been sleeping, you must assume that exposure to rabies may have occurred.

Large amounts of bat guano can harbor microscopic fungus that can be inhaled when disturbing or cleaning up droppings. People can be exposed to histoplasmosis after breathing in the fungal spores from contaminated guano. It is recommended to wear a NIOSH-approved respirator while cleaning up or working around bat guano. See this [document](#) for information about how to safely clean and remove bat guano.

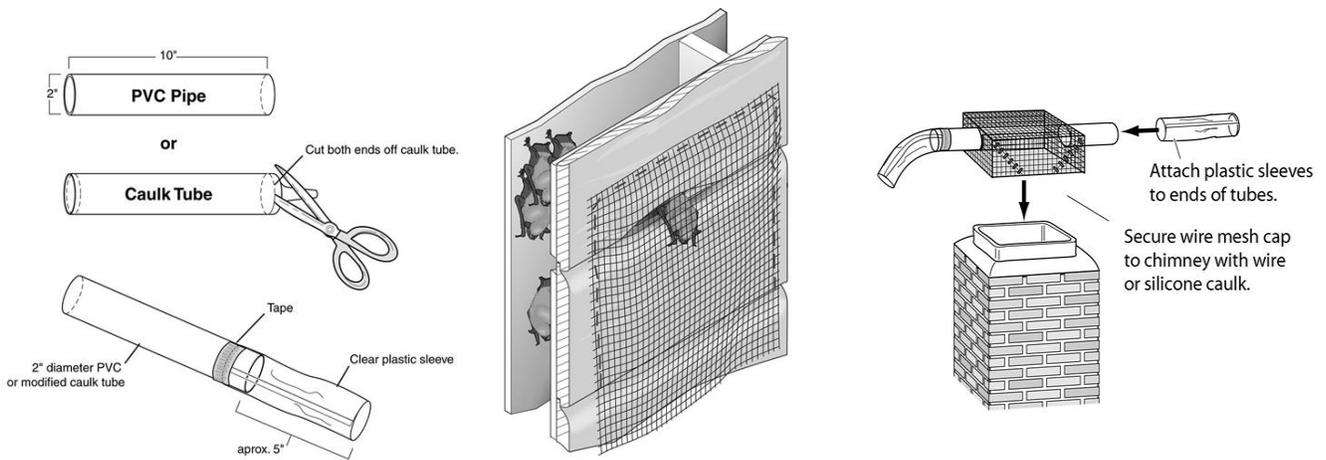
Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- A bat found inside the living quarters of a home may be captured with a net or heavily gloved hand. Bats should not be released unless there has been no possibility of exposure to rabies.
- An alternative to capturing the animal would be to open a window, leave lights on (if at night) and seal other entrances to the room until the bat leaves.
- Exclusion

- In cases where bats inhabit the attic, walls, etc. of an occupied building, a WCA may use exclusion to solve the problem. See attached photos for examples of exclusion devices.
 - New born bats or pups are non-volant (cannot fly) and are completely dependent on the adults for survival. When bats are raising pups, they cannot be excluded as removal of the adults would cause the young to die. May 1st through July 31st is considered the critical period for pup rearing.
- Install bat house when excluding bats from a building for an alternative roosting location
 - Bats that are simply roosting on the outside of a building or on trees should be left undisturbed.

Lethal Options:

- Lethal measures may not be used to control bat problems unless special circumstances apply. Authorization for lethal take must be approved by the WRC and requires additional permitting.



Beavers

Beavers are the largest rodents in North America and are known as “nature’s architect” due to their ability to alter their environment and construct a home. By damming streams and forming shallow ponds, beavers create wetlands that are beneficial to many plant and wildlife species. Sometimes these wetland areas create conflicts when beaver territories overlap with people’s property and removal is needed to minimize conflicts with flooding and timber damage.

What kind of damage is caused by beavers? Beavers construct dams on flowing water, ditches and culverts which may cause flooding in agricultural fields, residential property and forested areas. Beavers can also damage timber by chewing on or felling trees.

Can a WCA write a depredation permit? A depredation permit is not required to take beavers when depredation/damage has occurred. A permit is only required if the landowner or someone assisting the landowner wishes to sell beaver parts and pelts taken outside the beaver trapping season.

Can they be relocated? No, beavers cannot be relocated in North Carolina. They must be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia.

What can I do with sick or injured beavers? There are licensed rehabilitators across the state that can take in injured or orphaned wildlife. If the injury is not significant, advise individual to leave the animal alone. It should be able to recover without help. If the beaver has a life-threatening injury or illness, it should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there any safety concerns? No, however it is a good practice to wear gloves when handling any animal

Non-lethal Options:

- Water level control
 - Beaver dams may be removed or breached to restore normal water level and stream flow.
 - Installing a pipe drain into the dam can be used to manage water levels in situations where the removal of the beavers is not desired or practical. For more information on pipe drain installation, click [here](#).
- Exclusion
 - Trees can be protected from cutting or girdling by fencing the tree with hardware cloth or similar wire mesh extending 2-3 ft above the ground or water level. Do not wrap fencing tightly around the tree or the beaver will be able to chew on the bark.

Lethal Methods:

- Beavers may be trapped during the trapping season with a valid trapping license and outside of the trapping season with landowner permission when property damage has occurred. For regulations regarding trapping of beavers please review the regulations digest and the Best Management Practices.

- Beavers can be taken with firearms or bow and arrow during any open season for taking of wildlife animals with a valid hunting license. A landowner is not required to purchase a license to hunt on his/her own property.
- If property damage has occurred, beavers can be taken without a depredation permit, provided landowner permission is obtained and no parts are being sold from the removed beaver. Parts can be sold if a depredation permit is issued provided the beaver was taken during the open trapping season and the WCA has a hunting or trapping license.
- Those providing assistance must obtain permission from the landowner to hunt or trap.
- It is illegal to disturb an active beaver lodge. The lodge is a separate structure from the dam. If the lodge must be removed to assist in resolving a conflict, contact the NCWRC for a beaver lodge removal permit.

Reporting activities:

- For taking beaver under depredation permit:
 - Beaver taken under depredation permits need to be reported online at <https://www.ncpaws.org/RSS/>.
- For taking beaver under trapping license:
 - Report beaver taken on furbearer harvest survey issued by the furbearer biologist in April.
- This information helps NCWRC continue to monitor beaver populations and identify predominant problem areas.

Black Bear

Black bears are the largest wild mammal in North Carolina. Today with the state's increasing human population, interactions with black bears are rising across North Carolina. A black bear's strongest sense is smell. They can pick up a scent from over a mile away!

What kind of damage is caused by black bears? Food and food odors attract bears, so they frequently get into trash containers, birdfeeders, pet food and livestock enclosures.

Can a WCA write a depredation permit? No, wildlife control agents are not authorized to write depredation permits for big game species. Depredation permits for black bears can only be issued by [district biologists](#). The individual incurring the property damage can have a WCA listed as a second party on the depredation permit.

Can bears be relocated? No, black bears cannot be relocated.

What can I do with a sick or injured black bear? If you receive a report of a severely injured or dead black bear, please contact the NC Wildlife Helpline at 866-318-2401 (Mon.-Fri. 8 am-5 pm) or the Wildlife Enforcement Division at 800-622-7132 (outside of business hours). If a bear has a non-life-threatening injury, advise individual to leave the bear alone and let nature take its course.

Are there safety concerns? Yes. Bears are instinctively wary of people but can become habituated to humans when they find food sources around houses. Bears may try and stand their ground if they are in the process of eating and sows can defensively protect cubs. Never feed, approach, surround or corner a bear.

Non-lethal Options:

- Education
 - See the first pages of this document for general ways to prevent damage from wildlife.
 - [Bearwise.org](#) was created by the southeastern 15 states' wildlife agencies specifically to help the public prevent conflicts with black bears.
- Exclusion
 - Electric fencing can be used to exclude bears and prevent structural damage to livestock enclosures and apiaries (bee hives). See image below for an example of electric fencing.
 - [Bear-resistant trash containers](#) can be purchased to prevent bears from having access to garbage.

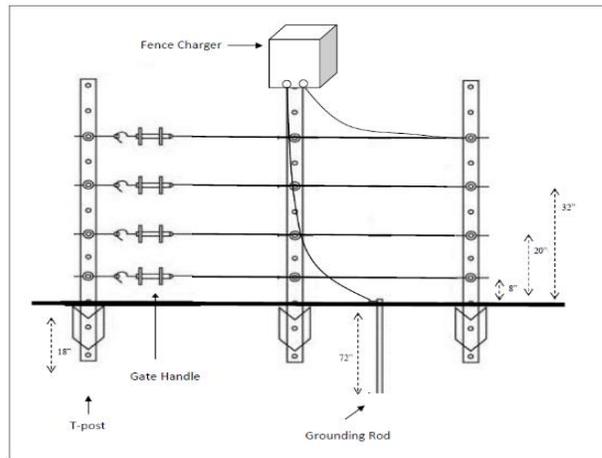


Figure 1. Diagram of a 3 strand electric fence system, modified design from MAAREC Publication 4.10 March 2004.

Lethal Options:

- Depredation permits can only be issued through district biologists.
 - The individual incurring the property damage can have a WCA listed as a second party on the depredation permit
- Bears can be taken during the established hunting season with a valid hunting license and big game harvest report card. A landowner is not required to purchase a license to hunt on his/her own property.

Bobcat

Bobcats are nocturnal, shy, and elusive by nature, usually keeping their distance from people. They make a variety of noises, but their most characteristic sound is compared to screaming or crying.

What kind of damage is caused by bobcats? Bobcats have been known to take small livestock (chickens, guineas, etc.).

Can a WCA write a depredation permit? Yes, if property damage has occurred a depredation permit can be issued by a WCA.

Can bobcats be relocated? No, bobcats cannot be relocated. They must be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia.

What can I do with a sick or injured bobcat? Bobcats can be rehabilitated. There are licensed rehabilitators across the state that can take in injured or orphaned wildlife. If the injury is not significant, advise individual to leave the animal alone. If the bobcat has a life-threatening injury or illness, it should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there safety concerns? Yes, bobcats are considered a potential vector species for rabies. If someone or his/her pet has been bitten or scratched by a bobcat, refer the individual to their county health department. It's good practice to wear gloves while handling any animal.

Non-lethal Options:

- Education
 - See the first pages of this document for general ways to prevent damage from wildlife.
- Exclusion
 - Fencing can be effective at excluding bobcats. Small livestock needs to be placed in a completely enclosed pen with 1-inch chicken wire over a sturdy wooden framework. Electric wire can be added to the enclosure for additional protection.

Lethal Options:

- Bobcats can be hunted during the open hunting season with a state hunting license. A landowner does not need to purchase a hunting license to hunt on his/her own property.
- Bobcats may be trapped during the regulated trapping season with a trapping license. A landowner does not need to purchase a trapping license to trap on his/her own property.
- Bobcats caught in the act of causing property damage may be shot by the landowner without a depredation permit (where permitted by local ordinance).
- Outside on an established season, bobcats can be taken with a depredation permit if property damage has occurred.

Coyote

Coyotes are a highly adaptable species and can be found in all 100 counties in North Carolina. They are shy and elusive by nature and their presence alone should not be a cause for concern.

What kind of damage is caused by coyotes? Coyotes have been known to take livestock and small domestic pets.

Can a WCA write a depredation permit? Yes, if property damage has occurred a depredation permit can be issued by a WCA. Coyotes taken under a depredation permit cannot be sold to a licensed fox preserve. A Collarum™ may only be used on coyotes under a depredation permit.

