
Vertebrate Pest Management

A Guide for Commercial Applicators Category 7D

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INTRODUCTION

How to Use This Manual

This manual contains the information needed to become a certified commercial applicator in Category 7D, Vertebrate Pest Management. This manual is intended for use in combination with the Pesticide Applicator Core Training Manual (Extension bulletin E-2195), available through the Michigan State University Bulletin Office. However, this manual would also be useful to anyone interested in learning more about vertebrate pest management.

Category 7D, Vertebrate Pest Management, covers the management and control of vertebrate pests that become problems in and around buildings, and in lawns, gardens, fields, backyards, etc. The chapters contain basic scientific information as well as guidelines for practical solutions to pest control problems.

The Category 7D certification exam will be based on information found in this booklet. Each chapter begins with a set of learning objectives that will help you focus on what you should get out of each chapter. The table of contents will help you identify important topics and understand how they relate to one another through the organization of headings and subheadings. As you prepare for the exam, read each chapter and answer the

review questions located at the end. These questions are not on the certification exam. They are provided to help you prepare for the exam. Questions on the exam will pertain directly to the learning objectives.

The appendices and glossary, including an answer key (Appendix A), at the end of this manual provide supplemental information that will help you understand the topics covered in the chapters. Terms throughout the manual text that are bold and italicized can also be found in the glossary.

This certification manual benefits the applicator and the general public. By learning how to handle pesticides correctly, applicators will be able to protect themselves, others, and the environment from pesticide misuse. For more specific information on how to become a certified applicator in Michigan, refer to the beginning of the core manual (E-2195) or to the Michigan Department of Agriculture's Web site at:
<<http://www.mda.state.mi.us>>.



CHAPTER 1

Legalities of Vertebrate Pest Management

LEARNING OBJECTIVES

After completely studying this chapter, you should:

- Understand the various state and federal laws that govern pesticide use and handling, record-keeping requirements, worker protection, and wildlife protection.
- Be able to explain the legal responsibilities of a pesticide applicator according to the rules of Regulation 637.
- Be familiar with the Wildlife Conservation Order and understand the rules regarding control (pesticide use, hunting and trapping, etc.) of wildlife pests.
- Know under what circumstances a state and/or federal permit is required to control vertebrate pests.
- Know the accepted methods for euthanization of vertebrate pests and for the disposal of animal carcasses.
- Know the rules regarding retaining and/or selling live or dead animals or their parts.

In this chapter, you will learn about the state and federal laws that regulate pesticide applicators with a particular focus on commercial pesticide applicators certified in Category 7D, Vertebrate Pest Management. **Vertebrates** are any animals with a backbone or spinal column. Humans, dogs, snakes, and birds are examples of vertebrates; insects, worms, jellyfish, and snails are not. A few vertebrates, such as rats and mice, are common pests in urban and industrial sites. Others are not pests in their normal habitats but may occasionally become pests when they conflict with humans. A skunk in the woods is a beneficial part of nature; a skunk nesting in the crawlspace of a home is an entirely different matter.

Simply defined, a **pest** is any unwanted organism. Applicators certified in Category 7D are responsible for vertebrate pest management in places where the activity of these animals is undesirable. This often occurs where vertebrate pests invade structures—homes, schools, businesses, warehouses, etc.; where they become pests of lawns, gardens, crops, etc.; and also where they pose a human health risk.

Some vertebrates that are serious pests in particular situations are never considered pests by certain people. Pigeons, for example, can cause human health problems when roosting in large numbers. Commonly, their droppings foul sidewalks, contaminate food, and damage automobile paint. But pigeons are seen as pets and friends by many city dwellers who feed them. These people may react angrily to any attempt to poison or trap pigeons. Many people today are involved emotionally in protecting the welfare of animals, particularly vertebrates. Control of vertebrates other than rats and mice is often more of a public relations problem than a pest problem. Wherever possible and practical, a non-lethal method of pest control should be used.

Public concern for the welfare of animals and the risk to people, pets, and other non-targets from poisons used to kill vertebrates have made rules governing vertebrate pest control particularly strict. Laws and regulations at the state and local levels may be much more restrictive than federal regulations. For these reasons, among others, it is important that Category 7D applicators understand and keep up-to-date with federal, state, and local laws that affect pesticide application for control of vertebrates.

STATE AND FEDERAL LAWS

The Pesticide Applicator Core Training Manual (E-2195) discusses federal and state laws that govern the handling and use of pesticides. Review the core manual and understand how laws and regulations affect pesticide practices and use. These laws include federal laws such as the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Occupational Safety and Health Act (OSHA), the Endangered Species Act, and the Federal Migratory Bird Treaty Act. State laws include the Natural Resources and Environmental Protection Act, Regulation 636, Regulation 637, the Michigan Occupational Safety and Health Act (MIOSHA), and the Wildlife Conservation Act. These are just some of the laws that affect commercial pesticide applicators. They are briefly described below. Refer to the core manual to learn more about other laws affecting pesticide use and

for further details on laws discussed in this chapter. Pesticide technicians should keep up-to-date copies of the laws and review their contents periodically. Copies of these laws can be obtained from MDA regional offices.



