Animal Damage Control Program

Final Environmental Impact Statement

Summary

Volume 1 of 3

April 1994
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Issue date: April 1994
March 23, 1995

Dear Recipient of the Animal Damage Control EIS:

The record of decision (ROD) for the Animal and Plant Health Inspection Service, Animal Damage Control program environmental impact statement (EIS) was signed on March 7, 1995. Enclosed is a copy of that ROD and errata for the EIS. Comments and questions concerning the ROD or the errata should be addressed to:

USDA, APHIS, ADC
William H. Clay, Director
Operational Support Staff
4700 River Road, Unit 87
Riverdale, MD 20737-1234

Sincerely,

Bobby R. Acord
Deputy Administrator
Animal Damage Control

2 Enclosures
Introduction

This decision is the culmination of the environmental impact statement (EIS) process for the Animal and Plant Health Inspection Service (APHIS), Animal Damage Control (ADC) program. The final programmatic EIS document underlying this decision develops at great length and specific detail the strategies, methods, and processes through which the mission of ADC is accomplished. Numerous examples ("decision model" applications presented in Appendix N, for instance) of how the program has approached some of its environmental responsibilities in the past are provided. Information concerning categorizing classes of action and individual documentation requirements could not be specified in the final EIS because the development of APHIS regulations concerning compliance with the National Environmental Policy Act (NEPA) was not yet completed. Subsequently, the APHIS regulations have been published (60 FR 6000-6005, February 1, 1995) and became effective on March 3, 1995. ADC will fully comply with these implementation procedures and any amendments to those procedures.

The Council on Environmental Quality's (CEQ) regulations implementing NEPA tell decisionmakers what information must be included in records of decision. Section 1505.2 of the CEQ regulations provides that records of decision contain:

- A statement of what the decision is;
- The identification of all alternatives considered by the agency, including the environmentally preferable alternative(s);
- A discussion of factors (economic, technical, and agency statutory mission) and essential considerations of national policy balanced in the decisionmaking process and how each factor weighs in the decision; and
- An explanation of whether the decision (the alternative selected) is designed to avoid or minimize environmental harm and, if not, why not.

The final EIS prepared by ADC is programmatic in nature. The EIS process was undertaken to explore issues and alternatives associated with program implementation, to identify data elements and other information necessary to evaluate effects at the programmatic and project levels, and to assist in the development of a flexible framework within which effects of various alternatives may be considered in site-specific contexts that are consistent with the documentation and procedural requirements of NEPA.

Program Alternatives

The final EIS rigorously explored and objectively evaluated, in detail,
five alternative strategies that may be utilized by program personnel in different site-specific settings. In addition, eight other alternatives that involved restructuring or broadly applied, single-focus approaches, were presented and briefly considered. The five alternative strategies considered in detail are:

- The current program (the integrated pest management alternative), which consists of various practices and techniques, including both nonlethal and lethal actions, that are available for formulating a damage control strategy consistent with applicable State and local requirements, cooperative agreements, and interagency arrangements;
- A system of compensation, as a replacement for ADC program actions, to pay partially or fully, for agricultural losses due to damages by wildlife;
- No action, under which USDA-APHIS funded wildlife damage control activities would cease with no specified provisions for replacement measures—compensation or other;
- Use and recommendation of only nonlethal methods to control wildlife-caused damage, precluding the use or recommendation of any and all methods that are directly lethal to wildlife; and
- A requirement that practical nonlethal methods of wildlife damage control be recommended or used in each situation prior to recommending or using any lethal methods.

Integrated pest management (the current program alternative) has been identified by ADC as both its "preferred" alternative and the "environmentally preferable" alternative.

A principal function of an EIS is its use by Federal officials, in conjunction with other relevant materials, to plan actions and make decisions. As a practical matter, the integrated pest management alternative includes nearly all animal damage control options and tools available to ADC officials at the project level. How these or other options will be developed and integrated efficiently into program planning and decisionmaking consistent with NEPA and other environmental mandates are addressed in the new APHIS NEPA implementing procedures. Specifically, ADC reaffirms its intention that nonlethal control methods as the means of achieving project goals will normally be considered, recommended, and, when appropriate, applied prior to recommending or using lethal methods (ADC Directive 2.101).

The APHIS Framework for Environmental Decisionmaking

The starting point for environmental decisionmaking by agencies of the Federal Government is NEPA. The CEQ implementing regulations require agencies to integrate the NEPA process into their planning and to establish procedures to facilitate compliance with the Act. The final EIS prematurely asserted that APHIS had new, finalized NEPA compliance procedures. In fact, as stated
above, APHIS only recently promulgated its new NEPA compliance procedures (60 FR 6000-6005, February 1, 1995). The ADC program has adapted its planning and decisionmaking practices to these new procedures. ADC, in compliance with the APHIS Regulations, is structuring a cost-effective environmental compliance system that will be published in the APHIS Environmental Manual.

