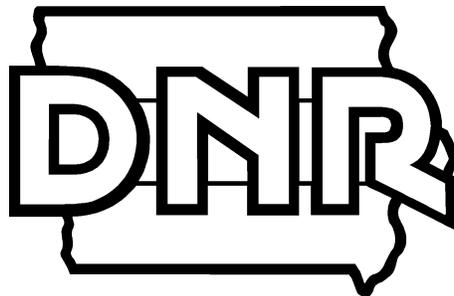


IOWA DEPARTMENT OF NATURAL RESOURCES

**NUISANCE WILDLIFE CONTROL OPERATOR
GUIDEBOOK**



**Law Enforcement Bureau
Iowa DNR
502 E 9th St
Des Moines IA 50319-0034**

Updated January, 2015



IOWA DEPARTMENT OF NATURAL RESOURCES

Licensing Section
502 East 9th Street, Des Moines, IA 50319-0034
Phone: (515) 725-8200 www.iowadnr.gov

CASHIER'S USE ONLY
0233-542-0092-MG-0642
Business Name
Full Name

NUISANCE WILDLIFE CONTROL OPERATOR PERMIT APPLICATION

APPLICANT INFORMATION:

Full Name: Last First Middle

Address: Address City State Zip Code

Phone Number:

Birth Date: Years of Trapping Experience:

Business Name:

Business Address if different from above:

Business Phone if different from above:

Email Address: Website:

I would like my business to be posted on the DNR Website Yes No

Signature of Applicant: Date:

Conservation Officer Signature: Date:

OFFICE USE ONLY

Test Score #1: Date of Test: Officer Initials:

Test Score #2: Date of Test: Officer Initials:

If test failed: Explain timetable for re-testing

Send to Aron Arthur at Central Office:

- Completed application Signed copy of "Terms of Permit"
Completed test with score \$25.00 Administration Fee

Multiple offender file checked: Date: Officer Initials:

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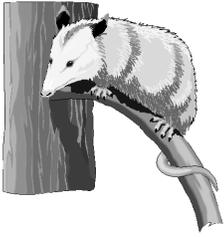
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Iowa Department of Natural Resources

Nuisance Wildlife Control Operator Program

Part 1:

Introduction



The progressive loss of Iowa's woodlands and farmlands to development is increasing the chance for conflicts between humans and wildlife. Social trends, such as increased urbanization, increased populations of certain wildlife species, and finite government resources have combined to provide the opportunity for more involvement from the private sector in the prevention and control of wildlife damage and nuisance situations. As development occurs:

1. Less land is available to wildlife. Natural habitat, like older woodlots with hollow trees, may not be readily available for wild animals. The lack of traditional den sites may cause wild animals to use chimneys and attics as alternate shelter or den site (This is common for species such as squirrels and raccoons.) Animals displaced from their habitat by new home or business construction may reestablish themselves in new surroundings.
2. Reclusive species lose habitat, while opportunistic species, such as raccoons, build populations to unnaturally high densities.
3. Many people move from the city out into the country or newly developed area, often bringing with them an unfamiliarity with wild animals and their habits.

These consequences of development have combined to make the problem of wildlife damage and nuisance control a major concern of wildlife management and law enforcement personnel.

Wildlife Damage and Wildlife "Nuisance"

The term "**damage**" is easily understood, however, "**nuisance**" means different things to different people. For some, the mere presence of a raccoon in a tree in the woods near their house constitutes an intolerable situation. For others, catching a glimpse of the same animal would be a thrilling and rewarding experience.

Obviously, education can play an important role in nuisance recognition and resolution. A wild animal that poses no real threat to the safety of the public, livestock, crops or property should not be viewed as a nuisance simply because it exists. A public that is knowledgeable about the habits and life history of wild animals is better equipped to recognize and solve wildlife damage and nuisance situations.

The role of the Department of Natural Resources (DNR) is to ensure the well-being of the state's wildlife populations while also assuring that individual wild animals are not posing a threat to human safety or creating unreasonable property, crop or livestock damage. As long as humans coexists with wild animals, conflicts (some real, and some unfounded) will arise. The DNR attempts to resolve these conflicts through direct action, education, and technical assistance in cooperation with private businesses, the federal government, and other agencies. Care must be taken to ensure that damage and nuisance control measures are necessary and warranted.

Wild animals exhibit a number of predatory and competitive behaviors that can be misinterpreted as cruel, aggressive, or detrimental by the public. These behaviors are natural, necessary for species survival, and should not necessarily be viewed as harmful. All wild animals, except those owned by specially licensed shooting preserves and licensed game breeders, are public property, and are therefore subject to controls and regulations by the State.

The Role of Hunting and Trapping in Nuisance Control

Many nuisance situations are the result of high populations of a particular species. An annual, regulated harvest during the hunting and trapping seasons is the preferred and most practical method of reducing populations to alleviate animal-caused damage. A sustained annual harvest of raccoon, beaver, muskrat and other species provides recreation and income for hunters and fur-harvesters and is the most important single factor in decreasing the potential for wildlife damage and conflict to occur.

However, regular season hunting and trapping alone may not represent adequate solutions under the following circumstances:

1. If damage is extensive and occurs well outside the normal hunting and trapping seasons.
2. If damage is the result of an individual animal rather than the over abundance of an entire population.
3. If problems are being caused by species that are normally not harvested during the hunting and trapping seasons, generally due to lack of harvest efforts by sportspersons, such as squirrels and skunks.
4. If problems are occurring in highly urbanized areas where hunting and/or trapping are not practical or permitted.

In such situations where regular season harvests are not successful or practical in controlling animal damage, a more structured approach to the problem is required.



Part 2:

Wildlife Damage and Nuisance Control Permits

Under the authority of the Iowa Code Chapters 455A., 456A., 481A., 483A., the Department of Natural Resources administers a permit system for licensing individuals who meet established criteria who desire to establish a business to address the issues of nuisance animal control.

This system allows nuisance wild animals and wild animals causing damage to property to be taken during times of the year and by methods not normally allowed under the regular hunting and trapping regulations. This process helps both the person who believes they have a legitimate nuisance animal problem, and the Department of Natural Resources, in that this system permits specially licensed individuals to address the nuisance animal problem, which in turn allows state conservation officers and biologists to commit more time to more important aspects of their respective jobs.

Iowa Administrative Code Chapter 571-114 outlines the requirements of the Nuisance Wildlife Control Operator Program. Additional requirements are found in the "Nuisance Wildlife Control Operators Guidebook".

Disclaimer:

The Iowa Code and Iowa Administrative Rules listed in this manual were current when this manual was printed. Updates will be provided as changes take place. However, this manual is only a synopsis of the most pertinent Iowa regulations. For further clarification contact your conservation officer.

Iowa Administrative Code- Chapter 571-114
NUISANCE WILDLIFE CONTROL

571—114.1(456A) Nuisance wildlife control program. This chapter is intended to implement Iowa Code section 456A.24(8) by providing permitting of nuisance wildlife control operators for the purpose of protecting private property from nuisance wildlife. No provision of this chapter shall restrict a landowner from lawfully removing nuisance wildlife pursuant to Iowa Code section 481A.87.

571—114.2(456A) Definitions.

“Annual activity report” means an annual report submitted on a form provided by the department.

“Biologist” means a natural resource biologist employed by the wildlife bureau of the department of natural resources.

“Guidebook” means the nuisance wildlife control operator’s manual provided by the department.

“Helper” means a person who possesses a fur harvester license, has paid the habitat fee, and is listed, by name, on the permit as authorized to perform nuisance wildlife control operator duties under the direction of the permittee.

“Nuisance wildlife” means wild, native animals or birds under the jurisdiction of the department of natural resources that are causing damage to private property, creating a nuisance, or presenting a health hazard.

“Nuisance wildlife control operator” or *“NWCO”* means a person who operates as a business and charges a fee to remove nuisance wildlife from private property.

“Permit” means an annual permit issued by the department under the authority of Iowa Code section 455A.5(6)“e” for the purpose of capturing and removing nuisance wildlife from private property. The permit shall expire January 10 of each year and is not transferable.

“Permittee” means an NWCO who possesses a valid nuisance wildlife control operator’s permit issued by the department and also possesses a valid Iowa fur harvester license and has paid the habitat fee.

“Special Canada goose control permit” or *“SCGCP”* means a permit to engage in the Canada goose population control activities specified by the department of natural resources.

“Technician” means a natural resource technician employed by the wildlife bureau of the department of natural resources.

“Translocate” means to transport and release an animal at a site other than the site at which it was captured.

571—114.3(456A) Nuisance wildlife control operator’s permit. An NWCO permit may be issued to an NWCO who, upon application and following review and testing, complies with all requirements established within this chapter. This is an annual permit and may be renewed by January 10 of the following year. The department shall not renew a permit without first receiving a completed annual activity report for the previous year.

571—114.4(456A) Application requirements. All applicants must be at least 18 years of age and possess a valid driver’s license.

571—114.5(456A) Nuisance wildlife control operator’s guidebook. All applicants will receive an NWCO guidebook at the time they submit a completed permit application form. The permittee shall refer to the guidebook as an operating manual for nuisance wildlife control activity. All requirements and procedures listed in the guidebook must be followed. The NWCO guidebook is hereby adopted by reference and shall be a part of this chapter as if set forth herein.

571—114.6(456A) Nuisance wildlife control operator's test and interview. An applicant must successfully pass a written test with a minimum test score of 80 percent before an NWCO permit will be issued. If the applicant fails the written test, the applicant must wait 45 days before retaking the test. If the applicant fails the written test a second time, the applicant must wait 180 days before reapplying. A \$25 testing fee will be assessed when the applicant successfully completes the test. In addition, the applicant must successfully complete an oral, in-person interview with a representative of the department to determine the applicant's knowledge of wildlife and wildlife capture techniques, and to determine if the applicant has the ability to provide effective services to the public.

571—114.7(456A) Records and record-keeping requirements. All permittees shall keep a daily record of their nuisance wildlife control activities. Each record must contain the client's name, address, telephone number, date of service, service provider's name, species of animal, number of animals removed, control methods used, and disposition of the animals. Permittees holding an SCGCP must also document on aerial photos, or similar maps, the locations of all Canada goose nests destroyed, the numbers of Canada goose eggs destroyed, and the numbers of Canada geese killed at each project site. These records shall be kept up to date and on file at the business location specified in the permit. The permittee shall provide these records for inspection by a department representative at any reasonable time.

571—114.8(456A) Annual activity report. The permittee shall submit an annual activity report on forms provided by the department no later than January 31 of the following year. The department shall not renew a permit until a complete and accurate annual activity report has been received for the preceding year.

571—114.9(456A) Permit renewal. An NWCO permit may be renewed by the department when all reporting requirements for the previous year have been met. An administrative fee of \$20 will be assessed at the time of permit renewal.

571—114.10(456A) Helper. A helper shall operate under the same conditions as the permittee. The permittee shall be responsible for all actions of the helpers listed on the permit. Compliance violations committed by a helper may be cause for the department to revoke the NWCO permit.

571—114.11(456A) Capture methods and trap tagging. Live traps such as box traps and leg-hold traps should be used whenever possible. Humane traps, which are those designed to kill instantly and which have a jaw spread exceeding eight inches, are unlawful except when placed entirely underwater. All traps and snares, except those that are placed entirely underwater, shall be checked once every 24 hours. All traps and snares for the taking of nuisance wildlife shall have a metal tag attached that is plainly labeled with the permittee's business name and address. If traditional capture methods fail, the permittee may use chemicals, smoking devices, mechanical ferrets, wire, tools, instruments, or water to remove nuisance animals in accordance with the procedures contained in the guidebook. No person, except a person acting under an NWCO permit, shall capture or take, or attempt to capture or take, with any trap, snare, or net, any game bird. The permittee and designated helpers shall observe all Iowa fur trapping and fur possession regulations as provided by Iowa law, the Iowa Administrative Code, and the NWCO guidebook.

571—114.12(456A) Endangered and threatened wildlife species. The permittee is not authorized to capture or possess any wildlife species listed as endangered or threatened. A permittee may only capture or possess a federally protected species to the extent that the permittee is authorized to engage in specific Canada goose population control activities by the terms of a valid SCGCP. This prohibition includes, but is not limited to, the capture or possession of spotted skunks, hawks, owls, eagles, migratory birds, waterfowl, and songbirds. When a nuisance wildlife problem involves an endangered or threatened species, the local state conservation officer must be contacted, and the officer will determine how the situation should be handled.

571—114.13(456A) Special Canada goose control permits. A person applying for a special Canada goose control permit to use lethal methods to control Canada goose populations or to trap and translocate Canada geese must be a currently certified NWCO and must abide by the following rules:

114.13(1) Lethal control practices. Permittees wishing to use lethal methods, such as nest destruction, egg oiling, egg addling, or killing geese, must comply with the following procedures:

- a. Permittees must obtain written permission from the biologist responsible for the county in

which the lethal control practice is proposed for every site where a lethal control practice is proposed before implementing any such practice. The biologist will determine if lethal control practices are necessary and will specify the number of nests, eggs, or adult geese that can be destroyed at each site.

b. The permittee must follow the procedures in the NWCO guidebook for implementing lethal control practices and disposing of dead birds, eggs, and nests. Failure to follow such procedures will result in immediate revocation of the permit.

c. Permittees must satisfactorily complete at least two lethal control projects under the direct supervision of a biologist or technician before being granted an SCGCP for lethal control practices. Upon the permittee's satisfactory completion of two lethal control projects, the biologist can issue the NWCO an SCGCP to perform lethal control activities without direct supervision by DNR personnel. The NWCO must carry this permit whenever engaged in lethal Canada goose control activities and exhibit it upon request by department of natural resources personnel. Any persons assisting with the lethal control practices must be listed on the SCGCP. The permittee is responsible for the conduct of all persons listed on the SCGCP who are helping conduct lethal control operations.

d. Permittees must document on an aerial photo, or similar map, the locations of all Canada goose nests destroyed, the numbers of Canada goose eggs destroyed, and the numbers of Canada geese killed at each project site within 48 hours of completion of each project. Any banded geese that are killed must have the bands removed before disposal and be reported as specified in the NWCO guidebook within 48 hours of the permittee's completion of the project.

e. Permittees must provide the department a written report of all lethal control activities by December 31 of the year for which the SCGCP is valid. Failure to provide this report by December 31 will result in the permittee's not being reauthorized to use lethal control methods the following year.

114.13(2) *Trapping and translocation operations.* Permittees wishing to trap and translocate Canada geese must comply with the following procedures:

a. Permittees must obtain written permission from the biologist responsible for the county in which the trap and translocation operation is proposed for every site where such operation is proposed before implementing any such operation. The biologist will determine if a trap and translocation operation is necessary and will specify the number of geese that can be translocated from each site. The biologist will also specify release sites for the captured geese. Release sites must be approved by the biologist before any geese are captured.

b. The permittee must follow the procedures in the NWCO guidebook for implementing trap and translocation operations. Failure to follow such procedures will result in immediate revocation of the permit.

c. Before the permittee engages in a trap and translocation operation, the permittee's trapping and transport equipment must be inspected and approved by a biologist or technician.

d. Permittees must satisfactorily complete at least four trap and translocation projects under the direct supervision of a biologist or technician before being granted an SCGCP for trap and translocation operations. Upon satisfactory completion of four trap and translocation projects, the biologist can issue the NWCO an SCGCP to perform trap and translocation operations without direct supervision by DNR personnel. The NWCO must carry this permit whenever engaged in trap and translocation operations and exhibit it upon request by department of natural resources personnel. Any persons assisting with the trap and translocation operations must be listed on the SCGCP. The permittee is responsible for the conduct of all persons listed on the SCGCP who are helping with trap and translocation operations.

e. Permittees must inform the biologist of the number of birds captured and translocated within 48 hours of the completion of each operation. Permittees must document the number of Canada geese trapped and released for each capture and release site and the number of geese that die during each trap and translocation operation. Any banded geese that are captured and translocated must be reported as specified in the NWCO guidebook within 48 hours of completion of the project.

f. Permittees must provide the department a written report of all trap and translocation operations by December 31 of the year for which the SCGCP is valid. Failure to provide this report by December 31 will result in the permittee's not being reauthorized to trap and translocate geese the following year.

114.13(3) General provisions.

a. The SCGCP is valid for one year and must be reauthorized by a biologist each year when the NWCO permit is renewed.

b. Any plumage, eggs, eggshells, nests, or dead birds encountered by the permittee when performing activities permitted under this rule may not be sold, offered for sale, bartered or shipped or possessed for the purposes of being sold, offered for sale, bartered or shipped.

c. Any properties on which lethal control or trap and transport operations are conducted must be open at all reasonable times, including during actual operations, to any biologist or technician, conservation officer, U.S. Fish and Wildlife Service special agent, or U.S. Department of Agricultural Wildlife Services agent wishing to inspect the activity or the results of the activity.

d. Nothing in the permit should be construed to authorize the killing of any migratory bird or the destruction of the nests or eggs of any migratory bird other than resident Canada geese.

571—114.14(456A) Disposition of captured nuisance wildlife. Nuisance wildlife, with the exception of endangered or threatened species, may be relocated or euthanized. The permittee shall comply with the euthanization and release methods described in the NWCO guidebook. Sick or injured wildlife must be handled as described in the NWCO guidebook. The carcass of a dead nuisance animal must be disposed of in a legal manner and within 24 hours of the animal's death.

571—114.15(456A) General conditions for permits. Records and facilities shall be available for inspection by officers of the department during reasonable hours. All records and reports must be kept current and shall reflect a true and accurate account of the permittee's activities. The department's law enforcement bureau shall be notified in writing within 30 days if the permittee ceases operation as a nuisance wildlife control operator. Permittees and helpers must obtain and possess valid fur harvester licenses and have paid the habitat fees, except that persons listed as assistants on the SCGCP do not need to have a valid fur harvester license nor to have paid the habitat fee when assisting with Canada goose control activities. Permittees must renew their NWCO permits by January 31 of each year.

571—114.16(456A) Permit refusal. The department may suspend, revoke, refuse to issue, or refuse to renew a nuisance wildlife control operator's permit if the department finds that the permittee, a helper, or an employee of the permittee is not in compliance with this chapter. In addition, any violation of Iowa Code chapter 481A, 481B, 482, 483A, 484A, 484B, or 716 shall be cause for the department to suspend, revoke, refuse to issue, or refuse to renew a permit.

571—114.17(456A) Penalties. A person or organization that violates a provision of this chapter is guilty of a simple misdemeanor.

These rules are intended to implement Iowa Code sections 456A.24(8), 481A.38, 481A.39 and 481A.48.

APPLICATION PROCESS

General Conditions for Permits:

1. Be at least 18 years of age and possess a valid driver's license.
2. Pass a written examination with a minimum score of 80% before a permit is issued. If an applicant fails the examination, they must wait 45 days before being permitted to retake the examination. If the applicant fails the test a second time, they must wait a period of six months before reapplying.
3. Not currently be under any license suspension or revocation by the Iowa Department of Natural Resources or any court.
4. The applicant must successfully complete an oral, in-person interview with a representative of the department to determine the applicant's knowledge of wildlife and wildlife capture techniques, and to determine if the applicant has the ability to provide effective services to the public.
5. A \$ 25.00 testing fee will be assessed when the applicant successfully completes the test. (Permit renewals will be \$ 20.00).
6. Possess a valid fur harvester license and have paid the habitat stamp fee.

NUISANCE WILDLIFE CONTROL RULES AND REGULATIONS

The rules and regulations concerning nuisance animal control permits are outlined in Iowa Administrative Code Chapter 571-114 and are found in other sections of this manual. The primary policy and procedural regulations are outlined in the following section:

Terms of Permit:

1. The permittee is not a representative or agent of the Iowa Department of Natural Resources (DNR), but is a private contractor.
2. Permittee may take, possess, and transport species protected by the Iowa Code in accordance with the terms/conditions/limitations of this permit.
3. The permittee must possess a valid NWCO permit and a valid fur-harvester license and habitat stamp. Partners or assistants must also possess a valid furharvester license and pay the habitat stamp fee.

The permit shall be issued on an annual basis and expire on January 10th of each year and is not transferable.

4. All traps must be tagged with the permittee's name and address.
5. All traps must be checked, and any captured animals/birds removed, at least once every 24 hours. Permittee's who rent, lend, or otherwise transfer traps to clients under authority of this permit are responsible for the client's compliance with this requirement.
6. It will be the responsibility of the permittee to obtain proper authorization from political subdivisions when necessary to carry out nuisance wildlife control work in those respective communities, and to obtain the necessary and proper municipal, state, and federal permits when and where required.
7. Permittee may not take, possess, or transport migratory birds or threatened or endangered species without special authorization from the DNR and accompanying state and/or federal permits when/where required.
8. Permittee must describe the estimated costs and types of control that will be used to alleviate damage and obtain the landowner's or tenant's permission before initiating control efforts.

9. Injured protected birds may be taken to one of the DNR's licensed wildlife rehabilitators or to a person or facility designated by the local state conservation officer or wildlife biologist. When injured animals or birds are encountered, the local conservation officer or biologist may be contacted for advice.
10. Animals which are euthanized or found dead will be promptly and properly disposed of by the permittee. The carcasses of all dead nuisance animals must be disposed of within 24 hours of their discovery. Methods of proper disposal include:
 1. Taking the carcass to an approved landfill that will accept it.
 2. Taking the carcass to, or having it picked up by a renderer.
 3. Taking the carcass to an approved incinerator site.
 4. Burying the carcass outside the city limits. Above ground disposal of the carcasses is not permitted.

Expenses/costs related to euthanizing an animal or disposal of carcasses is the responsibility of the permittee.

11. Animals may not be kept in possession of the permittee for more than 24 hours. During that time, animals/birds taken during control operations should be released, taken to a wildlife rehabilitator, or euthanized. No live animals may be taken from the state. Animals and/or birds and/or their parts may not be retained for any purpose, and shall not be sold or given to other individuals. (This will exclude fur-bearing animals taken during the open season in rural settings when the permittee has the understanding and approval of the landowner to do so.) Animals and/or birds may not be used for display or programs, kept in captivity, or used for training dogs.
12. Animals which are relocated must be released in suitable habitat at least ten miles from the original capture site. Animals are not to be liberated in an area close to human dwellings, which would result in a transfer of, rather than a solution to, the nuisance problem. Animals shall not be released inside the city limits of any city.
13. A record shall be kept by the permit holder indicating the following information:
 - a. location of call
 - b. numbers and species of animals/birds removed
 - c. date of action
 - d. disposition of these animals/birds

These records shall be updated within 24 hours of the event and shall be open to inspection by the Department's representative at any time. This information shall be documented in an annual report, covering the calendar year, which shall be filed with the DNR by January 31st of each year. Failure to file an annual report by January 31st shall be cause for permit revocation/cancellation.

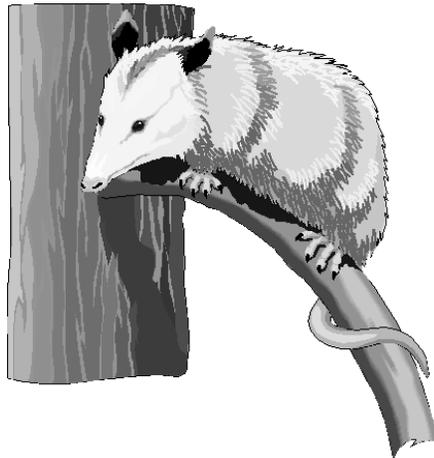
A NWCO permit may be renewed by the department when all reporting requirements for the previous year have been met. An administration fee of \$ 20.00 will be assessed at the time of renewal.

14. The permittee or their designee shall be in possession of this permit while engaged in nuisance wildlife control activities and shall show the permit to any officer or landowner requesting to see it.
15. All wildlife handled under the terms of this permit shall be handled and treated as humanely as possible.
16. The use of firearms to destroy an animal or bird is prohibited inside any city limits. The use of firearms elsewhere shall be subject to all state restrictions.
17. The use of poison is prohibited for the taking of any gamebird or animal. (except as outlined in Iowa Administrative Code 571-100.2 [481A]).
18. Methods of euthanizing animals must be approved by the Department, and include:

- a. Gunshot
- b. Drowning
- c. Inhalants, including; anesthetics such as ether, halothane, methoxyflurane, isoflurane, nitrous oxide, or carbon monoxide, or carbon dioxide
- d. Noninhalant pharmaceutical agents (injectables) excluding; strychnine, nicotine, magnesium sulfate, potassium chloride, and chloroform.

All applicable laws must be followed governing the acquisition, use, and storage of any of the chemicals or agents used to conduct euthanasia. Proper euthanasia methods must be used, and appropriate disposal of the animal carcasses, is required.

19. Any violation of the terms/limitations/conditions of this permit as outlined above, or violations under 481A.130, accrual of habitual offender points as outlined in 481A.134, or court action outlined in 483A.21, will result in the revocation or suspension of this permit.



Iowa Administrative Code- Chapter 481A
TRAPPING RESTRICTIONS: GENERAL PROVISIONS

481A.42 Nongame protected - exclusion.