FEDERAL LAWS

FIFRA

This is the basic federal law administered by the Environmental Protection Agency (EPA) that regulates pesticides (their use, handling, storage, transportation, sale, disposal, etc.). The Michigan Department of Agriculture (MDA) has a cooperative agreement with the EPA to enforce some provisions of FIFRA in Michigan. Some of the provisions of FIFRA are that the EPA must register all pesticides before they can be sold or used. The pesticides must be classified as either “*general use*” or “*restricted use*.” General-use pesticides are those that can be purchased without restriction. Restricted-use pesticides are those that can be used only by or under the direct supervision of a certified applicator. FIFRA also stipulates that persons who misuse pesticides (in a way that is “inconsistent with the pesticide labeling”) are subject to penalties.

OSHA

OSHA is administered by the U.S. Department of Labor (DOL). OSHA governs the record-keeping and reporting requirements of all work-related deaths, injuries, and illnesses of businesses with 10 or more workers.

Endangered Species Act

This act requires the U.S. EPA to ensure that endangered or threatened plant and animal species are protected from pesticides. This act requires each pesticide label to limit its use in areas where these species could be harmed. Category 7D applicators must consider the possibility that endangered or threatened species may be affected by the pesticides they apply. The Michigan Department of Natural Resources (MDNR) Wildlife and Fisheries Management divisions administer the Michigan

Endangered Species Act (Act 451, Part 365) and maintains the federal and state endangered or threatened species lists. Michigan applicators who want to be sure they are complying with the act must take the initiative and consult with the MDNR to be sure that there are no endangered or threatened species in their area. One of the goals of pest management is to protect off-target plants and animals from pesticides, whether they are endangered or not.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act protects all birds except pigeons, house sparrows, and starlings. However, local ordinances may protect bird species not protected by the federal act and/or specify the types of treatments that can be used. Always check local and state laws before attempting to control any bird species.



Other than pigeons, house sparrows, and starlings, special federal permits (50 CFR) are required to control all other migratory bird species. In particular, the federal **Depredation Permit** allows the permittee to control migratory birds that are clearly shown to cause or about to cause serious damage to agricultural, horticultural, or fish cultural interests. The act also specifies the manner by which the birds may be killed. However, one exception in the Migratory Bird Treaty Act states: “A federal permit shall not be required to control red-winged, rusty, and Brewer’s blackbirds, cowbirds, all grackles, crows, and magpies when found committing or about to commit depredations upon ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance....” In these situations, first consult local and state laws before attempting control.

STATE LAWS

Natural Resources and Environmental Protection Act, Act No. 451, Part 83, Pesticide Control

This legislation gives the director of the MDA authority to register or certify private and commercial applicators and to prescribe standards for certification and registration. Category 7D applicators are considered commercial applicators. Commercial applicators can be divided into two subclasses:

Subclass A—Any person (including homeowners) who uses or supervises the use of restricted-use pesticides (RUPs) for a non-agricultural purpose.

Subclass B—Any person who either (1) applies pesticides other than ready-to-use pesticides in the course of his or her employment, or (2) applies a pesticide for a commercial purpose (for hire).

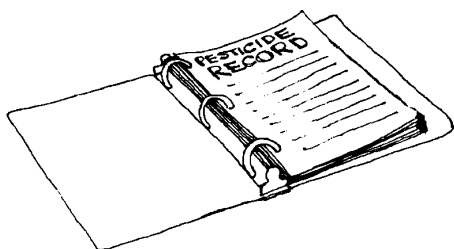
Ready-to-use pesticides are those used from the manufacturer's original container (aerosols, pump sprays, strips, baits) with no need to mix or load into application equipment.

Regulation 636 (Pesticide Applicators)

This establishes the types of certified applicators and expands the pesticide record-keeping requirements. All commercial applicators shall maintain records of pesticide use for a time period not less than the following:

General-use pesticides: One year following application.

Restricted-use pesticides: Three years following application.



All records shall contain the following:

- The name and concentration of the pesticide applied.
- The amount of pesticide applied.
- The target pest or purpose.
- The date the pesticide was applied.
- The address or location of pesticide application.
- Where applicable, the method and rate of application.

The records must be made available to the MDA upon request.

Michigan Occupational Safety and Health Act (MIOSHA)

The MIOSHA Right-to-Know act requires employers to:

- Obtain and retain material safety data sheets (MSDS) on all hazardous chemicals (including pesticides) for employee review.
- Develop and implement a written employee training program.
- Ensure that all containers of hazardous materials are properly labeled.

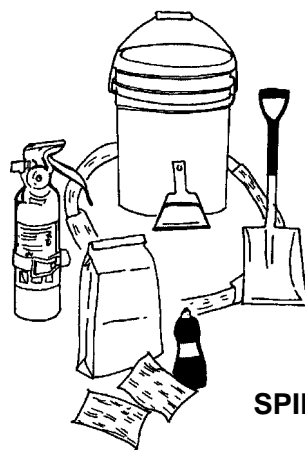
Regulation 637 (Pesticide Use) Requirements

One of the pertinent state laws that Category 7D applicators must be familiar with and understand is Regulation 637, Pesticide Use. Regulation 637 establishes

several legal standards for pesticide use. It requires that pesticides be used in a manner consistent with their labels, that applications be made in a manner that prevents off-target discharges of pesticides, and that pesticide application equipment be properly calibrated and in sound mechanical condition. Obtain a copy of the entire regulation to understand the components of each rule and how your pest management business and practices must comply.