The programmatic EIS process has functioned as a catalyst to focus on environmental issues raised both by the public and internally and to provide environmental information to public officials and citizens before decisions have been made. For its part, ADC has sought a useful decisionmaking "model" (outlined in Chapter 2 of the final EIS and assessed in Appendix N) that is compatible with both its mission and NEPA. ADC will use this "decision model" process, in conjunction with the general outline of NEPA compliance contained in the final EIS, the CEQ regulations (40 CFR 1500, et seq.), the Department's NEPA implementing regulations (7 CFR 1b and 3100.40), and the APHIS implementing regulations (7 CFR 372, et seq., 60 FR 6000-6005), as its system for compliance with NEPA. In this process, ADC also will assure continued compliance with all other environmental statutes and regulations, including section 7 of the Endangered Species Act, at the local level. The program is cooperating with the Forest Service, the Bureau of Land Management, other Federal and State agencies, and the public, to coordinate the environmental assessment process through which use of the decision model will be appropriately documented and applied. CEQ recently agreed to assist in this endeavor.

The ADC program will continue to assure that its environmental compliance processes comply with the new APHIS NEPA procedures. Consistent with CEQ's regulations implementing NEPA, the public has been informed and had ample opportunity to participate in the formation of APHIS' and ADC's overall environmental compliance system.

Decision and Rationale

Aspects of most of the alternatives analyzed in the final EIS are currently being used in specific situations in the United States or its Territories. Since this final EIS is programmatic in nature and national in scope, a single alternative as the sole, all-encompassing focus of the ADC program may not adequately cover all wildlife damage problems and situations. Therefore, my decision is to send forward to regional and local decisionmakers the viable alternatives discussed in the final EIS for consideration as management approaches, when appropriate, practical, and reasonable, in preparation of local and site-specific documents and actions. This approach provides a complete range of wildlife damage control strategies available as part of an overall integrated management approach. Application of appropriate methods will be determined following the processes defined in the ADC decision model (EIS, Chapter 2, Pages 23-350 and completion of local analyses subject to the NEPA process.)
Minimizing Environmental Harm

The final EIS developed a host of mitigation measures that would augment the numerous existing program policies, procedures, and continuing research efforts, to minimize or eliminate environmental impacts. These may be applied at virtually every level of consideration and for each appropriate alternative strategy. Programmatically, ADC has proposed (and in some instances is already implementing) a number of measures, including:

- Environmental compliance training for supervisors and managers;
- The standardization of data collection and reporting;
- Consultation, monitoring, and periodic evaluations; and
- An outreach element, including publishing literature and providing training on the application of nonlethal wildlife damage control alternatives.

Many of the programmatic mitigation measures will be incorporated into ADC's site-specific environmental compliance documents and actions.

For possible mitigation at the local level, the final EIS listed 24 specific measures for consideration, for example:

- Placing greater emphasis on nonlethal animal damage control strategies and techniques;
- Insisting upon the use of more humane capture devices and practices; and
- Providing nonlethal control tools to resource managers.

The complete listing provides a menu to which program decisionmakers may refer in various site-specific contexts.

Conclusions

In this decision, I have determined that:

- All currently feasible Animal Damage Control program alternatives have been adequately developed and explored, although the program intends to continue searching for other environmentally preferable means of achieving its mission;
- Program decisionmakers will appropriately consider any significant environmental impacts and the viable alternatives developed in the final EIS in the context of the NEPA process for local actions;
- An environmental compliance system, including APHIS' new NEPA compliance procedures and ADC's specific accommodation of such procedures, will be implemented immediately;
• ADC will use the decisionmaking model explained in Chapter 2 of the final EIS and will follow CEQ regulations and the USDA, APHIS, and ADC NEPA compliance procedures.

• A satisfactory environmental mitigation strategy at both the programmatic and local level has been developed and will be implemented, as appropriate.

Executed in Washington, D.C., this 7th day of March, 1995.

Lonnie J. King
Acting Administrator
The following paragraphs contain some text that is not legible.

The final RMP developed by the Kilauea Wildlife Management Team includes several key components to support the successful execution of local, community-based management strategies:

- An integrated approach to implementing a network of observers, including:
  - The standardization of data collection and reporting.
  - Observer training and monitoring.
  - Outreach activities, including publishing literature and providing training to the community on collaborative wildlife damage control practices.

Many of these pre-existing mitigation measures will be incorporated into AOA's site-specific environmental compliance documents and actions.

The complete listing provides a menu of which program decisions may refer in various site-specific contexts.

**Conclusion**

In this scenario, I have determined that:

- All non-contraceptive Animal Damage Control program alternatives have been adequately developed and explored, although the program intends to continue searching for other environmentally preferable means of achieving its mission.

- Program decisions will appropriately consider any significant environmental impacts and the viable alternatives developed in the final RMP in the context of the AOA's current program for local managers.

An environmental compliance system, including AOA's new RMP, will be implemented immediately.
The following is a list of omissions and printing, typographical, or numerical errors found in the Animal Damage Control Program—Final Environmental Impact Statement. Please note these changes in your copies.