Can coyotes be relocated? No, coyotes cannot be relocated. They must be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia

What can I do with a sick or injured coyote? Coyotes cannot be rehabilitated. Advise individuals to leave the animal alone. A coyote with a life-threatening injury or illness should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there safety concerns? Yes, coyotes are considered a potential vector species for rabies. If someone or his/her pet has been bitten or scratched by a coyote, refer individual to their county health department. It's good practice to wear gloves while handling any animal.

Non-lethal Options:

- Education
 - See the first pages of this document for general ways to prevent damage from wildlife.
- Exclusion
 - Fencing can be effective at excluding coyotes. Small livestock and poultry should be placed in a completely enclosed pen with 1-inch chicken wire over a sturdy wooden framework. Electric wire can be added to the enclosure for additional protection.

Lethal Options:

- Coyotes can be hunted year-round with a state hunting license except in Dare, Hyde, Tyrell, Washington and Beaufort counties where a coyote hunting permit is needed. A landowner is not required to purchase a license to hunt on his/her own property.
- Coyotes may be trapped during the regulated trapping season and during any local fox trapping season for that county with a trapping license or if the landowner is trapping on their own property.
- Coyotes in the act of causing property damage may be shot by the landowner without a depredation permit (where permitted by local ordinance).
- If property damage has occurred, coyotes can be taken with a depredation permit.

Deer

No wild animal in North Carolina is as recognizable as the white-tailed deer. Deer are so adaptable they are found in almost any type of habitat. Without some control, deer populations grow larger than their habitat can support, causing mass starvation and disease in herds, as well as severe crop depredation and overgrazing of habitat.

What kind of damage is caused by deer? Deer problems are usually seasonal and typically worse in the winter when food is scarce. During years with poor mast crops, deer subsist primarily by browsing on herbaceous plants which could result in increased depredation problems in residential areas. Deer can also cause extensive damage to agricultural crops.

Can a WCA write a depredation permit? No, wildlife control agents are not authorized to write depredation permits for big game species. Depredation permits for deer can only be issued by [district biologists](#) or [wildlife enforcement officers](#). The individual incurring the property damage can have a WCA listed as a second party on the depredation permit.

Can deer be relocated? No, deer cannot be relocated.

What can I do with a sick or injured deer? If you receive a report of a severely sick or injured deer, contact the NC Wildlife Helpline at 866-318-2401 (Mon.-Fri. 8 am-5 pm) or the Wildlife Enforcement Division at 800-622-7132. If an adult deer has a non-life-threatening injury, advise the individual to leave the deer alone.

If you receive a report from someone who has picked up a potentially orphaned fawn within the past few hours, it should be returned to its original location and left alone. Does frequently leave young fawns alone for long periods of time while they forage. If the caller is certain that the mother is dead, or the fawn has been in the same location over 48 hrs. and clearly distressed, advise caller to contact a [licensed fawn rehabilitator](#).

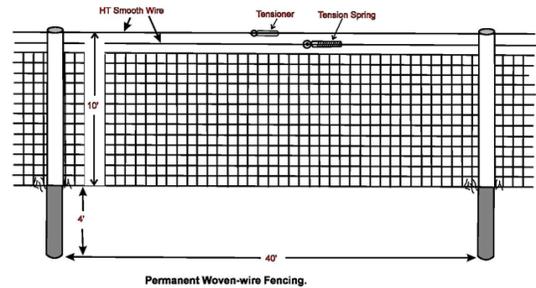
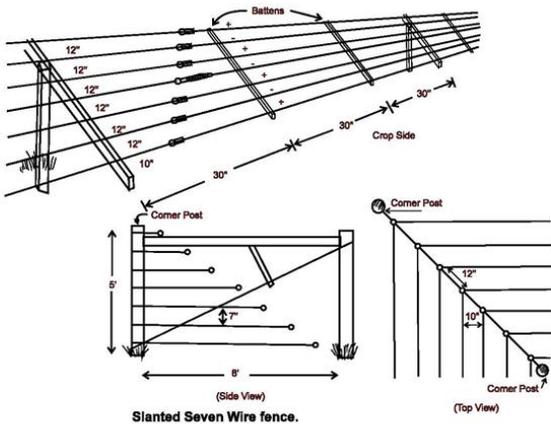
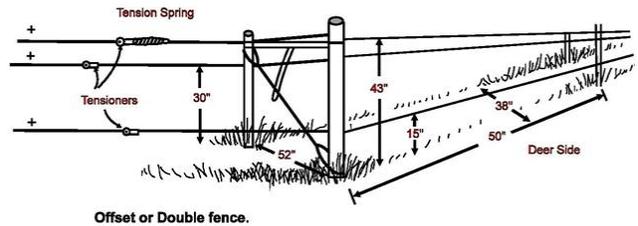
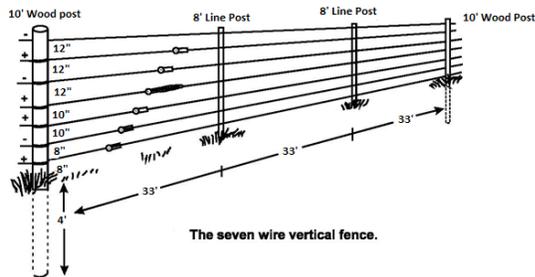
Are there safety concerns? Yes, deer are very powerful animals and caution should be taken around bucks in the rutting season and does that are rearing fawns.

Non-lethal Options:

- Education
 - See the first pages of this document for general ways to prevent damage from wildlife.
- Exclusion
 - An adult deer can easily jump 7 ft. or higher and can squeeze through small gaps in vertical or horizontal slatted fences. While short fences (4 ft.) may be effective at reducing damage in very small areas or around individual trees or shrubs, a “deer proof” fence would need to be 8 ft. or taller and constructed of strong impenetrable material like welded wire or chain link to be effective long-term. To see examples of fencing to exclude deer, visit <https://www.ncwildlife.org/Learning/Species/Mammals/Whitetail-Deer/Fencing-to-Exclude-Deer> and see figures below.

Lethal Options:

- Deer may be taken during the established hunting season with a state hunting license and big game harvest report card. A landowner does not need to purchase a hunting license to hunt on his/her own property.
- Deer in the act of causing property damage may be shot by the landowner without a depredation permit (where permitted by local law). The edible portions of deer may be kept for consumption but cannot be transported from the property where the depredations occurred without a depredation permit. The deer meat cannot be given to another individual without a depredation permit. The non-edible parts including head, hide, feet, and antlers may not be kept and must be disposed of.
- Depredation permits can only be issued through district biologists or wildlife enforcement officers.
 - A WCA can be listed as a second party, allowing them to do the removal.



Elk

The National Park Service introduced elk to the Great Smokies Mountains National Park (GRSM) in 2001. Since then, elk have expanded their range outside of the (GRSM) boundaries. This expansion presents additional recreational opportunities for residents and tourists but also increases human-elk conflicts. If you have a sighting please report it to the Wildlife Helpline at (866) 318-2401 or wildlifehelpline@ncwildlife.org.

What kind of damage is caused by elk? Elk can impact agriculture crops, ornamental plants, forest and livestock fences.

Can a WCA write a depredation permit? No, wildlife control agents are not authorized to write depredation permits for elk. If you receive a request for an elk depredation permit, refer individual to their local [district biologist](#).

Can elk be relocated? No, elk cannot be relocated.

What can I do with a sick or injured elk? If you receive a report of a severely injured or dead elk, please contact the NC Wildlife Helpline at 866-318-2401 (Mon.-Fri. 8 am-5 pm) or the Wildlife Enforcement Division at 800-622-7132.

Are there safety concerns? Yes, elk are powerful animals and can be unpredictable during mating season. Elk are usually wary of people unless humans feed or provoke them. Never feed, approach, surround or corner an elk.

Non-lethal Options:

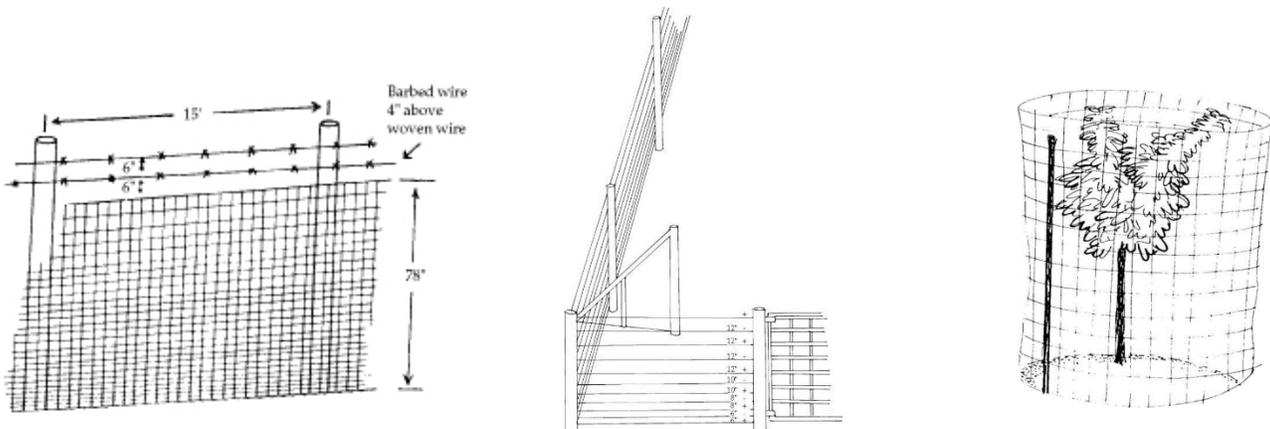
Education

- See the first pages of this document for general ways to prevent damage from wildlife.

Exclusion

- Fencing should be six feet high (1.8-m) with woven-wire, topped with two strands of smooth or barbed wire (Fig. 1). This type of fence is effective but can be costly.
- High-voltage (3,500- to 7,500-volt) electric fences have proven to be a relatively inexpensive and effective alternative to woven-wire fences. They feature 8 to 11 smooth strands of triple-galvanized, high-tensile steel wire supported by conventional fence post systems (Fig. 2).
- 6-ft cylinders of welded wire (Fig. 3) can be used to protect individual trees.

For additional assistance about elk, contact the local [district biologist](#).



Feral Swine

Feral swine or hogs belong to the Suidae family and are descendants of escaped or released pigs. Feral swine look similar to domestic hogs, but typically have thicker hair and longer tusks. Any free-ranging swine that does not have an ear tag is considered feral. Feral swine are more active at night and generally travel in family groups consisting of multiple adults and piglets. Feral swine are known for having a high reproductive output and for causing serious damage to the landscape, very quickly. This combination of factors makes them a very undesirable feral species to have in North Carolina.

What kind of damage is caused by feral swine? Feral swine can cause extensive damage to property through rooting and wallowing. This damage can cause decreased property values, poor water quality, and decreased vegetative diversity. In addition to property damage, feral swine can decimate crops and orchards through consumption, rooting, and wallowing if left unchecked.

Can a WCA write a depredation permit? A WCA can issue a depredation permit for feral swine. Alternatively, agents who possess either a hunting or trapping license could obtain a “Feral Swine Trapping Permit” from the NCWRC which would allow them to trap feral hogs without issuing a depredation permit. For information on the Feral Swine Trapping Permit please visit <https://www.ncwildlife.org/Licensing/Other-Licenses-Permits/Feral-Swine-Trapping-Permit>.

Can they be relocated? Feral swine cannot be relocated, and if trapped, they must be euthanized inside of the trap.

What can I do with sick or injured feral swine? There is no rehabilitation for feral swine. Because feral swine are undesirable and cause extensive damage, it is preferred that all feral swine regardless of health be euthanized.

Are there any safety concerns? When threatened or approached, feral swine can charge people creating potentially dangerous situations. Additionally, feral swine have tusks that are capable of impaling people if contact is made when charging. Swine also have very strong jaws that can deliver serious bite wounds. Caution should be taken when attempting to trap or hunt these animals.