Some of the rules of Regulation 637 surrounding the safe and legal use of pesticides are as follows:

- A pesticide must be used in a manner consistent with its label.
- Applications must be made so that off-target direct discharges are prevented.
- Pesticide application equipment will be in sound mechanical condition and be free of leaks and other defects that might cause a pesticide to be deposited off-target or in a way inconsistent with its label.
- Application equipment must be properly calibrated.
- Pesticide application or loading equipment that is designed to draw water must have an antisiphoning device.
- Applications shall not occur when conditions favor off-target drift of pesticides or prevent the proper deposition of pesticide to the target area.
- Before applying a pesticide, the applicator will identify any sensitive areas that are located adjacent to the target area and will use appropriate precautionary measures to prevent the direct discharge of pesticides to those areas.
- Each vehicle that is used to transport pesticides must have the following information printed on its exterior:
 - Name of the pesticide applicator firm.
 - Business telephone number, address, or U.S. Department of Transportation census number of the applicator firm.



SPILL KIT

- Any person who mixes, loads, or otherwise uses pesticides must have immediate access to a spill kit. The spill kit requirement does not apply to a person using single containers of use-dilution pesticides in a quantity less than 16 ounces.

Regulation 637 also discusses the most acceptable manner in which to handle excess pesticides and pesticide-containing material. Pesticide-containing materials are any materials that contain a mixture of active (pest-controlling) and inactive (non-pest-controlling) ingredi-



ents. To be in compliance with the label directions, the pesticide or pesticide-containing material should be applied to a site that is specified on the label and in a manner so that the total rate of application of the active ingredient is not more than the rate allowed on the label.

Regulation 637 also requires the applicator to follow label directions regarding **personal protective equipment (PPE)**. The regulation sets the minimum PPE requirements for commercial applicators. Unless otherwise directed by the pesticide product label, while performing pesticide tasks, applicators must wear:

- Long pants.
- Protective footwear.
- Long-sleeved clothing (short-sleeved clothing may be worn if wash water or waterless soap is immediately available).
- Gloves impervious to the pesticide being used when the applicator's hands are likely to come in contact with the pesticide, unless a program is in place that offers comparable applicator protection.

Regulation 637, requires commercial applicators to enter into oral or written **applicator service agreements** with the customer or authorized agent. The agreement must specify:

1. The customer's consent to services.
2. The name, address, and telephone number of the company that provides the pesticide application services.
3. The approximate schedule and frequency of anticipated services.

Further, according to the regulation, not later than at the time of each pesticide application, the commercial

pesticide applicator must provide all of the following **written information** to the customer:

1. The name, address, and telephone number of the company providing the pesticide application service.
2. The full name of the applicator who is making the pesticide application.
3. A general description of the target pest or pests to be controlled.
4. A list of pesticides applied, including the common name of the active ingredient.
5. The time and date of the application.
6. Precautionary warnings that are pertinent to the protection of humans, animals, or the environment at the application site and that appear on the label(s) of the pesticide(s) applied.

In addition, not later than at the time of the initial pesticide application, a commercial applicator must provide **risk and benefit information** to the customer. Risk and benefit information contains but is not limited to:

1. Definition of a pesticide.
2. A general description of how a pesticide works.
3. Why pesticides are used.
4. General toxicity information related to the following:
 - The type of compound used.
 - The environment where the pesticide is applied.
 - General exposure information.
 - The amount or rate of pesticide applied.
 - Proper pesticide applications in compliance with the label.
5. Common-sense precautionary measures to the customer regarding pesticides.
6. General information on the environmental fate of pesticides.
7. Instructions to the customer to discuss site preparation and precautionary measures with the pesticide applicator.
8. Instructions to the customer to consult with a physician if an unusual reaction occurs.

The regulation also specifies that the duration of a service contract cannot exceed 12 months unless either written notification of continuation of service is provided annually or unless the service agreement is a signed contract that specifies a definite period of time during which the contract is valid. The written notification of continuation of service must provide information to the customer on how to discontinue service.

Further, Regulation 637 requires a commercial applicator to provide all of the following documents to the customer, if requested:

- Pesticide product labels.
- **Material safety data sheets (MSDS)**.

- Environmental Protection Agency fact sheets, if available.
- A document that specifies the rate of application of the active ingredients of the products applied.

The misrepresentation of pesticide safety is prohibited by Regulation 637. Such claims or statements that would imply that the pesticide is recommended or endorsed by a federal or state agency, that the pesticide is “absolutely safe,” or comparative statements of pesticide safety such as “contains all natural ingredients,” “among the least toxic chemicals known,” and “pollution approved” are strictly prohibited.

Regulation 637 also requires commercial applicator training in *integrated pest management (IPM)*. To make certain types of pesticide applications in schools, health care facilities, and public buildings, Category 7D applicators must participate in a training program that includes the following IPM elements:

- Site evaluation, description, inspection, and monitoring.
- The concept of threshold levels.
- The relationship between pest biology and pest management methods.
- Pest population reduction (including mechanical, biological, and chemical techniques) and pest prevention (including habitat modification).
- The development and implementation of an IPM program with consideration for reducing the possible impact of pesticide use on human health and the environment.
- The evaluation of an IPM program to determine its effectiveness.
- The record-keeping requirements of the IPM program.

