

**DECISION  
AND  
FINDING OF NO SIGNIFICANT IMPACT**

**FOR THE ENVIRONMENTAL ASSESSMENT:  
“MAMMAL DAMAGE MANAGEMENT IN PENNSYLVANIA”**

**I. INTRODUCTION and BACKGROUND**

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program receives and responds to requests for assistance from individuals, organizations and agencies experiencing damage and other problems related to wildlife. Wildlife damage management is the alleviation of damage or other problems caused by or related to the presence of wildlife, and it is recognized as an integral part of wildlife management (The Wildlife Society 1992). In September 2006, WS released an Environmental Assessment (EA) entitled *Mammal Damage Management in Pennsylvania* to facilitate planning, interagency coordination, streamline program management, and to clearly communicate to the public the analysis of WS' proposed adaptive integrated mammal damage management (MDM) program. Ordinarily individual WS damage management actions are categorically excluded and do not require an EA (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). However, to facilitate good planning and communication and to disclose the analysis of impacts, an EA was prepared. The EA documented the need for adaptive integrated MDM in Pennsylvania and assessed potential impacts of various alternatives<sup>1</sup> to reduce risks to human health and safety and respond to other damage associated with mammal activities. WS also consulted with the U.S. Fish and Wildlife Service (USFWS), Pennsylvania Game Commission (PGC) and the Pennsylvania Department of Agriculture to help determine any impacts to state wildlife populations and resources, and to ensure that the proposed action is in compliance with relevant laws, regulations, policies, orders and procedures, including the Endangered Species Act (ESA) of 1973. The EA and supporting documentation<sup>2</sup> are available for review at the USDA-APHIS-WS State Office, P.O. Box 60827, Harrisburg, PA 17106-0827.

The determination for action is the need to reduce risks to public health and safety and damage to agriculture, natural resources, and property from red fox (*Vulpes vulpes*), raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), woodchucks (*Marmota monax*), feral cats (*Felis catus*), little brown bats (*Myotis lucifugus*), northern long-eared bats (*M. septentrionalis*), Indiana bats (*M. sodalisi*), small-footed bats (*M. leibii*), silver-haired bats (*Lasionycteris noctivagans*), eastern pipistrelles (*Pipistrellus subflavus*), big brown bats (*Eptesicus fuscus*), red bats (*Lasiurus borealis*), and hoary bats (*L. cinereus*) in Pennsylvania. Some of the types of mammal damage that resource owners/managers seek to alleviate are: 1) human health and safety threats (*i.e.*, disease risk), 2) hazards to aviation at airports, 3) disease transmission threats to livestock, 4) property damage from burrowing or digging, 5) crop damage, and 6) threats to threatened or endangered (T/E) species and/or their habitats. Details on the conflicts and benefits associated with mammals in Pennsylvania are provided in the EA.

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<sup>1</sup> WS cannot change the PGC permitting private landowner's to reduce mammal damage. Therefore, an overarching factor to analyze potential environmental impacts of WS' MDM is the fact that such management can be conducted by State or local governments, or private entities that are not subject to compliance with National Environmental Policy Act if WS is not involved. Thus, WS has limited ability to affect the environmental *status quo*, except that WS is likely to have lower risks to nontarget species and fewer impacts on wildlife populations than some resource owners/managers. Despite this limitation, the EA is valuable to inform the public of environmental issues, and methods for reducing mammal damage.

<sup>2</sup> The EA incorporates by reference information in the WS programmatic Environmental Impact Statement (EIS) (USDA 1997). Copies of the EIS are available from the USDA/APHIS/WS, Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD 20737-1234.

## II. AGENCY AUTHORITIES

Under various acts of Congress, an Executive Order (EO) from President Clinton, and the Code of Federal Regulations (CFR), WS, as requested, is authorized and directed to carry out damage management programs necessary to protect the nation's agricultural and other resources. Among these are the Act of March 2, 1931 (46 Stat. 1468-69, 7 U.S.C. ' 426-426b, as amended), Public Law No. 100-202, (' 101(k), 101 Stat. 1329-331, 7 U.S.C. ' 426c), EO 13112 and CFR 50.

- Under the Act of March 2, 1931 and Public Law No. 100-202, the Secretary of Agriculture may carry out damage management programs alone, or may enter into cooperative agreements with states, local jurisdictions, individuals and public and private agencies whereby they may fund and assist in carrying out such programs. The Secretary has delegated this authority to APHIS; within APHIS the authority resides with the WS program.
- EO 13112 establishes guidance to federal agencies to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health impacts that invasive species cause. To comply with EO 13112, WS may cooperate with other federal, state, or local agencies, or with industry or private individuals to reduce damage to the environment or threats to human health and safety from invasive species.
- CFR 50 Subchapter C: Part 30, Subpart B-30.11- *The National Wildlife Refuge System - Feral Animals* states: feral animals, including horses, burros, cattle, swine, sheep, goats, reindeer, dogs, and cats without ownership that have reverted to the wild from a domestic state may be taken by authorized federal or state personnel or by private persons operating under permit in accordance with applicable provisions of federal or state law or regulation.