Non-lethal Options:

- Exclusion
 - Fencing can be installed to prevent swine from accessing agricultural or crop areas when damage is occurring. However, because feral swine are invasive and cause extensive damage, it is preferred that lethal methods be used to control damage.

Lethal Options:

- Hunting
 - Feral swine may be hunted year-round with a state hunting license. However, a landowner is not required to purchase a hunting license to hunt on his/her own property.
 - There are no bag limits.
 - Swine may be taken at night, and artificial lights and electronic calls are allowed on private lands.

- Trapping
 - Feral swine may be trapped year-round with proper license/permitting (either a depredation permit, or the combination of a feral swine trapping permit and a trapping or hunting license)
 - Only box and corral traps are legal for trapping feral swine
 - Traps must be constructed in a manner such that non-target animals can be easily released or escape without harm.
 - Feral swine must be euthanized inside of the trap and cannot be removed from the trap while alive.
 - In addition to having a weather-resistant permanent tag with trapper contact info, feral swine traps are also required to display the trapping permit number.
 - A permit is required to trap feral swine. Agents who possess either a hunting or trapping license can obtain a “Feral Swine Trapping Permit” from the NCWRC which would allow them to trap feral hogs without issuing a depredation permit.

Foxes

The red and gray fox are economically important as predators and furbearers. Their appetite for mice and woodchucks greatly benefits farmers, and their pelts are valuable for making coats, hats, and other warm clothing. Foxes are primarily nocturnal, but it is not unusual to see one during the day. Daytime sightings are not necessarily a sign that a fox is diseased. Rather, they are responding to the abundance of food available during the day.

Foxes are the only species where hunting and trapping seasons are established at the county level. To see whether or not a county has a hunting or trapping season visit ncwildlife.org/foxseasons.

What kind of damage is caused by foxes? Foxes have been known to take poultry and small domestic pets.

Can a WCA write a depredation permit? Yes, if property damage has occurred a depredation permit can be issued by a WCA.

Can they be relocated? Foxes cannot be relocated in North Carolina. They must be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia.

What can I do with sick or injured fox? Foxes can be rehabilitated. There are licensed rehabilitators across the state that can take in injured or orphaned wildlife. If the injury is not significant, advise individual to leave the animal alone. A raccoon with a life-threatening injury or illness should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there any safety concerns? Yes, foxes are considered a potential vector species for rabies. If someone or his/her pet has been bitten or scratched by a fox, refer the individual to their county health department. It's good practice to wear gloves while handling any animal.

Non-lethal Options:

- Education
 - See the first pages of this document for general ways to prevent damage from wildlife.
- Exclusion
 - Fencing can be effective at excluding foxes. Small livestock and poultry should be placed in a completely enclosed pen with 1-inch chicken wire over a sturdy wooden framework. Electric wire can be added to the enclosure for additional protection.

Lethal Options:

- Foxes can be trapped during a county's established trapping season with a state trapping license. A landowner does not need to purchase a trapping license to trap on his/her own property.
- Foxes may be taken during the county's established hunting season with a state hunting license. A landowner does not need to purchase a hunting license to trap on his/her own property.
- Foxes caught in the act of causing property damage may be shot by the landowner without a depredation permit (where permitted by local ordinance).
- Outside of the trapping season, individuals can trap foxes under a depredation permit if property damage has occurred.

Groundhogs/Woodchucks

Groundhogs are a large rodent native to North America that typically weigh between 5 to 12 pounds and can be up to 2 feet long. Groundhogs inhabit a variety of habitats, but specifically require areas where they can construct burrows without risk of flooding. Groundhogs are herbivorous and prefer the tender parts of new growth from a variety of wild and cultivated plants. They hibernate during the winter from November until February.

What kind of damage is caused by groundhogs? Groundhogs can create extensive burrow systems extending 15-25 feet underground and having multiple holes/entrances. These holes can be hazardous to people or livestock who may accidentally step in them, or cause damage to agricultural equipment operating in areas where burrows are present. Additionally, groundhogs may chew through underground wires if they encounter them while creating a burrow system. Groundhogs eat a variety of vegetation and can cause substantial damage to crops, gardens, and flower beds that are located within the vicinity of their burrows.

Can a WCA write a depredation permit? Yes, if property damage has occurred, a depredation permit can be issued by a WCA.

Can they be relocated? Groundhogs cannot be relocated in North Carolina. They must be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia.

What can I do with sick or injured groundhogs? Groundhogs can be rehabilitated by licensed wildlife rehabilitators. Alternatively, if the animal is suffering and will not recover, it can be humanely euthanized and disposed of in a safe and sanitary manner.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Exclusion
 - Fencing can be installed to prevent groundhogs from accessing agricultural or crop areas when damage to vegetation is occurring. Make sure the lower edge of the fence is buried at least 12 inches into the ground to prevent burrowing underneath.
 - If burrows are relatively new, filling them can be an effective way to encourage groundhogs to move on to other areas. Filling burrows is less effective when the animal already has a well-established tunnel system

Lethal Options:

- Groundhogs may be taken via hunting at any time during the year if the WCA is a licensed hunter. A landowner is not required to purchase a hunting license to hunt on his/her own property.
- Groundhogs may be trapped during the trapping season with a valid trapping license. A landowner is not required purchase to a trapping license to trap on his/her own property.
- Outside of the trapping season groundhogs may be trapped/taken if a depredation permit has been issued.

Moles

North Carolina has three different species of mole: eastern, hairy-tailed, and star-nosed. The star-nosed mole is listed by the state as a Species of Special Concern. Star-nosed moles are aptly named for the 22 rays that surround their nostrils. These moles can be found in soils around wetlands in the mountains and coastal plain.

What is the common damage by moles? Moles can cause turf damage from mole hills around tunnel openings or from surface runways. Moles are primarily carnivores eating grubs, worms, and other insects. Often, moles are blamed for damage to gardens and roots of plants, but this damage is usually caused by voles or other small rodents.

Can a WCA write a depredation permit? Yes, a WCA can write a depredation permit for trapping moles. A depredation permit is not needed if registered pesticides are being used for removal (see lethal options). The star-nosed mole cannot be removed.

Can moles be relocated? Yes, moles can be relocated onto private property with the permission of the landowner.

What can I do with a sick or injured mole? There are licensed [rehabilitators](#) across the state that can help injured or orphaned wildlife. Advise the individual to leave the animal alone for 24 hours to see if it can recover on its own. Alternatively, if the animal is suffering and will not recover, it can be humanely euthanized and disposed of in a safe and sanitary manner.

Are there safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Education
 - See the first pages of this document for general ways to prevent conflicts with wildlife.
- Exclusion
 - For small areas, hardware cloth can be used to prevent moles from having access. To be effective, the hardware cloth needs to be buried at least 12 inches into the ground and have a lip bent outward at a 90° angle.

Lethal Options:

- Eastern and hairy-tailed moles are considered pest species and under [GS 113-200.2](#), “it is lawful to use any pesticide registered by the Pesticide Board to control any species of mole other than the Star-Nosed Mole (*Condylura cristata parva*), provided that (i) all rules regulating the application of pesticides adopted by the Pesticide Board are followed and (ii) pesticides used to control these species are applied in a manner that minimizes hazards to nontarget species.”
 - When applying pesticides for moles a depredation permit is not needed.
 - In order to apply pesticides to another individual’s property a pesticide license is required. Licenses are obtained through the [North Carolina Department of Agriculture and Consumer Services](#).
 - If applying pesticides, ensure that they are being applied in accordance to the label. Please note that using pesticides in any way other than what is described on the label breaks federal law.
- Moles can be trapped and removed.
 - A depredation permit is needed for trapping moles.

Muskrats

Muskrats are highly adaptable semi-aquatic mammals that can be found along riverbanks and marshes. Muskrat are commonly confused with beaver and nutria. However, muskrats are smaller than both beaver and nutria. Muskrat have a long, bare tail that is flattened vertically, nutria have a long rat-like tail, and beavers have a large wide and flattened tail.

What kind of damage is caused by muskrats? Muskrats can cause damage to dikes, dams, banks, and road beds due to their burrowing.

Can a WCA write a depredation permit? Yes, a WCA can write depredation permits for muskrats. WCAs that possess trapping licenses would not need to write a depredation permit during trapping season.

Can muskrats be relocated? Yes, muskrats can be relocated, but it must be onto private property with the permission of the landowner.

What can I do with sick or injured muskrats? There are licensed rehabilitators across the state that can take in injured orphaned wildlife. If the injury is not significant, advise individual to leave the animal alone. It should be able to recover without help. If the muskrat has a life-threatening injury or illness, it should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Exclusion
 - Fences can be used to keep muskrats from having access to an area. To be effective, the fence must be buried at least 12 inches in the ground to prevent the muskrats from being able to tunnel underneath.
- Habitat modification
 - Creating a gradually sloping bank (3:1 ratio or less) will make the area less favorable to muskrats (see diagram below).
 - As water levels rise and chambers become flooded, muskrat will create new chambers deeper and higher into the bank causing further damage. Keeping the water level stable will prevent muskrats from creating new den chambers.
- Relocation
 - Muskrats can be trapped under a depredation permit and relocated onto private property with the permission of a landowner. When relocating muskrat, a depredation permit is needed regardless of whether it is trapping season.

Lethal Options:

- Muskrats can be trapped during the trapping season with a valid trapping license. A landowner does not need to purchase trapping license to trap on his/her own property.
- Outside of the season, muskrat that are causing property damage can be trapped under a depredation permit.
- Muskrat in the act of causing property damage may be shot without a depredation permit as long as there are no local ordinances that would prevent take.

Identifying Nutria (*Myocastor coypus*)

Nutria
Invasive



Photos courtesy of Tony Northrup and Joyce Grass

Beaver
Native



Photos courtesy of Alaska DFG and Cheryl Reynolds

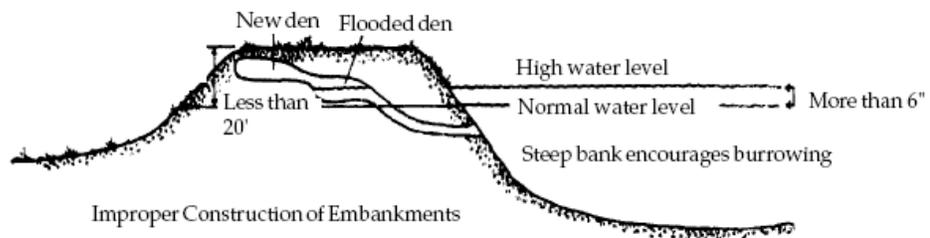
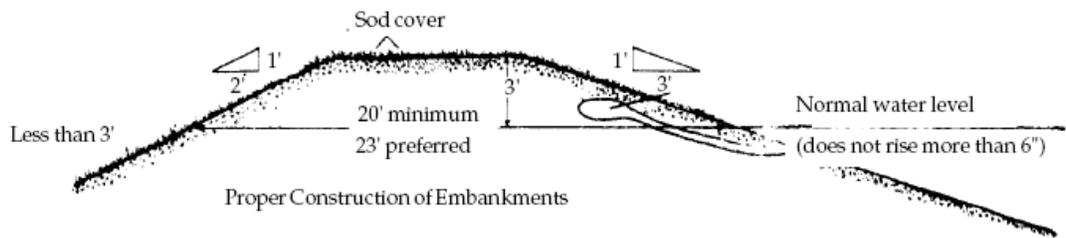
Muskrat
Native



Photos courtesy of N. Carolina State Parks and Merle Ann Laman



Whiskers/ head	<ul style="list-style-type: none"> • Conspicuous white whiskers • Muzzle often white 	<ul style="list-style-type: none"> • Black whiskers 	<ul style="list-style-type: none"> • Fine, black whiskers • Muzzle may be white <p><small>Drawings courtesy of Danielle M. Crozier</small></p>
Tail	 <ul style="list-style-type: none"> • Tail rounded, rat-like, and sparsely covered in coarse hair • Tail still while swimming; body propelled by feet 	 <ul style="list-style-type: none"> • Tail broad and flat. • Tail flattened top-to-bottom • Slap water with tail when disturbed 	 <ul style="list-style-type: none"> • Tail flattened side-to-side • Tail used for swimming with rapid side-to-side serpentine motion
Body	 <ul style="list-style-type: none"> • Adult size: 10-20 pounds; body length to 2 feet, with 1 foot tail • Juveniles similar in size to muskrats • Hunched appearance on land 	 <ul style="list-style-type: none"> • Adult size averages 40 pounds • Length to over 3 feet, including tail 	 <p><small>Silhouettes courtesy of USFWS</small></p> <ul style="list-style-type: none"> • Adult size: 2-5 pounds; body length up to 1 foot



Nutria

Nutria are an exotic species native to South America. Nutria live in aquatic habitats along the banks of marshes, swamps, drainage canals, ditches, rivers, and impoundments in some areas of eastern North Carolina. High populations of nutrias are capable of converting marsh habitat into open water.