Part 401 of Act 451—Wildlife Conservation:

Wildlife Damage and Nuisance Control

Regulations

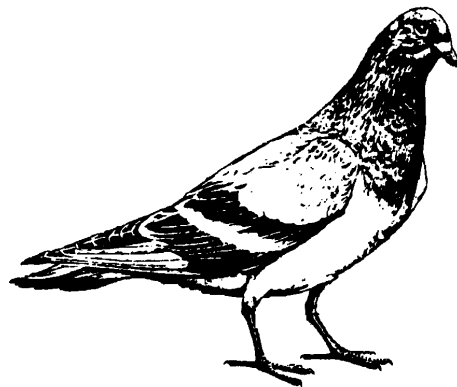
Under the authority of **Part 401 of Act 451, the Wildlife Conservation Order (WCO)**, the Michigan Department of Natural Resources Wildlife Division administers a permit system for control of wildlife that are creating unreasonable property, crop, or livestock damage. Many nuisance situations are the result of high populations of a particular wildlife 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. However, trapping and hunting during the regular season may not be adequate to control wildlife damage that occurs at other times. Extensive damage may be occurring outside of the regular hunting season, either by an individual animal or by an overabundance of a particular species. In some cases, the damage may be caused by animals that are normally not harvested during the hunting and trapping seasons (for example, red squirrels and

skunks), or the problems may be occurring in urbanized areas where hunting and/or trapping is not practical or permitted. The permit system allows nuisance wild animals causing damage to private property to be taken during times of the year and by methods not normally allowed under the regular hunting and trapping rules.

Under the damage and nuisance control system, four types of permits may be issued. Three of these permits may be issued to licensed commercial applicators:

A General Wildlife Damage and Nuisance Control Permit—This permit (also referred to as a general permit) is issued by the MDNR Wildlife Division office to nuisance animal control businesses, agencies, and organizations with licensed commercial applicators certified by the Michigan Department of Agriculture in Category 7A (General Pest Control) or 7D (Vertebrate Pest Control). (See Appendix C.)

A Project Control Permit—This is a specialized permit issued only to licensed pesticide applicators when pesticides are being proposed for use outside of buildings in areas that are not recognized industrial areas for the control of feral pigeons, starlings, and English sparrows (see Appendix C). Further details on regulations pertaining to the Project Control Permit are discussed in the chapter on bird control (Chapter 2).



A Wildlife Damage Investigation and Control Permit is issued by a conservation officer or a wildlife biologist to landowners, lessees, or their agents (e.g., certified applicators) on a case-by-case basis.

The fourth permit, the **Restricted Wildlife Damage and Nuisance Control Permit**, is issued to businesses, agencies, and organizations that are not licensed by the Michigan Department of Agriculture as commercial pesticide applicators.

The major difference between permits issued to landowners and those issued to businesses, agencies, and organizations is that the latter group is preauthorized to undertake control measures on specific species in certain areas and at certain times upon complaint of the person suffering damage without individual inspections and individual permits being issued by DNR personnel.

To obtain a restricted or general **Wildlife Damage and Nuisance Control Permit**, a Wildlife Damage and Nuisance Control Application and Permit form (PR2004) must be obtained from the DNR Wildlife Division office.