The PGC is charged “to protect, propagate, manage, and preserve the game or wildlife of the Commonwealth of Pennsylvania and to enforce, by proper actions and proceedings, the law of the Commonwealth of Pennsylvania relating thereto” (Pennsylvania Statute 322 (a) Title 34). PGC (Chapter 21, subchapter B, Section 2121) allows Pennsylvania residents, under permit<sup>3</sup>, to kill any game or wildlife: 1) which the person may witness engaged in the material destruction of cultivated crops, fruit trees, vegetables, livestock, poultry, or beehives, 2) anywhere on the property under the person's control immediately following such destruction, and 3) where the presence of the game or wildlife on any cultivated lands or fruit orchards is just cause for reasonable apprehension of additional imminent destruction.

## III. ISSUES ANALYZED IN THE EA

The following issues were identified as important to the scope of the analysis (40 CFR 1508.25) and each of the alternatives was evaluated relative to its impacts on these issues.

- Effects on Wildlife
- Effects on Human Health and Safety
- Effects on Socio-cultural Elements and Economics of The Human Environment
- Humaneness of Methods Used by Wildlife Services

An additional seven issues were considered but were not analyzed in detail in the EA:

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<sup>3</sup> Pennsylvania Statutes state: “General rule - A commercial wildlife pest control permit is required for a person to take, harass, transport, release or dispatch designated wildlife, for another person for a fee or other consideration, which is creating a nuisance, causing damage to property or is a risk to human health or safety” (Chapter 147, Subchapter T. Section 147.721).

- Appropriateness of Preparing an EA (Instead of an EIS) For Such a Large Area
- Effects on Public Use of Mammals
- WS' Effect on Biodiversity
- Wildlife Damage is a Cost of Doing Business -- a "Threshold of Loss" Should Be Established Before Allowing Any Lethal MDM
- Wildlife Damage Management Should not Occur at Taxpayer Expense, but Should be Fee- Based
- Cost Effectiveness of MDM
- Effectiveness of MDM Methods

#### **IV. ALTERNATIVES ANALYZED IN DETAIL**

The following alternatives were developed to evaluate and respond to the "issues analyzed in detail." An analysis of the effects of each Alternative on the issues is discussed in the EA. All Pennsylvania WS management actions comply with appropriate federal, state, and local laws, and Appendix B of the EA provides a description of the methods that could be used or recommended by WS.

##### **Alternative 1 – Continue the Current Federal MDM Program (No Action/Proposed Action)**

The proposed action is to continue the current Pennsylvania adaptive WS MDM program that responds to requests to protect human health and safety, agriculture, natural resources, and property. WS MDM would be allowed in the Commonwealth when requested on private property or public facilities where a need has been documented and upon the completion of an *Agreement for Control*.

The Pennsylvania WS MDM program has several goals to: 1) minimize human health and safety threats, 2) minimize property damage at airports and other urban and rural environments, 3) reduce losses or the risk of loss to agricultural crops and any other agriculture-related resources, 4) reduce damage caused by mammals to natural resources, including T/E species, wildlife, natural flora, parklands, recreation areas, distinctive habitats, etc. and 5) eliminate or alleviate damage to property such as residential and non-residential buildings, landscape, golf courses, grasses and turf, pets, zoo animals, or any other properties.

Under the proposed action, WS would respond to all requests for assistance with, at a minimum, technical assistance or self-help advice, or where appropriate and when funding is available, operational damage management assistance where professional WS Wildlife Biologists or Specialists conduct damage management actions. An adaptive integrated MDM approach<sup>4</sup> would be implemented allowing for use of any legal technique or method, either singly or in combination, to meet requesters' needs for resolving conflicts with mammals. Lethal methods include: shooting, trapping, snaring, and EPA approved chemicals. Nonlethal methods<sup>5</sup> include: deterrents/repellents, exclusion, harassment, habitat alteration, or live-capture and translocation. However, non-lethal methods may not always be applied as a first response to each damage situation (*i.e.*, human health and safety or where nonlethal methods have failed to protect resources in the past). The most appropriate response could be a combination of non-lethal and lethal methods, or there could be instances where application of lethal methods alone would be the most appropriate strategy.

##### **Alternative 2 – Nonlethal Required Before Lethal Control**

This alternative is similar to the Proposed Action except that WS personnel would be required to always recommend or use nonlethal methods prior to recommending or using lethal methods to reduce mammal damage. This alternative would not allow the use of lethal methods by WS until all nonlethal MDM

<sup>4</sup> WS' policies and social considerations will be considered when conducting MDM.

<sup>5</sup> In many situations, the implementation of nonlethal methods, such as exclusion, would be the responsibility of the requester.

methods had been attempted and found to be ineffective or inadequate. Although WS personnel experienced in MDM generally know when and where nonlethal methods would work, this alternative would often result in the use of methods that are known to be ineffective in particular situations. This would likely increase the costs of MDM efforts and would also allow unacceptable levels of damage to continue until the requirements of this alternative would be met.

### **Alternative 3 – Technical Assistance Only**

This alternative would not allow for WS operational MDM in Pennsylvania. WS would only provide technical assistance and make recommendations when requested. Property owners/managers, agency personnel, or others could conduct MDM using traps, shooting, pesticides or any nonlethal or lethal method that is legally available. Property owners/managers could implement their own MDM program, use private businesses or volunteer services, or take no action. This alternative would place the immediate burden for operational damage management work on property owners/managers and other federal, state or county agencies. This would likely result in increased take of nontarget species by persons with less experience.