What kind of damage is caused by nutria? Nutria can cause damage to dikes and dams by burrowing or destroying native vegetation creating areas that are susceptible to erosion. Nutria can also cause crop damage (i.e. corn, rice, cabbage).

Can a WCA write a depredation permit? Yes, if property damage has occurred, a depredation permit can be issued by a WCA. WCAs that possess trapping licenses would not need to issue depredation permits during the trapping season.

Can nutria be relocated? No, nutria cannot be relocated. They must be released on site or humanly euthanized either at the site of capture or at a facility designed to humanely handle the euthanasia.

What can I do with a sick or injured nutria? Nutria cannot be rehabilitated. Advise individuals to leave the animal alone. A nutria with a life-threatening injury or illness should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there safety concerns? No, however, it is good practice to wear gloves when handling any animal.

Lethal Options:

- Nutria can be hunted year-round with a state hunting license. A landowner does not need to purchase a hunting license to hunt on his/her own property.
- East of I-77 there is no closed season or bag limit for trapping nutria. A second party trapping nutria on a landowner's property must have a trapping license or depredation permit. A landowner does not need to purchase a trapping license to trap on his/her own property.
- West of I-77, nutria can be trapped during the regulated trapping season with a trapping license or if the landowner is trapping on their own property.
- Nutria caught in the act of causing property damage may be shot by the landowner without a depredation permit (where permitted by local ordinance).

Identifying Nutria (*Myocastor coypus*)

	Nutria <i>Invasive</i>	Beaver <i>Native</i>	Muskrat <i>Native</i>
Whiskers/ head	 <p><small>Photos courtesy of Tony Northrup and Joyce Grass</small></p>	 <p><small>Photos courtesy of Alaska DFG and Cheryl Reynolds</small></p>	 <p><small>Photos courtesy of N. Carolina State Parks and Merle Ann Loman</small></p>
Tail	 <ul style="list-style-type: none"> • Conspicuous white whiskers • Muzzle often white • Tail rounded, rat-like, and sparsely covered in coarse hair • Tail still while swimming; body propelled by feet 	 <ul style="list-style-type: none"> • Black whiskers • Tail broad and flat. • Tail flattened top-to-bottom • Slap water with tail when disturbed 	 <ul style="list-style-type: none"> • Fine, black whiskers • Muzzle may be white • Tail flattened side-to-side • Tail used for swimming with rapid side-to-side serpentine motion <p><small>Drawings courtesy of Danielle M. Crowler</small></p>
Body	 <ul style="list-style-type: none"> • Adult size: 10-20 pounds; body length to 2 feet, with 1 foot tail • Juveniles similar in size to muskrats • Hunched appearance on land 	 <ul style="list-style-type: none"> • Adult size averages 40 pounds • Length to over 3 feet, including tail 	 <ul style="list-style-type: none"> • Adult size: 2-5 pounds; body length up to 1 foot <p><small>Silhouettes courtesy of USFWS</small></p>

Opossums

Opossums are the only marsupial found in North Carolina and are not considered a rabies vector species. They are resistant to the venom of most venomous snakes in NC and feed on copperheads, rattlesnakes and cottonmouths with minimal risk of injury or death. Opossums also eat a substantial amount of ticks and a wide variety of critters (cockroaches, slugs, mice, etc.).

What kind of damage is caused is by opossums? Opossums can eat chicken eggs and young chicks. They will occasionally get into houses and outdoor structures through small holes or openings.

Can a WCA write a depredation permit? Yes, if property damage has occurred, a depredation permit can be issued by a WCA.

Can bears be relocated? Yes, opossums can be relocated onto property with landowner permission. They can also be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia.

What can I do with a sick or injured opossum? Opossums can be rehabilitated. There are licensed [rehabilitators](#) across the state that can take in injured or orphaned opossums. An opossum with a life-threatening injury or illness should be humanly euthanized and disposed of in a safe and sanitary manner.

Are there safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Education
 - See the first pages of this document for general ways to prevent damage from wildlife.
- Exclusion
 - Fencing can be effective at excluding opossums. Poultry needs to be placed in a completely enclosed pen with 1-inch chicken wire over a sturdy wooden framework. Electric wire can be added to the enclosure for additional protection.

Lethal Options:

- Opossums can be hunted during the open hunting season with a state hunting license. A landowner does not need a hunting license to hunt on their property during the season.
- Opossums may be trapped during the regulated trapping season with a trapping license. A landowner does not need a trapping license to trap on their property during the season.
- Opossums caught in the act of causing property damage may be shot by the landowner without a depredation permit (where permitted by local ordinance). If property damage has occurred, opossums can be taken with a depredation permit.

Raccoons

For many years, the raccoon has been one of North Carolina's most economically important furbearers. Their great adaptability has allowed them to flourish throughout history and in almost all environments. Interactions between people and raccoons are uncommon unless raccoons become habituated.

What kind of damage is caused by raccoons? Raccoons can cause damage by getting into homes and outbuildings. They can also cause lawn damage while digging for grubs and are known to take small livestock.

Can a WCA write a depredation permit? Yes, if property damage has occurred a depredation permit can be issued by a WCA.

Can raccoons be relocated? No, raccoons cannot be relocated. They must be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia.

What can I do with a sick or injured raccoon? Raccoons can be rehabilitated. There are licensed rehabilitators across the state that can take in injured or orphaned raccoons. A raccoon with a life-threatening injury or illness should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there safety concerns? Yes, raccoons are a potential vector species for rabies. If someone or his/her pet has been bitten or scratched by a raccoon, refer individual to their county health department. It's good practice to wear gloves while handling any animal.

Non-lethal Options:

- Education
 - See the first pages of this document for general ways to prevent damage from wildlife.
- Exclusion
 - Fencing can be effective at excluding raccoons. Livestock needs to be placed in a completely enclosed pen with 1-inch chicken wire over a sturdy wooden framework. Electric wire can be added to the enclosure for additional protection.

Lethal Options:

- Raccoons may be trapped during the regulated trapping season with a trapping license. A landowner does not need to purchase a trapping license to trap on his/her own property.
- Raccoons may be taken during the established hunting season with a state hunting license. A landowner does not need to purchase a hunting license to hunt on his/her own property.
- Raccoon caught in the act of causing property damage may be shot by the landowner without a depredation permit (where permitted by local ordinance).
- Outside of the trapping season, individuals can trap raccoon under a depredation permit if property damage has occurred.

Skunks

North Carolina has both the [eastern spotted skunk](#) and the [striped skunk](#). The eastern spotted skunk is much more elusive than the striped skunk and only occurs in the western part of the state. The Commission asks anyone that sees a spotted skunk to report it to the iNaturalist Eastern Spotted Skunk Project at <https://www.inaturalist.org/projects/eastern-spotted-skunk> or email Colleen Olfenbittel at colleen.olfenbittel@ncwildlife.org. Spotted skunks are much smaller (about the size a large squirrel) than striped skunks and have an upside-down triangle shaped white spot on their heads. Striped skunks are about the size of a large cat, have a narrow white stripe down the center of their faces, and usually have two stripes going down their backs. Click [here](#) for more information on how to distinguish between the two species.

What kind of damage is caused by skunks? Spotted skunks rarely cause problems with people, they tend to avoid human development. Striped skunks are commonly found and can thrive in neighborhoods. The most common complaint is about skunk odor. Please note that a skunk spraying in the area does not count as property damage and a depredation permit should not be issued. Skunks can cause lawn and turf damage by digging for grubs in an individual's yard.

Can a WCA write a depredation permit? Yes, a WCA can write depredation permits for skunks.

Can they be relocated? Skunks are considered a rabies vector species and therefore cannot be relocated. If trapped, the animals must be released on site, euthanized at the capture site, or taken to a facility that is designed to humanely handle the euthanasia.

What can I do with sick or injured skunks? Skunks can be rehabilitated. There are licensed rehabilitators across the state that can take in injured or orphaned skunks. If the skunk has a life-threatening injury or illness, it should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there any safety concerns? Yes, skunks can have rabies. If someone or his/her pet has been bitten or scratched by a skunk, refer the individual to their county health department.

Skunks will spray defensively, so be cautious when handling. If an individual or pet has been sprayed, mixing 1 quart of 3% peroxide, ¼ cup of baking soda, and 1 table spoon of liquid dish detergent and applying it to the affected area can help eliminate the odor. Do not store or premix this solution as it is volatile.

Non-lethal Options:

- See the first pages of this document to for general ways to prevent conflicts with wildlife.
- Exclusion
 - Use chicken wire or hardware cloth to cover any openings at the base of structures. It is best to bury 1 foot of the chicken wire or hardware cloth in the ground with the last 6 inches bent away from the building. This ensures that even if the skunk tries to dig underneath it will hit the barrier.

- Harassment
 - Spraying the skunks with water can help deter them from yards.

Lethal Options:

- Striped skunks can be taken year-round with a valid hunting license. A landowner does not need a hunting license to hunt on his/her own property.
- Skunks can be trapped during the established trapping season with a valid trapping license. A landowner does not need to purchase a trapping license to trap on his/her own property. Advise individuals to review the [Best Management Practices](#) for trapping skunks.
- Outside of the trapping season, a depredation permit is required to trap skunks.

Eastern Spotted Skunk



Erin Ragheb

Striped Skunk



Wikimedia

Squirrels

North Carolina has red, gray, fox, and northern and southern flying squirrels. The [northern flying squirrel](#) is listed as Federally Endangered and are only found at elevations greater than 4,500 feet. [Southern flying squirrels](#) are found across the state.

What kind of damage is caused by squirrels? Property damage incurred from squirrels is usually caused by gray squirrels. They will occasionally get into individuals' attics or under houses through small holes or by chewing through siding. Squirrels can also cause damage by chewing on porches or through electrical wiring.

Can a WCA write a depredation permit? Yes, a WCA can write depredation permits for squirrels. Since northern flying squirrels are listed as federally endangered, they cannot be removed without first obtaining a federal depredation permit. The USDA Wildlife Services facilitates the procurement of federal permits through the US Fish and Wildlife Service in Atlanta, Georgia. If there is any question of species, please contact the Wildlife Helpline at (866) 318-2401 or wildlifehelpline@ncwildlife.org.

Can they be relocated? Yes, squirrels can be relocated onto private property with the permission of the landowner.