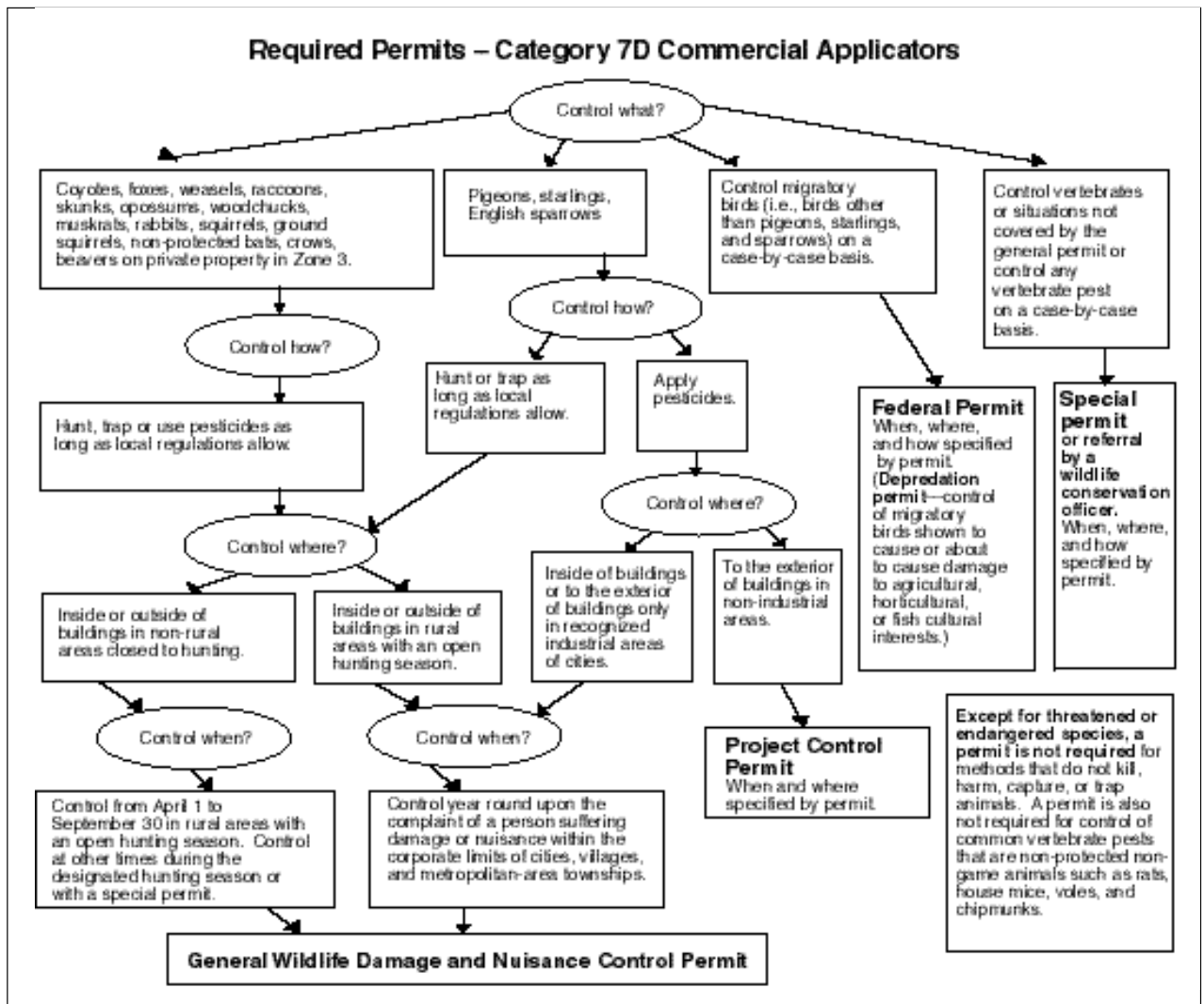


Figure 1.1. Flowchart of permits needed for Category 7D pest control operations

New applicants must obtain a “Certificate of Persons Conducting Business Under an Assumed Name” (DBA) from the county clerk of the county the business is located in and attach a copy to the application. Applicants for general permits (i.e., commercial applicators licensed in Categories 7A and/or 7D) must also attach a copy of their pesticide applicator’s license when submitting the form to the DNR. Permits must be renewed every three years. Applicants for renewal permits must attach a copy of their commercial applicator’s license and a copy of their three-year activity report (see “Record-keeping Requirements” below). See Appendix C for a sample permit application form (PR2004) and an activity report form (PR2004-1).

Wildlife Damage Control Rules and Regulations

Regulations related to these permits are found in Sections 5.50 to 5.55 of the WCO. According to the WCO,

the general permit allows commercial applicators to take action at any time in controlling certain animals upon complaint of any person suffering damage or nuisance within the corporate limits of cities, villages, and metropolitan-area townships that are closed to hunting. In other areas (non-urban areas open to hunting), the control measures may be initiated upon the complaint of a person suffering damage or nuisance from April 1 to September 30. Complaints that occur outside of these dates in areas that are open to hunting may be initiated by the *permittees* (in this case, 7D applicators who have been issued permits) if referred to by a conservation officer.

Wild Animal Species. The wild animals that permittees are authorized to take control measures on are coyotes, foxes, weasels, raccoons, skunks, opossums, woodchucks, muskrats, rabbits, squirrels, ground squirrels, non-protected bats, English sparrows, feral pigeons, starlings, and crows. Beavers on private property may be

controlled only in Zone 3 (southern Lower Michigan) upon complaint during the closed season. However, beaver shall not be live trapped and relocated or translocated without authorization of the DNR Wildlife Division management unit supervisor. Control of damage by game animals other than those listed above may be taken only if authorized by a conservation officer. A federal permit is required for control of damage caused by protected migratory birds (see Federal Migratory Bird Treaty Act).



A permit is not required when means other than hunting, trapping, or pesticide use are used to deter or prevent animal damage. These methods include frightening devices such as noisemakers and scarecrows; exclusion devices such as fences or screening; and other recognized and recommended means of preventing damage that do not kill, harm, capture, or trap animals. A permit is also not required for control of common vertebrate pests that are not protected by any federal or state laws. These are non-game animals such as rats, house mice, voles, and chipmunks.

Some further stipulations of the WCO are:

- Permittees may, unless otherwise instructed by a conservation officer, use steel and live traps, and firearms in those municipalities permitting the discharge of firearms, in control operations.
- All wild animals that the permittee is authorized to take shall be taken and disposed of in a manner to ensure humane handling or killing. Traps shall be checked daily. Captured wild animals shall not be held longer than 24 hours unless required by a physician or DNR representative for public health reasons.
- Captured animals shall not be released from or upon a public roadway or right-of-way. Captured animals shall not be released upon the lands of another person without the written consent of the landowner.
- Captured animals shall not be euthanized except by methods recommended and approved by the DNR.