Protected nongame species include wild fish, wild birds, wild bats, wild reptiles, and wild amphibians, an egg, a nest, a dead body or part of a dead body, and a product made from part of a body of a wild fish, wild bird, wild bat, wild reptile, or wild amphibian. However, nongame does not include game, fish that may be taken pursuant to regulations established under the Code or departmental rule, fur-bearing animals, turtles, or frogs, as defined in this chapter. The commission shall designate by rule those species of nongame which by their abundance or habits are declared a nuisance, and these species shall not be protected. Rules adopted shall include, but are not limited to, a provision that states that any bat, except for the Indiana bat, which is found within a building that is occupied by human beings is not a protected nongame species.

481A.58 Trapping birds or poisoning animals.

No person except those acting under the authority of the director shall capture or take or attempt to capture or take, with any trap, snare or net, any game bird, nor shall any person use any poison or any medicated or poisoned food or any other substance for the killing, capturing or taking of any game bird or animal.

481A.90 Disturbing dens.

A person shall not molest or disturb, in any manner, any den, lodge, or house of a fur-bearing animal or beaver dam except by written permission of an officer appointed by the director.

This section does not prohibit the owner from destroying a den to protect the owner's property.

481A.91 Shooting or spearing.

No person shall kill with shotgun, or spear any beaver, mink, otter, or muskrat, or have in possession any of said animals or the carcasses, skins or parts thereof that have been killed with shotgun or spear.

481A.92 Traps -- disturbing dens -- tags for traps.

A person shall not use or attempt to use colony traps in taking, capturing, trapping, or killing any game or fur-bearing animals except muskrats as determined by rule of the commission. Box traps capable of capturing more than one game or fur-bearing animal at each setting are prohibited. A valid hunting license is required for box trapping cottontail rabbits and squirrels. All traps and snares used for the taking of fur-bearing animals shall have a metal tag attached plainly labeled with the user's name and address. All traps and snares, except those which are placed entirely underwater, shall be checked at least once every twenty-four hours. Officers appointed by the department may confiscate such traps and snares found in use that are not properly labeled or checked.

Except as otherwise provided, a person shall not use chemicals, explosives, smoking devices, mechanical ferrets, wire, tool, instrument, or water to remove fur-bearing animals from their dens. Humane traps, or traps designed to kill instantly, with a jaw spread, as originally manufactured, exceeding eight inches are unlawful to use except when placed entirely underwater.

Conibear type traps and snares shall not be set on the right-of-way of a public road within two hundred yards of the entry to a private drive serving a residence without the permission of the occupant.

A snare when set shall not have a loop larger than eight inches in horizontal measurement except for a snare set with at least one-half of the loop underwater. A snare set on private land other than roadsides within thirty yards of a pond, lake, creek, drainage ditch, stream, or river shall not have a loop larger than eleven inches in horizontal measurement.

All snares shall have a functional deer lock which will not allow the snare loop to close smaller than two and one-half inches in diameter.

Iowa Administrative Code- Chapter 110
TRAPPING LIMITATIONS

Natural Resource Commission [571] IAC 7/1/09
[Prior to 12/31/86, Conservation Commission[290] Ch 114]

571—110.1(481A) Public roadside limitations—snares, body-gripping, and conibear type traps. No person shall set or maintain any snare, body-gripping, or conibear type trap within any public road right-of-way within 200 yards of buildings inhabited by human beings unless a resident of the dwelling adjacent to the public road right-of-way has given permission or unless the body-gripping or conibear type trap is completely underwater or at least one-half of the loop of a snare is underwater. Nothing in this rule shall be construed as limiting the use of foothold traps or box-type live traps in public road rights-of-way. No person shall place or leave any trap, stake, or nonindigenous set making material upon any public road right-of-way except during a period of time that begins two weeks before the trapping season opens and ends on the last day of the season. [ARC 7922B, IAB 7/1/09, effective 8/5/09]

571—110.2(481A) Snares.

110.2(1) Placement. No person shall set or maintain any snare in any public road right-of-way so that the snare when fully extended can touch any fence. Snares may not be attached to a drag.

110.2(2) Loop size. No snare when set will have a loop larger than 8 inches in horizontal measurement except for snares set with at least one-half of the loop underwater or snares set on private land other than roadsides within 30 yards of a pond, lake, drainage ditch, creek, stream or river shall not have a loop larger than 11 inches in horizontal measurement.

110.2(3) Deer locks. All snares must have a functional deer lock that will not allow the snare loop to close smaller than 2½ inches in diameter.

110.2(4) Mechanical snares. It shall be illegal to set any mechanically powered snare designed to capture an animal by the neck or body unless such snares are placed completely underwater.

571—110.3(481A) Body-gripping and conibear type traps. No person shall set or maintain any body-gripping or conibear type trap on any public road right-of-way within 5 feet of any fence.

571—110.4(481A) Foothold and leghold traps. No person shall set or maintain on land any foothold or leghold trap with metal-serrated jaws, metal-toothed jaws or a spread inside the set jaws of greater than 7 inches.

571—110.5(481A) Removal of animals from traps and snares. All animals or animal carcasses caught in any type of trap or snare, except those which are placed entirely underwater and designed to drown the animal immediately, must be removed from the trap or snare by the trap or snare user immediately upon discovery and within 24 hours of the time the animal is caught.

571—110.6(481A) Trap tag requirements. All traps and snares, whether set or not, possessed by a person who can reasonably be presumed to be trapping shall have a metal tag attached plainly labeled with the user's name and address.

571—110.7(481A) Colony traps. All colony traps must be set entirely underwater.

These rules are intended to implement Iowa Code sections 481A.38 and 481A.92.

**SPECIES WHICH MAY NOT BE HANDLED WITHOUT
A SPECIAL PERMIT OR AUTHORIZATION**

Standard permits do not permit the handling of certain species. Problems may arise with species that are Federally protected and/or are on the threatened or endangered species list. These will include, but are not limited to; spotted skunks, hawks, owls, eagles, migratory birds, waterfowl, and all songbirds.

Should you encounter a problem with one of these species, contact your respective state conservation officer to consult with them to determine how this particular situation should be handled.

ENDANGERED OR THREATENED SPECIES

The Iowa Code, Chapter 481B and the Iowa Administrative Code, Chapter 571-77, addresses endangered and threatened species. The specific definitions are important to understand. It is unlikely you would encounter these species, but in case you should- be aware that special regulations exist and you must contact your local state conservation officer before proceeding. Consequently, if dealt with during a nuisance wildlife control complaint, these species must be released alive. The following is a partial list of those species:

**Iowa Administrative Code- Chapter 77
ENDANGERED AND THREATENED PLANT AND ANIMAL SPECIES**

Natural Resource Commission [571] IAC 3/2/94, 12/29/99
[Prior to 12/31/86, Conservation Commission[290], Ch 19]

571—77.1(481B) Definitions. As used in this rule:

“Endangered species” means any species of fish, plant life, or wildlife which is in danger of extinction throughout all or a significant part of its range.

“Special concern species” means any species about which problems of status or distribution are suspected, but not documented, and for which no special protection is afforded under this rule.

“Threatened species” means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

571—77.2(481B) Endangered, threatened, and special concern animals.

The natural resource commission, in consultation with scientists with specialized knowledge and experience, has determined the following animal species to be endangered, threatened or of special concern in Iowa:

77.2(1) Endangered animal species:

Mammals:

Indiana Bat	Myotis sodalis
Plains Pocket Mouse	Perognathus flavescens
Red-backed Vole	Clethrionomys gapperi
Bobcat	Felis rufus
Spotted Skunk	Spilogale putorius

Birds:

Red-shouldered Hawk	Buteo lineatus
Northern Harrier	Circus cyaneus
Peregrine Falcon	Falco peregrinus
Piping Plover	Charadrius melodus
Common Barn Owl	Tyto alba
Least Tern	Sterna antillarum
Bald Eagle	Haliaeetus leucocephalus
King Rail	Rallus elegans
Short-eared Owl	Asio flammeus

Reptiles:

Yellow Mud Turtle	Kinosternon flavescens
Wood Turtle	Clemmys insculpta
Great Plains Skink	Eumeces obsoletus
Slender Glass Lizard	Ophisaurus attenuatus
Yellowbelly Water Snake	Nerodia erythrogaster
Copperbelly Water Snake	Nerodia erythrogaster neglecta
Western Hognose Snake	Heterodon nasicus
Speckled Kingsnake	Lampropeltis getulus
Copperhead	Agkistrodon contortrix
Prairie Rattlesnake	Crotalus viridis
Massasauga Rattlesnake	Sistrurus catenatus

Amphibians:

Blue-spotted Salamander	Ambystoma laterale
Mudpuppy	Necturus maculosus
Crawfish Frog	Rana areolata

77.2(2) Threatened animal species:

Mammals:

Least Shrew	Cryptotis parva
Southern Bog Lemming	Synaptomys cooperi
Grasshopper Mouse	Onychomys leucogaster
Spotted Skunk	Spilogale putorius
River Otter	Lutra canadensis

Birds:

Long-eared Owl	Asio otus
Henslow's Sparrow	Ammodramus henslowii

Reptiles:

Slender Glass Lizard	Ophisaurus attenuatus
Common Musk Turtle	Sternotherus odoratus
Blanding's Turtle	Emydoidea blandingii
Stinkpot	Sternotherus odoratus
Ornate Box Turtle	Terrapene ornata
Diamondback Water Snake	Nerodia rhombifera
Western Worm Snake	Carphophis amoneus
Speckled Kingsnake	Lampropeltis getulus
Smooth Green Snake	Opheodrys vernalis

Amphibians:

Mudpuppy	Necturus maculosus
Central Newt	Notophthalmus viridescens

77.2(3) Special concern animal species:

Mammals:

Southern Flying Squirrel	Glaucomys volans
Southern Bog Lemming	Synaptomys cooperi

Birds:

Forester's Tern	Sterna forsteri
Black Tern	Chlidonias niger
Peregrine Falcon	Falco peregrines
Bald Eagle	Haliaeetus leucocephalus

Reptiles:

Smooth Green Snake	Opheodrys vernalis
Bullsnake	Pituophis catenifer sayi

MIGRATORY BIRDS

Migratory birds are protected by both state and federal regulations. Thus, the control of migratory bird species requires a federal permit in addition to a state permit. Federal regulations do not protect feral pigeons, European starlings, or English sparrows, thus a Federal permit is not required to control these species. **European starlings and house sparrows are not protected in Iowa (IAC 571-76)**. However, special regulations exist regarding pigeons. **(See IAC chapter 571-100)** Also see further information below. All other species of birds are protected in Iowa.

For more information regarding the Federal regulations or the issuance of Federal permits, consult with the U.S. Fish and Wildlife Service. There is a Special Agent stationed in Des Moines - phone 515-284-4125.

BIRD CONTROL - PESTICIDE USAGE

Extreme caution must be exercised when using pesticides for the control of pigeons, European starlings or house sparrows because of the possibility of:

1. Direct poisoning of non-target bird species, or
2. Secondary poisoning of other bird species

Because of these risks the state regulations are very restrictive in non-industrial areas where non-target species are likely to be present.

Iowa Administrative Code- Chapter 76
UNPROTECTED NONGAME
SEASONS, LIMITS, METHODS OF TAKE

Natural Resource Commission [571] IAC 7/11/01 TITLE VIII
[Prior to 12/31/86, Conservation Commission[290] Ch 16

571—76.1(481A) Species. Certain species of nongame shall not be protected.

76.1(1) Birds. The European starling and the house sparrow shall not be protected.

76.1(2) Reptiles.

a. Garter snake.

b. Timber rattlesnake except in Allamakee, Appanoose, Clayton, Delaware, Des Moines, Dubuque, Fayette, Henry, Jackson, Jones, Lee, Madison, Van Buren, and Winneshiek Counties but not including an area of 50 yards around houses actively occupied by human beings in those counties.

This rule is intended to implement Iowa Code sections 481A.38, 481A.39, and 481A.42.

Iowa Administrative Code- Chapter 100
CROW AND PIGEON REGULATIONS

[Ch 101—formally related to Mourning Dove Season]
[Prior to 12/31/86, Conservation Commission [290] Ch 101]

571—100.1(481A) Crow season. Open season for hunting crows shall be from October 15 through November 30 and January 14 through March 31 of each year. No bag or possession limit. Entire state open.

571—100.2(481A) Pigeons.

100.2(1) Pigeon season. There is a continuous open season for the taking of pigeons except the season for taking pigeons with firearms shall be October 1 to March 31. However, within 100 yards of buildings and bridges pigeons may be taken with firearms the year around. No bag or possession limit. Entire state open.

100.2(2) Pigeons causing a health or safety hazard may be taken by trapping, or any current EPA and Iowa registered pesticide repellent, or toxic perches. Strychnine-based products cannot be used. The person or organization engaging in such a program will provide for proper removal and disposal of all pigeons taken by such means.

100.2(3) If a specific problem involving the use of a toxic substance or a procedure designed to destroy problem pigeons proves not to be species specific, the director, conservation officer or wildlife biologist will issue an immediate order to stop the particular method being employed or the substance being used.

These rules are intended to implement Iowa Code sections 481A.38, 481A.39, and 481A.48.

The incidental taking of migratory birds by poison bait ingestion, or the killing of hawks and owls or other predatory/scavenger bird species by secondary poisoning is not treated lightly and can result, not only in the loss of valuable birds, but also severe fines for the unlawful killing. **The prompt and proper disposal of target carcasses, to ensure that secondary poisoning does not occur, is a responsibility of the permittee. If secondary or non-target poisoning occurs the permittee will be held responsible.**

EUTHANASIA

Species defined as game mammals or furbearing mammals (with the exception of Endangered or Threatened species) may be relocated or euthanized. Euthanization is a recognized and approved method of nuisance wildlife control and is recommended particularly for striped skunks, but may be utilized with opossums, raccoons, beavers, woodchucks, or other species of common wild mammals. **It is required for those fur-bearing animals that you believe to be sick or diseased.**

Relocation of large numbers of common species can:

- spread disease to resident populations
- compound nuisance wildlife problems in nearby residential areas
- increase predation of ground, shrub, and cavity nesting birds and their eggs
- disrupt social and behavioral mechanisms in resident populations

Due to these important reasons, euthanization of nuisance animals is preferred.

Methods of euthanizing animals must be approved by the Department, and include:

- a) Gunshot (Gunshot may not be used inside any city)
- b) Drowning
- c) Inhalants, including; anesthetics such as ether, halothane, methoxyflurane, isoflurane, nitrous oxide, or carbon monoxide, or carbon dioxide
- d) Noninhalant pharmaceutical agents (injectables) excluding; strychnine, nicotine, magnesium sulfate, potassium chloride, and chloroform.

When the decision is made to euthanize an animal, every effort should be made to be discreet, and to minimize the distress of the animal.

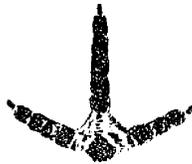
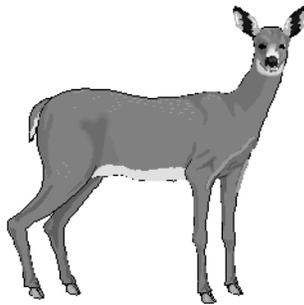
All applicable laws must be followed governing the acquisition, use, and storage of any of the chemicals or agents used to conduct euthanasia. Proper euthanasia methods must be used, and appropriate disposal of the animal carcasses is required.

All reptiles captured must be released alive back into the wild.

It is strongly suggested that operators make contact with their local Animal Shelter, Animal Rescue League, or Humane Society in order to build a working relationship with these organizations, particularly in dealing with humane euthanasia methods and carcass disposal.

**DEER, WILD TURKEY, and CANADA GOOSE
NUISANCE / DAMAGE CONTROL:**

**HAVE COMPLAINANT CONTACT LOCAL STATE WILDLIFE BIOLOGIST OR
CONSERVATION OFFICER TO GET INFORMATION REGARDING THE
DEPARTMENT'S PROGRAM RELATING TO DEER, WILD TURKEY, AND CANADA
GOOSE NUISANCE / DAMAGE CONTROL**



Part 3:

LANDOWNER / PUBLIC RELATIONS

When responding to a wildlife damage or nuisance complaint, we recommend and encourage the permittee give the person seeking services the following information:

- 1. An assessment of the nature of the nuisance problem-** (i.e. species identification, approximate number of animals involved, extent and type of damage).
- 2. The methods to be used to solve the problem-** The permittee should recommend methods of control to the landowner, the estimated costs, and the advantages and disadvantages of each method. The final decision should be made mutually by the landowner and the permittee.
- 3. The conditions which constitute a solution to the problem-** The permittee should explain to the landowner how much of the problem he/she expects to be able to resolve within the limits of his/her abilities and methods. He/she and the landowner should agree upon a realistic solution.
- 4. An estimate of the fee or rate of payment to be charged-** The permittee and the landowner should determine and agree upon the fees to be charged, whether made on an hourly, per animal, per trip or flat rate fee for the entire job. They should also decide how and when the payment will be made. the permittee should provide estimates of the total cost.

The regulations do not require written contracts, but for the protection of both parties, a written document is strongly recommended. Likewise it is strongly recommended that the contract address liability issues. The permittee and the landowner should review the property boundaries and the permittee should be made aware of any domestic animals in the vicinity that may be caught inadvertently if trapping is to be used.

*(The term "landowner" here refers to renters, lessees, homeowners, legal occupants or other persons in lawful control of the respective premises.)

When dealing with landowners, be sure to remind them that you are specially licensed by the DNR which permits you to deal with these animal problems, yet you are **not** an agent of the state. Listen carefully to what the landowner is telling you so you can fully understand their problem and best address it. Show the person that you truly care about helping them solve their problem, as well as showing care and respect for the animal/bird. Treat the animals humanely. The public wants their problems solved...as long as it is done humanely. Their care and welfare is important in the eyes of the public. Building and maintaining positive public relations and support should be as important to you, the operator, as it is to the Department. Let's work together on this!



Part 4:

METHODS OF CONTROL

When faced with a wildlife damage or nuisance situation the permittee and the landowner must carefully evaluate the situation and decide upon one of the following courses of action within the **"resolution continuum"**:

1. Unfounded concerns: Some calls come from people who regard certain animals as nuisances even though the "offending" animal has not caused any damage to property, poses no real threat of damage, and therefore cannot be controlled under the terms of a permit. The most common reason for these calls result from an unjustified concern over potential damage to property, crops, livestock, or an unrealistic perceived threat to the safety of humans or pets. In many situations, education and reassurance will alleviate unwarranted concerns. The natural predatory and competitive interactions of wild animals are not generally a legitimate reason for control measures.

2. Managing the habitat: The activities of people often create habitat for animals that eventually become a problem. Piles of brush, wood, rocks, dense tall grass and shrub areas provide cover for many species of wildlife. Better management of these areas often reduces their attractiveness to wildlife species causing the problem. Plugging or covering holes into buildings and under porches are only a few of the **"exclusionary"** efforts that can be initially implemented to solve a problem. Properly covering holes and entrances through which animals/birds can enter a structure is often the most effective, long-term solution to nuisance animal problems.

3. Eliminate the attraction: Refuse, garbage, and pet food when left outdoors or on a porch or step provides a strong attraction for a number of wildlife species including raccoons, opossums, and certain species of birds. Such "dinner plates" can eventually entice animals into creating real damage to property if the lure of a free handout is not properly managed. Landowners are encouraged to eliminate such an "attractive nuisance." Control measures such as live trapping, are unwarranted until every effort is made to educate the landowner and proper trash handling is attained to more permanently eliminate the problems.

4. Alter the situation so that the potential for damage is reduced: In many cases this option will provide the best long-term solution to a nuisance animal problem. Poor building design and/or poor maintenance, which provides easy and inviting access to wildlife, can be corrected. **Exclusions**, such as fencing, screening and repairs to existing vents, woodwork, chimneys (screens and caps should meet building code standards) or foundations are very effective at keeping wild animals away from areas in which they are unwanted. Harassment measures may also prove effective for transient problems.

5. Removing the offending animal: For most of the species that can be handled with a DNR permit, box or cage-type live traps are the devices recommended for capture, particularly in urban and suburban areas. Traps must be tagged with permittee's name and address and must be checked at least once every 24 hours. **The use of firearms to destroy an animal or bird is not permitted inside any city limit.** Sometimes a conibear type trap may be used to catch an animal that must be destroyed. Use good judgment when using conibear traps to avoid catching neighborhood pets and other non-target species. It is highly recommended that when an animal needs to be destroyed, it is done away from the capture sight in a humane and discreet manner.

Euthanization is the preferred method of disposal of nuisance animals.

RELOCATING ANIMALS

The following recommendations should be followed when relocating captured animals:

- A. Animals should be relocated in suitable habitat at least ten miles from the original capture site.
- B. Animals should not be liberated in an area close to human dwelling which would result in a transfer of, rather than a solution to, the nuisance problem. **Animals are not to be released within the city limits of any city.**
- C. Animals are not be released onto state or county game management areas.
- D. Animals are not be released onto private property without the permittee first obtaining permission of the respective landowner.
- E. All reptiles captured must be released alive back into the wild.

Permittee's cannot hold wild animals for more than 24 hours. During that time all animals should be released, taken to a wildlife rehabilitator, or euthanized. Animals and birds taken during control operations shall not be given or sold to other individuals. The animals and/or their parts shall not be retained for any purpose.

Contact your local conservation officer to determine who is a licensed wildlife rehabilitator in your area.

HANDLING OF SICK OR INJURED ANIMALS

Many wildlife diseases are readily transmissible to a wide range of species, including humans and their pets. Because different diseases may exhibit similar symptoms, it is usually not possible to diagnose a disease simply by observing an animal's condition or behavior. Common symptoms of disease may include:

1. lack of coordination;
2. lack of aggressiveness;
3. secretions from the eyes, nose or mouth;
4. weak, rapid or uneven respiration;
5. malnourishment;
6. local or general loss of muscle control;
7. loss of large patches of hair/fur.

Potential causes of these symptoms could include viral infections (i.e. distemper, rabies, tularemia), bacterial toxins (i.e. botulism) or parasite infestations (i.e. mange, roundworms). Poisoning or starvation may also cause animals to behave abnormally. Because the permittee often will know little more than that the animal is sick, the animal should be handled as little as possible, and then only with equipment to protect against bites and elbow-length rubber or disposable plastic gloves.

ANIMALS THAT HAVE BITTEN A PERSON

Any person that is bitten by a wild animal should seek medical advice from their health care provider or physician as soon as possible. Under such conditions the animal should be maintained in confinement until instructions are provided for disposal by the health care professional. The same precaution applies if a person has handled an obviously sick animal which may be harboring a contagious disease. Children are particularly inclined to handle lethargic small mammals. If the animal cannot be restrained safely, it should be destroyed and the carcass temporarily kept for possible testing.

UNDER NO CIRCUMSTANCES SHOULD AN ANIMAL THAT HAS BITTEN SOMEONE, OR IS NEEDED FOR RABIES EXAMINATION, BE SHOT IN THE HEAD OR SUBJECT TO HEAD TRAUMA, SINCE THE BRAIN IS REQUIRED TO BE INTACT FOR RABIES DETERMINATION.

Information regarding submitting an animal for testing can be obtained from your local veterinarian or by calling the Iowa Public Health Veterinarian at 515-281-4933.

The costs, if any, related to transporting and/or testing of an animal for rabies (or other disease) is the responsibility of the person who was bitten.

DISPOSITION OF SICK ANIMALS

Animals that are obviously sick, but have not bitten or been handled by humans, must be euthanized.

DISPOSAL OF CARCASSES

The carcasses of all dead nuisance animals must be disposed of promptly (within 24 hours) and properly. This would include:

1. Taking the carcass to an approved landfill that will accept it.
2. Taking the carcass to, or having it picked up by a renderer.
3. Taking the carcass to an approved incinerator site.
4. Burying the carcass outside the city limits. Above-ground disposal of the carcasses is not permitted.

Expenses/costs related to euthanizing an animal or disposal of carcasses is the responsibility of the permittee.

Part 5:
ADMINISTRATION
LIABILITIES

Through the wildlife damage and nuisance animal control permit system, the Department provides a mechanism by which landowners can address wildlife damage problems. However, the Department is not liable for any action, or lack of action, taken by the permittee, their assistants, or the landowner, nor is the Department liable for any damages or injuries caused or suffered by either party. Any control measure undertaken by a nuisance animal control operator is considered a contractual matter between the permittee and the complainant. Liability insurance to cover the permittee is highly recommended but not required.

RECORD KEEPING REQUIREMENTS

Each permittee shall keep records of their nuisance animal control activities. Such reports shall be summarized on the Department provided report form and shall be sent to the DNR's Law Enforcement Bureau by the 31st day of January each year. **Timely submission of this report is a condition for permit renewal.** Detailed records, documenting the landowner's name, address, phone number, dates of service, service person's name, species of nuisance animal and control methods used, shall be kept on file and up to date at the business location specified on the permit. Permittee's shall allow, at any reasonable time, a Department official to examine and inspect such records and animals in their possession.

A license renewal fee of \$20.00 must be paid for annual renewal of the Nuisance Wildlife Control Operator Permit.

LIVE ANIMALS AND SALE OF ANIMALS

State wildlife regulations clearly prohibit any person from taking game or protected birds or animals alive from the wild. The sale of wild animals, dead or alive, and their parts, is also strictly prohibited, except for the specific provisions outlined in 481A.23, 481A.50, and 481A.55 of the Code of Iowa.