Page 2-ii–2-46
The page header for chapter 2 reads “Environmental Consequences.” It should read “Proposed Program Alternatives.”

Page 3-57, Table 3-18
The total under “Sheep & Lambs” reads “99,105.”
It should read “499,105.”

Page L-51
In the response to Commentor No. 449, “wildlife image management” should read “wildlife damage management.”

Page N-20
b. Environmental Considerations, (1) Biological, last sentence: “near the rookery” should read “near the site.”

Page L-55
Specific responses to Commentors Nos. 000012, 000037, 000102, and 000104 were omitted. They should read as follows:
COMMENTOR No. 000012

COMMENT: We favor a modified version of the Compensation Program Alternative that includes what you call “resource management” and “physical exclusion.”

RESPONSE: This option is allowed under the Current Program Alternative and is a strategy that is used to a limited extent in States where compensation programs exist, such as Wisconsin. Many aspects of this alternative are explored in the Nonlethal Control Program Alternative. However, this strategy is not effective at stopping many kinds of damage, is difficult to assess, and extremely expensive to monitor.

COMMENTOR No. 000037

COMMENT: The statement on page 6, appendix T, infers that the reported risk to nontarget animals is too high because many of the nontarget animals captured by ADC are released, and that the released animals survive . . . . It is unreasonable to infer that more than a very low percentage of the animals trapped by leghold traps will survive even if they are released . . . . There is a high probability that it (the trapped animal) has suffered a permanent injury or amputation.

RESPONSE: APHIS ADC specialists examine all animals prior to release from any traps (leghold or other) and snares or other restraining devices. If the specialist has any reason to believe that the animal is injured, preventing its future survival, the animal is euthanized. The released animals listed in the Appendices and in other APHIS ADC reports are considered to have a chance of survival comparable to other members of its population.

COMMENTOR No. 000102

COMMENT: ADC has continued to ignore CEQ input by publishing the entire document instead of only the new portions in the SEIS.

RESPONSE: APHIS ADC decided to publish the entire document so that commentators could read all changes in context. Originally, APHIS had intended to publish the document as a final EIS and since we were working with a contractor, found that the expense of “highlighting” the changes or simply publishing the changes alone (two of the three CEQ suggested formats) would have been prohibitive and the time involved would have delayed even further the overly long process. Instead, APHIS chose the third option suggested by CEQ, and published the entire document for public review. This option was also requested by several other previous commentators and critics of the process and original draft.

COMMENT: APHIS ADC is missing the opportunity to improve the program as part of the NEPA/EIS process, which is the ultimate goal of the Act.

RESPONSE: APHIS ADC feels that many improvements in both the delivery and presentation of the program have resulted from of the interactions, including with CEQ, surrounding the preparation of the EIS. Interactions with all interested parties have continued to heighten the awareness of the issues outlined in the SEIS concerning applications of nonlethal methods and improved husbandry.
techniques; and have generated more frequent and meaningful contacts, and
solicitations from a wide variety of interest groups. The program is continuing
its futuring process, strategic planning efforts, improved focus on a formalized
decision process and NEPA compliance directives (1993), and growth into new
areas of dealing with wildlife conflicts and innovative solutions.

COMMENT: The current alternative receives inordinate amount of discussion
compared to the other alternatives, leading to the conclusion that the other
alternatives are just afterthoughts.
RESPONSE: Since APHIS ADC is trying to not add additional length to this
already lengthy document and since many of the “effects” of the alternatives
were demonstrated to be the same as the Current Program Alternative, APHIS
ADC decided to avoid the redundancies and merely state these conclusions.
Additions to the tables and discussions that have been added between the SEIS
and the final should further clarify the relative impacts of the alternatives and
speak to the issue raised by CEQ.

COMMENT: CEQ raises concerns about several aspects of the analysis with
economics, sociocultural impacts, and other aspects of Chapter 4.
RESPONSE: APHIS ADC has, to the extent possible, attempted to respond
directly to these comments with the revisions and reanalyses found in Chapters
3 and 4 and in Appendix N. In response to comments on the SEIS, including
CEQ’s, the final EIS presents a reanalysis of the economics, plus a more
detailed description of the sociocultural analysis and conclusions, and a com¬
parison of the alternative approaches relative to the examples of the use of the
decision model.

COMMENT: Data limitations should be more clearly acknowledged and dis¬
cussed. For example, protected livestock, or non-target or target species may be
affected by ADC activities, but not accounted for due to lack of effort or tech¬
nique to locate the species affected or destroyed: a bobcat may have consumed a
poison and wondered away; missing livestock could have perished due to causes
other than predation . . . .
RESPONSE: Losses of animals taken by APHIS ADC are generally accurate
since techniques applied are target specific and/or used in such a manner to re¬
duce nontarget contact. Having mortality data has made APHIS ADC a target
for criticism, regardless of the biological significance of that data. However, the
greatest loss of wildlife occurs as “invisible death.” Typically, this is a result of
habitat loss outside of APHIS ADC influence. On a small scale, many “non-
lethal” actions such as fence construction and guarding animals also produce in¬
visible death. In these cases there are definite data limitations. With regards to
livestock, APHIS ADC recognizes that there are many causes of livestock morta¬
ality other then predation; however, APHIS ADC also recognizes that experi¬
ence and research has shown that only a small amount of predation is accounted
for. Livestock owners acknowledge that there are many causes of livestock
mortality.
COMMENTOtor No. 000104