Use of pesticides. The WCO also specifies that licensed commercial applicators in Categories 7A and 7D may use pesticides for nuisance animal control. Some of the rules for pesticide use under the WCO are:

- Prior to the initial use of pesticides by any permittee, the operator shall contact the Michigan representative of the U.S. Department of Agriculture to obtain general guidance and technical advice regarding methods of controlling nuisance birds without threatening protected species.
- Pesticides may be used inside buildings to control the depredations of the authorized bird and animal species (listed above under "Wild Animal Species").
- Pesticides may be used on the exterior of buildings and other structures only in recognized industrial areas of cities to control damage by English sparrows, feral pigeons, and starlings. Placement of pesticides outside of buildings in areas other than such recognized industrial areas shall not be made except under a Project Control Permit issued for each project. (See the WCO, Section 5.53, for details on what information should be included in the Project Control Permit.)

Record-keeping Requirements. Under Section 5.54 of the WCO, a person issued a Wildlife Damage and Nuisance Control Permit must keep records of all nuisance animal control operations, documenting the complainant's name, address, date of service, service technician, species of nuisance animal, number of each species taken, and the disposition of all animals taken. These records and any animals in the permittee's possession shall be available for inspection by a conservation officer or other representative of the DNR at any reasonable time. Prior to a permit being renewed, the permittee shall submit a completed renewal application and accurate summary of activities conducted under the previous permit furnished by the DNR. The renewal permit application forms and activity reports are submitted every three years (see Appendix C).

Permit Suspension/Revocation. Section 5.55 of the WCO provides the legal basis for permit suspension or revocation. Permittees should be aware that any conviction for a violation of Part 401 of Act 451 or the Wildlife Conservation Act, including a violation of a condition of the permit, shall result in the revocation of the permit upon action by the DNR.

Special Permits

No animals protected by federal or state laws may be trapped or killed with a general permit other than those listed above. To control animal damage by species not covered under the general permit, it is necessary to obtain a special permit or special authorization from the DNR. These permits may be applied for at local DNR district offices (Appendix F). In general, the species that require special permits cause relatively few damage or nuisance problems that cannot be addressed during the regular hunting and trapping seasons, or are species of particular management interest.

On the permit, the DNR representative or conservation officer will specify which methods, if any, may be used to control damage caused by the animal. In some cases, the DNR representative will require a visit to the site with the permittee before issuing a special permit. Problems caused by certain species (for example, black bear, deer) or migratory birds (for example, ducks, Canada geese) will be handled on a case-by-case basis. Specific regulations are currently in place that govern the DNR's deer damage control policy.

Endangered or threatened species are provided special protection under the law and may not be taken, harmed, pursued, or harassed. Though both federal and state laws make certain exceptions for the control of these species, rarely, if ever, would issuance of a control permit be justified.

Euthanasia of Animals

Section 5.52 of the WCO prohibits the euthanasia of animals except by methods recommended and approved by the DNR. When euthanasia is required, the DNR recommends the American Veterinary Medical Association (AVMA) methods. These methods include but are not limited to:

Sodium pentobarbital—An injection of sodium pentobarbital is considered by many to be the most humane method of euthanasia. Acquiring, possessing, and using this drug is strictly regulated by state and federal laws. For this reason, it is necessary to seek the assistance of a veterinarian or a specially licensed dog pound or animal shelter when using this method to euthanize an animal. The carcasses of animals euthanized by drugs, except for the hide when it may be legally sold, must be disposed of by burial, incineration, or disposal in a landfill. These carcasses cannot be sold or given away.

Carbon dioxide—This is the method commonly used for the euthanasia of laboratory research animals. Using this method requires a chamber in which the heavier-than-air carbon dioxide is used to replace available oxygen in a container. To minimize stress to the animal, the chamber should be large enough to hold the live trap without removing the animal. The opportunity to euthanize the animal without injection, handling, or transfer is a definite advantage of this method.

Shooting—Shooting can be the most painless and is sometimes the only available method to humanely dispose of an animal. Local laws and regulations regarding the transportation and discharge of firearms must be complied with. It is the responsibility of the permittee and employee(s) to ensure the safe handling and use of firearms. If shooting is used, the operator and firearm must be capable of producing a quick death by a shot to the brain of the animal. The careless, negligent, or reckless use of firearms is a violation of state law. The carcasses of animals killed by shooting may be sold if sale is otherwise lawful. ***Animals that have bitten a person must not be shot in the head.***

Commercial operators interested in more information on euthanasia methods are encouraged to contact their local veterinarian. In addition, the report of the AVMA

panel on euthanasia (1993 Report of the AVMA Panel on Euthanasia, J Am Vet Med Assoc 188:252-268) should be available through the local public library. It is the responsibility of the commercial operator to employ safe and effective euthanasia practices.

Animals That Have Bitten a Person

Any person who is bitten by a wild animal should seek medical advice from his/her health care provider or physician. Under such conditions, the animal should be maintained in confinement until disposal instructions are provided by the health care professional. This same precaution applies if a person has handled an obviously sick animal that 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.