This would include and prohibit the sale of pigeons which are captured or taken under the provisions of Iowa Code chapter 481A.58 and Iowa Administrative Code chapter 571-100.

Live animals taken, possessed, and/or transported under this permit shall not be removed outside the state.

COMPLAINTS

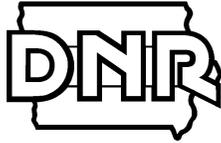
Complaints from the public regarding violations of the wildlife damage and nuisance control regulations by permittees should be forwarded to the Law Enforcement Bureau of the Iowa DNR, 502 E 9th St, Des Moines, Iowa 50319-0034. Complaints against nuisance wildlife control operators will be thoroughly and fairly investigated by officers of the Department.

PERMIT SUSPENSION and / or REVOCATION PROCEDURES

Persons under any department or court issued license suspension or revocation are ineligible to apply for, obtain, or maintain a nuisance wildlife control operator permit for the period of their suspension or revocation.

The Iowa Code, chapters 481A.130 and 481A.133 provide the legal basis for permit suspension or revocation. Any violation of the terms/limitations/conditions of this permit as outlined above, or accrual of habitual offender points as outlined in 481A.134, or court suspension under 483A.21, will result in the revocation of this permit.

Hearings may be provided for under chapter 17A of the Iowa Code.



INFORMATION AND ASSISTANCE

For further information or assistance with nuisance wildlife control or other wildlife issues or questions, please contact the Iowa Department of Natural Resources offices in your area:

Central Office- Iowa DNR
502 E 9th St
Des Moines IA 50319-0034
515-281-4515
FAX 515-281-6794
www.iowadnr.gov

NC Regional Office- Iowa DNR
1203 N Shore Dr
Clear Lake IA 50428
641-357-3517
FAX 641-357-5523
Email: iadnrcl@netins.ins

SW Regional Office- Iowa DNR
Cold Springs State Park
57744 Lewis Rd
Lewis IA 51544
712-769-2587
FAX 712-769-2440

NW Regional Office- Iowa DNR
Spirit Lake Fish Hatchery
122 252nd Ave
Spirit Lake IA 51360
712-336-1840
FAX 712-336-0921

SE Regional Office- Iowa DNR
Lake Darling State Park
110 Lake Darling Rd
Brighton IA 52540
319-694-2430
FAX 319-694-2309

NE Regional Office- Iowa DNR
Manchester Fish Hatchery
22693 205th Ave
Manchester IA 52057
563-927-3276
FAX 319-927-5736

Vacant- Furbearer Biologist
1203 N shore Dr
Clear Lake IA 50428
641-357-3517 (Office)
641-357-5523 (FAX)
641-425-5088 (Cell)

Iowa DNR Wildlife Depredation Biologists:

Bill Bunger
110 N B St
Indianola IA 50125
515-975-8318 (Cell)
Bill.Bunger@dnr.iowa.gov

Greg Harris
1023 W Madison
Washington IA 52353
319-653-2856 Fax
319-330-5578 Cell
Greg.Harris@dnr.iowa.gov

OTHER REFERENCES / RESOURCES:

U.S. Fish & Wildlife Service – Special Agent
629 Federal Bldg.
210 Walnut
Des Moines IA 50309
515-284-4125

U.S. Fish & Wildlife Service
Division of Migratory Birds Permit Section
BHW Federal Building
1 Federal Drive
Fort Snelling MN 55111-4056
(612) 725-3776

U. S. Department of Agriculture
Animal and Plant Health Inspection Service
(APHIS)
Wildlife Services
2407 Industrial Drive
Columbia MO 65202-1280
(314) 446-1942 FAX
(314) 446-1862

Field Manual of Wildlife Diseases in the Southeast
United States
(applies to Midwest species as well)
\$20.00 - Available from:
Southeastern Cooperative Wildlife Disease Study
College of Veterinary Medicine - University of
Georgia
Athens GA 30602-7393
(706) 542-1741
FAX (706) 542-5685

or locally,

USDA/APHIS
Dept. of Animal Ecology
124 Science II
Iowa State University
Ames IA 50011- 3221
(515) 233-9130
fax: 515-294-5337

Wildlife Control Technology (A bi-monthly
publication for the wildlife control industry)
PO Box 480
Cortland IL 60112
(815) 286-3073

National Animal Damage Control Association
R.R. 1, PO Box 37
Shell Lake WI 54871

Wildlife Pest Control Handbook by Phillip J.
Nichols
\$ 15.95 + 3.00 shipping = \$ 18.95
1-800-724-9468 or by mail:
PVE
PO Box 84
Pennsburg PA 18073

Wildlife Health News
(\$26.00/12 issues)
PO Box 155
Black Mountain N.C. 28711
(704) 669-2683 or (704) 669-2689

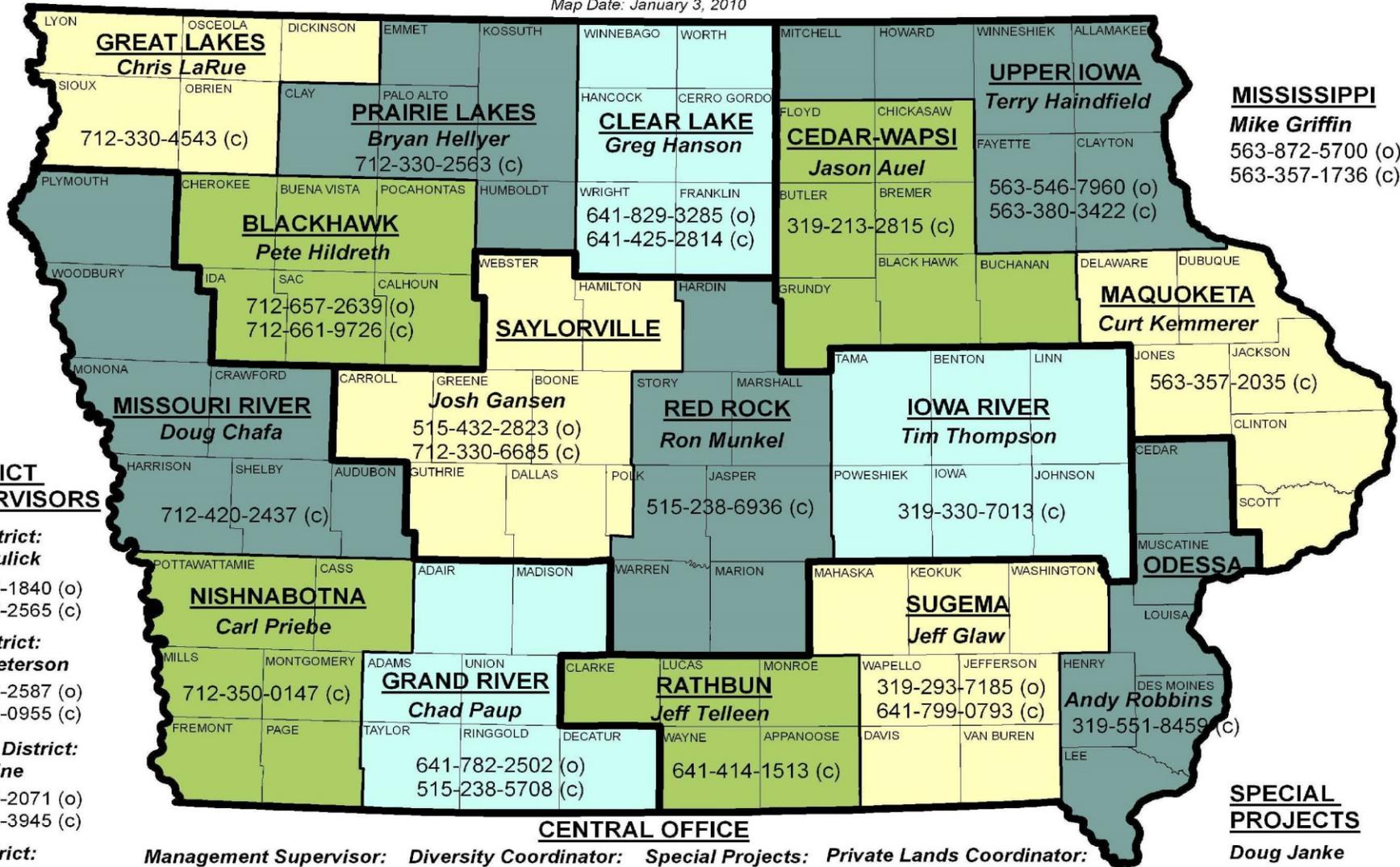
The Trapper and Predator Caller (a monthly
publication)
700 E. State Street
Iola WI 54990-0001

National Urban Wildlife Management News
(Official publication of the National Urban Wildlife
Management Association)
2801 Benson Mill Rd
Sparks MD 21152
(313) 453-8274

IOWA DNR WILDLIFE MANAGEMENT STAFF

Dale Garner, Wildlife Bureau Chief 515-281-6156 (o), 515-238-3181 (c)

Map Date: January 3, 2010



DISTRICT SUPERVISORS

NW District:
Mark Gulick
712-336-1840 (o)
712-330-2565 (c)

SW District:
Scott Peterson
712-769-2587 (o)
712-254-0955 (c)

Central District:
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641-842-2071 (o)
641-751-3945 (c)

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563-927-3276 (o)
563-920-5915 (c)

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Bill Ohde
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Management Supervisor:
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Karen Kinkead
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Executive Officer:
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Private Lands Coordinator:
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Katy Reeder
515-281-8396 (o)
515-494-6136 (c)

SPECIAL PROJECTS

Doug Janke
641-330-0241 (c)

PRAIRIE RESOURCES
Bill Johnson
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515-689-5704 (c)

CENTRAL OFFICE

NUISANCE WILDLIFE MANAGEMENT ASSOCIATIONS

WCT encourages membership and active involvement in national, state, and provincial associations. To include your association in this space, send the information to: Bob Noonan, Editor, WCT Magazine, PO Box 130, Canaan, ME 04924

NATIONAL WILDLIFE MANAGEMENT ASSOCIATION (Update)

Proposal: An Association be formed as a not-for-profit organization under 501(C)(3) Internal Revenue Code. Board of Directors consisting of CEO, President, Vice-President, Secretary, Treasurer, Communications Administrator, and one Director from each State Association. Committee Chairpersons- one for each committee deemed appropriate (all directors would be asked to chair or serve on a specific committee). If each state had a representative on the Board, there could possibly be 55 persons on it. This board would vote and conduct business as a representative body of members. A Business Manager could be hired to work for the Association, and be tasked by the Board to perform information gathering and conduct day to day business of the Association.

The Board of Directors would vote on issues and conduct business on behalf of the membership.

Input on all issues must be received from the field for the Association to be effective. This input should be channeled, whenever possible, through a state level association. For example, an issue is tabled and sent to the field for comment. A notice would be sent via mail, email, or phone to the point of contact at the state or district level, who in turn sends it to the membership. Members input is collected and returned back up the line to be condensed on a national level. When this happens the issue has received input from operators across the nation, not just from a few individuals. Individual members from states that do not have associations would also be able to provide input directly to the Board of Directors. A statement of policy that has nationwide support can be made in regards to the issue. Communication is critical and input from the individual operator is essential.

For all the above reasons NWCOS must join forces and be active in Local or State level associations, and those associations must be a part of the national group of associations. Some state don't have an association- this does not stop the operators from forming within their state or joining other state's associations to stay in touch. A National Association can make it happen. Contact Tim Julien, President, 1832 N Basil Ave, Indianapolis

IN 46219. Tel: 317-895-9069, Email tjulien@inquest.net

The **National Animal Damage Association (NADCA)** is the oldest group of wildlife damage management professionals. Contact: Grant Huggins, Noble Foundation, PO Box 2180, Admire OK 73402

The **National Animal Control Association (NACA)** represents municipal and state animal control/care employees, police and humane officers, and public health and wildlife officials. For more information, call: 1-800-828-6474

The **Northeast Association of Wildlife Damage Biologists (NEA-WDB)**, for wildlife professionals from the 13 northeastern state and the 7 eastern Canadian provinces. Members receive quarterly newsletter. Contact: Dennis Slate, President, PO Box 296, Peverley Rd, Tilton NH 03276. Tel: 603-225-1416.

The **Connecticut Nuisance Wildlife Control Operators Association**. Contact: Paul Magnotta, Secretary, PO Box 381, Durham CT 06422. Tel: 860-349-9940.

The **Indiana Animal Damage Control Association (IADCA)**. Contact: Tim Julien, President, 1832 N Basil Ave, Indianapolis IN 46219. Tel: 317-895-9069.

The **Massachusetts Association of Problem Animal Controllers (MAPAC)**. Contact: Stephen Marken, Treasurer, 1374 Concord St, Framingham MA 01701

The **Michigan Animal Damage Control Association (MADCA)**. Contact: Kevin Syperda, Secretary, MADCA, 17504 Briggs Rd, Pierson MI 49339. [Tel:616-636-5594](tel:616-636-5594)

The **New Jersey Urban Wildlife Management Association (NJUWMA)** is seeking members. Contact: Karen Dwyer, PO Box 261, Audubon NJ 08106. Tel: 609-547-8464.

The **New York State Wildlife Management Association (NYSWMA)**. Contact: NYSWMA, Bob Meakin, 5721 Middle Rd, RD 2 PO Box 176, Munnsville NY 13409. Tel: 315-495-5561 (Evenings).

The **Tennessee State Nuisance Wildlife Control Operator Association** is seeking members. Contact: Mike Cable, RT 1 PO Box 389, Cripple Creek Rd, Watauga TN 37694. Tel: 423-543-5197 (Evenings).

The **Washington State Nuisance Wildlife control Operators Association**. Contact: Don Goetschius, President 2507 NE 102nd St, Vancouver WA 98686. Tel: 360-573-7130 (Evenings).

The **Nuisance Wildlife Operators Association Of Nova Scotia (NWOANS)**. Contact: Mike Larade, President, NWOANS Ste 30, RR 6 PO Box 72, Armdale, Nova Scotia, Canada B3L4P4. Tel: 902-497-2582

(Taken from:
Wildlife Control Technology Magazine
July-August 1998)

THE BATS OF IOWA

Bats are among the least understood and most misrepresented of all the mammals in Iowa. While a healthy respect is due any wild animal, the fear and paranoia that many persons have for bats is both regrettable and generally ill founded. These attitudes largely result from inaccurate information and sensationalism in news stories. Misinformation, often given by knowledgeable professionals, only increases the prejudice and superstition that surrounds these unique flying mammals. This guide provides a summary of some general aspects of bat biology and, in particular, the

current information about those species that occur in Iowa. Our hope is that such information will be used not only to correctly inform the public about bats, but will help instill a more rational attitude toward these beneficial and relatively harmless animals. Since there are so many kinds of bats and their habitats are so varied, the generalizations presented pertain to the nine important insect-eating species that compose the bat fauna of Iowa. References such as *America's Neighborhood Bats* by Merlin D. Tuttle and *Just Bats* by M. Brock Fenton contain additional information about bats.

THE IMPORTANCE OF BATS



Throughout most of the world, bats play important ecological roles, having both direct and indirect benefits to the ecosystems they inhabit. Bats which are fruit and nectar eaters, for example, provide the primary and sometimes only means of seed dispersal and pollination of many topical forest plants. In fact, more than 450 products used by humans come from bat-pollinated plants. Products include food (bananas, cashews, dates, figs); wood (balsa); fiber (kapok); beverages (tequila); dyes, fodder, fuel and medicines. Some tropical bats even eat small vertebrates, including fish and frogs. There are also three species of vampire bats that consume bird or mammal blood. All vampires, however, are found from Mexico southward; none occur in the US or Canada. Most bats in North America feed on insects of various sizes and kinds. The little brown bat, for example, may capture up to 600 tiny insects, including mosquitoes, in a single hour (Tuttle 1988). The large big brown bat, on the other hand, often feeds on a quantity of moths and

beetles of agricultural importance (See Whitaker 1993 for details of pest control by bats).

Bats should be considered for what they really are—integral members of our ecosystems. As such, they deserve attention from both conservationists concerned with species preservation and the general public. Worldwide, bat populations are declining, some reaching critical levels, necessitating steps to protect them. While some efforts have been made in the United States through the Federal Endangered Species Act, most declining species are not adequately protected. In Iowa, all bats in their natural habitats and outbuildings are protected as nongame species under Section 109.42 of the Code of Iowa. Bats in a building occupied by humans are not protected until the Iowa Code with the exception of the Indiana bat which is an endangered species and is protected by state and federal law in all locations. Removal techniques are described in later sections of this publication.



MYTHS AND DISEASES

Although both ecologic and economic importance, bats have been culturally valued in only a few societies, most notably in China. In nearly all cultures, however superstitions and misinformation have prevailed, resulting in needless and senseless persecution of bats. Some false notions, such as bats deliberately entangling themselves in women's hair or that bats are blind, can be easily dismissed as old wives' tales. Other misinformed ideas are more difficult to change. Perhaps the most serious of these is that "most bats carry disease," particularly rabies and histoplasmosis. While rabies is a serious disease of the central nervous system and does occur in a small percentage of bats (less than 1/2 of 1%), the majority are free of the disease virus. Furthermore, only 11 cases of human rabies transmitted by bats have been documented in North America in more than 30 years, a far lower number than from many other wild and domestic animals.

The early suggestion that bats could carry rabies without showing clinical symptoms was incorrect because bats that contract the disease die quickly and rarely show the aggressiveness shown by

rabid dogs and cats. Like any wild animal, bats should be handled cautiously even though most species in Iowa cannot puncture human skin with their teeth. Healthy bats found in homes should be captured with a heavy glove or net and released outside to carry on their normal ecological roles as insect eaters. If any bat appears sick or shows abnormal behavior, it should be sent to the hygienic laboratory in Ames or Iowa City. Because of fear and misinformation, many bats are automatically sent for analysis. (See table 1 for "high risk" bats analyzed for rabies by State Hygienic Laboratory, Coralville, 1979-1983 and 1986-1991). This fear also causes some people to undergo the treatment for rabies. Anyone participating in post exposure treatments for rabies should be in contact with a medical doctor but also consider both details of the bat encounter and potential side effects of the treatment. Likewise, anyone handling bats regularly who is considering a pre-exposure treatment, such as the human diploid cell pre-exposure vaccination, should know the potential side-effects of the vaccine before taking it. If there is any doubt, the State Health Department or the Center of Disease Control in Atlanta, Georgia, should be contacted.

Table 1. Numbers and species of Iowa-taken bats analyzed for rabies at the State Hygienic Laboratory, Coralville, from 1979-1983 and 1986-1991. Numbers in parentheses indicate the number that tested positive for the rabies virus. Tuttle (1988) calculated >.05 percent of the bats contract rabies. The 4.1% is higher than the wild population because "sick" bats are more apt to be caught by humans and sent in for testing.

Species	1979-1983	1986-1991	Total
Big Brown Bat	247 (7)	183 (10)	430 (17)
Little Brown Bat	40 (1)	21	61 (1)
Red Bat	25 (1)	11 (1)	36 (2)
Northern Lon-eared Bat	8	16	24
Hoary Bat	5	6 (1)	11 (1)
Evening Bat	2	--	2
Silver-Haired Bat	1	1 (1)	2 (1)
Eastern Pipistrelle	1 (1)	--	1 (1)
Total	329 (10)	238 (13)	567 (23)
Percent positive of "high-risk" bats			4.1

Histoplasmosis is also a disease associated with bats. The disease organism is a soil fungus sometimes found in both bird and bat fecal droppings. Droppings of poultry and pigeons are the primary source of the infection for humans. Although the fungus grows most readily in moist areas, it has occasionally been found in droppings in hot attics where bats roost. Anyone entering

such an area should avoid stirring up and breathing dust where bird or bat droppings have accumulated. When removing droppings, use a properly fitted respirator that can filter particles as small as two microns in diameter. There is no evidence of any other risk to humans from bat droppings.

NATURAL HISTORY

As members of the Order Chiroptera¹, bats comprise the second largest mammalian order. Because they play interesting and often unique roles in the natural world, bats come in many sizes and colors, including red, yellow, and white, as well as various shades of black and brown. Although all bats can see, some have much larger eyes than others. Some have interesting facial adornments while others are rather plain looking. A few have disproportionately large ears and others rather small ones. There is even a variation in time when bats feed. Although most bats are active after dark, many of the large tropical fruit-eating bats feed during the daylight hours.

Feeding and Roosting

It is in the pursuit of night-flying insects that one of the most interesting adaptive features of bats is best developed. Bats can echolocate flying prey by emitting vocal sounds from the larynx and mouth that are usually, but not exclusively, in the ultrasonic range (up to 180 kHz)². These sound waves that are funneled by the ears into a specialized portion of the brain. So specialized is this mechanism that bats can even compensate for rapidly changing distances and angles as they approach their prey. Excellent summaries of how bats use their sonar systems are provided by Fenton (1983) and Tuttle (1988).

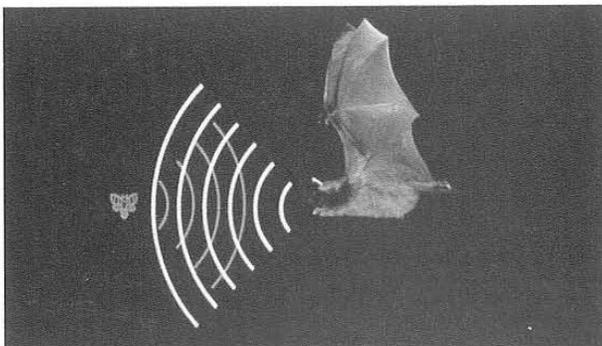
Insect-feeding bats can often be seen foraging in twilight hours along streams and forest edges or in town under streetlights. The foraging flight is erratic since bats dive after the insects, catching them with their mouths, wing tips or tail membranes. Insects too large to be handled in flight may be taken to a night roost to be eaten. Since bats prefer juicier insect parts, legs and wings usually are discarded.

When not foraging, bats utilize a variety of roosts. Some species have alternate day and night retreats, the former being the more secluded. Although Iowa's bats generally use natural roosts (e.g. loose tree bark, caves, tree cavities and foliage), some, especially the big and little brown bats, also utilize buildings or other man-made structure. In most North American species, males generally do not roost with the females and young.

When evening approaches, roosting bats become restless and often are noisy prior to departure. If their roosting shelter is large, the bats may even fly about before emerging. Upon departure, they frequently go first to water and drink by skimming the surface and scooping water with their lower jaws. Bats may then feed for more than two hours before returning to their roosts.

¹ Chiroptera is Greek for "winged hand."

² The human upper hearing limit is about 20 kHz



← Simple diagram showing how bats use echolocation to locate objects, including prey.

For many species, there is a second shorter feeding period just before dawn; but by daylight, or shortly thereafter, all bats have returned to their day retreats. Females usually modify this pattern when their young are born since nursing mothers must spend more time with their offspring.

When a bat lands in the roost, it banks slightly then catches hold with its hind feet. This maneuver, which resembles a cartwheel, puts it in the characteristic upside-down roosting position. While such a position may aid in detection of predators, the primary advantage seems to be in facilitating take-off. The bat simply releases its hind feet, spreads its wings and becomes airborne. However, many species can crawl with their wrists and hind feet along flat surfaces to jump-off points for flight or can simply flip into the air using both wings and legs.

Migration, Hibernation and Reproduction

Fall is a time for migration for most North American bats. During this time, large numbers of bats may be flying in and around caves, mines or similar cavernous structures. This phenomenon (swarming) may be associated with reproduction since mating occurs in many species during this time of year.

Although fall migration may commence as early as late July, by August most bats are "moving," and may seek temporary refuge in or on buildings enroute to their places of hibernation. Additional fat deposition, however, may occur after arrival at the wintering site (hibernaculum). In Iowa, four species- little brown myotis, northern myotis, eastern pipistrelle, and big brown bat- commonly hibernate in caves, and mines in eastern counties. A fifth species (Indiana myotis) has been found hibernating in only two places in Dubuque County. Other bats migrate southward. The only species known to overwinter in buildings in Iowa is the big brown bat. During hibernation, the bat's depressed body temperatures reduce metabolism and fat utilization. If hibernating bats are disturbed or aroused, their metabolism increases, depleting fat reserves and diminishing their chances of surviving the winter.

While most mating activity occurs prior to hibernation, some takes place during winter arousal periods when there are prolonged spells of warm water. In many bats, sperm cells are retained in the female's uterus until spring when ovulation and fertilization occurs. Gestation is

about 50-60 days, with most young being born between late May and late June, soon after females have returned to their summer roosts. Colonial species form nurseries of 50 to 1,000 or more individuals in a variety of locations, including tree hollows, under loose tree bark, and in buildings. Females of solitary species roost in tree foliage.

While most bats produce one or two young per year, the red and hoary bats regularly have three or four. When birthing, the female turns right-side up as the young is born, receiving the baby in a pouch formed by the tail membrane. Naked and with closed eyes, the young bat resembles a miniature adult. In colonial species, the young (normally left in the roost when the mothers forage) form small clusters. Returning mothers recognize their own young by their own distinct odor and/or sound.