What can I do with sick or injured squirrels? There are licensed [rehabilitators](#) across the state that can take in injured or orphaned wildlife. If a young squirrel falls out of the nest, advise the individual to either put the squirrel back in the nest or leave it alone and wait 24 hours before contacting a rehabilitator. Adults will come back for young and build new nests if needed.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- Exclusion
 - Use fine mesh hardware cloth or chicken wire to cover any openings and prevent squirrels from getting into a residence.
- Harassment
 - Placing chili powder on the area where the squirrels are chewing can act as a taste deterrent.
 - Noise deterrents can be used but are most effective if the squirrels have just begun coming into the area and persists every time the animals return.
- Relocation
 - If the squirrels are causing property damage, they can be trapped under a depredation permit and relocated. They can only be relocated onto private property with landowner permission.

Lethal options:

- Squirrels can be taken during the established hunting seasons with a valid license. A landowner does not need a hunting license to hunt on his/her own property.
- Squirrels that are causing property damage can be trapped and humanely euthanized under a state depredation permit.

Voles

North Carolina has three different species of voles: meadow, pine, and southern rock. The southern rock vole is listed by the State as a Species of Special Concern. Southern rock voles occur at elevations higher than 3,800 feet and are only found in a few western counties. Pine and meadow voles have been declared pest species by the North Carolina Pesticide Board. Registered pesticides can be used to remove pine and meadow voles.

What is the common damage by voles? Voles can damage vineyards, ornamental plants, and young trees by girdling stems or by chewing around the root crown. They can also cause lawn and turf damage from their runways which are most noticeable after snow melt. While meadow voles construct their runways above ground, pine voles will build extensive runways underground.

Can a WCA write a depredation permit? Yes, a WCA can write a depredation permit to trap voles. A depredation permit is not needed if registered pesticides are being used for removal.

Can voles be relocated? Yes, voles can be relocated onto private property with the permission of the landowner.

What can I do with a sick or injured vole? There are licensed [rehabilitators](#) across the state that can help injured or orphaned wildlife. Advise the individual to leave the animal alone for 24 hours to see if it can recover on its own.

Are there safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal options:

- Education
 - See the first pages of this document for general ways to prevent conflicts with wildlife.
- Exclusion
 - Fine mesh (¼" or less) chicken wire or hardware cloth can be wrapped around trees and plants to prevent voles from having access. Bury the wire or hardware cloth 6-8" in the ground to prevent the voles from burrowing underneath.
- Voles can be trapped and relocated onto private land with the permission of the landowner.
 - A depredation permit is needed for trapping voles

Lethal options:

- Pine and meadow voles were declared pest species by the North Carolina Pesticide Board, so there are registered rodenticides that can be used to remove voles.
 - To apply pesticides to another individual's property a [pesticide license](#) is required. These licenses are obtained through the [North Carolina Department of Agriculture and Consumer Services](#).
 - Ensure that pesticides are being applied in accordance to the label as it is against Federal law to use pesticides in any way that is not described on the label.
 - If using a registered pesticide, a depredation permit does not need to be written.
- Voles can be trapped and humanely euthanized.

Blackbirds

Blackbirds are a federally protected migratory species. Blackbird is a general term used to describe the subfamily Icterinae which includes, starlings¹, orioles, cowbirds, grackles, red-wing black birds, rusty blackbirds, Brewer's blackbirds and yellow-headed blackbirds.

What is the common damage caused by blackbirds? Flocks of blackbirds can cause damage to agricultural crops and will forage on newly planted fields.

Can a WCA write a depredation permit? A federal permit must first be obtained for any migratory bird, unless there is a federal depredation order specifying otherwise (see lethal options). The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. A state depredation permit is also required. A WCA can write a state depredation permit once the federal permit is received.

Can blackbirds be relocated? No, under the [Migratory Bird Treaty Act](#) it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird.

What can I do with sick or injured blackbirds? There are licensed wildlife rehabilitators across the state that can take in sick or injured birds. Advise the individual to leave the bird alone for 24 hours before contacting a rehabilitator.

Are there any safety concerns? No, however is good practice to wear gloves when handling any animal.

Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- Blackbirds that are inside a structure can be caught but must be released on site.
- Exclusion
 - Netting can be placed over gardens to prevent black birds from having access.
- Harassment
 - Can use visual or noise deterrents to scare the birds off when they land.

Lethal Options:

- A state depredation permit is always required to take blackbirds.
- Federal permits are always required unless acting under depredation order 50 CFR 21.43.
 - Active nests (nests with eggs or nestlings) are protected under the Migratory Bird Treaty Act and cannot be removed without a federal permit.
 - Under depredation order 50 CFR 21.43, no federal permit is required to take certain blackbird species² under any of the following circumstances (must attempt non-lethal methods of control first):
 - Where they are causing serious damages to agricultural or horticultural crops or to livestock feed.
 - When they cause a health hazard or structural property damage.

¹ European starlings are an invasive species and are not protected under the Federal Migratory Bird Treaty Act.

² The following species are included under the 50 CFR 21.43 depredation order: Brewer's blackbird, red-winged blackbird, yellow-headed blackbird, bronzed cowbird, brown-headed cowbird, shiny cowbird, American crow, fish crow, northwestern crow, boat-tailed grackles, common grackles, great-tailed grackles, greater Antillean grackle and black-billed grackle.

Chimney Swifts

Chimney swifts are a federally protected migratory bird. Chimney swifts are unable to perch upright but are uniquely adapted to cling and build their nests on vertical surfaces. These birds are dependent on chimneys, abandoned buildings, and stone walls to roost and nest.

What is the common damage caused by chimney swifts? Chimney swifts spend most of their time flying, landing only to roost at night and to build and sit on their nests. Most complaints about chimney swifts are because they have created a nest in a homeowner's chimney.

Can a WCA write a depredation permit? A federal permit must first be obtained for any migratory bird, unless there is a federal depredation order specifying otherwise. The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. A state depredation permit is also required. A WCA can write this permit once the federal permit is received.

Can chimney swifts be relocated? No, under the Migratory Bird Treaty Act it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird without a federal permit.

What can I do with sick or injured chimney swifts? There are licensed rehabilitators across the state that can take in sick or injured birds. Young chimney swifts can climb and preen before their feathers develop. Advise individuals concerned about nestlings to leave them alone for 24 hours before contacting a rehabilitator.

Are there safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Exclusion
 - Outside of the nesting season, a chimney cap can be placed over the top of the chimney to prevent birds from having future access. A chimney cap cannot be placed if there is an active nest, as excluding the adults will cause the young to die. Most individuals notice a chimney swift's presence when the young begin calling. This generally occurs when the young are around two weeks old. At point, it will only take a few more weeks for the young to fledge and the noise to cease.

Lethal Options:

- A federal permit is always required to remove chimney swifts.
 - The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia.
 - Active nests (nests with eggs or nestlings) are protected under the Migratory Bird Treaty Act and cannot be removed without a federal permit.
- In addition to the federal permitting, a state depredation permit is required and can be written by a WCA, wildlife enforcement officer, or district biologist.



Chimney Swift Photo: George L. Armistead

Crows

Crows are a federally protected under the Migratory Bird Treaty Act. In North Carolina, there are two species of crow: the American crow and the fish crow.

What kind of damage is caused by crows? Crows will cause damage to agricultural fields when it is newly planted, starting to sprout and a mature crop.

Can a WCA write a depredation permit? A federal permit must be obtained for any migratory bird, unless there is a federal depredation order specifying otherwise (see lethal options). The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. A state depredation permit is always required regardless of whether a federal permit is needed, a WCA can write the state permit.

Can crows be relocated? No, under the Migratory Bird Treaty Act it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird without a federal permit.

What can I do with sick or injured crows? There are licensed wildlife rehabilitators across the state that can take in sick or injured birds. Advise the individual to leave the bird alone for 24 hours to see if the bird can recover on its own before contacting a rehabilitator.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- Crows that are inside a structure can be caught but must be released on site.
- Exclusion
 - Netting can be placed over gardens that prevent crows from having access.
- Harassment
 - Crows can recognize when one of their own is dead and will consequently mark the area as unsafe and avoid it. Crows can be dispersed by hanging a crow effigy (fake, dead looking crow) in the area where the birds are roosting.
 - Mylar strips or old CDs will create a bright glare in the sun and work as a visual deterrent for birds.
 - Loud noises such as clapping, yelling, or banging pots and pans can deter birds if they have just started coming into the area and is persistent every time the birds land.
 - There are products advertised to deter birds from agricultural fields such as bird bangers or propane cannons.

Lethal Options:

- Crows can be taken during the established hunting season with the proper licenses.
- Federal permits are required unless acting under the circumstances described in depredation order 50 CFR 21.43.
 - Under depredation order 50 CFR 21.43, no federal permit is required to take crows³ under any of the following circumstances (must attempt non-lethal methods of control first):
 - Where they are causing serious damage to agricultural or horticultural crops or to livestock feed.
 - When they cause a health hazard or structural property damage.
 - To protect a species that is recognized by the Federal or State Government as endangered, threatened or a species of special concern.
 - USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia.
 - Active nests (nests with eggs or nestlings) are protected under the Migratory Bird Treaty Act and cannot be removed without a federal permit. Inactive or empty nests can be removed without any permits.
- Outside of the hunting season, a state depredation permit is always required to take crows.

³The following crows included under the 50 CFR 21.43 depredation order: American crow, fish crow, northwestern crow.

Muscovy Ducks

Muscovy ducks have naturally expanded their range from Mexico into the southernmost part of Texas. Muscovy ducks were added to the list of birds protected under the Migratory Bird Treaty Act in 2010 due to this expansion. However, these ducks are popular in the pet trade, so depredation order 50 CFR 21.54 allows removal of Muscovy ducks outside of where they naturally occur. Any Muscovy ducks in North Carolina are considered released domestics.

What is the common damage caused by Muscovy ducks? People often become upset by ducks that utilize and defecate in their pools. Muscovy ducks may become nuisances by staying around yards without fear of people.

Can a WCA write a depredation permit? A WCA does not need to write a state depredation permit for Muscovy ducks since they are not native wildlife in NC. No federal permit is required for Muscovy ducks under depredation order 50 CFR 21. 54.

Can Muscovy ducks be relocated? No, under depredation order 50 CFR 21.54 you may not release a Muscovy duck in any location other than the capture site. They must be released on site, euthanized at the capture site, or taken to a facility designed to humanely handle the euthanasia.

What can I do with sick or injured Muscovy ducks? Muscovy ducks are non-native in North Carolina. It is not recommended that they be rehabilitated. Advise individuals to leave the bird alone to see if it can recover on its own. If the bird has a life-threatening injury or illness it should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Harassment
 - Dogs, lasers, and loud noises can deter ducks. This is most effective when they have just begun to land on someone's property.
- Landscape modification
 - Ducks prefer water bodies that are surrounded by short grassy areas that allow them to have a place to rest and graze. This makes manicured lawns around retention ponds ideal habitat. Planting tall grasses or trees around a pond or installing fencing can make an area less desirable to ducks. To learn more click [here](#).
 - Ducks prefer gradually sloping grassy areas around the water sources. Using riprap or creating a steep slope can be effective in deterring them.

Lethal Options:

- A state depredation permit is not required to take Muscovy ducks.
- Federal permits in NC are not required under depredation order [50 CFR 21.54](#).
 - Anywhere in the contiguous United States except in Hidalgo, Starr, and Zapata Counties in Texas and in Alaska Hawaii and U.S. territories and possessions, landowners and Federal, State, Tribal, and local wildlife management agencies, their tenants, employees

or agents may, without a Federal permit, remove or destroy Muscovy ducks and their nests or eggs at any time when found.

- You may donate Muscovy ducks taken under this permit to public museums or institutions for scientific or educational purposes, or you dispose of them by burying or incinerating them. You may not retain for personal use or consumption, offer for sale, or sell a Muscovy duck removed under the authority of this section, nor may you release it in any other location.