Disposal of Carcasses

The carcasses of all dead nuisance animals must be disposed of properly (Bodies of Dead Animals, Act No. 239 of 1982). Proper disposal methods include 1) above-ground, 2) belowground, 3) incineration, 4) disposal in a licensed landfill, or 5) disposal with a dead animal dealer. Ecologically, aboveground disposal, burial, or disposal via a licensed dead animal dealer is preferred and encouraged over incineration or landfill disposal methods.

Aboveground disposal is not recommended for the carcasses of sick (or suspected of being sick) animals. Below are some guidelines to follow for proper disposal of carcasses.

Aboveground—All of these conditions must be met:

- The carcass must be placed in a remote area that is at least 1,000 feet from any neighboring resident, or at a greater distance as necessary to prevent a nuisance odor condition.
- The carcass should not be placed within 20 feet of another carcass.
- The owner of the land must authorize placement of the carcass.
- The carcass must not come into contact with surface or groundwater.

Belowground, individual grave—All of these conditions must be met:

- The carcass must be covered by at least 2 feet of soil within 24 hours after burial.
- The carcass must not come into contact with surface or groundwater.
- The number of individual graves must not exceed 100 graves per acre.
- The grave must be located at least 200 feet from any

groundwater well that is used to supply potable drinking water.

Belowground, common grave—All of these conditions must be met:

- The number of carcasses in a common grave should not exceed 250.
- Each individual carcass should be covered with at least 12 inches of soil within 24 hours after burial.
- The common grave should not remain open for more than 30 days and should have at least 4 feet of soil as final cover.
- The number of common graves should not exceed five graves per acre.
- The carcasses must not come into contact with surface or groundwater and must not be disposed of in a 100-year floodplain or wetland area as defined by the Solid Waste Management Act.
- The common grave must be located at least 200 feet from any groundwater well that is used to supply potable drinking water.

Incineration—The incinerator must be approved by state and local authorities to burn pathological waste.

Landfill—The carcass must be securely enclosed in a plastic bag or other suitable air-tight container to prevent noxious odors and disposed of at a Type II licensed solid waste disposal facility (standard landfill) or at an out-of-state facility in accordance with that state's solid waste disposal regulations.

Dead animal dealer—The carcass may be taken with or without fee but generally not sold to a dealer licensed pursuant to the Bodies of Dead Animal Act, 1982 PA 239. Dead animal dealers are licensed by the Michigan Department of Agriculture.

Live Animals and Sale of Animals

The statewide wildlife regulations clearly prohibit any person from removing game or protected animals alive from the wild (Part 401 of Act 451). One of the few exceptions provided is that a person issued a Damage and Nuisance Animal Control Permit may hold an animal in captivity for no more than 24 hours specifically for release or disposal. Under the authority of a physician's request for legitimate public health concerns or a DNR request, captured animals may be temporarily held for a longer period of time (refer to Section 5.52 of WCO).

The sale of wild animals, dead or alive, and their parts is also regulated in Michigan (WCO, Sections 4.1, 4.3, etc.). Except for the specific provisions applying to live trapped feral pigeons and dead game taken during the open hunting and trapping season by licensed persons, no animals or their parts may be bought, sold, given away, or bartered by a permittee. In addition, these animals, whether dead or alive, cannot be retained.



SUMMARY

A number of state and federal laws are designed to protect the public and the environment from the improper use of pesticides. It is the pest control technician's responsibility to understand and to comply with these laws. Category 7D applicators must be particularly sensitive about preventing contact between pesticides and non-target organisms, including people. Category 7D technicians should be trained in IPM and other methods that limit the use of pesticides while still achieving pest management goals. Regulation 637 outlines the details of this training along with other details pertaining to the safe and legal use of pesticides. Proper communication, notification, representation, and record-keeping are essential whenever pesticides are used.

Category 7D applicators must also be aware of the several federal and state laws that protect Michigan's wildlife and know under what circumstances a federal and/or state permit is required. This will depend on several factors, such as the animal species causing the damage, nuisance, or health risk; the time of year (whether or not during the open hunting season); the location where the problem is occurring (rural or non-rural); and the pest control technique that is used (pesticides, hunting, or trapping vs. exclusion or frightening devices). Pest control technicians must carefully examine each pest control situation and use good judgment in deciding upon a course of action that will control the pest problem effectively and humanely.