Young bats grow rapidly and are able to fly in about three weeks when they are approximately three-fourths grown. In Iowa, this usually is in late June to mid-July. After the young are weaned, the nursery colony disperses. Hence, by late July or early August most young of the year, having left the nurseries, frequent temporary roosts elsewhere.

Ectoparasites

A variety of ectoparasites have been found in fur, in ears, and on the wing and tail membranes of bats. Several kinds of bed bugs, fleas, mites, chiggers and lice have been taken from bats in Iowa, especially colonial species. Since such ectoparasites are host specific in their feeding habits, there is no danger of human infestation by bat parasites. For further information about bat parasites, consult Fenton (1983) and Tuttle (1988).

Longevity

For their small size, bats are surprisingly long lived. This longevity, however, is a necessity for species survival given the generally low reproductive rate of one or two young per year for most species. While data are too scarce for age estimates of non-colonial species (i.e. silver-haired, red and hoary bats), the following longevity records exist for those that are colonial: little brown myotis- 33 or 34 years in other states, northern myotis- 18.5, Indiana myotis- 13.8, eastern pipistrelle- 14.8, and big brown bat- 19.0. The oldest individual known from Iowa was a pregnant female little brown myotis caught at the Manchester Fish Hatchery 23 years after it had been banded (Bowles 1983)!

FOR MORE INFORMATION ABOUT BATS-
GO TO <http://batcon.org/>

Then go to “Bats in Building Project: Dealing
with Unwanted Guests”

Bats in Buildings

For most people in Iowa, encounters with bats are uncommon, even though both big and little brown bats regularly utilize man-made structures. Bats that enter buildings are often migrants seeking temporary roosts, or young of the year that have left their nurseries. If a bat is encountered in your house, try to shut it in a room, then open a window and remove the screen. If you must catch the bat, use a net, cloth, leather glove, or place a plastic container over it and slide cardboard underneath. Take the bat outside and gently place it on a branch or toss it upward.

In winter, a hibernating big brown bat hanging in the attic is best left alone; it will find its way out in spring. Be tolerant and remember that a few hibernating bats do not constitute a threat to you. Most methods used to exclude or control small numbers are either ineffective and costly (e.g. ultrasonic sound producers) or temporary (e.g. moth balls), and may cause the bats to move from secluded retreats to places where encounters with people are more likely. It is best to seal the attic well and make sure doors fit tightly. Since bats can move from one place to another within building walls, make sure cellar doors are also tightly fitting and kept shut. Persons with bat colonies in buildings should not be unduly frightened because the bats will not attack. Examine the attic for openings or gaps during daylight hours or in the early evening, usually about 15 minutes after sunset. Wait until fall (about September) to plug openings, after the bats have left their summer roost and before cold weather has begun. Sealing thoroughly is the only safe and permanent method to exclude bats.

When it is not possible to wait until after the bats leave in fall, a half-inch polypropylene bird netting

(used to protect fruit trees) can be hung during the day where bats exit so as to allow emergence but prevent reentry. A 2-foot strip of netting can be fastened with duct tape or staples several inches above the exit opening and extended about a foot on either side and below (top photo, this page). Such methods should be attempted only in spring before young are born, or in late August after they can fly. You should never seal bats inside a building.

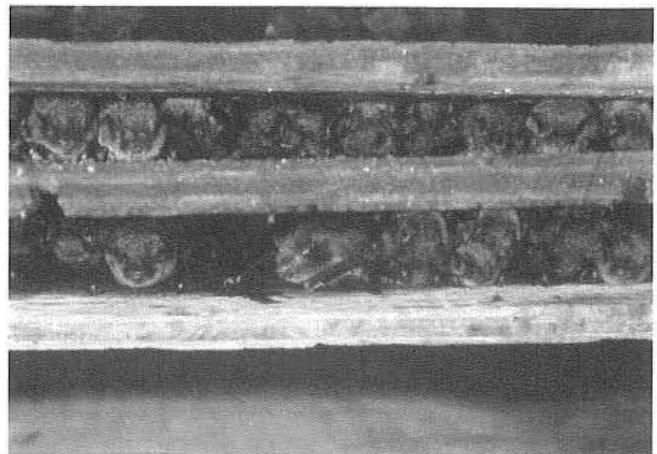
In exceptional cases, other methods may be necessary to use, but only by professionals who are familiar with bat control and who understand the habits of the species involved. Before any action is taken, you should recognize that most bat colonies do not cause problems and in most cases it is best to be tolerant and leave the bats alone.



↑ Putting up netting over known bat entrances allows them to leave but not to return.



↓ Little brown bats inside a bat house.

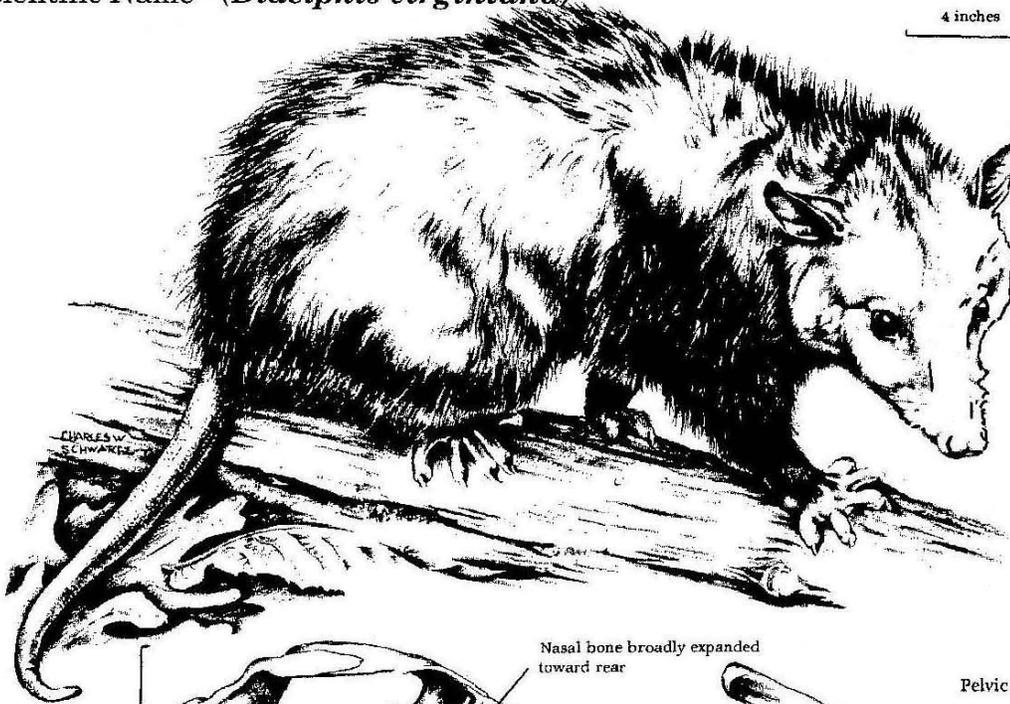


Iowa's Furbearer Resource

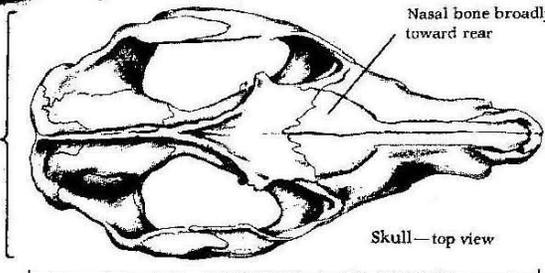
Common Name - Opossum

Scientific Name - (*Didelphis virginiana*)

4 inches 101 mm

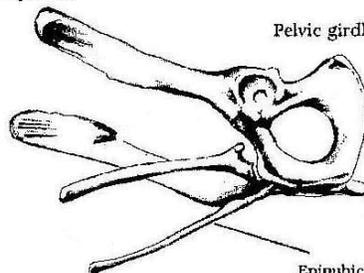


2 1/4 - 2 3/4 inches
57 - 69 mm



Nasal bone broadly expanded toward rear

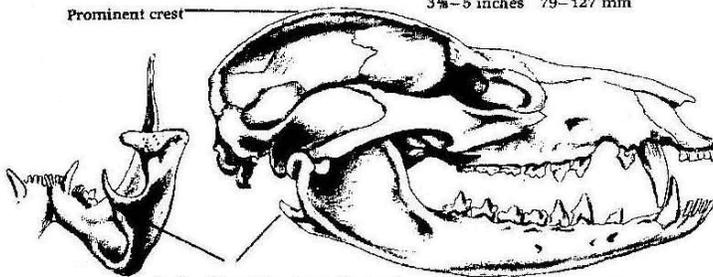
Skull - top view



Pelvic girdle

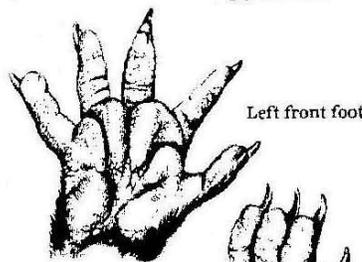
Prominent crest

3 1/4 - 5 inches 79 - 127 mm

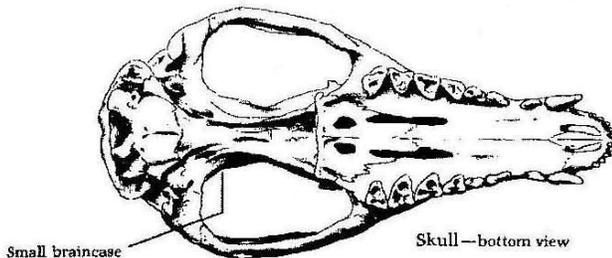


Skull - side view

Angle of lower jaw turned inward



Left front foot



Skull - bottom view

Small braincase



Left hind foot

Common Name- OpossumScientific Name- (*Didelphis virginiana*)

Description: Opossums are North America's only marsupial, or pouched mammals. An adult opossum is about the size of a large house cat and resembles a cream or gray colored rat with a pointed snout and a long, naked tail. The gray color is from the white guard hairs over black-tipped underfur. The ears are naked, black at the base and lighter at the tips. The female has a fur-lined pouch on the belly, similar to that of a kangaroo. The tail is prehensile, meaning it can be used to grasp branches or other objects. Opossums range in weight from 4 to 12 pounds but average about 6. At the same age males may be twice the size and length as females.

Habitat: Opossums are interspersed throughout most Iowa habitats, although they may prefer brushy areas near streams. Den sites include cavities in rocks, brush piles, trash heaps, hollow trees, fallen logs and old buildings.

Habitats: Opossums are shy, secretive and primarily nocturnal. They tend to be somewhat nomadic and have no fixed home range. Opossums are not aggressive and, when pursued, often climb trees in an attempt to escape. A common means of defense is feigning death which is so characteristic that it is known as "playing opossum." The animal rolls over on its side, becomes limp, shuts its eyes and lets its tongue hang out. The heartbeat is slowed. This reaction is a brief nervous shock, but the animal quickly recovers and escapes at the first opportunity. Although neither sex is particularly active when the temperature is below 20°F, females show a greater tendency than males to "hole up" during very cold weather. Their feet are adapted for climbing and the opposable toe on the hind foot assists in holding onto small branches. They have the ability to support themselves entirely by the tail if at least half of it grasps a branch.

Reproduction: Most breeding occurs in February or March, but a second peak in breeding activity occurs in late May through June after the first litters are weaned. A female may breed at either or both of these times. The average number of young is nine, but ranges from 5 to 13. Young are born blind and incompletely developed. Each is less than one-half inch long and weigh 1/175 ounce. The young climb up a fur pathway into the pouch and attach to a teat for about 60 days as they continue to develop. At 60 days of age the young are about the size of mice and the eyes are open. Young stay with the female for about 100 days. Breeding occurs the year following birth.

Food: Opossums are omnivores and will eat almost anything.

Sign: Opossum tracks are very distinctive, especially the wide angled "big toe" (opposable thumb) on the hind foot. Opossum droppings are not distinctive and vary according to the type of food eaten.

Predators: Predators of opossums include dogs, people, foxes, coyotes and great-horned owls.

Diseases: Tularemia and rabies can occur in this species although little is known about diseases infecting opossums.

Parasites: Parasites known to occur on or in opossums are mites, ticks, lice, fleas, roundworms, flukes and tapeworms.

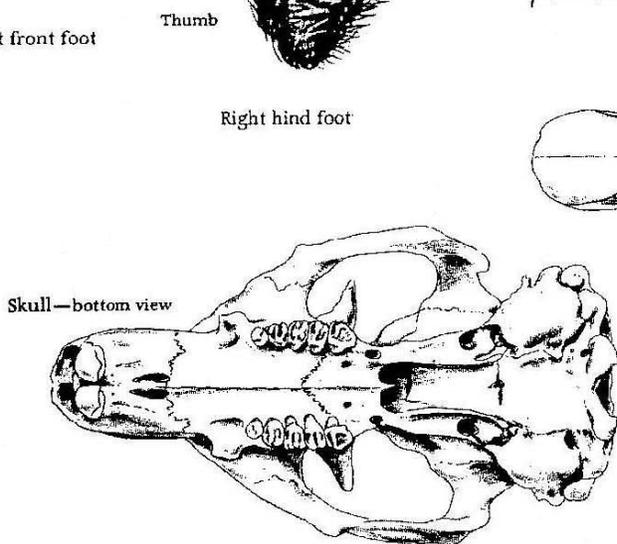
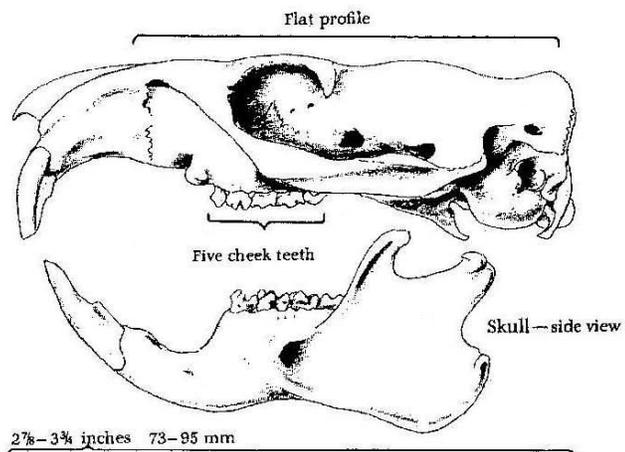
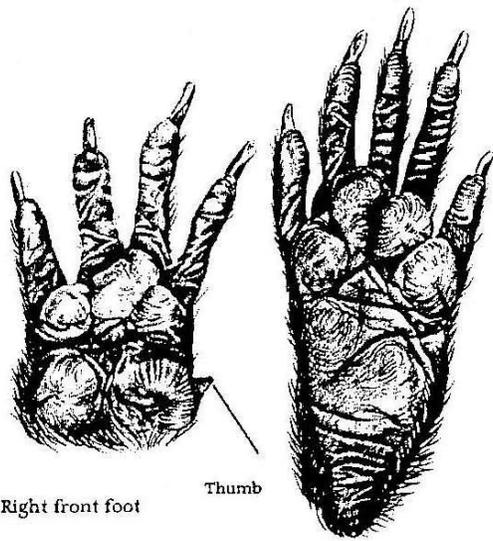
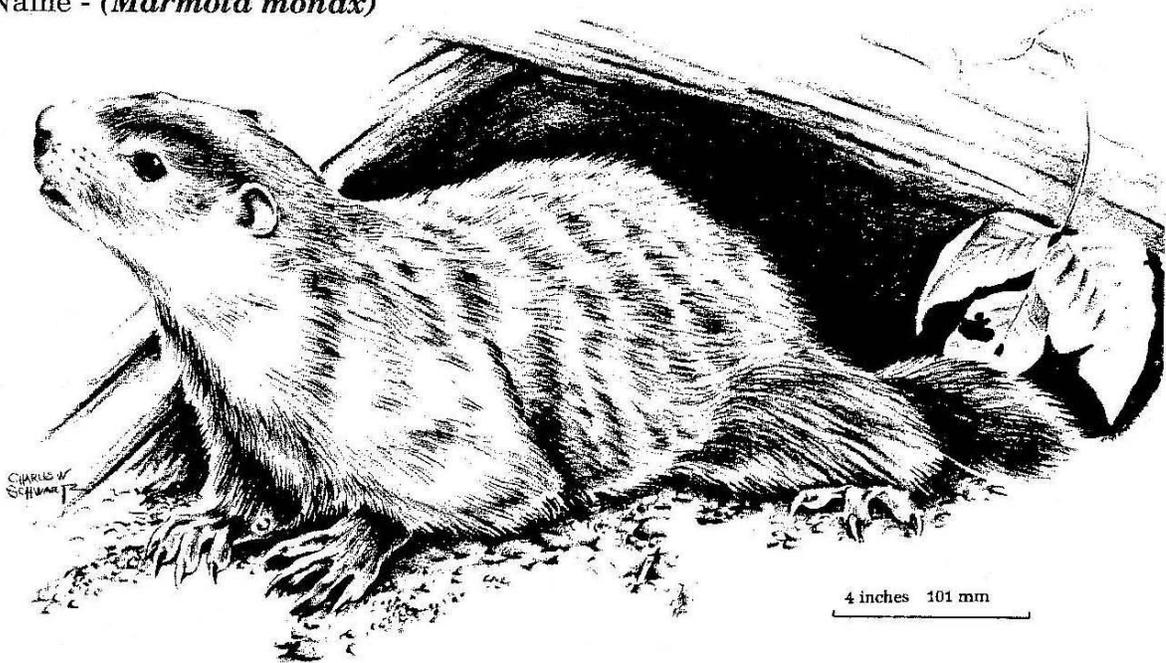
Importance: Opossums are very common furbearers. Their fur is used primarily as trim on coats; however some opossums are made into full length coats. Baked opossum is a traditional Southern dish and is quite good when prepared correctly.

Baits and lures: Almost any strong-smelling food lure or bait will attract opossums, including tainted meat, fruit or fish.

Sets: Pocket, dirt hole, blind, trail, cubby or box traps.

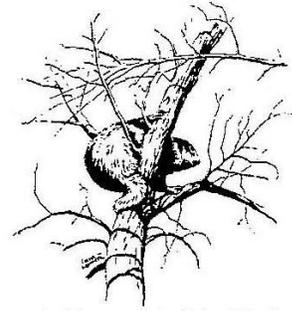
Common Name- Woodchuck

Scientific Name - (*Marmota monax*)



Common Name- **Woodchuck**

Scientific Name- (*Marmota monax*)



Description: The woodchuck, also called groundhog, is a medium-sized, stout mammal with short, powerful legs and a medium-long, bushy and somewhat flattened tail. The broad head has large and conspicuously white or pale yellow incisor teeth, a blunt nose, moderately sized eyes and small, rounded ears which can be closed at will to exclude dirt. There are four clawed toes and a small thumb with a flat nail on each front foot and five toes on each hind foot. Small internal cheek pouches are present. The body fur is long and coarse and of little pelt value. They weigh between 4 and 14 pounds and will lose one-third to one-half their autumn body weight during hibernation.

Habitat: Woodchucks prefer to live in the parts of timber habitat bordered by open land, or along fence rows and heavily vegetated gullies or streams. One woodchuck may have several burrows. Hibernating dens are located primarily in woodland areas while summer dens are in open grasslands or croplands.

Habits: Woodchucks feed and build up body fat during late summer. By late October most are curled up asleep in their underground nests. In this rapid state breathing is very slow and the body temperature is between 43°F and 57°F. Woodchucks emerge from hibernation in late February or early March. The animals may be active anytime of the day, but they are most active during the early morning and late afternoon. They spend considerable time basking in the sun, and when feeding they remain very alert by occasionally rising up to sniff the air and peer about. Woodchucks are solitary animals. Like the badger they continually pioneer burrows and dens for other animals to move into after they depart. Being a member of the squirrel family, they can readily climb trees.

Reproduction: The breeding season occurs in March following emergence from hibernation.

A male woodchuck probably mates with several females. The gestation period is 32 days, and the average litter size is five. The young are naked, wrinkled, blind, and helpless at birth, weighing about one and one-half ounces. Woodchuck's eyes open at about four weeks. They begin coming out of dens and are weaned at about seven weeks. Family groups break up in midsummer. About 25 to 50 percent of the young are capable of breeding the first spring following birth.

Food: The woodchuck is almost a complete vegetarian eating less than one percent animal matter. The plant foods consist of leaves, flowers, grasses, clover, alfalfa and certain garden crops.

Sign: Considerable den digging and tracks with claws are fairly distinguishable.

Predators: Predators include people, foxes, coyotes, dogs, weasels, mink and some large hawks and owls.

Diseases: Tularemia is the best known disease recorded in woodchucks although they are likely susceptible to a variety of other diseases.

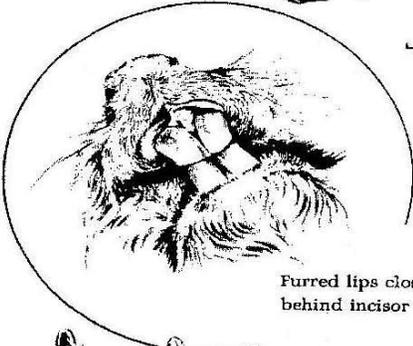
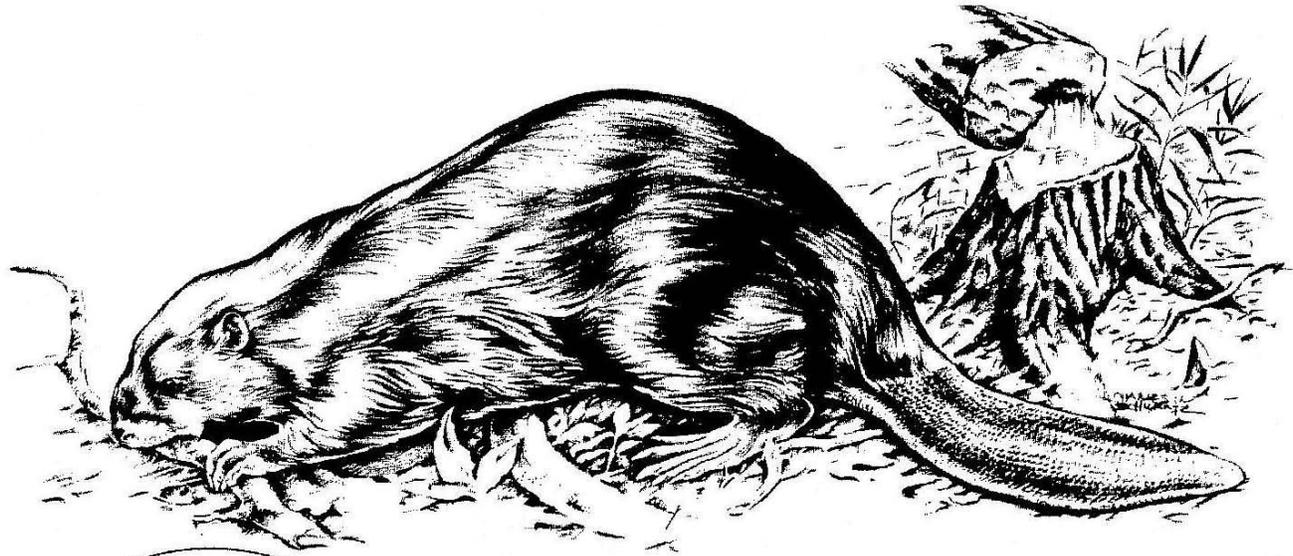
Parasites: Woodchuck parasites include ticks, fleas, adult flies, warbles and roundworms.

Importance: Seldom are woodchucks specifically trapped because of poor pelt quality and hibernation during the regular fall trapping period. They do provide some hunting opportunities during midsummer and early fall. When prepared properly, woodchuck meat is considered a delicacy.

Baits and lures: Plant material including fruits and vegetables can be used.

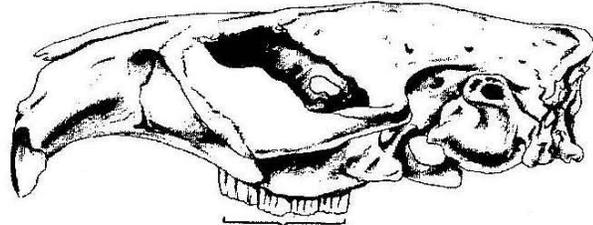
Sets: Box traps or traps set near den entrances.