### **Alternative 4 – No Federal WS MDM**

This alternative would eliminate WS' involvement in MDM in Pennsylvania. WS would not provide operational or technical assistance and requesters of WS assistance would have to conduct their own MDM without WS input. Information on MDM methods should be available to property owners/managers through such sources as the PGC, universities, or pest control organizations or companies. Property owners/managers could implement their own MDM program, use private businesses or volunteer services, or take no action. This alternative would place the immediate burden of damage management work on property owners/managers and other federal, state or county agencies. This would likely result in increased take of nontarget species by persons with less experience.

## **V. MONITORING**

The Pennsylvania WS program will monitor its actions relative to each issue analyzed in detail in the EA. This evaluation will include annual reporting to the PGC the WS take of all target and nontarget species to help ensure no adverse impact on the viability of any target or non-target species, including T/E species. PGC expertise will be used to determine impacts to the Commonwealth's wildlife populations.

## **VI. PUBLIC INVOLVEMENT**

As part of this process, and as required by the Council on Environmental Quality and APHIS-National Environmental Policy Act implementing regulations, an announcement of the availability of the EA for public review and comment was made through "Notices of Availability" (NOA) published in five major newspapers throughout the Commonwealth and through direct mailings to parties that had specifically requested to be notified. Sixteen (16) letters were mailed to organizations, individuals, and public agencies announcing that the EA was available. WS received one request for a copy of the EA for review. Following the 30 day public review and comment period, WS received one comment letter on the EA from an individual not located in the Commonwealth representing an organization. This letter was reviewed for substantive and relevant comments. Most concerns were already addressed in the EA or outside the scope of the analysis, but some of the comments warranted additional clarification or treatment. These comments and the WS' response are described in Appendix A of this Decision document.

## VII. DECISION and RATIONALE

I have carefully reviewed the EA and the input resulting from the EA review process. I believe the issues identified in the EA are best addressed by selecting Alternative 1, *Continue the Current Federal MDM Program (i.e., adaptive integrated MDM) (Proposed Action/No Action)*, and applying the associated standard operating procedures and monitoring measures discussed in Chapter 3 of the EA. Alternative 1 provides: 1) the best range of practical and effective damage management methods, 2) has low impacts on target and non-target species, 3) provides safeguards for public safety, 4) allows WS to meet its obligations to the PGC, cooperating counties and residents of Pennsylvania, 5) addresses the issues, and 6) allows for WS' congressionally directed role to protect the nation's agricultural and other resources. Alternative 1 also provides a mix of technical and operational assistance, and non-lethal and lethal methods. While Alternative 1 does not require non-lethal methods to be used in every situation, WS will continue to consider the use of nonlethal methods and provide information, and encourage the use of practical and effective non-lethal methods, when appropriate (WS Directive 2.101<sup>6</sup>). As a part of this Decision, the Pennsylvania WS program will provide information to requesters on biological and non-lethal management techniques that could reduce damage. I have also adopted the EA as final because comments from the public did not change the analysis.

### FINDING OF NO SIGNIFICANT IMPACT

The EA analysis indicates that there will not be significant impacts, individually or cumulatively, on the quality of the human environment because of the proposed action, and that these actions do not constitute a major federal action. I agree with this conclusion and therefore determine that an EIS will not be necessary or prepared. This determination is based on the following factors:

1. Mammal damage management, as conducted in Pennsylvania is not regional or national in scope.
2. The proposed action will not have an impact on unique characteristics of the areas such as historical or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecological critical areas.
3. The proposed action will not significantly affect public health and safety.
4. The effects on the quality of the human environment are not highly controversial. Although there is opposition to government-sponsored damage management, this action in Pennsylvania is not controversial in relation to size, nature or effects.
5. Standard operating procedures adopted as part of the proposed action lessen risks to the public and prevent adverse effects on the human environment and reduce uncertainty and risks.
6. The proposed action does not establish precedence for future actions with significant effects. This action would not set precedent for additional WS damage management that may be implemented or planned in Pennsylvania.
7. The number of animals taken (both target and non-target) annually would be very small in comparison to total populations. Adverse effects on wildlife or wildlife habitats would be minimal.

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<sup>6</sup> WS Policy Manual provides guidance for WS personnel to conduct wildlife damage management through Program Directives. WS Directives referenced in this Decision document can be found at <http://www.aphis.usda.gov/ws/wsdirectives.html>.

8. Mammal damage management would not affect cultural or historic resources. The proposed action does not affect districts, sites, highways, structures or objects listed in or eligible for listing in the National Register of Historic Places, nor would it cause a loss or destruction of significant scientific, cultural, or historical resources.

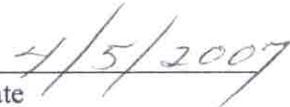
9. An evaluation of the proposed action and its effects on state and federally listed T/E species determined that no significant adverse effects would be created for these species. The proposed action complies fully with the Endangered Species Act of 1973, as amended. Consultations with the USFWS and the PGC regarding potential risks to T/E species have been conducted and these agencies' input was used to develop standard operating procedures for the proposed action.

10. This action would be in compliance with federal, state and local laws or requirements for damage management and environmental protection.

11. No significant cumulative effects were identified by this assessment or other actions implemented or planned within the area.

For additional information regarding this decision, please contact Harris Glass, State Director, APHIS-WS, P.O. Box 60827, Harrisburg, PA 17106, or by phone @ 717-236-9451.