COMMENT: ... APHIS may want to consider "widespread and repeated mortality" rather than "abundance" as the appropriate measure for significant biological impact. EPA’s experience regarding the measure of biological impact involves pesticide regulation. In court cases involving diazinon (Ciba-Geigy v USEPA, US Court of Appeals, Fifth Circuit, 1989), the standard for pesticide use is not whether that use kills so many members of a population that the population cannot recover, but is there a "significant risk of bird kills (or deaths of other organisms), even if birds are actually killed infrequently."

RESPONSE: The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended (7 U.S.C. 136 et seq.) provides for the registration, classification, and regulation of all pesticides. USEPA is responsible for implementing FIFRA; primary enforcement responsibilities for use-related violations are assigned to States with approved programs. States may further restrict pesticide use. All pesticides used in the United States must be registered by the USEPA which assesses the nontarget and other environmental risks associated with the chemicals. USEPA’s determinations are based on stringent research data supplied by registration applicants. Chemical methods of control constitute only a fraction of the lethal and nonlethal methods used under the APHIS ADC program’s IPM approach. The significance of potential biological impacts of chemical control methods has been determined using several approaches, including the use of quantitative risk assessment, all of which use the same criteria for evaluating program impacts (magnitude, geographic extent, duration, likelihood), and all address impacts on abundance and diversity of species. It is noted that other agencies have independently evaluated potential biological impacts of some APHIS ADC pesticides (e.g., USFWS 1979, 1991; USEPA 1980, 1983a, 1983b, 1991b). In addition, the USFWS Office of Endangered Species, in its Biological Opinions related to the APHIS ADC program, has evaluated potential impacts of these methods on federally listed T&E species (USDI 1979, 1982, 1989a, 1992a). Chemical methods used or recommended by APHIS ADC in direct control or technical assistance include several dozen pesticide products, each of which is required to satisfy appropriate registration requirements, administered by USEPA as prescribed under the Federal Insecticide, Fungicide, and Rodenticide Act. The intent of FITRA is to ensure that the benefits of pesticide use not be outweighed by potentially adverse environmental effects. Accordingly, a primary objective of USEPA’s registration procedure is to require evaluation of potential environmental hazards associated with product use to help weigh the effect of approving or denying registration against the effect on reduced food production, increased prices, or impacts to other protected resources. All chemical methods evaluated or used by APHIS ADC have satisfied or will satisfy these registration requirements. The APHIS ADC risk assessment goes further than USEPA’s registration process in that it addresses potential exposures not considered under FIFRA or other registration requirements and evaluates the potential for nontarget exposures on a toxicological basis.
U.S. Department of the Interior
Bureau of Land Management
Rock Springs District Office PO Box
Rock Springs, WY 82902-1869
Abstract

USDA conducts an animal damage control program that employs an integrated pest management approach to prevent or reduce wildlife damage to agriculture, natural resources, facilities and structures, and for the safeguarding of public health and safety. This programmatic EIS examines 13 alternatives and provides detailed analyses of the No Action Alternative, Current Program Alternative, Nonlethal Control Program Alternative, Nonlethal Before Lethal Control Program Alternative, and Damage Compensation Program Alternative. The analyses focus on the wildlife species affected, losses associated with wildlife damage, societal values or attitudes, and impacts on biological, economical, and physical aspects of the human environments. The Current Program Alternative, which uses an integrated pest management (IPM) approach to address wildlife damage problems, is the preferred alternative.
Animal Damage Control Program

Final Environmental Impact Statement

April 1994

United States Department of Agriculture
Animal and Plant Health Inspection Service

United States Department of Agriculture
Forest Service

United States Department of the Interior
Bureau of Land Management
This final Environmental Impact Statement (EIS) documents the analysis of the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Animal Damage Control (ADC) program for the protection of American agriculture, natural resources, and facilities and structures, and the safeguarding of public health and safety. The EIS follows the format recommended by the President's Council on Environmental Quality (CEQ). Most EISs evaluate new projects, such as power plants or water impoundments. However, this EIS addresses an ongoing program of wildlife damage management. The intent is to analyze the impacts associated with the full range of wildlife damage control activities included in the Federal/Cooperative APHIS ADC program. This final EIS also analyzes the impacts associated with alternatives to the current APHIS ADC program.

The Readers Guide is provided to help orient readers and guide them through the document. The following guide shows the structure of the EIS and summarizes what the reader can expect to find in individual chapters. A brief Readers Guide also is provided at the beginning of each chapter.