Common Name - **Beaver**
Scientific Name - (*Castor canadensis*)



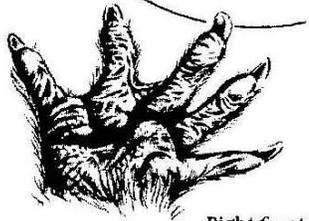
Furred lips close behind incisor teeth

6 inches
152 mm

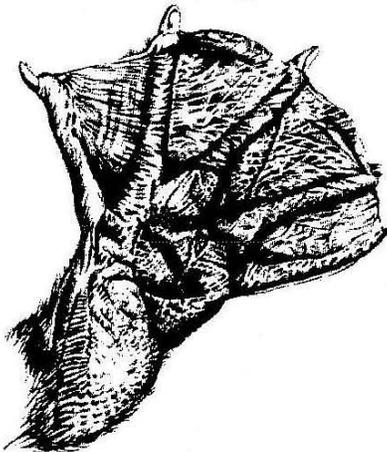
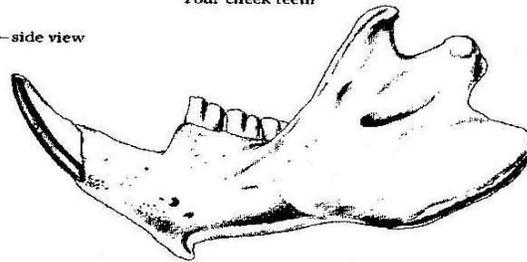


Skull—side view

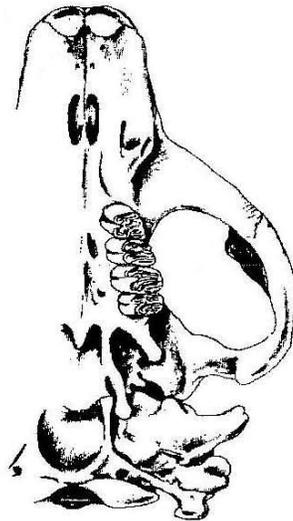
Four cheek teeth



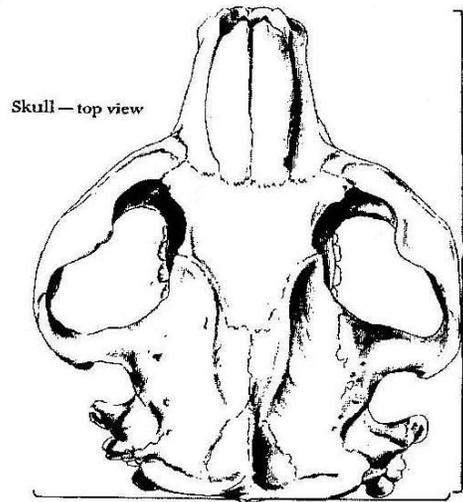
Right front foot



Right hind foot



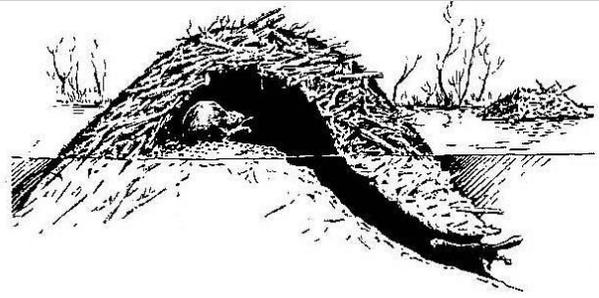
Skull—bottom view, left half



Skull—top view

4½—
5½
inches
114—
139 mm

3¾—4 inches 79—101 mm



Common Name: Beaver

Scientific Name- (*Castor Canadensis*)

Description: Beavers are the largest members of the rodent family in North America. Adult beavers weigh from 35 to 65 pounds and may reach lengths of four feet. Beaver are usually brown in color and have distinctively large protruding front teeth. The tail is large, flat, scaled, naked and black in color. The hind feet are webbed for swimming and considerably larger than the front feet. The front feet are quite dexterous in manipulating food and are often used for digging. The eyes and ears of beaver are small.

Habitat: Beavers are dependent on water for survival and are found along many of Iowa's waterways. Beaver particularly like to inhabit small rivers with willows and other brush lining the shoreline.

Habits: Beaver may stay under water for up to 15 minutes. It takes a beaver about three minutes to cut down a tree five inches in diameter. Beaver often build dams across streams and small rivers. The dams provide more permanent habitat than waterways which may dry up during periods with no rain.

Reproduction: Beaver breed from January through March with a gestation period of approximately 90 days. They young, kits, are born from April through June. There are typically three to four kits per litter. They are fully furred, have their eyes open at birth, weigh about one pound and are 15 inches long. The young are weaned when six weeks old and become mature when two years old. The young will live with their parents until they are mature. Most beaver do not breed until they are three years old.

Food: Beaver eat from one to two pounds of food daily. They eat up to 100 percent woody plants in the winter but eat only about 10 percent woody plants in the summer.

Willow and cottonwood saplings are favorite woody plants. Corn and various water plants are preferred summertime foods.

Sign: Beaver cuttings will be easily spotted if beaver are present. Beavers may also be distinguished by castor deposits and slides, leading from the water to cuttings, cornfields or other desirable food and habitat.

Predators: Coyotes, otters and mink may prey upon beaver. People and flooding conditions are primary factors limiting the population.

Diseases: Tularemia and *giardia lamblia* (see Wildlife Diseases) are most common diseases known in beavers.

Parasites: Lice, fleas, beetles, flies, roundworms and flukes parasitize beavers.

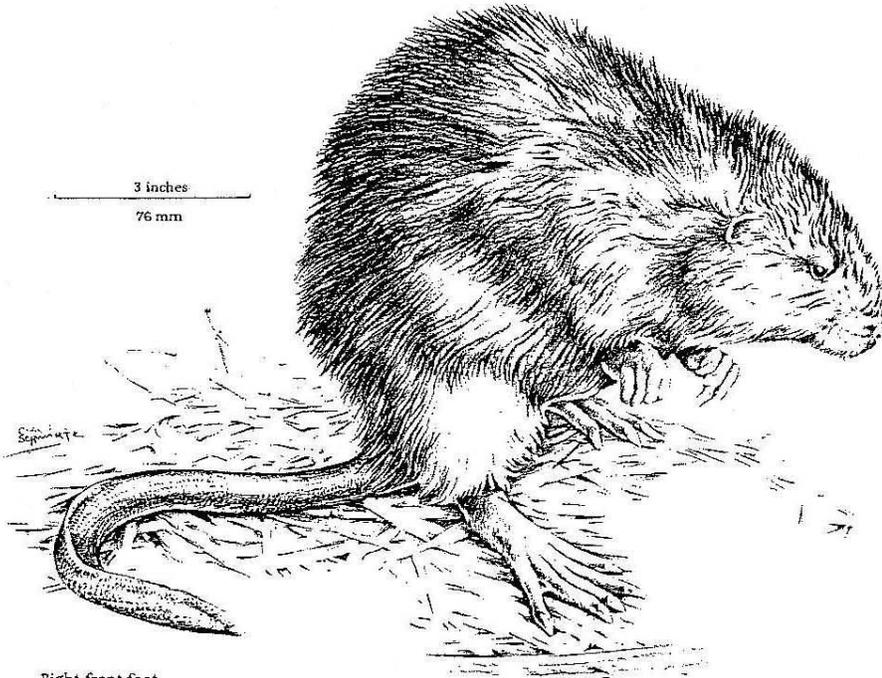
Importance: The search for beaver pelts was a major motivating factor for the exploration and later exploitation of North America. Beaver pelt hats and coats were the fashion standard in Europe in the early 1800s. Today beaver pelts are used to make coats, hats and trim. Beavers are the source of castoreum, which is used as a fixative in perfumes and as a trapping scent. They are also very delicious when properly cooked. Although beavers can cause damage to cornfields and drainage projects, they provide valuable habitat by constructing their dams.

Baits and lures: Small sticks with the bark partially peeled, carrots, corn, beaver castor, sweet flag and anise are used successfully.

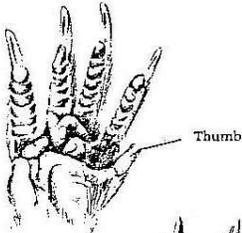
Sets: Scent mound, slide, spillway and baited sets.

Common Name- Muskrat
 Scientific Name- (*Ondatra zibethicus*)

Description: The muskrat is another member of the rodent family. The muskrat looks similar to the common rat but is larger. Muskrats vary in total length from 16 to 25 inches. There are 16 subspecies of muskrats in North America with many different color variations.

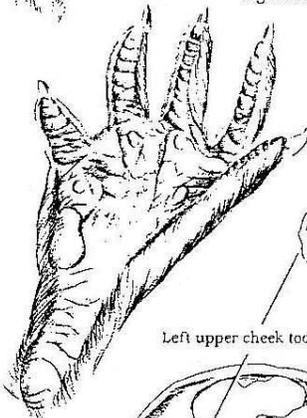


Right front foot



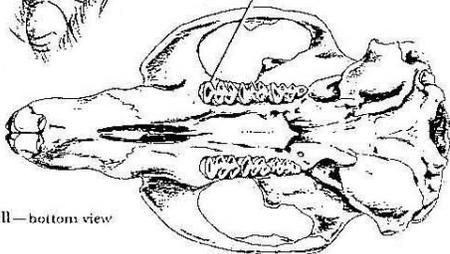
Thumb

Right hind foot

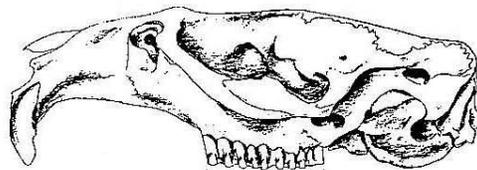


Sharp-angled enamel folds surround four or more islands of dentine in each tooth

Left upper cheek tooth row

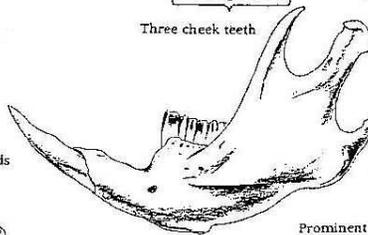


Skull—bottom view

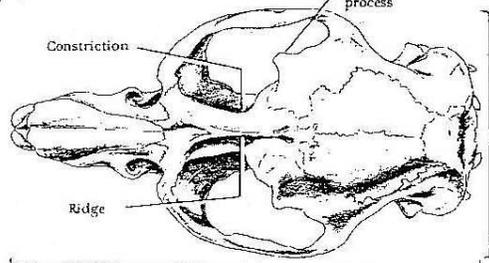


Three cheek teeth

Skull—side view



Prominent postorbital process



Constriction

Ridge

2 1/2 - 2 3/4 inches
60 - 69 mm

Skull—top view

1 1/2 - 1 3/4 inches
38 - 44 mm

Musk rats in Iowa are typically light brown to dark brown. The fur is medium length and quite dense. The tail is naked, laterally compressed (similar to an ell's tail) to aid in swimming and approximately the same length as the body.

Habitat: Musk rats are found in conjunction with almost all permanent bodies of water in Iowa. Musk rats are well adapted to an aquatic lifestyle and are dependent upon it for protection from predators. Musk rats can be found in the highest concentration in marshes. Populations as high as 35 muskrats per acre have been recorded on cattail marshes in Iowa.

Habits: Musk rats have the annoying habit of making their dens in pond dams and dikes. This is probably the single largest damage complaint concerning muskrats. Musk rats prefer to build houses (also known as huts or lodges) out of vegetation if it is present in sufficient quantities and the water will not wash it away. If no suitable place to construct houses exists, muskrats will make dens in stream banks. Musk rats will often use slides, toilets and feeding places repeatedly. They are nocturnal but may be active during the day in the spring and fall. Musk rats tend to be less active during nights with a full moon. They are most active during rainy nights. Usually solitary they may live as part of a group in houses in the fall and winter.

Reproduction: Musk rats are very prolific. In Iowa females may have two or three litters per year. Each litter commonly has four to seven young. Breeding activity begins in March and peaks in May and June. Some individuals may breed through September. As with most wildlife, adults have fewer litters and fewer young per litter when the population is above the carrying capacity. Individuals, especially males become quite territorial during peak breeding times. The gestation period is about 30 days. The young become mature when approximately six months old. Only 10 to 20 percent of newborn muskrats live longer than one year with or without trapping. The young are often referred to as kits.

Food: Musk rats are primarily herbivores, feeding upon the most abundant vegetation. Smaller animals may also constitute a part of the muskrat's diet if the preferred vegetation is not readily available. Cornfields neighboring bodies of water are often used as feeding areas. Cattail, bulrush, arrowhead, waterlily, dry grasses, soybeans and corn are favorite muskrat foods.

Sign: The muskrat signs most easily identified are their droppings and "feed beds." Feed beds are floating mats of vegetation where muskrats feed. Signs where muskrats have been digging to get roots of plants or eating cattails may also be identified. Narrow mudslides and muskrat houses are common where muskrat populations are high.

Predators: People and mink are the major predators of muskrats, but raccoons, great-horned owls, coyotes, dogs and foxes also prey on them. Hawks, cats, weasels, snapping turtles and some large fish may prey upon muskrats and their young, but are only of minor importance in Iowa. Muskrat meat, when properly prepared, is very good.

Diseases: Tularemia, hemorrhagic fever, septicemia and coccidiosis are all known to occur in muskrats.

Parasites: Musk rats may be parasitized by mites, fleas, roundworms, flukes and tapeworms.

Importance: Musk rats are the most numerous furbearer in Iowa. Most muskrat pelts are sold to European countries where they are made into moderately priced coats. Musk rats musk is used extensively in trapping scents. Musk rats may cause damage to dikes and pond dams, but they are important prey for many predators.

Baits and lures: Apples, carrots, celery, corn and fish are good baits. Anise, spearmint, sweetflag, fish oil and beaver castor are good lures.

Sets: Pocket, slide, stool, feedbed, blind and conibears in trails or den entrances.

Common Name - Coyote

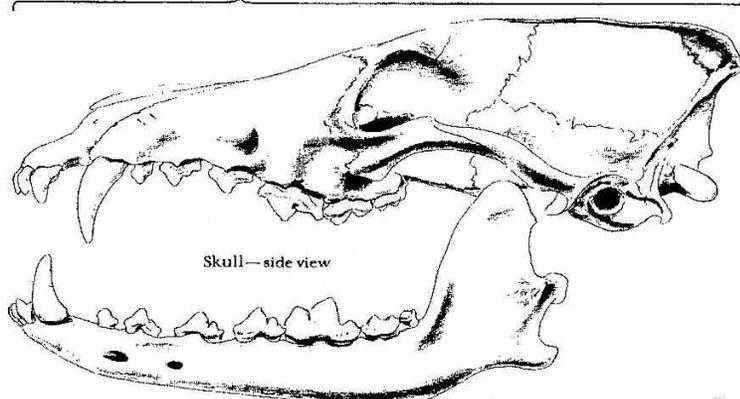
Scientific Name - (*Canis latrans*)



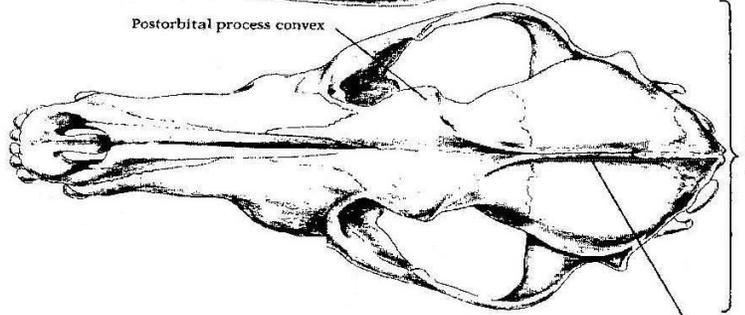
Left front foot



Left hind foot



Skull - side view

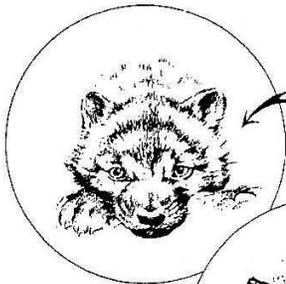


Skull - top view

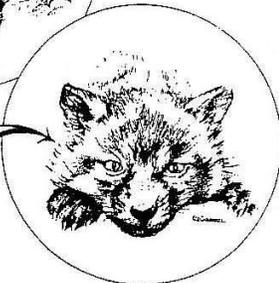
Postorbital process convex

3 3/8 - 4 1/2 inches
85 - 114 mm

Prominent crest formed by converging paired ridges



COYOTE OR DOG PUP
PUPIL OF EYE ROUND



RED OR GRAY FOX PUP
PUPIL OF EYE
SPINDLE - SHAPED

Common Name- Coyote

Scientific Name- (*Canis latrans*)

Description: The coyote is extremely doglike resembling a small German Shephard. A callus is usually obvious on the front leg in the region of the elbow. The pelage is fairly long, coarse and heavy. The coyote is easily distinguished from red and gray foxes by its larger size, coloration, shorter tail and round pupil of the eye (foxes' pupils are vertically elliptical). (See coyote and fox pup figures lower left on preceding page.) Typical Iowa coyotes are colored gray to dull yellow with the outer hairs broadly tipped in black. The throat, belly and innerleg fur is white to pale gray. Coloration can vary from barely black, to light gray and occasionally a reddish cast occurs. Adult coyotes range in length from 40 to 54 inches and in weight between 18 and 30 pounds.

Habitat: Coyotes prefer to live in brushy country, along the edge of timber and in open farmland. Dens are usually located in unused fields and are often close to timber. They may be found in a bank, under a hollow tree or log, in a rock cavity or occasionally in a dug out area in a clump of brush.

Habits: The home range of a coyote may be as small as three to four miles when caring for young, or as large as 25 to 30 miles during the rest of the year. They like semi-open country and prefer to travel on ridges or old trails. Coyotes normally hunt singly or in pairs, but in late summer or early fall may hunt with a family group. They are primarily nocturnal with peak activity periods within one or two hours of sunset and sunrise. Coyotes swim well and can run as fast as 45 miles per hour for short distances.

Reproduction: At least two-thirds of Iowa coyotes breed the first year of life. Pairing, mating and breeding activity begins in January with the peak occurring in late February thru March. Gestation is from 58 to 63 days with 2 to 15 young (usually 5 to 7) born in late April or May. Some pairs stay mated for a year while others mate for life. Pups are born blind and helpless. After five or six weeks of age they infrequently use den sites.

Food: Coyotes are carnivores, relying primarily upon rabbits and mice for two-thirds of their diet. Seasonal fruits and plants,

such as plums and mulberries, are also eaten. They are opportunists, feeding on whatever is available during a particular time. Adults will occasionally feed on domestic livestock including lamb, calves and pigs. They often feed on dead livestock and are sometimes blamed for livestock kills made by dogs. Adult coyotes carry food in their stomachs and regurgitate partially digested food for pups up to eight weeks of age.

Sign: Coyotes tracks are sometimes confused with certain breeds of domestic dog tracks. Generally they are more elongated and the toes are closer together than dogs. The hind portion of the heel pad of the front foot of a coyote is well lobed and spread horizontally in comparison to a dog's. Coyote scats are extremely varied in size and will overlap in size with red fox scat. The most conspicuous coyote sign denoting their presence is their howl.

Predators: Man is the most important predator of coyotes. Dogs and great-horned owls may take pups. White-tail deer have been known to kill coyotes with their feet.

Diseases: The most frequent diseases are distemper and tularemia. Rabies very rarely occurs in coyotes.

Parasites: The following parasites occur on or in coyotes: ticks, fleas, roundworms, tapeworms, flukes and mites. Occasionally mites cause coyotes to get mange, but mange does not cause as much mortality in coyotes as it does in the red fox.

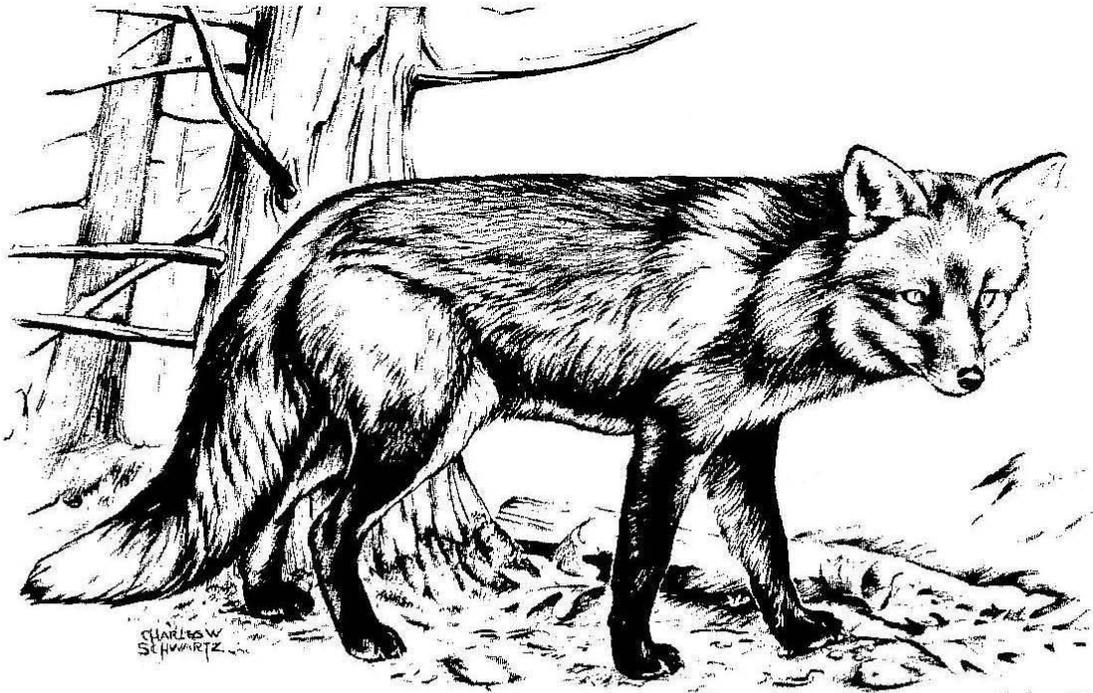
Importance: Coyote fur is both durable and attractive, and is often used in trimming for coats. Although coyotes kill some livestock and poultry, domestic dogs are responsible for many livestock kills. They are important predators and assist man by reducing rodent and rabbit populations. They may provide more man hours or recreational opportunity than other furbearers during late winter months.

Baits and lures: Commercial lures, fox urine, tainted meat baits and skunk carcasses are all affective attractants for coyotes.

Sets: Scent-post, flat, dirt-hole and urine post.

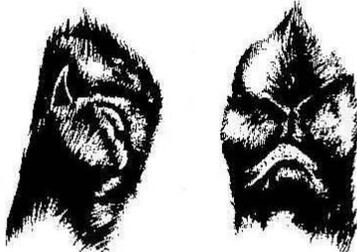
Common Name: **Red Fox**

Scientific Name: (*Vulpes vulpes*)



5 inches 127 mm

5 3/4 - 6 3/4 inches 133 - 158 mm



Right front foot—winter



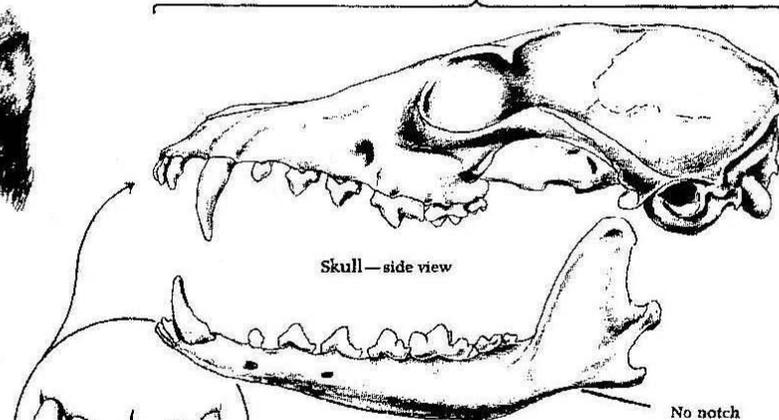
Winter

Summer



Winter

Right hind foot

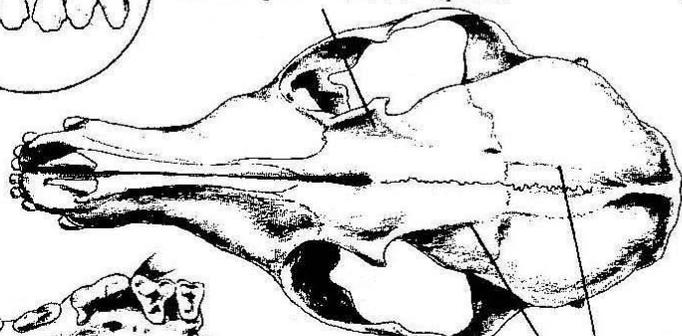


Skull—side view

No notch

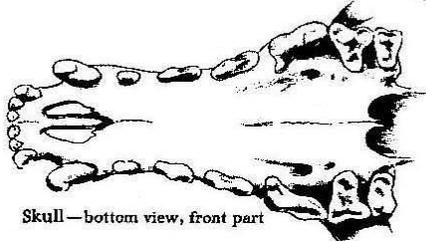
Postorbital process with shallow depression

Upper incisors—often lobed



Skull—top view

2 3/4 - 3 inches 69 - 76 mm



Skull—bottom view, front part

Surface smooth or indistinct ridges converge to form crest or come to within 3/8 inch of each other

Common Name: Red Fox

Scientific Name: (*Vulpes vulpes*)

Description: The red fox is a dog-like in appearance with an elongated, pointed muzzle; large pointed ears which are usually held erect and forward; moderately long legs; a long, heavily furred and bushy tail which is circular in cross-section, and long thick soft body fur. The pupil of the eye is vertically elliptical, a characteristic which distinguishes it from the coyote and other young animals. Typically, Iowa red foxes are colored with an orange-red coat, black legs, lighter colored underfur and usually a white tipped tail. Red foxes occur in many other color phases, including silver, cross and melanistic, but the red phase dominates. Adult foxes range from 36 to 46 inches in length and weigh between 8 and 15 pounds. A small percentage of Iowa red foxes have black tipped outer guard fur. These are referred to as a cross color phase of red foxes. Sampson foxes are poorly furred animals with no guard hairs.