  
Charles S. Brown  
Eastern Regional Director  
USDA-APHIS-WS  
Raleigh, North Carolina

  
Date

## **APPENDIX A RESPONSE TO/CLARIFICATION OF COMMENTS**

This Appendix contains issues raised in the only letter received by WS during the public comment period for this EA and WS' responses.

### **1. Feral cat management is contentious and some stakeholders have strong feelings and vested interests in protecting feral cats.**

We agree that there is debate relative to the impact of feral cats and subsequent management actions, that there is no consensus on the best management choices, and that decisions must be made on a case-by-case basis (Barrows 2004, Stoskopf and Nutter 2004, Winter 2004, Jessup 2004). However, because there may be disagreement does not mean that the action should not be conducted. In making decisions, agencies must consider the degree to which the environmental effects of their actions are likely to impact the environment or be highly controversial<sup>7</sup>. Feral cats have a problematic status in today's society as "cultural refugees" and they are considered an invasive species in the United States (Brickner 2003, Barrows 2004). On the one hand they are not generally owned or closely supervised and therefore are not fully protected by humans; on the other hand, they are not classified as wildlife and are therefore not protected by federal or state laws. Unfortunately, most feral cats are in poor condition and are more susceptible to hunger, injury, and life threatening diseases and parasites that can be passed onto humans and/or house pets (Brickner 2003, Slater 2004). WS only responds when requested and when damage or threats to resources are occurring, and our activities are often contingent upon funding from those requesting WS' assistance, or upon funding from Congress. Before this EA was released for public review it was reviewed by the cooperating agencies, and these agencies concurred with the proposed action and its effects.

### **2. Feral cats are domestic animals and management of these animals does not fall under the responsibility of WS.**

Congress provided authority to the USDA Secretary to protect American agricultural and other resources and interests from damage and to cooperate with private and public entities to resolve damage. The original and primary statutory authority for the WS program is the Act of March 2, 1931, as amended (46 Stat. 1468; 7 U.S.C. 426-426b).

In 1988, Congress strengthened the legislative authority of WS with the Rural Development, Agriculture, and Related Agencies Appropriations Act (*i.e.*, (Public Law No. 100-202) 7 U.S.C. 426c). This Act states, in part: "*the Secretary of Agriculture is authorized, except for urban rodent control, to conduct activities and to enter into agreements with States, local jurisdictions, individuals, and public and private agencies, organizations, and institutions in the control of nuisance mammals and birds and those mammal and bird species that are reservoirs for zoonotic diseases . . .*"

The authorities imparted to the Secretary of Agriculture have been delegated to APHIS, and within APHIS these authorities have been delegated to the WS program. Accordingly, WS' authorities support and authorize WS to reduce problems caused by injurious and/or nuisance animals to agricultural and other resources and minimize potential harm or threats to property and human health and safety. WS' authorities allow WS to enter into cooperative agreements with federal agencies, states, local jurisdictions, individuals, and public and private agencies, organizations, and institutions to reduce the risks of injurious animal species, or nuisance or invasive mammals and birds, and those mammal and bird

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<sup>7</sup> The term Acontroversial® applies to the environmental effects of a proposed action, not opposition to the proposed action itself (40CFR 1508.27 (b)(4)).

species that are reservoirs for zoonotic diseases. WS is a cooperatively-funded, service-oriented agency that responds to situations after a request for assistance is received and an agreement for control is signed by the property owner/administrator (WS Directives 3.101 and 3.110).

Further, Executive Order (EO) 13112, authorized by former President Clinton on February 3, 1999, established guidance to federal agencies to prevent the introduction of invasive species and provides for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. To comply with EO 13112, WS may cooperate with other federal, state, or local agencies, or with industry or private individuals to reduce damage to the environment or threats to human health and safety.

Cats have been identified as non-native, invasive species and whose introduction could or likely cause economic or environmental harm, or harm to human health (Barrows 2004, Stoskopf and Nutter 2004, Winter 2004). When feral cats have been identified as causing harm, or potential harm to protected resources, WS not only has the authority but the responsibility to respond to requests to help reduce damage or potential damage.

### **3. The key to successful feral cat management is the same as other mammal damage management and WS must utilize adaptive management.**

We agree and would conduct any damage management and all mammal damage management (MDM) using an adaptive management approach and integrate both lethal and non-lethal techniques into the management strategy, as appropriate. WS personnel, when evaluating a damage situation, use the WS Decision Model described in the EA at 3.2.3 (Slate et al. 1992). WS personnel assess the problem and evaluate the appropriateness and availability of strategies and methods based on technical information, scientific data and agency experience with similar problems. After the strategy/method(s) has been implemented, monitoring is conducted to assess the effectiveness of the strategy. As new information becomes available, it may be incorporated into the management plan/strategy to more effectively reduce damage or damage threats. In terms of adaptive management, the WS Decision Model (Slate et al. 1992) consists of continuous feedback between receiving the request and monitoring the results of the damage management strategy.