A quick preview of this EIS can be obtained by reading the following:

- **Summary.**
- Introduction to Chapter 1 for an understanding of the decisions to be made.
- Table 2-2 for a comparison of the current APHIS ADC program, including direct control and technical assistance through an Integrated Pest Management (IPM) approach (APHIS' preferred alternative), and other selected alternatives.
- Table of Contents to Chapter 3 for an overview of the affected environment.
- Table 4-42 for a summary and comparison of the impacts of the alternatives.

The appendices provide information on the development of this final EIS and more detailed technical data, procedures, and material than are presented in the body of the document.

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**Volume 1**

**Summary**

Provides a condensation of the document.

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**Volume 2**

**Chapter 1: Purpose and Need**

Provides an overview, including:

- Decisions to be made
- Background and history of Animal Damage Control (ADC).
- Legal authorities, laws, and regulations
- The National Environmental Policy Act (NEPA) process
- Interrelationships
- Requirements for further analyses
Chapter 2: Proposed Program Alternatives

Provides information pertaining to:
- Development of alternatives
- Current APHIS ADC program
- APHIS ADC Decision Model for Wildlife Damage Management Methods
- Other alternatives
- Comparison of alternatives
- Preferred alternative

Chapter 3: Affected Environment

Discusses those aspects of the human environment that are potentially affected by the alternatives described in Chapter 2, including:
- Protected resources, such as crops, livestock, facilities and structures, and public health and safety
- Target and nontarget wildlife and threatened and endangered species
- Economic environment
- Sociocultural environment
- Physical environment

Chapter 4: Environmental Consequences

Provides an analysis of the alternatives discussed in Chapter 2 and the effects as:
- Impacts of the five alternatives on the biological, economic, sociocultural, and physical environments
- Impacts of protecting crops, livestock, facilities and structures, and public health and safety on species abundance and diversity
- Direct, indirect, and cumulative impacts
- Unavoidable impacts and irreversible and irretrievable commitment of resources
- Comparison of impacts by alternatives

Chapter 5: Mitigation Measures

Discusses mitigation measures that potentially reduce impacts. These include:
- Standard operating procedures currently used in the APHIS ADC program
- Mitigation measures
- Monitoring and evaluation

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Summary

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This final Environmental Impact Statement (EIS) assesses the biological, sociocultural, economic, and physical impacts of alternatives for the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), to conduct an Animal Damage Control (ADC) program. This EIS replaces the ADC program EIS prepared by the Department of the Interior, U.S. Fish and Wildlife Service (USFWS) in 1979.

In contrast to site-specific EISs which address proposals of a narrower scope within restricted geographic areas, this programmatic EIS addresses the entire APHIS ADC program, including its various functions, methods of operation, and locations throughout the Nation. This EIS complies with the National Environmental Policy Act (NEPA) of 1969 which establishes policies, goals, and procedures to ensure that Federal agency decisions reflect an understanding of the environmental consequences of a proposed action and its alternatives.

The draft to this EIS was issued in June 1990, and a supplement to the draft EIS was issued in January 1993. This final EIS addresses issues raised in scoping and in agency and public comments on the draft and supplement to the draft EIS. In particular, this final EIS includes a revised discussion of the purpose and need for the program (Chapter 1), the addition of two new alternatives (Chapter 2), an expanded analysis of economic impacts (Chapter 4), and a detailed risk assessment of wildlife damage control methods used by the program (Appendix P).

Wildlife is generally regarded as having value, whether measured by economic, recreational, or aesthetic standards. However, wildlife also causes negative impacts to America's agriculture, facilities and structures, natural resources, and to public health and safety. The APHIS ADC program strives to manage the damage caused by wildlife by providing environmentally balanced wildlife damage management services that are safe, effective, and practical.

The primary statutory authority for the APHIS ADC program is the Animal Damage Control Act of March 2, 1931, as amended (7 U.S.C. 426-426c; 46 Stat. 1468). APHIS ADC activities are conducted at the request of and in cooperation with other Federal, State, and local agencies; private organizations; and individuals.

Wildlife damage management is practiced as a field of specialization within the wildlife management profession. The APHIS ADC program uses an Integrated Pest Management (IPM) approach to prevent or minimize wildlife conflict. IPM, as used or recommended by the APHIS ADC program, includes the integration and application of all practical methods of prevention and control to reduce wildlife damage. The APHIS ADC IPM approach incorporates resource management, physical exclusion, and wildlife management, or a combination of these damage control approaches. The selection of methods and development of application strategies is predicated on consideration of the specific biological, sociocultural, economic, physical, and other environmental circumstances associated with each wildlife damage situation.

In applying the IPM approach, the APHIS ADC program may offer technical assistance, direct control, or both in response to requests for help with wildlife damage problems. Technical assistance consists of advice, recommendations, information, or materials provided for use in managing wildlife damage problems. Direct control consists of identification of the source of the problem and implementation of practical, appropriate control actions by APHIS ADC personnel.

The APHIS ADC program also provides leadership in the science of wildlife damage management through an active research program emphasizing control methodologies designed to minimize risks to humans, the potential affected wildlife species, and the environment.
Improving and developing control methods, maintaining pesticide registrations, and disseminating scientific information are the primary functions of the Denver Wildlife Research Center.