Native Waterfowl

Native waterfowl refers to ducks, geese, and swans, all of which are protected under the Migratory Bird Treaty Act. Canada geese are broken into two groups: migratory and resident. Resident Canada geese, while protected under the Migratory Bird Treaty Act, have more options for removal (see Resident Canada Geese section). Mute swans are not native nor are they protected by the State or Federal Government (see Nonnative Birds section). To learn more about waterfowl identification and species-specific information click [here](#).

What is the common damage caused by waterfowl? As waterfowl can congregate in large flocks, landowners may become upset about the density of birds in the area or that they are defecating around the property. Birds may also cause damage to lawns or ag fields from foraging. Ducks can become nuisances by staying around and defecating in peoples' pools.

Can a WCA write a depredation permit? Outside of the established hunting season, a federal permit must be obtained for waterfowl. The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. A state depredation permit is also required. A WCA can write a depredation permit once the federal permit is received.

Can waterfowl be relocated? No, under the Migratory Bird Treaty Act it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird without a federal permit.

What can I do with sick or injured waterfowl? There are licensed rehabilitators across the state that can take in sick or injured waterfowl. Advise the individual to leave the bird alone for 24 hours before contacting a rehabilitator to see if it can recover on its own. If the bird is evading capture (able to swim or fly), it is best to leave the bird alone as repeated capture attempts may overstress the bird and cause further damage.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Harassment
 - Dogs have been used to harass geese and scare them off individuals' property.
 - Loud noises such as airhorns and whistles can be effective to deter waterfowl from coming into yards. This is most effective if applied as soon as the birds start coming into the area. The longer the birds have been there, the less effective noise deterrents become.
 - There are products advertised to deter bird birds such as propane cannons and bird bangers.
 - Shiny beach balls/ floating objects can be placed on the pool's surface to deter ducks from landing on the water.
 - Lasers can be shined on the ground next to flocks to act as a visual deterrent.
 - There are registered products that can be applied to lawns to deter geese. These products contain the active ingredients methyl anthranilate or anthraquinone.

Antraquinone gives the geese stomach discomfort when they ingest the grass and methyl anthranilate, found naturally in grapes, acts as a taste deterrent. Products need to be reapplied after it rains.

- Exclusion
 - When birds are molting and cannot fly, fencing can prevent them from getting into the area.
 - For small ponds, netting or wire mesh can be placed over the pond to prevent birds and other animals from having access.
- Landscape modification
 - Waterfowl prefer waterbodies that are open, so they can see when predators are approaching. Planting tall grasses or trees around the water source will make the area less desirable.
 - Using riprap or creating a steep slope along the water source can deter waterfowl as they prefer grassy, gradually sloping areas that make it easy to move from water to land.

Lethal Options:

- Waterfowl can be taken during the established hunting season with proper licensing, stamps, and certifications.
- Outside of the hunting season, a federal permit is always required to take waterfowl.
 - The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia.
 - Active nests (nests with eggs or nestlings) are protected under the Migratory Bird Treaty Act and cannot be removed without a federal permit.
- In addition to the federal permit, a state depredation permit is always required.

Nonnative Birds

Eurasian collared doves, European starlings, house sparrows, mute swans, and pigeons (see Pigeon section for more information) are not native species. They are not protected under the jurisdiction of the Wildlife Resources Commission, nor are they protected under the Migratory Bird Treaty Act. In North Carolina, there are established breeding populations of house sparrows, European starlings, and Eurasian collared doves. Mute swans will occasionally come into NC from northern breeding populations, but there are no records of breeding pairs in NC. Mute swans may also be released/escaped pets. Mute swans should not be confused with [tundra swans](#) which are a native migratory bird. Mute swans are much larger than tundra swans and have an orange bill.

What is the common damage caused by these birds? House sparrows, European starlings, and Eurasian collared doves will roost in large flocks, potentially becoming nuisances. House sparrows will sometimes nest in vents leading into houses. Mute swans can be very aggressive when approached and have no fear of people if they are released as pets.

Can a WCA write a depredation permit? A WCA does not need a state or federal depredation permit to remove any nonnative species.

Can nonnative birds be relocated? No, nonnative species cannot be relocated.

What can I do with sick or injured nonnative bird? These species are considered exotic and invasive. It is not recommended that they be rehabilitated. Advise individuals to leave the bird alone to see if it can recover on its own. If the bird has a life-threatening injury or illness it should be humanely euthanized and disposed of in a safe and sanitary manner.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Exclusion
 - Covering vents with a fine mesh (less than 3/4") will prevent house sparrows from getting inside homes to nest.
 - House sparrows can be deterred from bird feeders by using monofilament [halos](#) around the feeder.
- Harassment
 - Visual or noise deterrents are most effective when birds begin landing in an area. If they have been in the area for a while, harassment becomes less effective.
- Landscape modification
 - Swans prefer gradually sloping grassy areas around water sources, making it easier for them to move from water to land. Using riprap or creating a steep slope can be effective at making the landscape less attractive.
 - Removing submerged aquatic vegetation will remove the swans' food source.

Lethal Options:

- No permits are needed to remove any of the listed species.
 - Check with local ordinances to ensure there are no local laws preventing take.
- Active nests are not protected under the migratory bird treaty act and can be removed at any time.
- Birds can be trapped and removed without any additional licensing.

Pigeons

Pigeons were brought to North America from Europe in the early 17th century and have since established themselves across the United States. Since they are not native, they are not protected under the Federal Migratory Bird Treaty Act nor are they protected under the jurisdiction of the Wildlife Resources Commission.

What is the common damage caused by these birds? Pigeons can congregate in large flocks and become nuisances due to accumulation of feces, noise, or nesting.

Can a WCA write a depredation permit? A WCA does not need a permit to remove pigeons.

Can the birds be relocated? No, pigeons cannot be relocated.

What can I do with sick or injured birds? Pigeons are an invasive species. It is not recommended that they be rehabilitated. Advise individuals to leave the bird alone to see if it can recover on its own. If the bird has a life-threatening injury or illness it should be humanely euthanized and disposed of in a safe and sanitary manner

Individuals will race pigeons up to 600 miles for sport. During these races, pigeons can get lost or tired and will often stopover in someone's yard to rest and recuperate. Racing pigeons will have bands on their legs with either a number or the contact information of the owner. Banded birds can be reported to pigeon.org/lostbirdinfo.htm.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

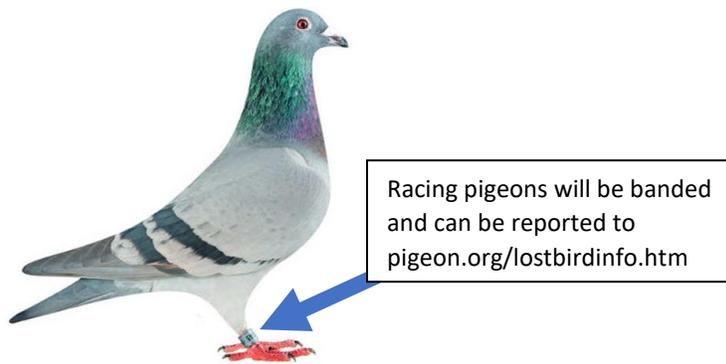
Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- Exclusion
 - Wire mesh, screen, or netting can be used to exclude pigeons from roosting areas.
 - Porcupine wire can be placed around ledges and window sills to prevent birds from nesting.
 - Slopes that are 45° or greater will prevent pigeons from using ledges as nesting and roosting sites.
- Harassment
 - Visual or noise deterrents are most effective when birds begin landing in an area. If they have been in the area for an extended period of time, harassment becomes less effective.
 - Electric shock systems can be installed on roofs and ledges to condition birds to avoid roosting. These systems provide a mild shock that will not harm the bird.

Lethal Options:

- Pigeons can be taken any time without a depredation permit as long as there are no local ordinances preventing take.
- Pigeons can be trapped at any time without a depredation permit. For information on trapping click [here](#).

- Nests can be removed at any time.
- There are registered pesticides for controlling pigeons. [Special licensing](#) may be required, contact the Department of Agriculture with any questions regarding necessary certifications. The NC Pesticide Board has established the following restrictions for use of pesticides on pigeons:
 - Only material registered for this purpose be used in accordance with directions on the label.
 - Pesticide be distributed in such a manner as to minimize hazard to non-target species, and that all unconsumed bait which is not in protected bait stations be picked up within one week.
 - In municipalities, dead birds must be picked up and disposed of by incineration or buried at intervals not to exceed 24 hours.



Raptors

Raptors include eagles, hawks, owls, and falcons. All raptors in NC are federally protected by the Migratory Bird Treaty Act. The NCWRC takes reports of [bald eagle](#) and [peregrine falcon](#) nests. Contact the wildlife helpline at (866) 318-2401 or wildlifehelpline@ncwildlife.org to report any nests. If possible, please take a picture of the nest for verification.

The federal government manages the [National Eagle Repository](#) which stores and distributes dead golden and bald eagles, feathers, and parts to Native American tribes for religious and cultural uses. Any dead bald eagles need to be reported to a local district biologist or wildlife enforcement officer.

What is the common damage caused by raptors? The most common raptor damage is preying on free-ranging poultry. Occasionally, they will take small dog breeds and outdoor cats.

Can a WCA write a depredation permit? A federal permit must first be obtained to remove raptors. The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. Once the federal permit is received, a WCA can write the required state depredation permit.

Can raptors be relocated? No, under the Migratory Bird Treaty Act it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird without a federal permit.

What can I do with sick or injured raptors? There are licensed wildlife rehabilitators across the state that can take in sick or injured birds. Advise the individual to leave the bird alone for 24 hours before contacting a rehabilitator to see if the bird can recover on its own.

Are there any safety concerns? Raptors have powerful talons and beaks, so caution should be taken while handling. Thick leather gloves are recommended for handling birds of prey.

Non-lethal Options:

- See the first pages of this document for general ways to prevent conflicts with wildlife.
- It is important to supervise small breed dogs or cats when they are outside. Raptors can see small animals as prey but will maintain distance if a human is present.
- Harassment
 - If a raptor is frequently perching in an area, loud noises or spraying them with water can be effective at deterring them from the area.
- Exclusion
 - Many predation problems can be alleviated by having poultry go into a predator proof coop at night.
 - Placing two layers of netting, chicken wire, or hardware cloth 6-12 inches apart over a poultry run will ensure a raptor does not have access to the birds.

Lethal Options:

- Federal permit is always required.
 - The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia.

- Active nests (nests with eggs or nestlings) are protected under the Migratory Bird Treaty Act and cannot be removed without a federal permit.
- In addition to the federal permit, a state depredation permit is always required to take raptors.

Red-Tailed Hawk



Photo: Lee Karney/USFWS

Bald Eagle



Photo: Mark Buckler

Peregrine Falcon



Photo: Jennifer Rowe

Resident Canada Geese

(See Native Waterfowl section for migratory Canada geese)

The U.S Fish and Wildlife Service (US FWS) defines resident Canada geese as those that nest in the lower 48 states and the District of Columbia in the months of March, April, May or June or reside in the lower 48 state and the District of Columbia in the months of April, May, June, July or August. Though resident Canada geese are non-migratory, they are still managed by the USFWS as migratory waterfowl.

What kind of damage is caused by resident geese? Flocks of geese can cause damage to agricultural fields and lawns from foraging. In residential areas, geese become nuisances through accumulation of feces, foraging on lawns, and acting aggressive while defending their nests.

Can a WCA write a depredation permit? Outside of an established hunting season, a federal permit must first be obtained for any migratory bird unless there is a federal depredation order specifying otherwise (see lethal options). The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. Once the federal permit is received, a WCA can write the required state depredation permit.

Can Canada geese be relocated? No, under the Migratory Bird Treaty Act it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird without a federal permit.