### **4. The EA does not discuss the effectiveness of feral cat management.**

The effectiveness of any damage management program could be defined in terms of losses or risks potentially reduced or prevented, how accurately practitioner's diagnosis the problem and the species responsible for the damage, and then how actions are implemented to correct or mitigate risks or damages<sup>8</sup>. To do this the agencies must be able to complete management actions expeditiously to minimize harm to non-target animals and the environment, while at the same time, using methods as humanely as possible within the limitations of current technology, funding and workforce. The most effective approach to resolving any damage problem is to use an adaptive integrated approach which may call for the use of several management methods simultaneously or sequentially (USDA 1997, Courchamp et al. 2003) and this was analyzed in the EA (See Section 3.1.1, 3.2.1, 3.2.3). The purpose behind integrated pest management is to implement management methods in the most effective manner while minimizing the potentially harmful effects on humans, target and non-target species, and the

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<sup>8</sup> The results of cat removal experiments supported that predation by feral cats reduced populations of small native vertebrates (Risbey et al. 2002). Bloomer and Bester (1991) removed cats from Marion Island and showed that night hunting decreased the density of cats based on a catch per unit-of-effort. In addition, no adult group was particularly vulnerable, however, removal efforts reduced the number of female cats and litters per female per year, thus reducing fecundity, a reported efficient way to reduce a cat population (Remfry 1981). With respect to the effects of removing cats from specific locations, eradication of cats from some small New Zealand islands allowed native bird populations to increase (Veitch 1985) and increased the potential to use such islands for relocation/reintroduction of endangered and indigenous animals.

environment<sup>9</sup>. Under the proposed action, the analysis showed that the methods proposed for use are the most practical and effective way to resolve damage problems. Efficacy is based on the types of methods employed, the application of the method, restrictions on the use of the method(s), the skill of the personnel using the method and, for WS personnel, the guidance provided by WS Directives and policies.

The goal of the WS program is to reduce damage, risks, and conflicts with animals as requested and not to necessarily reduce/eliminate populations. Total eradication is very difficult if not impossible to accomplish and is limited by its high cost, logistically and economically (Barrows 2004, Slater 2004, Winter 2004). WS recognizes that localized population reduction could be short-term and that new individuals may immigrate, be released at the site, or be born to animals remaining at the site (Courchamp et al. 2003). The ability of an animal population to sustain a certain level of removal and to eventually return to pre-management levels, however, does not mean individual management actions are unsuccessful, but that periodic management may be necessary. Even though a reduction in local populations may not last, timed properly, the management result can last long enough for the protected resources (*e.g.*, eggs, small mammals, birds, etc.) to reach a size or level of maturity where they are at less risk. To say that a management strategy is ineffective because it may have to be repeated is analogous to saying that lawn mowing is ineffective in making the grass short because it must be repeated.

**5. The EA offers no evidence that lethal management will provide population or disease control in feral cat colonies and feral cat control program must be accompanied by a public education program.**

The goal of the WS program is to reduce damage, risks, and conflicts with animals as requested and not to necessarily reduce/eliminate populations. Pennsylvania WS only removed 80 feral cats during the period of the analysis in the EA (Table 4-1 of the EA) but this removal effort was important in terms of resource protection. WS' cat removal efforts could be requested to reduce risks to the traveling public or property damage at airports, or remove potential bird and small mammal predators and return habitat to a more natural state (Jessup 2004). Feral cat removal would have the benefit of reducing predation on other species, including native rodent and birds (Courchamp et al. 2003).

The result of a cat removal experiment supported that predation by feral cats reduced populations of small native vertebrates (Risbey et al. 2002). Bloomer and Bester (1991) removed cats from Marion Island and showed that night hunting decreased the density of cats based on a catch per unit-of-effort. In addition, no adult group was particularly vulnerable; however, removal efforts reduced the number of females and litters per female per year, thus reducing fecundity, a reported efficient way to reduce a cat population (Remfry 1981). With respect to the effects of removing cats from specific locations, eradication of cats from some small New Zealand islands allowed native bird populations to increase (Veitch 1985) and increased the potential to use such islands for relocation/reintroduction of endangered and indigenous animals.

WS agrees that education is an important part of an effective management program and this is discussed in the EA. Education is an important element of WS' program because damage management is about finding "balance" or co-existence between the needs of people and animals. This is extremely challenging as nature has no balance but rather is in continual flux. In addition to the routine dissemination of recommendations and information to individuals and organizations requesting information, lectures and demonstrations are provided to farmers, homeowners, and other interested groups, and WS frequently cooperates with other agencies in education and public information efforts. Additionally, technical papers are presented at professional meetings and conferences so that WS

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<sup>9</sup> The cost of management may sometimes be secondary because of overriding environmental, legal, human health and safety, animal welfare, or other concerns.

personnel, other wildlife professionals, and the public are updated on developments in damage management technology, laws and regulations, and agency policies.

In addition, WS provides informational leaflets about MDM, mammal biology, and mammal ecology. Pennsylvania WS program personnel annually provide hundreds of leaflets and handouts, and information on animal husbandry, habitat and facilities management, animal behavior and behavior modification, and demonstrations on the proper use of some management devices. Technical assistance is generally provided following an on-site visit or verbal consultation with the requester. Typically, several management strategies may be described for short and long-term solutions to damage problems; these strategies are based on the level of risk, need and practical application. Technical assistance may require substantial effort by WS personnel to discuss and describe the technique(s), but the actual implementation is the responsibility of the requester.