C. Proposed Program Alternatives

Scoping (i.e., agency and public involvement in the determination of the issues to be addressed in an EIS) is required by the Council on Environmental Quality (CEQ) Regulations for Implementing National Environmental Policy Act Procedures (40 CFR, Section 1501.7). Scoping for this EIS began on November 16, 1987. The following 13 alternatives were selected as representative of the alternatives suggested by the public in scoping and in commenting on the drafts and are consistent with the issues affecting the present APHIS ADC program:

- No Action Alternative (no ADC program activity under APHIS).
- Current Program Alternative.
- Nonlethal Control Program Alternative.
- Nonlethal Before Lethal Control Program Alternative.
- Damage Compensation Program Alternative.
- Direct Control Only, With Supporting Research Alternative.
- Technical Assistance Only, With Supporting Research Alternative.
- Conversion of Direct Control Programs to Education and Technical Assistance, With Transfer of Funds and Responsibilities to USDA Extension Service Alternative.
- Continuation of Western Coyote Work at APHIS; Transfer of Eastern Bird Work to USFWS Alternative.
- Eradication Alternative (all program efforts directed toward planned, total elimination of specific pest wildlife populations in designated areas).
- Suppression Alternative (all program efforts directed toward planned, long-term reduction of specific pest wildlife populations in designated areas).

The 13 alternatives are described in Chapter 2. The No Action Alternative, Current Program Alternative, Nonlethal Control Program Alternative, Nonlethal Before Lethal Control Program Alternative, and Damage Compensation Program Alternative were selected as being the most reasonable and appropriate alternatives for detailed analysis in this EIS. The analysis of these alternatives covers the range of impacts of the other alternatives considered. NEPA does not require that all possible outcomes for each alternative be addressed. Instead, a reasonable range of outcomes are evaluated and presented to describe and clarify basic underlying issues and impacts and to provide the decision maker with a clear means to discriminate between the various biological, sociocultural, economic, and physical environmental consequences of the alternatives.

D. The Preferred Alternative

Based on the environmental analysis in Chapter 4, the Current Program Alternative is identified as the USDA APHIS preferred alternative to meet responsibilities under the Animal Damage Control Act of 1931 and other applicable laws.
The biological, economic, sociocultural, and physical environments potentially could be affected by any of the alternatives. The biological environment is described in Chapter 3 in terms of the wildlife species affected. The economic environment is described in terms of the value of production related to the major crops and livestock protected by the APHIS ADC program and the value of losses attributable to wildlife damage to these resources. The sociocultural environment is described in terms of the major groups within American society that hold values or attitudes potentially impacted by APHIS ADC program activities. The physical environment includes air, water, soil, and human health. A comprehensive risk assessment of all program methods was conducted to support the impact analysis. To provide a comparable baseline and standard against which to evaluate each alternative, fiscal year (FY) 1988 data were used for most of the analyses.

1. Resources Protected

The APHIS ADC program assists in the protection of agricultural resources, manmade structures and facilities, wildlife species of concern and other natural resources, and in reducing threats to public health and safety throughout the United States. APHIS ADC activities are highly variable among States and are dependent on damage control requests and needs, authorities provided to APHIS ADC, results of environmental analyses, technical expertise, and availability of personnel and funding. The APHIS ADC program provides damage control assistance for only a small percentage of the total amount of resources damaged by wildlife in the United States. The resources protected by the APHIS ADC program are discussed in detail in Chapter 3, Affected Environment, and are grouped under the following general categories:

a. Field Crops
Corn, barley, rice, sunflowers, wheat, and other field crops are damaged or consumed by a variety of birds and mammals (e.g., prairie dog, beaver, deer, pocket gopher, waterfowl, and blackbird).

b. Fruits and Nuts
Apples, cherries, grapes, almonds, and other fruit and nut crops are damaged or consumed by birds and mammals (e.g., crow, starling, magpie, blackbird, deer, pocket gopher, raccoon, and squirrel).

c. Commercial Forests/Forest Products
Hardwood and softwood trees and seedlings are damaged by mammals feeding, or by dam-building activities (e.g., field rodents, beaver, black bear, and deer).

d. Grazing Lands and Other Resources
Pastures and rangelands are damaged by digging, feeding, or dam-building activities (e.g., badger, feral hog, beaver, gopher, prairie dog, jackrabbit, and kangaroo rat).

e. Aquaculture and Mariculture
Commercial fisheries are subject to depredation by birds (e.g., cormorant, heron, and egret) to species such as bass, bluegill, catfish, crawfish, bait minnows, trout, lobsters, mussels, salmon, and shrimp.
f. Livestock
Sheep, lambs, calves, goats, and other domestic livestock are killed, injured, or harassed by mammals (e.g., coyote, bobcat, mountain lion, domestic dog, black bear, fox, raccoon, skunk) and birds (e.g., golden eagle, raven, and black vulture). Other birds, blackbirds and starlings in particular, indirectly injure livestock through the transmission of infectious diseases or cause economic losses by competing for livestock food.