Habitat: the red fox is extremely adaptable and thrives under a variety of conditions. It is considered more of a prairie animal than the gray fox and prefers to den in the farmlands interspersed with grasslands. Because Iowa's woodlands are quite small in nature, it will frequent them as well. Red foxes tend to avoid areas where coyote populations are established, but some can be found in areas between coyote home ranges. Prior to the mange outbreak in the early 1950s, foxes were most abundant in southern Iowa. Now they are more abundant in the northern two-thirds of the state. Foxes often renovate dens dug by badgers or woodchucks. Dens most likely will occur in more grassland situations.

Habits: Like more predators, red foxes are nocturnal, or active at night, and "lay up" during the day. Their day is often spent on a hillside or somewhere with good visibility to observe potential danger. Red foxes often hunt along the border of fields and woodlots or along fence rows where rodents are abundant.

Reproduction: At least 95 percent of male and female (vixen) foxes breed during the first year of life. Pairing, mating and breeding activity begins in late December, peaks in late January and continues to mid-February.

Gestation is 53 days, and the average litter size is six. Most foxes are born in late March. Pups, or kits are grayish brown, blind and helpless when born. They open their eyes at eight or nine days and stay in or near the den until four or five weeks old. They are weaned at eight to ten weeks of age. Both male and female assist in rearing young.

Food: Red foxes are carnivores feeding primarily on rodents, rabbits and birds. They also consume numerous insects and fruits as they come in season. Like most predators they are opportunistic and feed upon whatever is available at a particular time.

Sign: Red fox tracks are usually more or less in a straight line, and the hind foot is narrower and more pointed than the large front foot. The heel pad is narrow and, particularly in winter, little of the heel pad will show through the thick hair which covers the foot. Red fox scats are variable and similar to those of other canids, although noticeably smaller than most coyote scats.

Predators: The most important predators on foxes are people, dogs and possibly coyotes. Fur harvesting accounts for over 85 percent of mortalities, while roadkills, farming practices and miscellaneous mortality make up the remainder.

Diseases: Mange can be a devastating disease in high populations. Red foxes are also susceptible to coccidiosis, distemper, parvovirus, pseudorabies and rabies, but none of these diseases have as much impact as mange.

Parasites: The following parasites occur on or in red foxes: mites (which are the cause of mange), ticks, lice, fleas, roundworms and tapeworms.

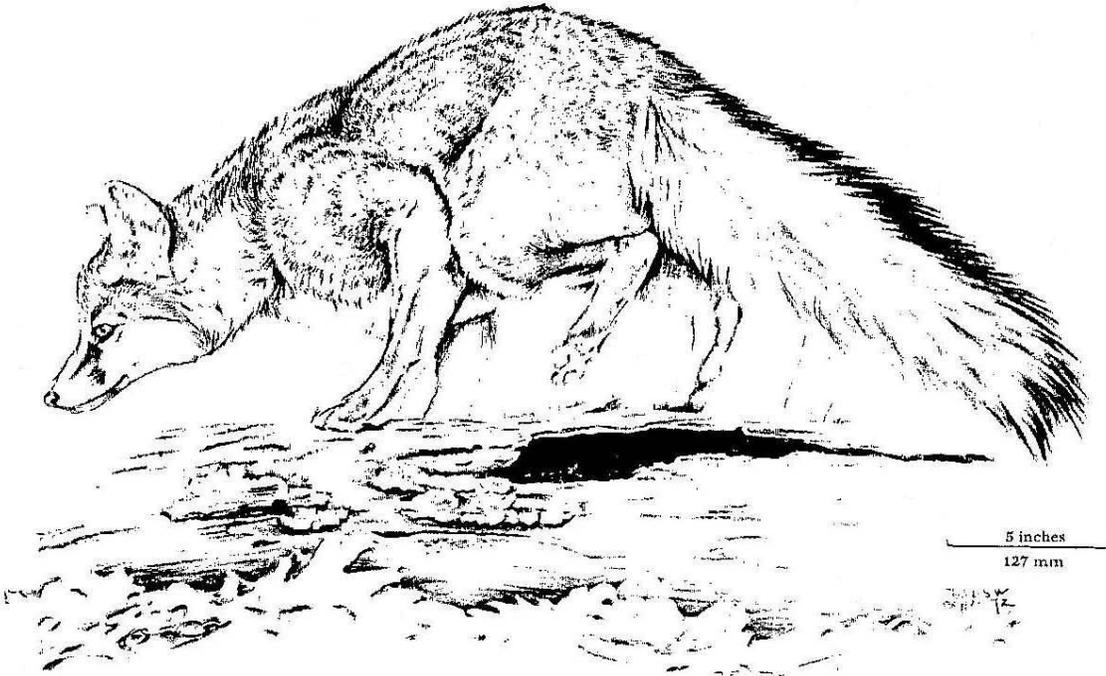
Importance: Red fox pelts are used to make many fur garments. Many different color mutations or phases of fox are raised in captivity. Red foxes are good rodent predators but have been displaced by coyotes in many areas.

Baits and lures: Commercial lures, fox urine, tainted meat baits and, in winter, skunk musk are all effective attractants for red fox.

Sets: Dirt hole, scent-post, flat set, trail set and urine post.

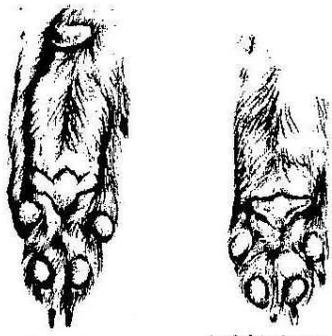
Common Name - Gray Fox

Scientific Name - (*Urocyon cinereoargenteus*)



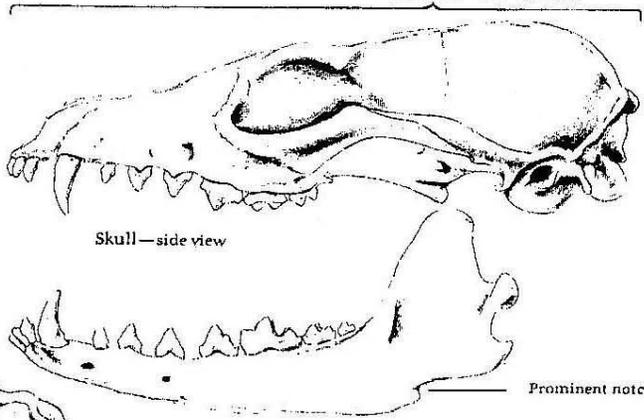
5 inches
127 mm

4 1/4 - 5 1/2 inches 120 - 130 mm



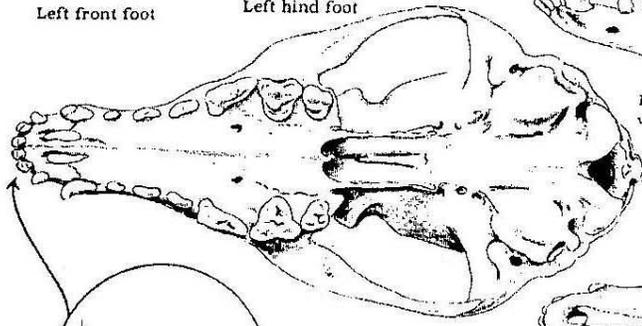
Left front foot

Left hind foot



Skull—side view

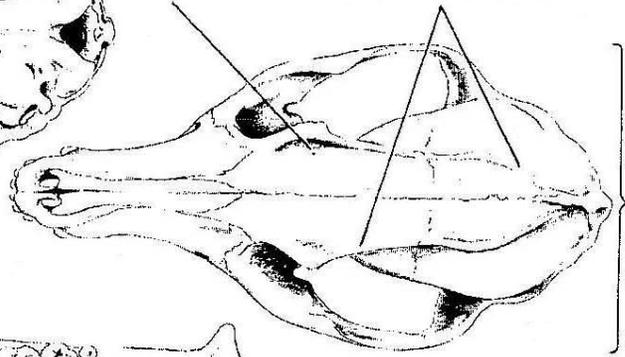
Prominent notch



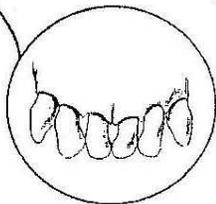
Skull—bottom view

Postorbital process with deep depression

Prominent paired ridges enclose U-shaped area more than 3/8 inch wide



2 1/2 - 3 1/8 inches
66 - 73 mm



Upper incisors—not lobed



Lower jaw—top view, left half

Skull—top view

Common Name- **Gray Fox**

Scientific Name- (*Urocyon cinereoargenteus*)

Description: The gray fox is slightly smaller than the red fox, weighing an average of six to ten pounds. Its fur has a coarser texture than the red fox and is colored by alternate bands of black and white guard hairs. There is reddish-brown fur on the underparts of the body. The tail is gray with a ridge of coarse, black hair along the top and on the tip. The total length of the gray fox is 35 to 44 inches with the tail being about 14 inches long.

Habitat: The gray fox lives in wooded areas and fairly open brushland. It is essentially an animal of warm climates. Since Iowa is in the northern part of its range, it uses dens for warmth more than the red fox. The dens are located in hollow logs and trees, hollows under rock piles or occasionally in the ground. They are filled with grass, leaves or shredded bark.

Habits: The gray fox is primarily nocturnal, but it can be seen occasionally during the day. In contrast to the red fox, the gray fox may climb trees using the front feet to grasp the tree trunk and the hind feet to push upward. Gray foxes are very secretive and shy but when necessary are fierce fighters.

Reproduction: Gray foxes breed primarily in February with a gestation period average of 53 days. Three or four pups are born in April. Gray fox dens tend to be in areas of brushy cover and are much more difficult to locate than red fox dens. At birth the pups are blackish, blind and scantily furred. They open their eyes at about ten days and remain near the den until they are approximately three months old. The family breaks up in late summer. The young breed the first year following birth.

Food: Like the red fox, the gray fox's diet consists primarily of rodents and rabbits. They are opportunistic animals, feeding upon available prey, fruits and berries as they become plentiful.

Sign: The gray fox track is smaller and rounder than that of the red fox. Scats are similar to those of the red fox.

Predators: The most important predators of the gray fox are people and dogs. Coyotes may also be a factor.

Diseases: They are similar to the ones that affect the red fox, although mange does not appear to be as devastating to the gray fox as it is to the red fox.

Parasites: The following parasites are known to occur on gray foxes: mites, ticks, lice, fleas, and roundworms.

Importance: Most gray fox pelts are sold to coat manufacturers in Germany. The coats are not as silky as red fox coats but are very durable. Gray foxes are good predators of rodents and cause almost no livestock damage.

Baits and lures: Commercial lures, fox urine, tainted meat baits, rodents and skunk musk are all effective attractants for the gray fox.

Sets: Dirt hole, scent-post, flat set, trail set and urine post.

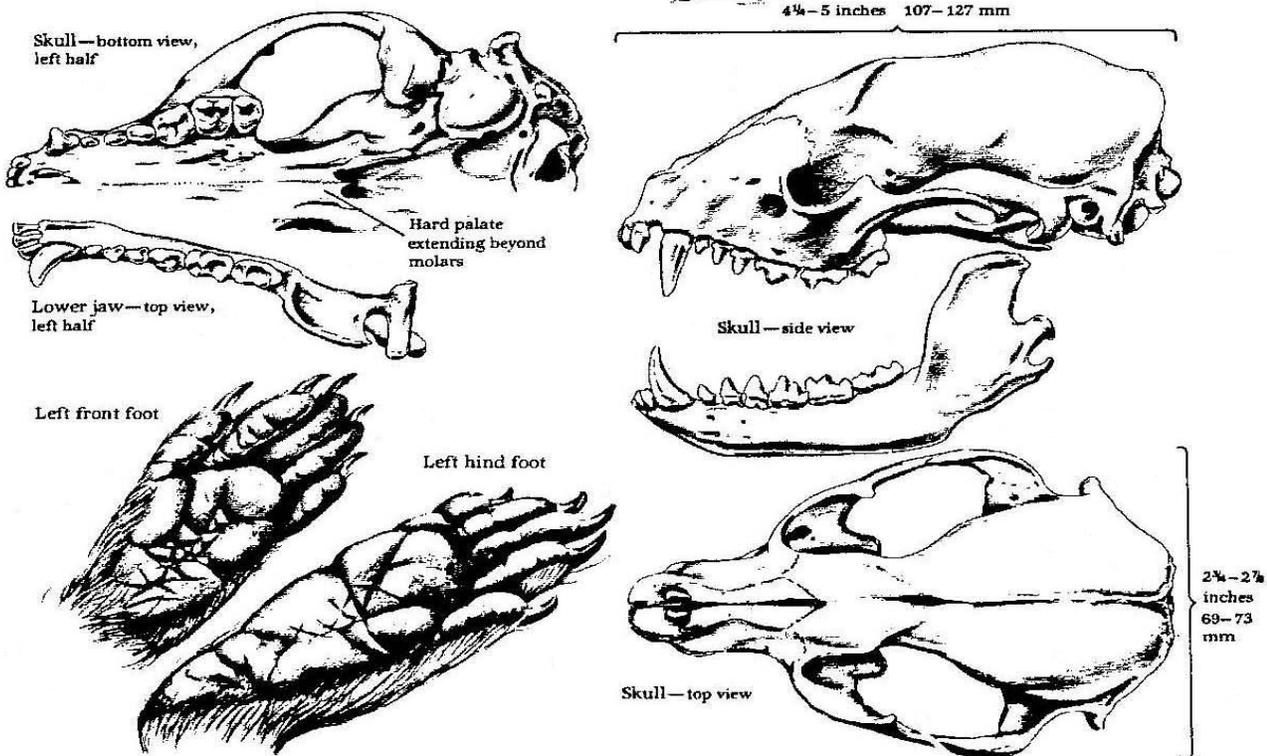


Common Name- Raccoon

Scientific Name- (*Procyon lotor*)

Description: The raccoon is a stocky, medium-sized furbearer. The fur on the back is usually a grizzled black, washed with gray or yellow. The belly fur is lighter in color and of little importance to pelt quality. Pure "red," black, albino and other individual colors do occur but are rare. All raccoons

have distinctively darker hair around their eyes that forms what looks like a mask. Their tail is distinctive because it has alternating bands of light and dark fur. Raccoons have a broad head with a pointed muzzle. The feet are naked and possess five prominent toes. Adults have a total length in the range of 24 to 41 inches. They typically weigh from 8 to 20 pounds. The heaviest raccoon recorded (from Wisconsin) weighed over 59 pounds; however



it is very uncommon for a raccoon to weigh over 25 pounds.

Habitat: Raccoons appear throughout Iowa. They can be found just about anywhere that food, shelter and water are available. The largest density occurs near permanent bodies of water which offer a wide variety of food and den sites. Raccoons den in hollow trees, junk piles, abandoned buildings and abandoned burrows. Raccoons are often found in cities and towns. The home range of raccoons in Iowa is about 250 acres at any one time. Home ranges overlap extensively and may change as different foods become available or as they are exhausted.

Habits: Raccoons are generally nocturnal, but they may be seen out in the daytime, especially early in the spring or fall. Raccoons will try to gain as much weight as possible in the fall, storing up a fat reserve for the cold days of winter. For this reason, raccoons have a voracious appetite in the fall. Shifts in the raccoon's diet occur rapidly in the fall as different foods become available. Raccoons will often den up during extremely cold or severe weather and take a short winter sleep, but they do not hibernate.

Reproduction: Generally, 60 percent of the females breed when one year old, while 90 percent of females over one year old will breed. The number of yearling females that breed may fluctuate greatly depending on population density. Fewer yearlings will breed if the population is high. Males may breed when one year old, but rarely do so because older, more aggressive males out compete them for mates. Males are sexually active from late December through May or June. Most breeding activity takes place in February. Females have one litter per year. There are usually three to four young per litter. Gestation is typically 63 days. Most young are born in late April or during May. The young are weaned when eight to ten weeks old and may be seen out of the den at this time. Males do not help raise the young. The young may stay with the female as a loosely knit family until the following breeding season.

Food: the raccoon is a true omnivore. Some of the wide variety of foods consumed by the raccoon includes birds, eggs of all kinds, crayfish, insects, fish, frogs, mice, wild fruit, corn

(particularly sweet corn in the milk stage) and nuts. Raccoons will eat the food that is most readily available to them but may become quite selective when food is abundant. In the spring and early summer over one-half of the raccoon's diet is animal matter. In contrast, in the late summer and fall, up to 78 percent of the raccoon's diet is plant matter. Examination of the raccoon droppings will reveal the raccoon's current diet.

Sign: Raccoon tracks are quite distinctive. Tracks may be found anywhere, but they are most easily seen and studied along muddy shoreline. Raccoon droppings (scats) are also distinctive and may be found near denning areas.

Predators: People are the major predators of raccoons. Nearly 90 percent of all raccoon mortalities are caused by humans. Fur harvesting accounts for roughly 70 percent, while roadkills account for about 15 percent. Between 1972 and 1987, fur harvesters took over 250,000 raccoons annually in Iowa with a record 390,000 harvested in 1986. Since 1986, harvest has declined substantially. Great-horned owls, coyotes, as well as dogs may all kill young raccoons.

Diseases: Canine and feline distemper, parvovirus, pseudorabies, tuberculosis and rabies are all known to occur in raccoons. The incidence of rabies in Iowa raccoons, however, is very small.

Parasites: Raccoons may be parasitized by ticks, lice, fleas, botfly larvae, roundworms, flukes and tapeworms. Recently the raccoon roundworm has received much attention (see Wildlife Diseases).

Importance: Raccoons are one of the most economically important furbearers in Iowa. Raccoon pelts are used to make many types of fur garments. The baculum is a novelty item and may be marketed as an "Arkansas toothpick" or a swizzle stick. Many people consider raccoons to be a delicacy.

Baits and lures: Many baits and lures attract raccoons; apples, corn, fish, peanut butter and marshmallows are common baits. Honey, anise, apple juice and shellfish and fish oils are common lures.

Sets: Pocket, dirt hole, blind, trail, cubby and cage trap sets.

Common Name - Mink

Scientific Name - (*Mustela vison*)



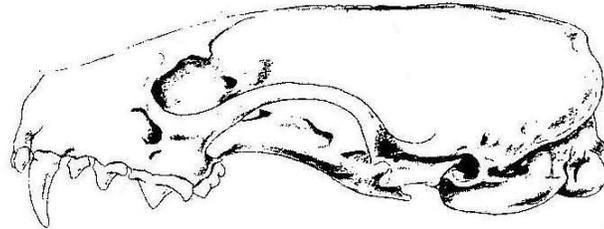
Right front foot



Right hind foot

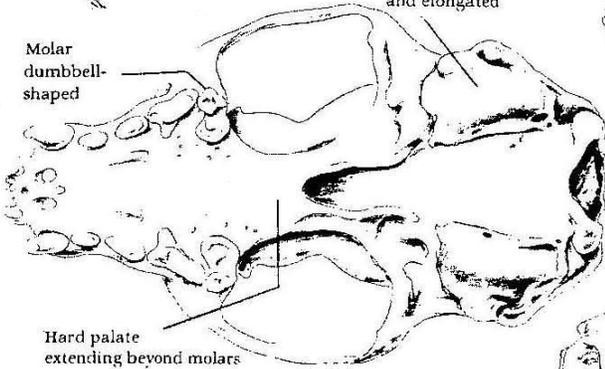


Auditory bulla greatly inflated and elongated



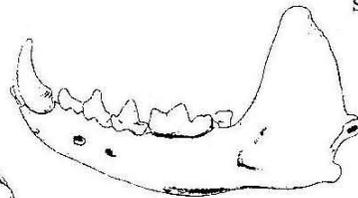
Skull—side view

Molar dumbbell-shaped

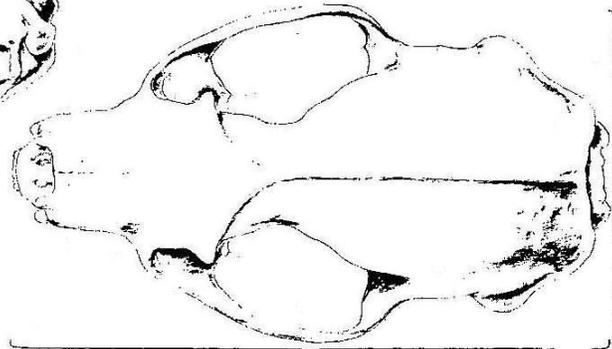


Hard palate extending beyond molars

Skull—bottom view



Lower jaw—top view, left half



1 1/4 - 1 1/2 inches
31-38 mm

2 1/4 - 2 3/4 inches 57-69 mm

Skull—top view

Common Name- **Mink**

Scientific Name- (*Mustela vison*)

Description: The mink is a member of the mustelid family. It is a small, slender, weasel-like animal. The fur is short and not very dense. Mink have short legs and inconspicuous ears. The tail is bushy and is usually one-third to one-half the length of the body. Native Iowa mink are usually brown in color with a white patch of fur on the underside of the throat. Other color phases do occur, but these are often individuals that have escaped from mink ranches. Males are generally larger than females of the same age. Males weigh in the range of one and one-half to three pounds, while females weigh in the range of one to two pounds. The total length of males is usually 23 to 28 inches, and total length of females is usually 18 to 22 inches. Mink have a very acute sense of smell, but their eyesight and hearing are moderate at best.

Habitat: Mink are almost always found in conjunction with water because of the diversity of food that is available in aquatic environments. Good places to find mink are lake shores, marshes and stream banks that have trees or rocks to provide shelter. The type of habitat available for mink is usually the controlling factor of mink populations. Mink are not bound to the water as muskrats are. Some mink may be found a considerable distance from water if sufficient food and shelter are available.

Habits: Mink are very inquisitive animals. They will investigate nearly all holes, crevices and hollow logs that are along their lines of travel. Mink often follow shorelines and streambanks in search of food. They often leave large piles of feces around the entrance to their dens.

Reproduction: Mink breed in late February through early April. They undergo the physiological process of delayed implantation. The gestation period averages 51 days. Mink have one litter per year, with usually four to five young per litter.



The young are known as kits and are usually born in May. One male may mate with several females, but it will usually stay with the last one to assist in caring for the young. Mink will use abandoned muskrat dens or burrows of some other mammal to live in. Most do not live longer than three or four years and can breed when one year old.

Food: Mink are carnivores. They prefer freshly killed food rather than carrion. Some of the major foods that mink eat are frogs, mice, fish, rabbits, birds, crayfish, squirrels and muskrats.

Sign: Mink tracks can often be found along shorelines. A good way to learn about mink is to follow tracks along a snow-covered creek in the middle of winter.

Predators: People, dogs, owls, foxes and coyotes are all predators of mink.

Diseases: Mink may be parasitized by roundworms, flukes, tapeworms, protozoa, mites, lice, fleas and flies.

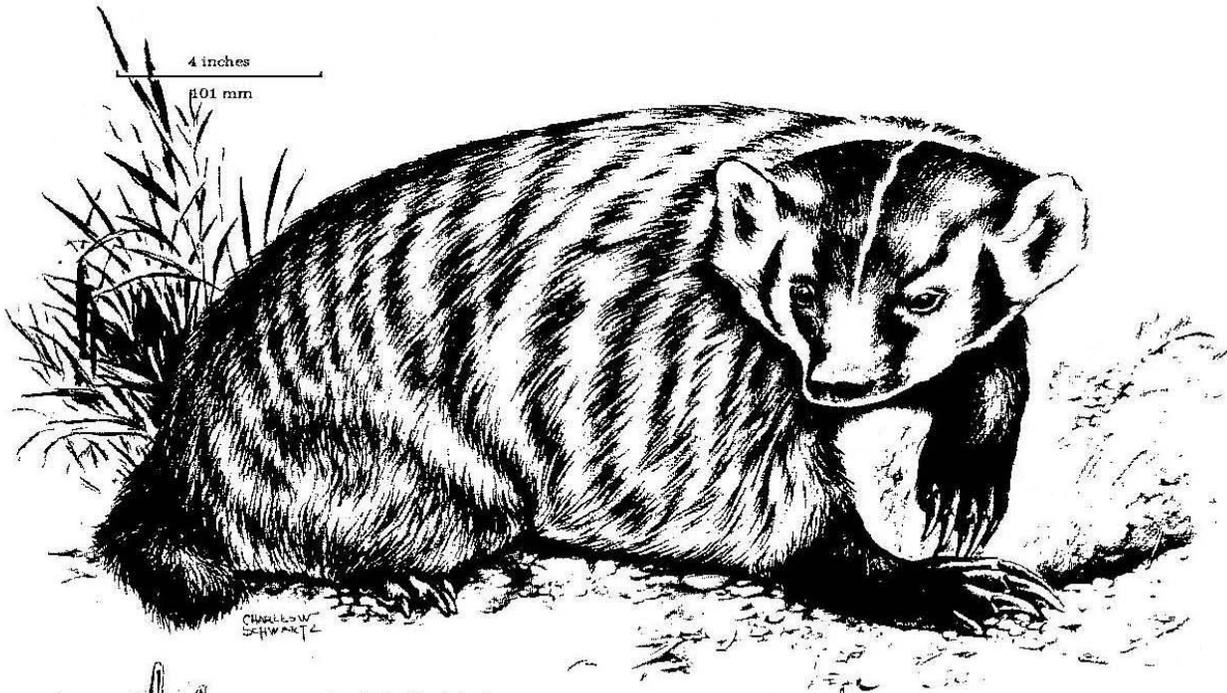
Importance: Mink have long been thought of as the leaders in the fur industry. Most mink garments are made from mink raised in captivity. Mink "ranching" became popular in the early 1900s when breeders were able to selectively breed for different colors of mink. Wild mink are important predators.