**6. Trap-Neuter-Release (TNR)<sup>10</sup> programs are said to have been proven successful in reducing feral cat populations, decreasing the number of healthy cats that are euthanized, reducing public complaints, and diminishing management costs when accompanied by adoption and regular surveillance of the colonies.**

The TNR program for feral and free ranging cats has undergone considerable debate in animal welfare and scientific communities for a number of years. Two main questions or viewpoints dominate this debate: 1) Does TNR work in controlling cat problems in the long run or the short run? and 2) Do TNR programs address or alleviate problems (*i.e.*, diseases, predation, etc.) created by feral cats?

The National Association of State Public Health Veterinarians and the American Veterinary Medical Association oppose TNR programs based on health concerns and threats (JAVMA 1996). First, diseases and parasites transmitted by cats to humans including: ringworm, bartonellosis, larval migrans, cat scratch fever, toxoplasmosis, bacillary angiomatosis, hepatic peliosis in immunocompromised patients, endocarditis, bacteremia, osteolytic lesions, pulmonary nodules, neuroretinitis, neurologic diseases and vector-borne zoonotic diseases are not controlled by TNR programs (Dubey 1973, Teutsch et al. 1979, Heller et al. 1997). Diseases that may be communicable from free-ranging or feral cats to pet cats include feline panleukopenia infection, feline calicivirus infection, feline reovirus infection, and feline syncytium-forming virus infection (Gillespie and Scott 1973).

Second, rabies is a major concern because cats are the number one “domesticated” species testing positive for rabies in the United States and other species commonly infected by the disease are also attracted to feral cat feeding stations (USDA 2003, Slater 2004). In areas where dog rabies has been eliminated but rabies in wildlife has not, cats often are the most significant animal transmitting rabies to humans (Eng and Fishbein 1990, Krebs et al. 1996, Vaughn 1976).

Further, TNR programs are not as successful as desired and needed and the results are problematic because they rely on anecdotal recollections of workers on the number of cats in colonies before and after TNR (AVMA 2003, Barrows 2004, Levy and Crawford 2004, Winter 2004, Jessup 2004). Feral and free-ranging cats subjected to TNR programs continue to cause the same problems<sup>11</sup> they caused before the TNR program was initiated because of slow attrition and TNR programs may take a decade or longer to reduce cat colonies to lower levels in localized areas (Barrows 2004, Levy and Crawford 2004, Winter

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<sup>10</sup> TNR has also been defined as “trap, neuter, and reabandon,” and that is how TNR was defined for the purposes of AVMA proceedings. Abandonment of animals cannot be morally justified and is illegal under state humane laws and trap, neuter, and reabandonment is a cruel fate for many former pet cats (Jessup 2004).

<sup>11</sup> Brickner (2003), Levy et al. (2003), Barrows (2004) and Jessup (2004) reported that sterilized cats that don’t spend any time on courting and mating are left with more time to hunt than non-sterilized cats and therefore, continue to remain as potential reservoirs of animal and human disease, a social nuisance and continue to hunt and kill protected species.

2004). Most cat colonies have not died out and many have remained as large or increased because of additional cat recruitment by abandonment, immigration and reproduction (Castillo and Clarke 2003, Levy and Crawford 2004, Winter 2004). So the problems with feral cats and wildlife and human health issues have not been resolved by TNR programs (USDA 2003, Barrows 2004, Winter 2004), but will require continuing education by WS, veterinarians, other agencies, and animal rights/welfare organizations (Barrows 2004, Slater 2004, Levy and Crawford 2004, Winter 2004).

Other questions that need to be asked and answered are: “Is TNR legal?” and “is it ethical for veterinarians to participate in TNR programs?” (Barrows 2004, Levy and Crawford 2004, Jessup 2004). There is question whether TNR programs are violating the Endangered Species Act (ESA) and Migratory Bird Treaty Act (MBTA) because released cats may kill migratory birds and/or endangered species<sup>11</sup> (Barrows 2004, Levy and Crawford 2004, Jessup 2004). The ESA and MBTA do not specifically address TRN, but it has been suggested that “these laws could be used to both promote TNR to reduce environmental impacts of cats or to initiate legal action against cat caretakers, veterinarians, and public officials if it can be shown that their involvement with feral cats ultimately leads to the impairment of protected species” and TNR is not a good solution when acute issues need rapid solutions (Levy and Crawford 2004, Stokopf and Nutter 2004). WS neither endorses nor uses this approach to problem resolution.

#### **7. Elimination of feral cats may result in sharp increases in introduced rat (*Rattus spp.*) and mouse (*Mus musculus*) populations that have been released from predation pressure by these cats.**

Research studies have demonstrated that house mice and rats were rarely preyed upon by cats although the mouse and rat population was reported to be relatively high (Jackson 1951, Dards 1980). This may support the observation that prey size and the difficulty of capture may greatly influence predation attempts by cats, and urban cats avoided preying on rats (Brickner 2003). It also implies that cats only have a small influence on the control or occurrence of pest rodent populations in cities and rural areas (Jackson 1951, Brickner 2003). In contrast, Winter (2004) reported that cats reduced the abundance of native rodent and bird populations, and changed the rodent species composition. In a California study, more than 85% of the native western harvest mouse (*Reithrodontomys megalotis*) and deer mice (*Peromyscus* sp.) were trapped in the areas without cats, whereas 79% of house mice<sup>12</sup>, another exotic species, were trapped in the areas with cats (Winter 2004).