g. Facilities and Structures
Property (e.g., private homes, barns, commercial and industrial buildings, public facilities, lakes, pools, reservoirs, golf courses, telephone poles, fences, landfills and dumps, dikes and impoundments, irrigation ditches, and landscapes) is damaged from nesting, burrowing, digging, chewing, and defecation by various species (e.g., skunk, squirrel, raccoon, bat, and woodpecker).

h. Public Health and Safety
Public health and safety are threatened by strikes and other damage to aircraft and airport facilities from birds (e.g., sparrow, finch, starling, mourning dove, gull, crow, pigeon, raptor, duck, and goose) and mammals (e.g., deer, moose, and coyote), and by wildlife-borne diseases (e.g., rabies, plague, and histoplasmosis).

2. Biological Environment

a. Target and Nontarget Species
Components of the biological environment affected or potentially affected by the APHIS ADC program include target and nontarget animals. The focus of APHIS ADC damage control activities is target species—birds and mammals that cause damage to crops, livestock, and other resources or present hazards to public health and safety. Nontarget species are animals that are inadvertently captured, injured, killed, or otherwise adversely affected during the conduct of wildlife damage control activities. For purposes of this final EIS, 17 target species or species groups listed below are considered sound representatives of the wildlife species impacted by APHIS ADC program activities conducted throughout the United States.

- Mammals
  - Badger
  - Beaver
  - Black bear
  - Bobcat
  - Coyote
  - Gray fox
  - Mountain lion
  - Nutria
  - Opossum
  - Porcupine
  - Prairie dog
  - Raccoon
  - Red fox
  - Striped skunk

- Birds
  - Blackbird group
  - Cattle egret
  - European starling
b. Natural Resources of Special Concern
An important function of the APHIS ADC program is that of assisting other government agencies with protecting rare wildlife populations and other natural resources of special concern. Examples include the protection of greater sandhill cranes at the Malheur National Wildlife Refuge in Oregon, and the protection and reclamation of natural trout streams in Wisconsin in cooperation with the Wisconsin Department of Natural Resources.

c. Threatened and Endangered Species
Over 300 animal species in the United States are federally listed as threatened or endangered. The APHIS ADC program has identified approximately 125 animal and 22 plant species that might be affected by some aspect of the program. Through formal consultation as prescribed by the Endangered Species Act (ESA), the USFWS narrowed the number of animal species to eight that could be jeopardized by APHIS ADC activities unless prescribed mitigation measures were adopted by APHIS ADC. The potentially impacted species and mitigation are discussed in detail in the USFWS Biological Opinion (Appendix F), and a summary is provided in Chapter 5. APHIS ADC will adopt the mitigation measures to avoid adverse impacts to the eight animal species.

3. Economic Environment
Information on the value of production is presented for representative agricultural crops and livestock resources. The resources selected for inclusion were chosen because they have a relatively high national economic value and are subject to the various types of damage attributable to depredating mammals and birds. The agricultural resources used to define the economic environment include:

- Field and Forest Crops
  - Field Crops (alfalfa, corn, rice, soybeans, sunflowers, and wheat)
  - Fruits and Nuts (apples, cherries, grapes, and pecans)
  - Commercial Forests/Forest Products (trees and timberland)
- Aquaculture and Mariculture
  - Freshwater (catfish)
- Livestock
  - Cattle and Calves
  - Goats
  - Poultry (chickens and turkeys)
  - Sheep and Lambs
  - Swine

Determining the volume of agricultural resources lost is difficult. Discriminating among losses caused by injury, disease, weather, insects, and other causes and losses caused solely by wildlife complicates this determination. Crop and livestock damage attributable to wildlife involves two types: (1) loss of the current market value of the crops or livestock at the stage of growth when the damage occurred, and (2) loss of the potential value of the crops or livestock if they had ripened or matured and then been sold. Confirmation of losses is documented by APHIS ADC primarily to substantiate that damage is occurring and assistance is needed to control the damage. Confirmed loss data are collected for
I. Summary

only a small percentage of the total resource lost. As a result of the large amount of time, effort, and expense required to compile wildlife damage data, no detailed analysis is made by APHIS ADC to estimate the losses for an entire State or the total resource affected by wildlife for purposes of this EIS.

4. Sociocultural Environment

The sociocultural environment affected by the present APHIS ADC program or the alternatives includes the values and attitudes of a large cross section of American society. The groups or individuals affected by the program fall into several categories, such as environmental, animal welfare, animal rights, and recipients of APHIS ADC program services. All views or attitudes regarding the APHIS ADC program are considered important to programmatic decisionmaking.

5. Physical Environment

The physical environment that might be affected by the present APHIS ADC program or the alternatives includes air, water, soil, and human health in all places where wildlife damage occurs or where damage control could be applied. However, the level of potential impact on the physical environment by chemical control methods is small, given the restrictive controls implemented by the U.S. Environmental Protection Agency on pesticides, and by APHIS ADC and other agencies on other damage control methods. Therefore, in keeping with CEQ regulations and the programmatic, national scope of this final EIS, the presently existing physical environment is not described.