Baits and lures: Fresh fish, muskrat, mice, squirrel and mink carcasses are used as bait. Mink musk and fish oil are used as lure.

Sets: Pocket, blind and conibears in trails or covering holes and dens.

Common Name - Badger

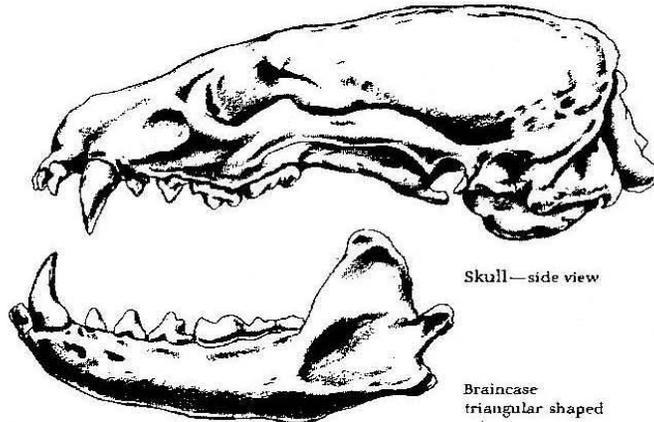
Scientific Name - (*Taxidea taxus*)



Right front foot

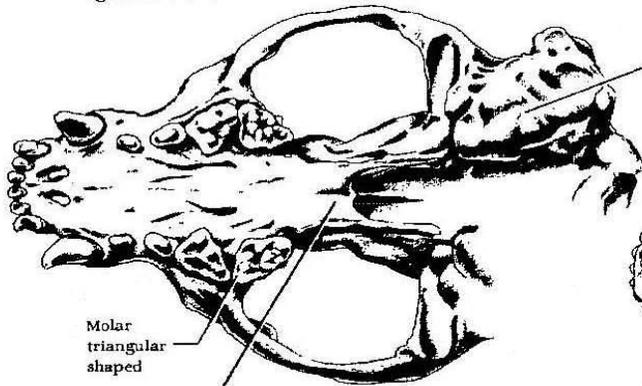


Right hind foot



Skull—side view

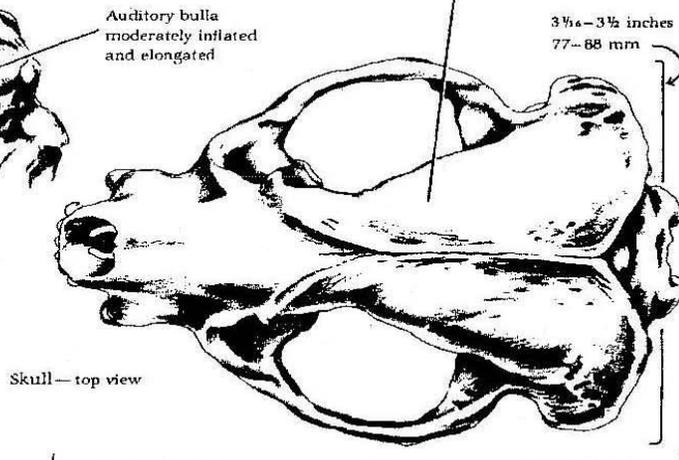
Braincase triangular shaped



Molar triangular shaped

Hard palate extending beyond molars

Skull—bottom view



Skull—top view

3 3/4 - 3 1/2 inches
77 - 88 mm

4 1/4 - 5 1/4 inches
107 - 130 mm

Common Name- Badger

Scientific Name- (*Taxidea taxus*)

Description: Badgers are medium-sized heavy-bodied animals. Adult females average about 17 pounds in weight while adult males average 24 pounds. They range from 26 to 35 inches in length. Badgers have wide, flattened bodies, short, powerful legs and short, bushy tails. They are adapted for digging, having large front feet with massive claws over an inch long. The fur on the upper parts is grizzled gray and black with a slight yellowish tinge. The underparts and the short tail are yellowish. A white stripe runs from the nose to the crown of the head and tapers off on the neck or back. The badger has white cheeks and an elongated black spot in front of each ear. The feet are black.

Habitat: Throughout most of its North American range badgers prefer open country, living in the prairies and plains where ground squirrels and other small burrowing mammals are abundant. In Iowa, badgers are distributed throughout the state, although they are less abundant in timbered regions.

Habits: Badgers are active mostly at night, spending daytime underground. Body fat is stored during late summer and serves as an energy reserve for the coming winter. Badgers do not actually hibernate but do spend most of the winter underground, occasionally coming out on warmer winter days. Although they do not spray they will release a strong musk odor when disturbed. Badgers will often make a hissing sound when they feel threatened. Badgers have an insatiable desire for digging. They have often been called pioneers because they dig numerous dens that are available for other animals, such as fox, raccoon and skunks, to live in once they have departed.

Reproduction: Very little is known about the reproduction of the badger. Mating probably takes place in September. There is a delayed implantation of the embryos until February or later, and the embryos then develop in approximately five weeks. This makes a total of only about six weeks for the entire period of development, although the whole gestation period

may last seven or more months. A single litter is born in April or May and averages three young. At birth the young are furred and blind. Eyes open at about five weeks of age. Weaning occurs when the young are about half grown, but the female continues to bring food to them. The young stay in and around the burrow until fall. Some females will breed when one year old.

Food: Badgers are strictly carnivores with their most important foods being rodents and rabbits. When the ground squirrels are not plentiful, mice of all kinds are sought and eaten. In the wild, badgers do not seem to require water to drink since they often live far from surface water.

Sign: The most obvious indication that badgers are present is the occurrence of tunnels, dug in open fields, with a large mound of dirt in front of them. Often the badgers will excavate several shallow holes at the same site when digging out a gopher. Badger tracks are sometimes mistaken for coyote tracks but can be distinguished by the five toes and the claw marks of the front feet, which are well in front of the toe marks. Badgers normally cover their droppings (scats) or leave them underground.

Predators: People are of the major adverse factor affecting badger populations.

Disease: Very little is known about badger diseases. They are apparently susceptible to tularemia and rabies.

Parasites: Ticks, fleas and roundworms parasitize badgers as do many other kinds of parasites.

Importance: Few fur harvesters pursue badgers. Some badgers are taken in traps set for other predators, but most are trapped or shot near areas that they have dug extensively. Badger fur is used almost exclusively as trim.

Baits and lures: Most baits and lures used for fox and coyote will attract badger.

Sets: Dirt hole and scent-post sets. Longer chains and stakes will prevent the captured badger from digging them up and escaping.

Common Name - Striped Skunk

Scientific Name - (*Mephitis mephitis*)



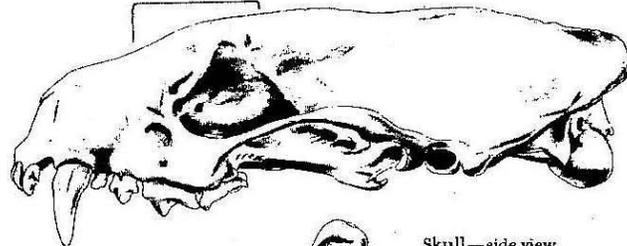
Left front foot



Left hind foot

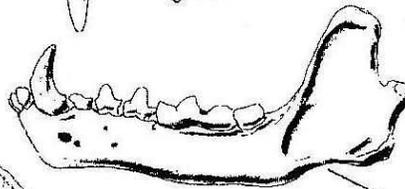


Well rounded

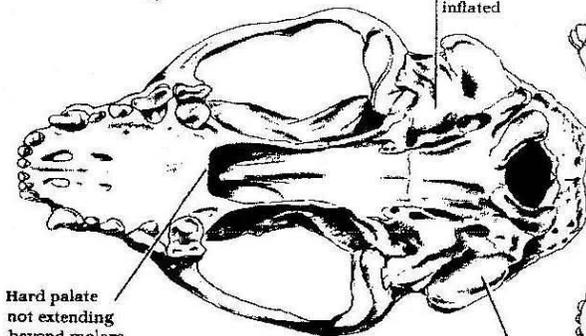


Skull—side view

Auditory bulla not inflated



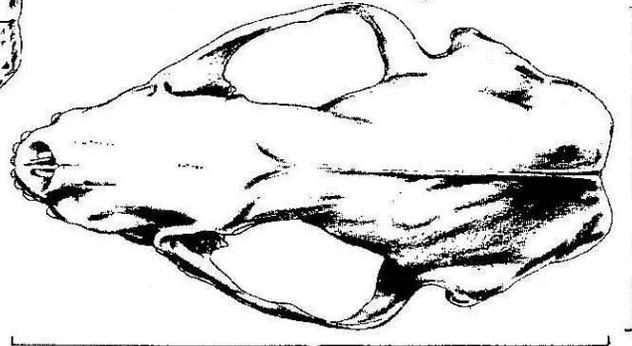
Obvious notch



Hard palate not extending beyond molars

Mastoid region not inflated

Skull—bottom view



1 1/2 - 2 inches
38 - 50 mm

2 1/4 - 3 1/4 inches 57 - 79 mm

Common Name- Striped SkunkScientific Name- (*Mephitis mephitis*)

Description: A member of the weasel family, the striped skunk is black with white on its head and two stripes that begin at the neck and extend back toward the hip region. The length of these stripes is quite variable, and a few skunks are completely black. The large, bushy tail is mainly black but is mixed with white to varying degrees. Skunks are wide-backed with a relatively small head. Most striped skunks weigh from four to ten pounds.

Habitat: Skunks are at home in a variety of habitats but prefer timber borders, brushy field corners, fence rows, rock piles, old building sites and open grassy fields. They customarily den in the ground, but occasionally rock piles, refuse dumps, stumps and buildings will be used as denning sites. They often utilize dens discarded by other animals. Skunks gather leaves and grass to build nests within the den site.

Habits: Striped skunks may leave their dens at any hour of the day but usually begin foraging in the late afternoon and are active most of the night. Because of these nocturnal habits, they locate prey by the sense of smell and hearing rather than sight. Skunks build up a good layer of body fat in the fall. Their winter activity depends upon the temperature. They may go into a winter sleep for many weeks or months if cold weather persists. Skunks are generally not sociable animals but they will den together for warmth. It has been suggested that such communal denning can be a factor in the spread of rabies. Striped skunks will spray a very pungent musk when disturbed. The musk may travel 10 feet or more depending on the wind.

Reproduction: Mating occurs in March and, after a gestation period of 63 days, an average of six young are born in May. At birth the young weigh about one-half ounce each. They are wrinkled and almost naked but possess the adult's characteristic black and white markings. Ears and eyes are closed. Claws are well developed and at 13 days young are fully haired. Eyes open at about three weeks, and young assume a weakly defensive pose at that time. Weaning is complete at two months of age, and at that time they are first able to spray.

Food: Skunks are omnivores and eat both plant and animal foods. Insects and insect larvae and earthworms are important food for skunks when in season. Skunks occasionally are nuisances for beehive owners, feeding on bees and honey with no apparent concern for being stung. They will eat birds and bird eggs and eat large numbers of small mammals as well as scavenge on the carrion of larger animals.

Sign: Tracks and the animal's distinctive smell are the surest signs of skunks.

Predators: With the exception of great-horned owls, few animals are foolish enough to try to kill skunks. People and farm dogs are also primary predators.

Diseases: Rabies is by far the most important disease of skunks, and they readily transmit it to other animals and humans if they bite them. Over 60 percent of the skunk population likely carries rabies. Some skunks may transmit rabies even though outwardly they appear very healthy. While they are susceptible to other diseases, the concerns for rabies often mask the others.

Parasites: Mites, lice, ticks, fleas, roundworms, flukes and tapeworms are parasites of this species.

Importance: Skunk fur coats were very fashionable in the 1920s. Today there is not a very large market for skunk pelts. Usually only the black fur is used for making garments. Skunk scent is used in some trapping scents and has recently been used instead of mace in human repellents. Their appetite for insects, insect larvae, mice and other small mammals helps somewhat to counter the other offensive aspects of the species.

Baits and lures: Skunks are easily trapped and are attracted to most commercial fox and coyote lures, scents and baits. Fresh or tainted meat and fish or fish oil are also good attractants.

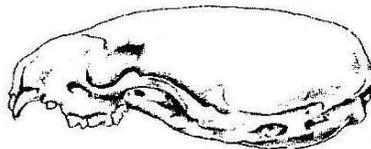
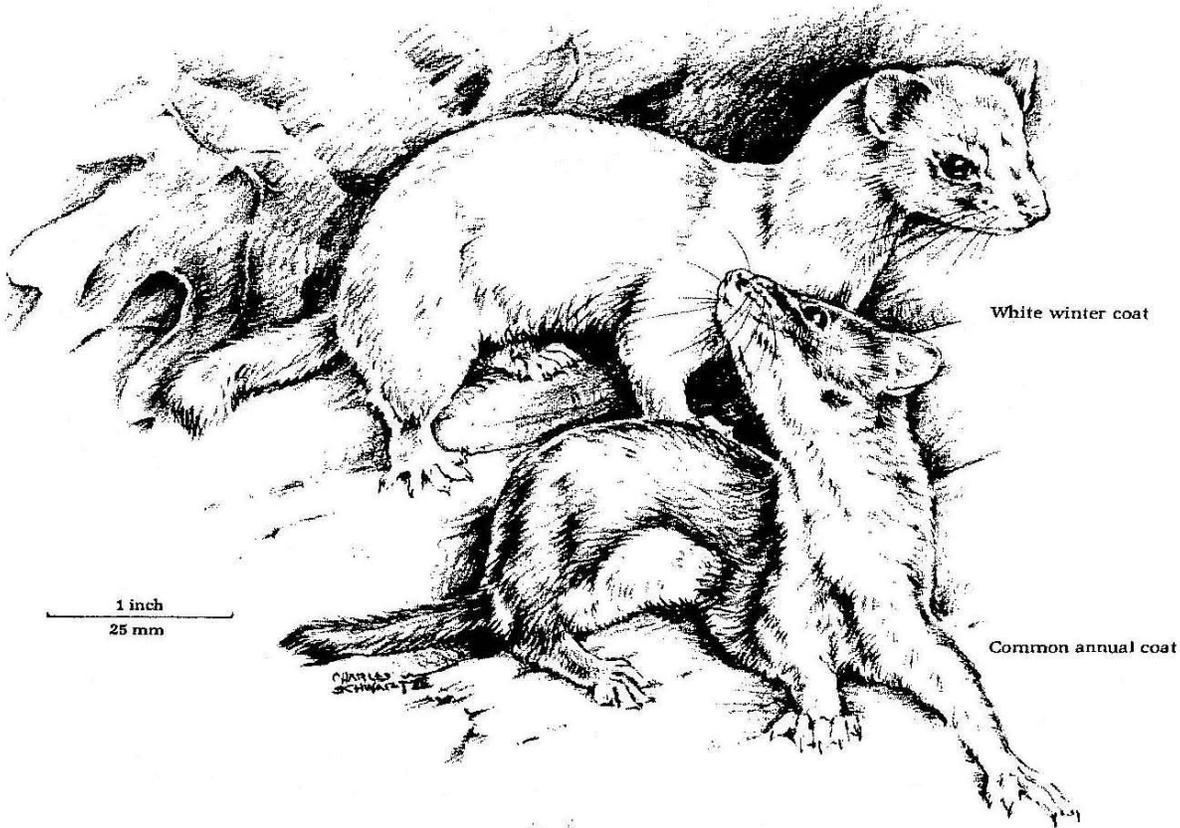
Sets: Dirt hole, scent-posts, cubbies and cage traps.

Common Name - Weasels

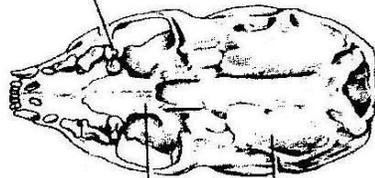
Scientific Names - *Least Weasel (Mustela nivalis)*

Short-tailed Weasel (Mustel erminea)

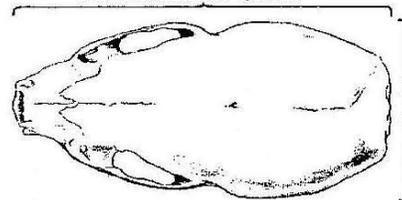
Long-tailed Weasel (Mustela frenata)



Molar dumbbell-shaped Skull—bottom view



1 1/16 - 1 3/16 inch 26 - 30 mm



1/2 - 5/16 inch
12 - 14 mm

Common Name- WeaselsScientific Name- Least Weasel (*Mustela nivalis*)Short-tailed Weasel (*Mustel erminea*)Long-tailed Weasel (*Mustela freata*)

Description: Weasels are also members of the mustelid family. They are extremely small. An adult least weasel may weigh as little as one and one-half ounce! Weasels are long, slender animals with head, neck and body about the same diameter. They have very short legs. Their fur is short and very soft. Weasels may turn to an all-white pelage in the winter in which case they are referred to as ermine. Generally long- and short-tailed weasels are 8 to 20 inches long including their tail. They usually weigh from 3 to 12 ounces depending on the species. The species of weasels found in Iowa are listed above in ascending order of size.

Habitat: Weasels live in a variety of habitats but prefer woodlands, thickets and brushy fence rows near available drinking water. Their home is a shallow burrow, often the former abode of a mole, ground squirrel or mouse. Weasels may also live in rock piles, under the roots of trees and, on occasion, in an old building where mice are plentiful. Within the burrow they construct a nest of rabbit or mouse fur, grass and sometimes feathers.

Habits: These mammals are very suspicious and inquisitive and are continually investigating their surroundings. They hunt both day and night but are more active at night. So persistent are weasels in their hunting activity that in a single night they may travel up to 3 ½ miles and yet remain very close to their den site. In spite of their small size, weasels may attack animals larger than themselves often inflicting fatal bites near the head region. Because of their agility and speed they can follow prey over all sorts of terrain and obstacles. During the winter their pelage often turns completely white, an excellent example of nature's protective camouflage or coloration.

Reproduction: Weasels also reproduce by delayed implantation. Mating occurs in August but young are not born until the following May. A single litter ranges from 1 to 12 young with an

average between five and eight. At birth young are blind, toothless, wrinkled and practically naked. Fur and teeth appear at three weeks. Eyes open at five weeks of age and weaning begins. Young males do not mate the first summer, although females mate when three to four months old.

Food: Weasels eat animal food primarily, including mice, rats, voles, squirrels and rabbits. They will also eat birds, bird eggs, reptiles, amphibians, worms and insects. Weasels are voracious killers and often times will cache surplus food items for later use. Drinking water is essential.

Sign: Tracks of the weasel are fairly distinctive in the snow, and active burrows often have cones, feathers and other food remains nearby. Latrine sites are generally close to active weasel dens.

Predators: The most common predators are foxes, coyotes, cats, hawks, owls, snakes and people. Occasionally least weasels fall victim to short-tailed and long-tailed weasels.

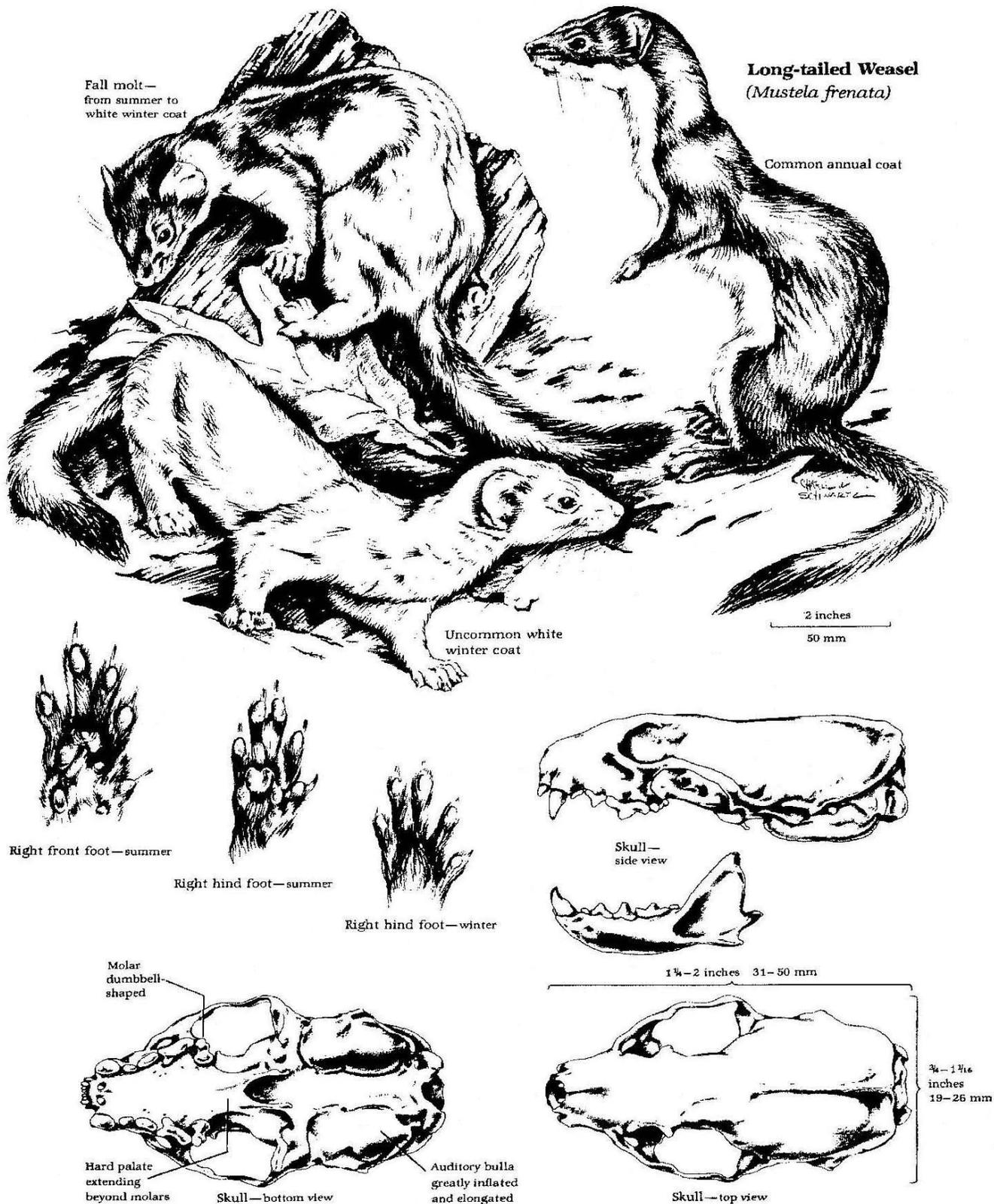
Parasites: Parasites include ticks, fleas, roundworms and flatworms.

Importance: The weasel trapping season closed in 1976 over concern about low populations. However in 1988 the season reopened and most weasel populations appear to be doing very well. Weasel fur is soft and durable. Pelt values are currently low, but the white ermine fur has some appeal for trimming cloth and novelty. They should be appreciated for their uniqueness with the least weasel being our smallest carnivore. They are also important in that they feed on large numbers of mice, voles, and other small mammals. Recent research studies in Iowa indicate that they may also be a significant nest predator feeding on eggs in several ground nesting species, especially waterfowl.

Baits and lures: Fresh fish, mice or other birds or animal meat. Musk, fish oil and some commercial lures.

Sets: Pocket, blind, den and small cubby sets.

Special Note: Short-tailed Weasels are smaller featured than long-tailed weasels but are larger than least weasels. They are commonly called ermines particularly in their winter white pelage. Because of size variation between ages and sexes of weasels, the only sure way to identify the long-tailed and short-tailed weasels is by examination and comparison of their skulls. The distribution of the short-tailed weasel in Iowa includes only the northern one third of the state.



Species That May Not be Harvested

The following information is included as a general information source. It should be emphasized that the following species are NOT legal to harvest in Iowa. We hope that this information will make people more knowledgeable about protected species and give them a greater appreciation for them.

Students should also be aware of these species' habits so that they will be able to avoid the unintentional capture of these animals.