What can I do with sick or injured Canada geese? There are licensed wildlife rehabilitators across the state that can take in sick or injured birds. Advise the individual to leave the bird alone for 24 hours before contacting a rehabilitator to see if it can recover on its own. If the goose able to evade capture (swim or fly away), advise caller to leave the bird alone as repeat capture attempts may cause further damage.

Are there any safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Exclusion
 - During molt (usually June and July) geese cannot fly, and fencing can be effective at excluding them from an area.
- Harassment
 - Harassment and frightening techniques are most effective when the geese have just begun coming into the area.
 - Dogs, lasers, and loud noises can scare geese.
 - There are registered products that can be applied to lawns to deter geese. These products contain either methyl anthranilate or anthraquinone. Anthraquinone gives the geese stomach discomfort when they ingest the grass and methyl anthranilate, found naturally in grapes, acts as a taste deterrent. Products will need to be reapplied after it rains.

- Landscape modification
 - Geese prefer water bodies that are open, so they can see any predators approaching. Planting tall grasses or trees around these areas can be effective in deterring geese.
 - Using riprap or creating a steep slope will make the area less attractive, as geese prefer gradually sloping, grassy areas around water sources.

Lethal Options:

- Depredation order [50 CRF 21.50](#) allows private land owners, and managers of public lands, homeowners' associations, and local governments or the employees or agents of any of these persons or entities to destroy Canada goose nests.
 - Must be registered through FWS to be able to destroy any active nests. The regulations require a landowner to be registered before nests and eggs may be destroyed. If the land owner requests a third part to register on their behalf, it is between the land owner and the third party. The registration must be in the landowner's name and with the landowner's address. Must register each employee or agent working on the landowner's behalf. Can register for free at <https://epermits.fws.gov/ercgr>.
 - If a WCA is **only** destroying nests, they do not need to write a state depredation permit.
 - Method of destroying eggs include the following:
 - Eggs may be shaken, punctured, or oiled using 100% corn oil. Corn oil is exempted from regulation from the US EPA under the Federal Insecticide, Fungicide, and Rodenticide Act.
 - Egg and nest destruction, including but not limited to the removal and disposal of eggs and nest material
 - Nest and eggs may not be kept for personal use.
 - This can only be done between **March 1st and June 30th**. Any nests that are destroyed must be reported by **October 31st**.
- For removal of birds, a state depredation permit is always required.
- Depredation order [50 CRD 21.51](#) allows a the State to implement programs that allow landowners, operator and tenants to conduct direct management actions such as nest destruction, trapping and culling, or other lethal or non-lethal strategies when resident Canada geese are causing depredations to an agricultural facility between **April 1st and August 31st**.
 - During this time, depredation permits causing agricultural damage can be obtained from a district biologist or, in districts 5 and 9, a wildlife enforcement officer. Outside of April 1st to August 31st, a federal depredation permit must be obtained. The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia.
- Geese can be taken during the established hunting season with proper licenses, certifications, and stamps.

Songbirds

The term songbird refers to birds in the order Passeriformes also known as perching birds. All native songbirds are protected under the Migratory Bird Treaty Act.

What is the common damage caused by songbirds? Songbirds are very well received and do not cause much damage (birdfeeders are more problematic than the birds). Complaints about songbirds stem from birds nesting in unfavorable locations or from birds acting aggressively toward their reflections and causing damage to windows. Occasionally, songbirds will get trapped in buildings.

Can a WCA write a depredation permit? A federal depredation permit must be obtained for songbirds. The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. Once the federal permit is received, a WCA can write the required state depredation permit.

Can songbirds be relocated? No, under the Migratory Bird Treaty Act it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird without a federal permit.

What can I do with sick or injured songbirds? There are licensed rehabilitators across the state that can take in injured or orphaned songbirds. Advise the individual to leave the bird alone for 24 hours to see if it can recover on its own.

A common myth is if a nestling falls out of a nest and gets put back, the adult birds will smell human scent and abandon their offspring. This is not true. Most birds do not have a sense of smell and therefore cannot detect a human's scent. If the individual knows where the nest is, advise them to put the nestling back.

There is a period when birds are old enough to be out of the nest but are unable to fly. During this time young are called fledglings. It is normal behavior for fledglings to be on the ground and hopping around. In these situations, advise the caller to leave the bird alone or move it to an area close by where it is not in any immediate danger.

Songbirds are susceptible to conjunctivitis, avian pox, and salmonella. These diseases often lead to death. Bird feeders facilitate the spread of these diseases by attracting large numbers of birds into a small area. If individuals are noticing dead birds around a bird-feeder, advise the individual to wash bird-feeders in a 10% bleach solution.

Are there safety concerns? No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- Songbirds that are stuck inside buildings can be trapped and removed but must be released on site.
- Harassment
 - Mylar strips, flashing tape, or old CDs create bright glares in sunlight which can act as a visual deterrent for birds.
 - Loud noises such as clapping, yelling, or banging pots and pans can deter birds if they have just started coming into the area and are persistent every time the birds land.
- Exclusion
 - Fine mesh netting can be placed over vents and openings to prevent birds from having access into a residence.
 - Songbirds will act territorially during breeding season. During this time, if they can see their reflections, they may act aggressively by thinking their reflection is another bird. Individuals can use soap, one-way transparent tape, or tempera paint to prevent birds from seeing their reflections.

Lethal Options:

- A federal permit is always required to take migratory birds.
 - USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia.
 - Active nests (nests with eggs or nestlings) are protected under the Migratory Bird Treaty Act and cannot be removed without a federal permit. Inactive or empty nests can be removed without any permits.
- In addition to the federal permitting, a state depredation permit is required and can be written by a WCA, wildlife enforcement officer or district biologist.



Vultures

Vultures are protected under the Federal Migratory Bird Treaty Act. North Carolina has both black and turkey vultures. Turkey vultures have a distinctive red head where as black vultures have a dark gray head.

What is the common damage caused by vultures? Vultures roosting on houses can cause damage by pulling off shingles, caulking around windows, and vinyl siding. They can also scratch paint, pull of windshield wipers, and crack windows on cars.

Can a WCA write a depredation permit? A federal permit must be obtained for vultures. The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. A state depredation permit is also required. Once the federal permit is received, a WCA can write the required state depredation permit.

Can vultures be relocated? No, under the Migratory Bird Treaty Act it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird without a federal permit.

What can I do with sick or injured vultures? There are licensed rehabilitators across the state that can take in sick or injured wildlife. Advise the individual to leave the bird alone for 24 hours to see if it can recover on its own before contacting a rehabilitator.

Are there any safety concerns? Vultures have powerful beaks and feet, be cautious when handling. Thick leather gloves are recommended for handling these birds.

Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- Harassment
 - Vultures can recognize when one of their own is dead and will consequently mark the area as unsafe and avoid it. Vultures can be dispersed by hanging a vulture effigy (fake, dead looking vulture) in the area where the birds are roosting.
 - Loud noises and visual deterrents can be effective if vultures have just begun to roost in an area. People will often use airhorns, pyrotechnics, whistles, and lasers to disperse roosting vultures. If the vultures have been roosting in an area for a long time, auditory and visual deterrents are less effective.

Lethal Options:

- A federal permit is always required to remove vultures.
 - The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia.
 - Active nests (nests with eggs or nestlings) are protected under the Migratory Bird Treaty Act and cannot be removed without a federal permit.
- In addition to the federal permitting, a state depredation permit is required and can be written by a WCA, wildlife enforcement officer or district biologist.

Wild Turkeys

As upland game birds, wild turkeys are not a federally protected species under the Migratory Bird Treaty Act but are protected by state law in North Carolina. Turkeys are a big game species.

What is the common damage caused by turkeys? Most problems with wild turkey stem from birds being fed either intentionally or unintentionally by people. Individuals may have nuisance turkeys that will not leave the property or cause lawn damage when scratching for food. Turkeys can act aggressive toward their reflections, thinking it is another bird, and cause damage to windows.

Can a WCA write a depredation permit? No, wildlife control agents are not authorized to write depredation permits for big game. Depredation permits for turkeys can only be issued by district biologists. The individual incurring the property damage can have a WCA listed as a second party on the depredation permit.

Can turkeys be relocated? Relocation of wild turkeys would fall to the discretion of the District Biologists. Any relocation options would have to be approved by the appropriate district biologist.

What can I do with sick or injured turkeys? Wild turkeys cannot be rehabilitated. Advise the individual to leave the birds alone and let nature take its course.

Are there safety concerns? No, but turkeys are large birds so be cautious when handling.

Non-lethal Options:

- Harassment
 - Loud noises or spraying the bird with a garden hose can be effective means of harassment. Harassment is most effective when birds have just begun coming into the area.
- Exclusion
 - Toms can act aggressively when they see their own reflection in windows, especially during breeding season. Often people will use soap, tempera paint, or one-way transparent tape to prevent birds from seeing their reflections.

Lethal Options:

- Depredation permits for wild turkey can only be issued through the district biologists.
 - A WCA can be listed as a second party, allowing them to do the removal.
- As turkeys are not protected under the Migratory Bird Treaty Act, no federal permits are required for removal.
- Male or bearded turkeys can be taken during the established hunting season.



Woodpeckers

Woodpeckers are federally protected under the Migratory Bird Treaty Act. [Red-cockaded woodpeckers](#) (see image below) are listed as federally endangered under the Endangered Species Act.

What is the common damage caused by woodpeckers? Common damage caused by woodpeckers is due to birds excavating holes in wood-sided houses or wooden porches. Woodpeckers can also become nuisances during spring because they defend their territories by drumming on resonant parts of houses like gutters and metal chimneys.

Can a WCA write a depredation permit? A federal depredation permit must be obtained for woodpeckers. The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia. A state depredation permit is also required. Once the federal permit is received, a WCA can write the required state depredation permit.

Can woodpeckers be relocated? No, under the Migratory Bird Treaty Act it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird without a federal permit.

What can I do with sick or injured woodpeckers? There are licensed rehabilitators across the state that can take in sick or injured wildlife. Advise the individual to leave the bird alone for 24 hours to see if it can recover on its own before contacting a rehabilitator.

Are there any safety concerns No, however it is good practice to wear gloves when handling any animal.

Non-lethal Options:

- See the first pages of this document for general ways to prevent conflicts with wildlife.
- When woodpeckers create holes in wood siding and porches it is usually to capture insects that are on/in the wood. Carpenter bees, carpenter ants, and termites are all common food sources for woodpeckers. Treating the area with the proper pesticides will remove the food source and alleviate the problem.
- Harassment
 - Noise deterrents can be effective at deterring woodpeckers if used as soon as the birds have started causing damage and occurs every time the birds come into the area. Individuals will clap, bang pots and pans or trashcan lids, or use airhorns and whistles to scare woodpeckers.
 - Hanging mylar strips or flashing tape create bright glares that can work as a visual deterrent.
 - Spraying woodpeckers with a garden hose can be effective at deterring them from the area. Intent of spraying them with a hose is to frighten not to injure/harm.
- Exclusion
 - Pinning a fine-mesh netting from the roof to the siding can be used to exclude them from damaging the siding beneath the eaves.
 - Plastic sheeting or fine mesh hardware cloth can be placed over areas where woodpeckers have created holes to prevent further damaged.

Lethal Options:

- A federal depredation permit is always required.
 - The USDA Wildlife Services facilitates the procurement of federal depredation permits through the US Fish and Wildlife Service in Atlanta, Georgia.
 - Active nests (nests with eggs or nestlings) are protected under the Migratory Bird Treaty Act and cannot be removed without a federal permit.
- In addition to the federal permit, a state depredation permit is always required to take woodpeckers.