Barrows (2004), Slater (2004), Winter (2004) also reported that cats have significant impacts on local wildlife populations, especially in habitat “islands” such as suburban and urban parks, wildlife refuges, and other areas surrounded by human development. The loss of bird species from habitat islands is well documented, and nest predation is an important cause of the decline of neotropical migrants (ABC 2005). In a two year study conducted in two parks with grassland habitat, one park had no cats but more than 25 cats were being fed daily in the other park. There were almost twice as many birds seen in the park with no cats than in the park with cats. California thrasher (*Toxostoma redivivum*) and California quail (*Lophortyx californica*), both ground-nesting birds, were seen during surveys in the no-cat area, whereas they were never seen in the cat area. The researchers concluded, “Cats at artificially high densities, sustained by supplemental feeding, reduce abundance of native rodent and bird populations, changed the rodent species composition, and may facilitate the expansion of the house mouse into new areas” (Hawkins et al. 1999).

Further, Childs (1991) and Childs (1986) found that urban/city cats’ use of rats is size limiting with few rats of reproductive size or age preyed on by domesticated cats. The duration of susceptibility of rats to

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<sup>12</sup> House mice evolved with cats and have had thousands of years to coevolve, whereas North American species have had only several decades to perhaps 200 years to develop defenses against cat predation (Jessup 2004).

predation is attributed to abundance of garbage and artificial food sources in the urban/city environment. Artificial feeding of cats also reduces predation to non-native rodents because of size differences in urban rats. In rural setting, cats may control rat populations for longer durations but ultimate suppression of rat populations was achieved via chemicals (*i.e.*, poisons).

## **8. The humaneness of leg-hold traps, snares, and body-gripping kill traps is questionable.**

Trapping using the above methods is a strictly, law-enforced activity regulated by the PGC<sup>13</sup> and is an important way for biologists to collect information about wildlife, including information about diseases like rabies that can affect people (<http://www.fishwildlife.org/furbearer.html>). The Association of Fish and Wildlife Agencies began a program to develop Best Management Practices<sup>14</sup> (BMPs) for regulated public trapping to assess animal welfare, identify efficient and selective trapping tools and techniques, document improvements in the welfare of captured animals, and develop recommendations<sup>15</sup> for state wildlife agencies to consider for furbearer management programs ([http://www.fishwildlife.org/furbearer\\_bmp.html](http://www.fishwildlife.org/furbearer_bmp.html)). Based on sound-science and research, program participants are working together to develop, modernize and improve the technology of trapping through scientific research and create practical and more humane wildlife capture applications to field situations.

As described above, WS takes the issue of humaneness of methods seriously and continues to evaluate existing and new methods for animal welfare and humaneness concerns<sup>16,17</sup> (WS Directive 2.450). Unlike regulated sport trapping, WS' wildlife restraint in Pennsylvania and across the nation is a damage management action<sup>18</sup> conducted with trained WS Specialist or Biologists and only conducted on few and specific species that are generally abundant or overly-abundant and which are causing unacceptable damage or risks of damage. At times, management decision-making processes involve considerations between resource protection (*i.e.*, human health and safety) and humaneness, and people may perceive the humaneness of an action differently depending on their background, culture, and how they value the various resources<sup>19</sup> (Proulx and Barrett 1991).

WS recognizes that animal welfare organizations are concerned that some methods used to reduce damage may expose animals to pain and suffering. However, WS also recognizes another side to this issue, as perceived by resource managers, property owners and others. WS believes that humaneness of an action or management plan must not only consider the effects of the action on the target species but also on the people or other species that may be or are affected by the target species. Ideally, such protection would be achieved through non-lethal means, but when non-lethal means are not practical or effective, lethal means may be the only way to accomplish such protection. Some of the standard operating procedures used by WS to reduce nontarget take and increase humanness are: 1) all WS leg-

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<sup>13</sup> The PGC is staffed by professional wildlife biologists and conservation officers that are familiar with Pennsylvania trapping regulates and public concerns about animal welfare.

<sup>14</sup> BMPs are carefully researched recommendations designed to address animal welfare and increase trappers' efficiency and selectivity. The extensive research and field-testing have been used to develop BMPs and methods evaluations used to develop BMPs have been standardized. BMPs are the product of on-going work that is updated as additional traps are identified through future scientific testing. BMPs will ensure the continued improvement of this management technique.

<sup>15</sup> Insofar as practical, WS intends to utilize BPM guidelines as a basis for policy formulation, recognizing that some devices used in wildlife damage management are not commercially available and not all devices recommended in the BMP guidelines for general public use meet the performance requirements, particularly for efficiency and durability, for use in federal wildlife management activities.

<sup>16</sup> Humaneness is also addressed in the EA at Sections 2.2.5, 3.4 and 4.1.5.

<sup>17</sup> WS' National Wildlife Research Center (NWRC) is mandated by Congress to devote 50% of its base funding toward nonlethal methods development. The NWRC actually spent about 80% out of an annual appropriation of \$17M toward nonlethal methods development in FY06 (L. Clark, NWRC, pers. comm. 2007).

<sup>18</sup> Pennsylvania state law requires that traps and other trapping equipment set in the field be check at least every 36 hours; Pennsylvania WS attempts to checks traps at least every 24 hours or makes arrangements for traps to be checked every 24 hours.