CHAPTER
1

Review Questions

Chapter 1: Legalities of Vertebrate Pest Management

1. Define a pest in simple terms. When are vertebrates considered pests?
2. Which Michigan regulation requires that pesticide applications be made in a manner that prevents off-target discharges of pesticides, and that pesticide application equipment be properly calibrated and in sound mechanical condition?
 - A. Regulation 636
 - B. Regulation 637
 - C. FIFRA
 - D. Natural Resources and Environmental Protection Act
 - E. OSHA
3. Which Michigan legislation gives the MDA authority to certify commercial applicators and to prescribe standards for certification?
 - A. Regulation 636
 - B. Regulation 637
 - C. FIFRA
 - D. Natural Resources and Environmental Protection Act
 - E. OSHA
4. Which federal legislation specifies that all pesticides be classified as either general-use or restricted use?
 - A. Regulation 636
 - B. Regulation 637
 - C. FIFRA
 - D. Natural Resources and Environmental Protection Act
 - E. OSHA
5. Which Michigan legislation establishes the types of certified applicators and expands the pesticide record-keeping requirements?
 - A. Regulation 636
 - B. Regulation 637
 - C. FIFRA
 - D. Natural Resources and Environmental Protection Act
 - E. OSHA
6. In Michigan, a vehicle used to transport pesticides for a pesticide application business must:
 - A. Be yellow or red.
 - B. Have the name of the pesticide(s) being carried posted in an appropriate location in the vehicle.
 - C. Name of the pesticide applicator firm and the business phone number printed on the exterior.
 - D. Be registered with the MDA and the MDEQ.
7. In Michigan, commercial pesticide applicators must provide their customer written information in the applicator service agreement including:
 - A. The time and date of application.
 - B. A general description of the target pest or pests to be controlled.
 - C. A list of pesticides applied.
 - D. All of the above.
8. Describe what type of pesticide information should be a part of the risk and benefit information provided to customers.
9. If requested, a commercial pesticide applicator must provide the customer with pesticide product labels and MSDS sheets.
 - A. True
 - B. False
10. List the minimum PPE requirements for commercial applicators.

11. Commercial pesticide applicators may represent pesticides as being endorsed by federal or state agencies
- True
 - False
12. List the elements that should be included in IPM training of commercial applicators.
- Use a distress-call frightening device to keep crows out of a farmer's field.
 - Trap and dispose of a coyote attacking livestock.
 - Trap and relocate a bear invading city dumpsters.
 - Use rat snap traps to catch chipmunks.
13. Under each situation described below, indicate which type of permit you would need and describe your reasoning (more than one answer may be possible for some).
- A general permit
 - A Project Control Permit
 - A special permit or referral by a wildlife conservation officer
 - None of the above
 - Build a fence to exclude deer from a farmer's field.
 - Control beaver damage on private property by trapping in Michigan's Upper Peninsula.
 - Use porcupine wire to prevent pigeons from roosting on a building.
 - Live trap pigeons roosting on a city building.
 - Control beaver damage on private property by trapping in southern lower Michigan.
 - Shoot deer during the non-hunting season to reduce crop damage.
 - Trap squirrels invading an attic.
 - Trap weasels in March to keep them out of a farmer's poultry house.
 - Trap weasels in April to keep them out of a farmer's poultry house.
14. Under each situation described below, indicate which type of permit you would need and describe your reasoning (more than one answer may be possible for some).
- A federal permit
 - A general permit
 - A special permit or referral by a wildlife conservation officer
 - A Project Control Permit
 - Shoot crows to keep them from destroying a farmer's crop.
 - Use poison baits to reduce a pigeon population in a city park.
 - Use poison baits to control starlings in an industrial area.
 - Trap owls attacking poultry.
 - Trap seagulls causing air-flight safety problems near airports.
15. After trapping a coyote that had been attacking livestock, which would be an approved and legal method for releasing or disposing of the animal?
- Within 24 hours, shoot the animal in the heart and dispose of the carcass in a nearby stream.
 - Within 48 hours, inject the animal with sodium pentobarbital and dispose of the carcass by an approved method.
 - Within 24 hours, have a veterinarian inject the animal with sodium pentobarbital and dispose of the carcass by an approved method.
 - Within 48 hours, shoot the animal in the heart and dispose of the carcass by an approved method.
 - Within 24 hours, take the animal home and make it a family pet.

16. Which is an accepted method of disposing of an animal that has bitten a person (assume local ordinance allows the discharge of firearms)?
- Shoot the animal in the head (brain) with a firearm capable of producing a quick death, retain carcass until examined by a veterinarian.
 - Hold the animal under observation for 24 hours; if the animal appears healthy release it; if not, consult a veterinarian.
 - Kill the animal by shooting through the heart, retain carcass until examined by a veterinarian.
 - Maintain the animal in confinement until instructions for disposal have been provided by a health care professional/veterinarian.
 - C & D
17. It is always legal for holders of general permits to sell animals or their parts.
- True
 - False
18. Which would be an approved method for disposing of a single animal carcass?
- Dispose of a sick animal in an aboveground grave at least 1,000 feet from a neighboring resident.
 - Dispose of a healthy animal in an aboveground grave at least 750 feet from a neighboring resident.
 - Dispose of a sick animal in a belowground grave at least 200 feet from any groundwater well, and cover with at least 2 feet of soil within 24 hours after burial.
 - Dispose of a healthy animal in a belowground grave at least 100 feet from any groundwater well, and cover with at least 2 feet of soil within 24 hours after burial.
 - Dispose of a healthy animal in a belowground grave at least 200 feet from any groundwater well, and cover with at least 1 foot of soil within 24 hours after burial.
19. What are the specifications for burying animals belowground in a common grave?
20. From an ecological standpoint, disposing of animal carcasses by incineration or landfill is preferred over burial aboveground or belowground, or disposal through a licensed dead animal dealer.
- True
 - False
21. For holders of general permits, which activity would NOT be a violation of the Wildlife Conservation Order?
- Checking set traps every two days.
 - Releasing a trapped animal on a public roadway or right-of-way.
 - Releasing an animal on private property with the property owner's written consent.
 - Releasing an animal after being held for 48 hours.
 - B & C
22. According to the Wildlife Conservation Order, what information must holders of general permits include in their records of nuisance animal control operations?