Southeastern woodpeckers:

1. Red-cockaded woodpecker
2. Hairy woodpecker
3. Downy woodpecker
4. Pileated woodpecker
5. Red-bellied woodpecker
6. Red-headed woodpecker
7. Yellow-bellied sapsucker
8. Northern flicker
9. Ivory-billed woodpecker

- from Thomas M. Imhof's "Alabama Birds"

Snakes

There are 37 different species of snakes in North Carolina, only six of which are venomous (see below for list of venomous species). Snakes are extremely beneficial to the environment, feeding heavily on rats, mice, and insects. Nine species of snakes are listed as threatened, endangered, or of special concern at the State or Federal level and cannot be harmed, harassed, or relocated without an Endangered Species Permit obtained from the NCWRC RAPS.

Listed Species Include: Eastern Diamondback Rattlesnakes, Timber Rattlesnakes, Carolina Pygmy Rattlesnakes, Eastern Coral Snakes, Northern Pine Snakes, Carolina Watersnakes, Outer Banks Kingsnakes, Smooth Green Snakes, Southern Hognose Snakes.

What kind of damage is caused by snakes? Damage caused by snakes is relatively uncommon compared to damage from birds or mammals. The most common types of damage that occur from snakes are predation of eggs in chicken coops and snakes entering buildings.

Can a WCA write a depredation permit? Yes, a depredation permit can be issued for non-listed species by a WCA but only if property damage has occurred or the animal is posing a direct threat to human safety (only applies to venomous snakes). See below for distinguishing between venomous snakes and non-venomous snakes.

Can snakes be relocated? Yes, non-listed species can be relocated on private property with landowner permission. However, most species will die from stress if they are relocated more than two miles away from the site of capture. If a snake is found inside of someone's house it is best to relocate the animal on the property if possible.

What can I do with sick or injured snakes? There are licensed wildlife rehabilitators across the state that can take in sick or injured snakes.

Are there any safety concerns? There are no major safety concerns related to non-venomous species (see the first pages of this document for general safety concerns related to handling wildlife), however if you are handling venomous species it is important to use the proper tools (e.g. snake hooks, snake tongs, gamma seal buckets with small holes in the lid for transport) to minimize your chance of being bitten. Do not use head shape or pupil shape to attempt to identify whether a snake is venomous (see photos below). If bitten by a venomous species, you should seek medical attention and call the NC Snake bite hotline at 1-800-222-1222.

Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- Education is the best coexisting option for snakes. Most snake species that people encounter in and around their homes are non-venomous and pose no threat to human/pet safety.
- Relocation- see the "Can snakes be relocated?" section for information on relocating snakes.
- For rat snakes entering chicken coops, identify the area where the snake is coming in (often at doors or windows) and seal it off.
- Removal of debris, junk, or wood piles from lawns as well as frequent mowing and weeding will help prevent both snakes and rodents (a common food source and attractant of snakes) from coming on to properties.

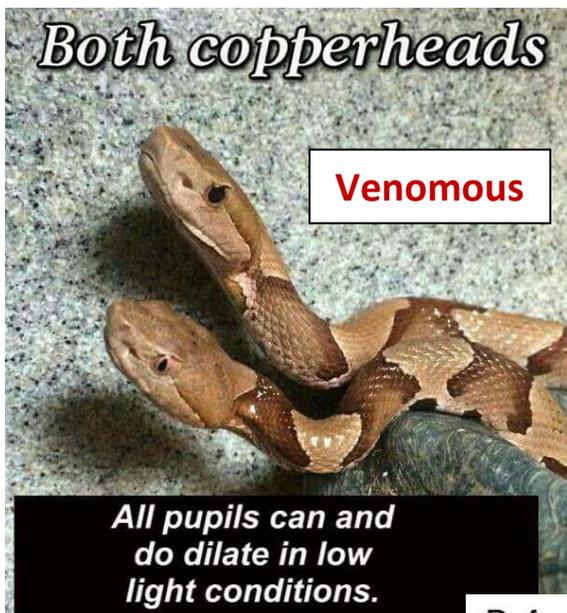
- There are many products advertised to repel snakes, but none are proven to work. Chemical applications such as Sulphur are ineffective. Additionally, applying any type of chemical in a manner different than what is stated on the label is illegal.

Lethal Options:

- Relocation (especially short distances) and education is **GREATLY** preferred to lethal options.
- A snake can be euthanized humanely (via [AVMA euthanasia guidelines](#) for reptiles) if a depredation permit has been written due to property damage, or if the snake is causing an immediate threat to human safety (only applies to venomous species) .

Identifying Venomous from Non-Venomous Species:

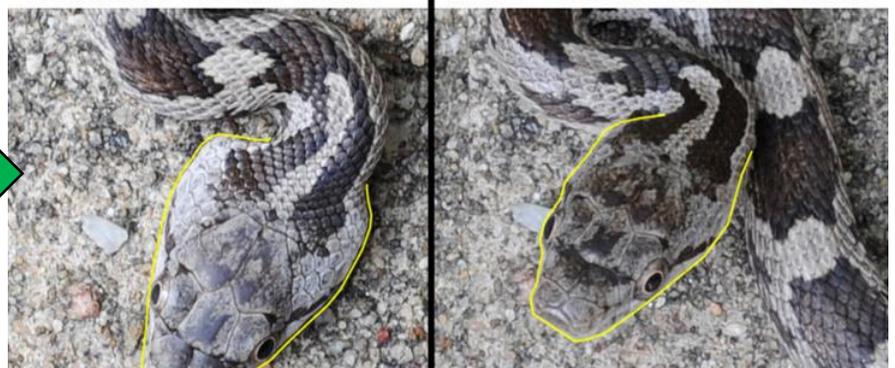
- When it comes to venomous snake identification there are a lot of myths about what to look for. The below items should NEVER be used to identify a venomous snake:
 - Head Shape (most non-venomous species flatten their heads to have a triangle shape when threatened).
 - Pupil Shape (snakes pupils dilate just like humans and look round).
 - Rattling Tail (many non-venomous species rattle tails to trick predators into thinking they are venomous when they are not).
- The best way to identify a venomous snake is to learn what venomous snakes are in your area and what they typically look like.
 - Use herpsofnc.org for range maps to show you which species are in your county.
 - Use a whole-body approach (e.g. color, pattern (bands vs saddles), size, and range) to identify species, there is no single “magic trick” to identifying a venomous snake.



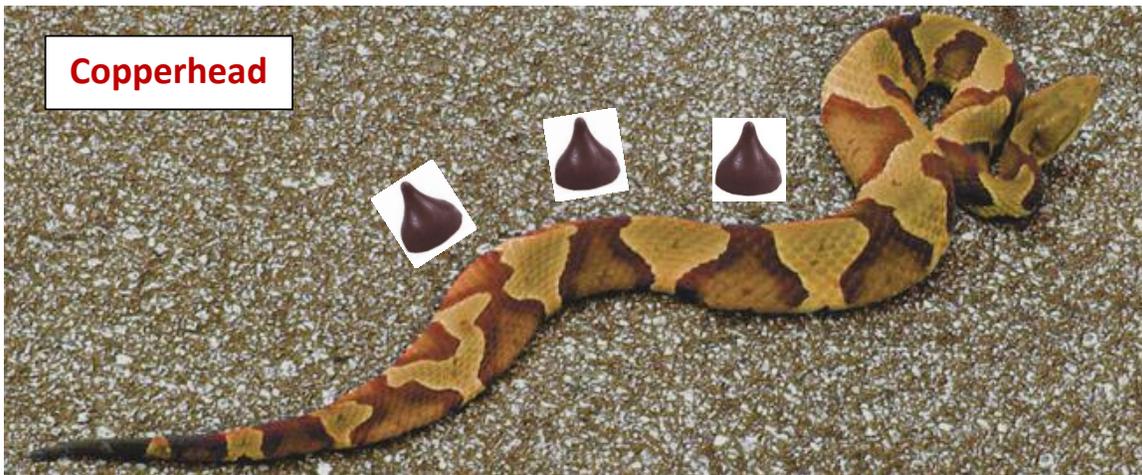
Non-venomous Rat Snake (same individual in both pictures)

Defensive Head Posture

Non-Defensive Head Posture



Venomous Snakes of North Carolina



Copperhead

When identifying copperheads look for the signature “Hershey kiss” pattern. Copperheads are the most commonly encountered venomous snakes in NC.



Cottonmouth



Cottonmouth



Cottonmouth

Cottonmouths are only found in the Coastal Plain and are variable in coloration with older individuals typically appearing darker- sometimes even black. Still look for “Hershey kisses” but they are more pixelated in appearance than the “Hershey kisses” on copperheads.

Protected and Endangered Venomous Snakes



**Eastern
Diamondback
Rattlesnake**



Pygmy Rattlesnake

IDENTIFYING RATTLESNAKES:

- Look up the species range in the state.
- Look for presence of dark stripe near eye.
- Look for rattle segments.



**Timber/Canebrake
Rattlesnake**

Note: The Coral snake is not pictured because there are only a few records of them from the Southeast portion of the state. They have wide red bands that touch skinnier yellow bands. They do not have red and black bands touching.

Turtles

There are 21 different species of turtles native to North Carolina (this includes marine/sea turtles). Most turtle species are either fully aquatic or semi-aquatic that inhabit water bodies across the state. Box turtles are the only completely terrestrial species in the state. Ten species of turtles are listed and cannot be harmed, harassed, or relocated without an Endangered Species Permit obtained from NCWRC RAPS and the US FWS for cases involving marine/sea turtle species and Bog turtles.

Listed Species Include: Bog turtle, Eastern chicken turtle, Diamondback terrapin, Eastern spiny softshell, Stripeneck musk turtle, Atlantic hawksbill sea turtle, Kemp's ridley sea turtle, Leatherback sea turtle, Green sea turtle, and the Loggerhead sea turtle.

What kind of damage is caused by turtles? Property damage caused by turtles is typically very minimal. The majority of turtle-related complaints stem from annoyances/nuisances as opposed to actual damage that does not warrant a depredation permit. Snapping turtles are the most commonly complained about species, especially when they are perceived to be eating fish from stocked ponds. Snapping turtles are omnivores and fish makes up only a small portion of their diet. Additional complaints can arise when female turtles are looking for areas to lay their eggs and begin digging holes on the property for nesting purposes. However, most turtle species will cover these holes after their eggs have been laid.

Can a WCA write a depredation permit? Yes, a depredation permit can be issued by a WCA but only if an agent can document that property damage has occurred. For questions on whether damage from turtles is substantial enough to warrant a depredation permit, contacts the RAPS line at 919-707-0061.

Can turtles be relocated? Yes, non-listed species can be relocated to private property with landowner permission. If a turtle needs to be relocated, it is best to move the animal to a new location on the property if possible, as even short-distance relocations (more than 2 miles) often reduces the animal's ability to survive.

What can I do with sick or injured turtles? There are licensed wildlife rehabilitators across the state that can take in sick or injured turtles.

Are there any safety concerns? Some larger species of turtles (especially snapping turtles) can inflict a serious bite wound if they are not carefully handled. Additionally, turtles can carry salmonella so WCAs are advised to always wear gloves and wash their hands after directly handling a turtle. See the first pages of this document for general safety recommendations for handling wildlife.

Non-lethal Options:

- See the first pages of this document for general ways to prevent damage from wildlife.
- Education is the best coexisting option for turtles. Turtles are important regulators in aquatic ecosystems and eat vegetation, decaying matter, and only a small amount of fish within a water body. Many people think they are responsible for declines in fish populations, but these declines are almost always due to improper pond management practices, not turtles.
- Traps can be used to aid in relocation efforts of turtles. Methods of trapping vary based on the species of interest. Relocations under two miles are greatly preferred to long distance relocations.

Lethal Options:

- Education and relocation (especially short distances) is **GREATLY** preferred to lethal options.
- A turtle can be euthanized humanely (via [AVMA euthanasia guidelines](#) for reptiles) if a depredation permit has been written due to property damage.