<sup>19</sup> The basic problem associated with animal traps is a lack of defining "humaneness" as it relates to animal cruelty (Proulx and Barrett 1991). The definition of humaneness varies between people and cultures.

hold traps must incorporate pan-tension devices, if appropriate, to prevent or reduce the capture of smaller nontarget animals, 2) break-away locks or stops are used on snares to allow for the release of livestock, deer, or other animals which may be captured, 3) replacement capture devices are selected from the commercially available devices or equivalents listed in BMP guidelines, unless specifically authorized by the WS Regional Director, and 4) all employees, as appropriate, participate in a trapper education course as recommended by BMP guidelines. We believe that if an animal death must occur, it should occur with minimum distress and pain, in as short a period of time as practical, and with compassion.

One of the challenges in coping with this issue, however, is how to achieve the least amount of suffering<sup>20</sup> within the constraints imposed by current technology and funding. Resource managers and the public would both be better served to recognize the complexity of defining suffering and pain since “. . . neither medical or veterinary curricula explicitly address suffering or its relief” (CDFG 1999). The CDFG (1999) discussed these issues in their Furbearing and Nongame Mammal Hunting and Trapping document. The document discussed welfare of individual animals, including the effects of various methods of “take” on pain and suffering<sup>21</sup>. CDFG (1999) stated that even cage traps are not perfect. Swanstrom (1962) and Swift (1966 as cited in CDFG 1999) reported that some animals captured in cage traps damage their teeth after being captured or when disturbed, and often suffer lacerations on their face and nose because of “fighting” the trap. Further, Roswell et al. (1980) reported that studies indicated that the clamping effect and use of snares was capable of producing rapid unconsciousness and death by hypoxia in cats and could be considered humane. Therefore, each method and situation must be considered on a case-by-case basis.

Proulx (1999) reported on state of the art trap technology on the basis of the most stringent animal welfare performance criteria. However, Proulx (1999) did not consider human safety. Body-gripping traps (*i.e.*, 330 conibear size traps) modified with clamping bars, as recommended by Proulx (1999), strike with 20% more force than a standard 330 conibear trap. However, since people using the conibear trap occasionally catch their hands, the full force of the trap would strike the hand and most likely cause injury. We consider this modification, while possibly more beneficial for animal welfare considerations, a detriment to human safety. While WS is willing to use kill traps that more quickly kill animals, we are unwilling to put our employees or the public at risk for potential injury.

Concerning the use of only non-lethal/displacement methods. What if damage occurs in spite of the use of non-lethal methods? WS is trying to achieve a “balance” between the needs of people, recognizing that people are part of the environment, and keeping issues like protection of the environment, economics, humaneness, etc. in perspective. Questions like, “Is it more humane and ethical to allow nonnative predators to maim and kill thousands of native species annually<sup>22</sup> than to reduce the suffering endured by those species?” need to be asked and answered (Jessup 2004). Non-lethal/displacement methods research suggests that most animals adjust and habituate to these methods (Conover 2002). Despite extensive research, the efficacy of most deterrent techniques remains unproven or inconsistent (Conover 2002). Further, success of displacement management depends on where the target species relocate or how their behavior<sup>23</sup> is modified because the target species may also cause a problem at a new location or with a new behavior.

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<sup>20</sup> Wild animals are not only killed by cats but are also maimed, mauled, dismembered, ripped apart, and gutted while still alive, and if they survive the encounter, they often die of sepsis because of the virulent nature of the oral flora of cats (Jessup 2004).

<sup>21</sup> Langford (2006) has little relevance to the expected effects from the proposed action, since that study dealt with caged mice held in close associations with each other and how the test mice reactions reflect human pain. That situation is a totally different circumstance than what would be expected to result from the limited predator removal associated with the proposed action. Even Langford states that, “No observation effects whatsoever were observed among strangers” which is the case when predator damage management actions are conducted by WS in Pennsylvania.

<sup>22</sup> Scientists estimate that nationwide cats kill hundreds of millions of birds and more than a billion small mammals each year, and this predation cannot be ignored (Winter 2004, Jessup 2004). For additional information on cat predation, see the EA at Section 1.3.5.

<sup>23</sup> Feral cats could be cage trapped (live trapped) and provided to county or local animal shelters for adoption, depend upon the situation and relevant ordinances. Because of the huge number of feral cats and the severe shortage of good homes and the difficulty of socialization, it is

Unfortunately, most feral cats are in a terrible state, they often lead a short, miserable life, exposed to car hits, animal attacks, human cruelty, disease, parasites, poisons, and traps (Brickner 2003, Slater 2004, Jessup 2004). Longevity of feral cats is estimated at 4-5 years while domestic cats can live 15-17 years as house pets (Ogan and Jurek 1997). Mortality rates for feral cats can be up to 80% per year (AVMA 2003) and feral cats suffer considerably higher rates of injury and disease (AVMA 2003, Santa Clara County Humane Society 1995). Many feral cats succumb to vehicle trauma, predation, disease, or severe weather. Winter (2004) has presented a number of examples of the dangerous and unsanitary conditions found at feral cat feeding sites. Clearly these conditions and outcomes are not serving the welfare of feral cats (JAVMA 2004).

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often necessary and the most compassionate choice to euthanize feral cats (JAVMA 2004). Therefore, relocating and holding feral cats that will ultimately be euthanized add unnecessary stress to those cats and could be considered less humane than immediate lethal control (Levy and Crawford 2004).

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