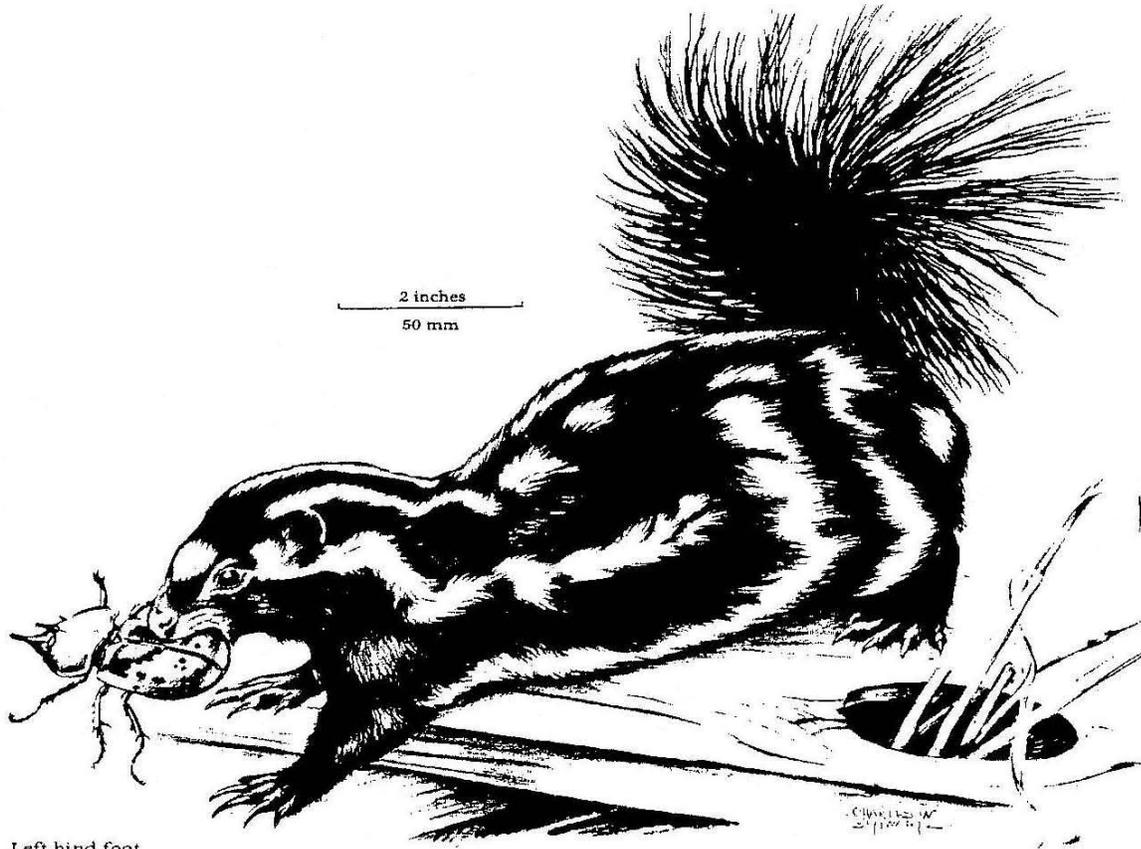
It is impossible to completely eliminate the unintentional capture of some animals while trapping common furbearers, but it is possible to keep the unintentional captures at a minimum. It is with this in mind that the following information is presented. Fur harvesters are also reminded that if they are unable to POSITIVELY identify an animal that has been captured, they should release the animal unharmed, if possible, then call their conservation officer.



Spotted Skunk - (Civet Cat)

Common Name - Eastern Spotted Skunk

Scientific Name - (*Spilogale putorius*)



Left hind foot

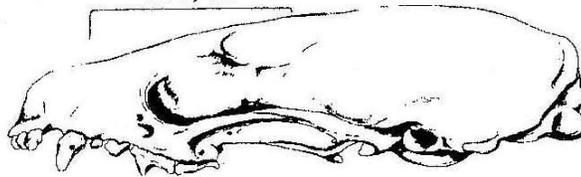


Left front foot



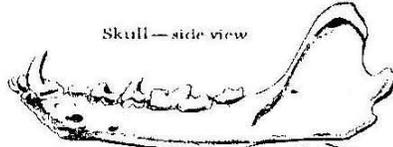
Auditory bulla slightly inflated

Nearly flat

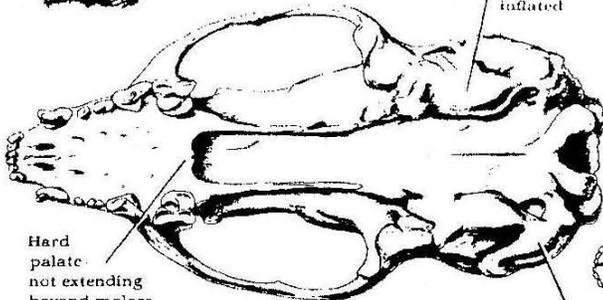


Skull—side view

No obvious notch



Hard palate not extending beyond molars



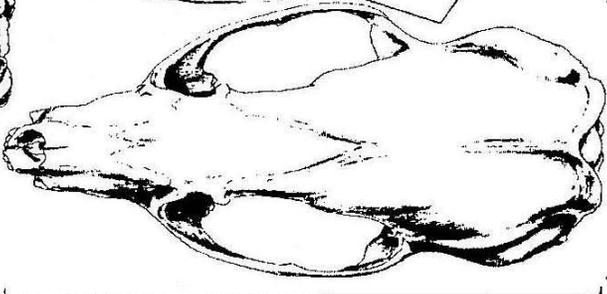
Skull—bottom view

Mastoid region inflated



Lower jaw—top view, left half

1 1/2 inches
38mm



2 3/4 inches
60 mm
Skull—top view

Common Name- Eastern Spotted Skunk

Scientific Name- (*Spilogale putorius*)

Trapping should be avoided in areas where Eastern Spotted Skunk signs are present.

Description: The spotted skunk, or civet cat, is a member of the mustelid family. It is commonly known as civet cat, but civet cat is not an accurate name since it is neither a member of the true civet family nor the cat family. The spotted skunk is similar to the more common striped skunk; however the spotted skunk is much smaller. The overall color is black with white spots on the forehead and four to six white stripes or series of spots that extend from the head along the length of the body. Spotted skunks usually only weigh from one to three pounds.

History: the population of spotted skunks rose as the Europeans settled in Iowa. They benefited from the diversity of small farm operations. The old farmsteads provide a much improved habitat over the natural prairies and woodlands.



Now, modern farming practices have virtually eliminated the spotted skunk from Iowa. Removal of wood piles, old building, fences and brushy areas; decreases in hay acreage; increasing amounts of rodent-proof grain storage; and chemical farming practices.

Current Distribution: Spotted skunks may be found throughout Iowa, but their densities are very low.

Precautions: No methods are known that will prevent the capture of this species specifically. The most important step in avoiding capture of this furbearer is to have pan tension set properly. All protected furbearers accidentally caught while trapping other species should be turned over to the DNR.

The following furbearers have been extirpated from Iowa or have never appeared in Iowa. These species will only be present in Iowa under rare circumstances. Fur harvesters do not need to consider the possible accidental capture of these animals since they do not inhabit in Iowa. If, on the rare chance that an unusual animal is captured or sighted, it should be reported to DNR personnel immediately.

- | | |
|--------|---------------|
| Bear | Mountain Lion |
| Fisher | Nutria |
| Lynx | Wolf |
| Marten | Wolverine |

Wildlife Diseases

Your fur harvesting activities will routinely bring you into contact with animals. You should be aware of diseases and parasites carried by wild animals and should take commonsense precautions. Since doctors may not routinely look for some types of diseases which may be contracted from wildlife, it is the fur harvester's responsibility to inform the doctor of their outdoor activities if a puzzling disease should develop.

A few simple, commonsense precautions will greatly reduce the risks of contracting diseases or parasites from wild animals: (1) Wear plastic or rubber gloves when skinning or handling furbearers or scats; (2) Wash hands thoroughly after handling animals; (3) Avoid animals that are behaving abnormally or that are obviously sick; (4) Do not drink directly from streams or lakes; (5) Cook all wild game thoroughly; and (6) inform your doctor of your wildlife-related activities if a puzzling illness should develop.

RABIES-HYDROPHOBIA

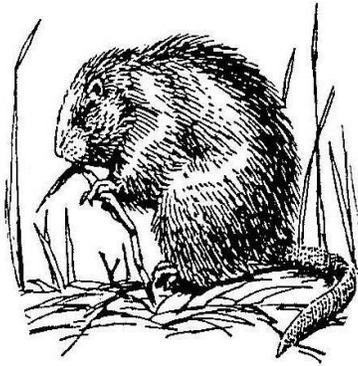
The primary wildlife carrier of rabies (hydrophobia) in Iowa is the striped skunk. Rabies is occasionally found in foxes and raccoons and, while reported only rarely in all other Iowa furbearers, may occur in them, too.

Rabies is a virus which attacks the nervous system and is usually transmitted in the saliva of an infected animal when it bites a noninfected animal. In addition to bites, the virus can enter through a cut or scratch while skinning an infected animal or by coming into contact with its eyes, nose or mouth.

Rabies occurs in forms in wildlife. In the "furious" form, the animal becomes irritable and aggressive, loses its fear and may attack other animals. In the "dumb" form, the animal becomes lethargic and may suffer various forms of paralysis. In some instances, skunks show no outward sign of rabies, but they still have the ability to expose humans and other animals if they bite them. Some studies indicate that more than 60 percent of the skunk population may carry rabies.

If you are bitten by any wild animal, wash the bitten area thoroughly with soap and water and contact a physician immediately. If possible, the animal involved should be captured or killed without damage to the head. If the animal must be killed, keep it refrigerated at 35 to 40 degrees (not frozen) until it can be given to experts for examination. Fur harvesters should avoid shooting skunks in the head (since most rabies viruses are in the brain) and should wear rubber gloves while skinning. A new vaccine against rabies (Human Diploid Cell Vaccine – HDCV) is now available which provides some pre-exposure protection from rabies without serious side effects. Fur harvesters who handle a lot of carnivores may want to consult with their doctor about getting this vaccine. Regardless of whether pre-exposure vaccines have been taken or not, if bitten by an animal, consultation with a doctor is necessary, and saving the animal or its head for later examination will help in determining the appropriate treatment.





TULAREMIA

Tularemia is a bacterial disease of mammals found primarily in rabbits, beavers and muskrats in Iowa. The disease often results in white necrotic (dead) spots in the liver of infected animals. The disease can be transmitted to humans through cuts or scratches while skinning infected animals, from drinking contaminated water during water-borne outbreaks, from flea, tick or insect bites, or, rarely, from eating undercooked meat.

LYME DISEASE

This is a relatively new disease caused by a spirochete (a type of protozoan) transmitted by a small red and black tick commonly known as the deer or bear tick (not the tick commonly found on dogs). The disease has occurred in Iowa, although the origin is uncertain. It is characterized by circular skin lesions with possible headaches, nausea or fever. In severe cases, arthritis in one or more joints and heart problems develop. Most exposures from this very small tick occur from May through October. Doctors may not routinely look for this disease so people with these symptoms who may have been exposed to tick bites should inform their doctor. Prevention is the best medicine. Check regularly for ticks and remove them promptly. Look especially for the "moving freckles" ticks. These are most likely the deer ticks, which usually carry Lyme disease.

OTHER VIRAL DISEASES

Pseudorabies, parvovirus and distemper are diseases carried by furbearers that will infect coonhounds, foxhounds, coyote hounds, pets and livestock. Appropriate vaccinations for hounds and pets will reduce most of these concerns. Generally disease that infect livestock occur from contaminated feed and forage. Good husbandry practices will reduce these potential problems.

LEPTOSPIROSIS

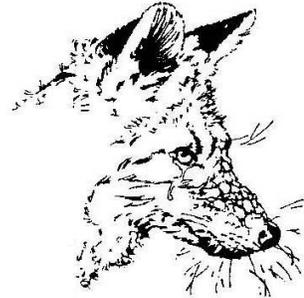
Urine, urine-contaminated water and mud can be the source of infection for leptospirosis, another spirochete bacterial organism. Infection may be subclinical, cause flu-like symptoms, or even produce life-threatening illness. Leptospire may enter the body by contamination of mucous membranes such as the eyes and mouth, through cuts and skin abrasions, and by ingestion. They affect the liver and kidneys and, in several cases, cause jaundice (yellowing of the eyes, skin and other tissue) and kidney failure. In mild cases, there may be headache, chills, fever, muscle ache and vomiting. Leptospire can infect a multitude of furbearers and other animals and humans. They are shed in urine.

ROCKY MOUNTAIN SPOTTED FEVER (RMSF)

RMSF, or just spotted fever, is a tick-borne disease caused by a rickettsial organism which is a type of bacteria. RMSF is characterized by the sudden onset of fever which lasts for 2-3 weeks, deep muscle pain, severe headache, chills and listlessness. A rash may develop on the hands, arms, legs and then move to involve the rest of the body. Dog ticks and wood ticks are usually involved in transmission of RMSF. Many furbearers are sometimes infected by several ticks. Contrary to its name, RMSF is usually found in the eastern half of the US. RMSF gets its name from a federal government laboratory in Montana.

MANGE

Red foxes and coyotes are the furbearers most commonly afflicted with a parasitic mite infestation which causes a condition known as mange. The most common type of mange is sarcoptic mange. It is caused by microscopic mites which burrow into or under the skin and deposit their eggs. With time the eggs hatch and the infestation increases to the point that the animal's hair begins to fall out, and the skin becomes thickened, crusted with scabs and cracked. Mange is spread from animal to animal by contact. In Iowa it may become epidemic when red foxes are abundant and result in widespread die-offs. Mange is nearly always fatal to red foxes and sometimes fatal to coyotes but is seldom contracted by gray foxes. Fur harvesters should take care in handling animals which have mange, since it is possible for humans to experience mild infections of the mites which cause a red, itching rash.



TRICHINOSIS

Trichinosis is caused by a nematode (roundworm) parasite which produces the disease in humans and many other domestic and wild animals. Nearly all mammals are susceptible to infestation of this parasite, which encysts in the muscle of the host and is then transmitted by eating the raw or poorly cooked meat. Infestations are often most severe in the well oxygenated, active muscle such as the diaphragm or eye muscles.

If wild animals such as raccoons, opossums, beavers, muskrats and other furbearers are to be eaten, the meat should be properly prepared by cooking, freezing or curing to destroy the encysted parasites. Cooking to an internal temperature of 135 degrees F; or freezing at 5 degrees F for 20 days, minus 10 degrees F for 10 days, or minus 20 degrees F for six days will kill trichinae. Curing should follow approved government regulations.

GIARDIASIS

Giardiasis is a disease caused by a protozoan parasite, *Giardia lamblia*, carried by many species including beaver. Beaver do not appear to be severely affected by the organism, but in some states parasites excreted by infected beaver appear to have contaminated water sources and caused outbreaks of the disease in humans. *Giardia* is known to be present in some Iowa water impoundments and is presumed to be caused by beaver. A variety of mammals, birds, reptiles, amphibians and fishes are also known to harbor this organism. Sometimes this disease is also referred to as beaver fever. Drinking water from safe sources will prevent giardiasis.



BAILYSASCARIS

Raccoons are host to a roundworm *Bailysascaris*, which also sheds microscopic eggs in raccoon feces. These eggs are not infective for about 30 days. They then can become airborne as dust and inhaled or can be accidentally ingested. People coming into contact with areas where raccoons have lived or concentrated such as in barns, chimneys and attics, or people who have pet raccoons, are most susceptible to infection. The eggs hatch after ingestion, and the microscopic larval worms migrate into the nervous system (spinal cord, brain) or into the eye. Symptoms are nervous system disorders. Severe infections have very rarely resulted in death. Skunks and animals affected by *Bailysascaris procyonis* may appear to be rabid due to larval migration into the brain.



ECHINOCOCCOSIS INFECTIONS (HYDATID DISEASE)

Echinococcosis or hydatid disease is infection with the larval (cystic) stage of tapeworms belonging to the genus *Echinococcus*. Cysts most commonly develop in the liver, but can also be found in the lungs, kidney, spleen, nervous tissue, or bone. One variety of the echinococcus tapeworm is largely restricted to wild animal hosts including fox and rodents. It is a highly invasive and destructive form of disease that causes solid, tumor-like masses.

People become infected by ingesting the echinococcus eggs because of uncleanness or by eating contaminated food, water and soil. Dogs will also act as a host and their feces can contaminate food in gardens and elsewhere.

Surgery is recommended treatment but medications are currently being developed. Prevention can be aided by not allowing dogs to feed on dead foxes, rodents or other hot carriers. Good personal hygiene when handling or skinning all furbearers and disinfecting the work area is essential to reducing infections. Like raccoon roundworm, *Bailysascaris*, if not properly treated is potentially fatal.

OTHER PARASITES

A number of parasites, primarily tapeworms, can be contracted from wild animals if good hygiene is not practiced. Microscopic eggs of these tapeworms may be found in the feces of foxes, coyotes, cats or dogs. Human infections result from contamination of hands and accidental ingestion of eggs from feces contaminated objects, food and water.

Furbearer Management in Iowa

The DNR manages Iowa's furbearer resources for the benefit of the citizens of the state. The DNR recognizes that furbearers have a variety of ecological, recreational, economic and aesthetic values. These values can be positive or negative. Since values are determined by people, not nature, the same animal can have a wide range of values depending on the time, place and person being affected by it.

The goal of management is to maintain a productive harmony between people and furbearer resources for present and future generations of Iowans. This goal is accomplished by maintaining habitats and controlling harvests so the harvestable surpluses can be utilized, consistent with habitat, disease, wildlife damage, and the desires and tolerances of people. In order to manage furbearers responsibly, the DNR monitors furbearer populations and harvests, sets regulations, maintains habitats and enforces laws related to furbearers.

Seasons

In Iowa the DNR sets seasons primarily based on their impacts on the furbearer populations. The DNR attempts to set seasons that will allow the maximum amount of recreational opportunity, while still sustaining the resource year after year. No season which would be

detrimental to the survival of a species is permitted. Once the biological requirement is met, further decisions are based on the concerns of people who use, value or are affected by the resources. Recreational opportunity, landowner concerns, fur primeness, damage problems, nonharvest values, disease problems and other factors all enter into these decisions. Opportunities for public input are provided.

Some fur harvesters are critical of the DNR for not considering pelt values more when setting seasons. Because furbearers are so adaptable and because of certain landowner tolerances, seasons are set somewhat prior to and extend somewhat beyond the peak pelt primeness period.

Surveys

Harvest and fur price surveys are conducted for all species of furbearers in Iowa. In addition, relative changes in population densities are monitored. Raccoon spotlight surveys, otter track and slide surveys, and muskrat house counts are used. Input from fur harvesters and DNR personnel provide important insights to furbearer population trends.



Habitat

Although furbearers are often not the highest priority in many habitat management programs, the fact remains that forbearing animals are primary beneficiaries of many of these practices. This is particularly true of wetland areas, which are prime habitat for muskrat, mink, beaver, raccoons, foxes and other animals. Furbearers often do so well on these areas that conflicts, such as high nest predation, occur with other species.

Forest management practices also influence furbearer populations. Some species favor dense, brushy stages and other favor less dense mature stands. Although it is difficult to say which habitat benefits furbearers the most, timbered river and stream valley corridors are probably the most important habitats for furbearers. Protecting and creating stream and river valley greenbelts will benefit many fur species. Planting trees and shrubs, protecting den trees, building and erecting artificial “nesting” boxes for raccoon, and water level manipulation for aquatic furbearers can greatly improve habitat.



Enforcement

Iowa’s Conservation Officers enforce the laws and regulations relating to furbearers in all counties of the state. Of course, they have many more duties in addition to the furbearer regulations, but they are always interested in and concerned about situations where violations are occurring. It is also important for fur harvesters to police their own ranks and to help enforcement officers by reporting violations. People who take fur illegally are stealing from the honest citizens of the state. The Turn In Poachers (T.I.P.) program has been and should continue to be enthusiastically supported by all fur harvesters.

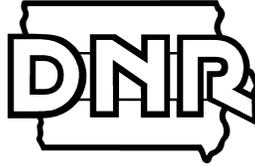


Conservation and Furbearer Management

Furbearer regulations are established for the entire state or for large regions of the state, depending upon the species. Conditions vary from region to region. It is wise for fur harvesters to practice conservation, leaving a few animals to reproduce on their areas. This sounds simple, but it can become complicated when a number of fur harvesters are competing for the same resources in the same area. This means that any one fur harvester can take only a portion of the excess.

Fortunately for most furbearers, harvesting tends to be self-limiting. The time and effort required to take furbearers exceeds the benefits long before furbearer populations are reduced to critical levels. However, for a few species which are not so resilient, regulations have to be correspondingly more restrictive. A good example of this is the river otter. When their populations are suitable for harvest, regulations are more complex so viable otter populations can be sustained.

Iowa Department of Natural Resources



Nuisance Wildlife Control Operators Permit

Terms of Permit:

1. Permittee is neither an employee nor an agent of the Iowa Department of Natural Resources, but is a private contractor.
2. Permittee may take, possess, and transport species protected by the Iowa Code in accordance with the terms/conditions/limitations of this permit.
3. The permittee must possess a valid NWCO permit and a valid fur-harvester license and have paid the habitat stamp fee. Partners or assistants must also possess a valid fur-harvester license and have paid the habitat stamp fee.

The permit shall be issued on an annual basis and shall expire on January 10th of each year and is not transferable.

4. All traps must be tagged with the permittees' name and address.
5. All traps must be checked, and any captured animals/birds removed, at least once every 24 hours. Permittees' who rent, lend or otherwise transfer traps to clients under authority of this permit are responsible for the client's compliance with this requirement.
6. It will be the responsibility of the permittee to obtain proper authorization from political subdivisions when necessary to carry out nuisance wildlife control work in those respective communities, and to obtain the necessary and proper municipal, state, and federal permits when and where required.
7. Permittee may not take, possess, or transport whitetail deer, wild turkey, migratory birds, or threatened or endangered species without special authorization from the Department (DNR) and accompanying state and/or federal permits when/where required.
8. Permittee must describe to the client the estimated costs and types of control that will be used to alleviate damage and obtain the landowner's or tenant's permission before initiating control efforts.
9. Injured animals or birds may be taken to one of the DNR's licensed wildlife rehabilitators or to a person or facility designated by the local state conservation officer or biologist. When injured animals are encountered, the local conservation officer or biologist may be contacted for advice.
10. Animals which are destroyed or found dead will be promptly and properly disposed of by the permittee. The carcasses of all dead nuisance animals must be disposed of within 24 hours of their discovery. Methods of proper disposal include:
 - a. Taking the carcass to an approved landfill that will accept it.
 - b. Taking the carcass to, or having it picked up by a renderer.
 - c. Taking the carcass to an approved incinerator site.
 - d. Burying the carcass outside the city limits. Above ground disposal of the carcasses is not permitted.

Expenses/costs related to euthanizing an animal or disposal of carcasses is the responsibility of the permittee.

11. Animals may not be kept in possession of the permittee for more than 24 hours. During that time, animals/birds taken during control operations should be released, taken to a wildlife rehabilitator, or destroyed. No live animals may be taken from the state. Animals and/or birds and/or their parts may not be retained for any purpose, and shall not be sold or given to other individuals. (This will exclude fur-bearing animals taken during the open season in rural settings when the permittee has the understanding and approval of the landowner to do so.) Animals may not be used for display or programs, kept in captivity, or used for training dogs.

12. Animals which are relocated must be released in a suitable habitat at least ten miles from the original capture site. Animals are not to be liberated in an area close to human dwellings which would result in a transfer of, rather than a solution to, the nuisance problem. Animals shall **not** be released inside the city limits of any city.
13. A record shall be kept by the permit holder indicating the following information:
 - a. Location of call
 - b. Numbers and species of animals/birds removed
 - c. Date of action
 - d. Disposition of these animals/ birds

These records shall be updated within 24 hours of the event and shall be open to inspection by the Department's representative at any time. This information shall be documented in an annual report, covering the calendar year, which shall be filed with the Department by January 31st of each year. Failure to file an annual report by January 31st shall be cause for permit revocation/cancellation.

A NWCO permit may be renewed by the Department when all reporting requirements for the previous year have been met. An administration fee of \$20.00 will be assessed at the time of renewal.

14. The permittee or their designee shall be in possession of this permit while engaged in nuisance wildlife control activities and shall show the permit to any officer or landowner requesting to see it.
15. All wildlife handled under the terms of this permit shall be handled and treated as humanely as possible.
16. The use of firearms to destroy an animal or bird is prohibited inside any city limits. The use of the firearms elsewhere shall be subject to all state restrictions.
17. The use of poison is prohibited for the taking of any game bird or animal. (Except as outlined in Iowa Administrative Code 571-100.2 (481A)).
18. Methods of euthanizing animals must be approved by the Department, and include:
 - a. Gunshot or drowning
 - b. Inhalants, including: anesthetics such as ether, halothane, methoxyflurane, isoflurane, nitrous oxide, or carbon monoxide, or carbon dioxide
 - c. Non-inhalant pharmaceutical agents (injectables) excluding: strychnine, nicotine, magnesium sulfate, potassium chloride, chloroform, and cyanide products

All applicable laws must be followed governing the acquisition, use, and storage of any of the chemical sor agents used to conduct euthanasia. Proper euthanasia methods must be used, and appropriate disposal of the animal carcasses is required.

19. Any violation of the terms/limitations/conditions of this permit as outlined above, or violations under 481A.130, accrual of habitual offender points as outlined in 481A.134, or court action outlined in 483A.21, will result in the revocation or suspension of this permit.

I understand and agree with the terms/limitations/conditions of this permit

Permittee Signature

Date

Issuing Conservation Officer

Date