F. Environmental Consequences

The impacts of the present APHIS ADC program are only a small part of the impacts of all wildlife management activities throughout the United States. For example, hunting, fishing, and trapping for furs may take more surplus individuals out of a population than APHIS ADC. The environmental impacts evaluated in this EIS include all identifiable direct, indirect, short-term, long-term, or cumulative impacts of the alternatives considered. The methods used to evaluate these impacts are presented in Chapter 4.

Impacts of chemicals used by APHIS ADC were evaluated in the draft EIS. This discussion has been revised and expanded to include qualitative and quantitative assessment of risks associated with nonchemical and chemical methods used or recommended by APHIS ADC (Appendix P).

Biological, sociocultural, economic, and physical impacts of the No Action Alternative, Current Program Alternative, Nonlethal Control Program Alternative, Nonlethal Before Lethal Control Program Alternative, and Damage Compensation Program Alternative are summarized in Table S-1. A comparison of the other alternatives, which are not presented in detail, is found in Table 4-43.

1. Cumulative Impacts

Cumulative impacts, as defined by CEQ (40 CFR 1508.7), are impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes such other actions. Based on the diversity and distribution of the affected environment, no significant cumulative impacts are identified or expected as a function of wildlife damage control activities conducted by the Current Program Alternative. Under the No Action
Alternative, Nonlethal Control Program Alternative, Nonlethal Before Lethal Control Program Alternative, or Damage Compensation Program Alternative, locally significant cumulative impacts could potentially result from uncoordinated control actions or misapplication of control methods by individuals.

2. Unavoidable Adverse Environmental Impacts

Some unavoidable adverse environmental impacts could occur from implementation of the proposed program alternatives. Mitigation efforts may alleviate or reduce the severity of some impacts.

The unavoidable adverse environmental impacts of the No Action Alternative are summarized as follows:

- The use of lethal methods would continue, resulting in the killing of wildlife.
- Local populations of target wildlife species could be adversely affected where Federal, State, and local agencies or individuals choose to implement lethal methods of wildlife damage control.
- More variability in application of control methods could increase the potential for impacts on nontarget species and threatened and endangered species.
- Producers could be adversely affected by higher costs if they choose to personally implement wildlife damage controls.
- Consumers could be adversely affected by higher costs related to the higher costs of production.
- Adverse sociocultural impacts would occur to groups favoring wildlife management practices of the present APHIS ADC program.

The unavoidable adverse environmental impacts of the Current Program Alternative are summarized as follows:

- Some local populations of target wildlife species are intentionally adversely affected to achieve damage control.
- The cost of the program to Federal taxpayers was $25 million in FY 1988.
- Animal welfare and animal rights groups are adversely affected by wildlife damage control methods they consider inhumane or unnecessary.
- Despite program efforts to reduce wildlife damage, substantial damage and economic losses could still occur.

The unavoidable adverse environmental impacts of the Nonlethal Control Program Alternative are similar to those identified above for the No Action Alternative.

The unavoidable adverse environmental impacts of the Nonlethal Before Lethal Control Program Alternative are similar to those identified for the Current Program Alternative in most cases. Because of nonlethal constraint on APHIS ADC action in some damage situations, producers or other groups may seek assistance from an organization or individual that does not have this restriction or delay. In this case, the impacts could be similar to the No Action Alternative.

The unavoidable adverse environmental impacts of the Damage Compensation Program Alternative are summarized as follows:

- Adverse impacts would occur to some target wildlife species from individuals personally implementing lethal wildlife damage controls.
Summary

• Taxpayers could be adversely affected by subsidizing the costs (exceeding $25 million) of a compensation program.
• Adverse sociocultural impacts would occur to groups favoring the results of wildlife management practices of the present APHIS ADC program.
• Human Health and Safety would not be addressed.
• Nonagricultural resources would not be addressed.

3. Irreversible and Irretrievable Commitment of Resources

Under the No Action Alternative there would be no irreversible or irretrievable commitment of energy resources by APHIS for wildlife damage control activities. However, other agencies and individuals would increase their consumption of fuel to cover the activities for which they would assume responsibility.

Under the Current Program Alternative, using FY 1988 as a typical year, the annual consumption of unleaded gasoline and diesel fuel by the APHIS ADC program is 493,918 gallons. An additional 55,261 gallons of aviation fuel also are used.

Under the Nonlethal Control Program Alternative, Nonlethal Control Before Lethal Control Alternative and Damage Compensation Program Alternative fuel use could be more or less than experienced in the present APHIS ADC program, depending on results of and response to the specific program alternative used.

G. Mitigation Measures and Monitoring

Mitigation measures are any features of an action that serve to prevent, reduce, minimize, or compensate for impacts that otherwise would result from that action.

Under the No Action Alternative, the APHIS ADC program could not provide mitigation because no APHIS effort or funds would be directed to wildlife damage control.

The present APHIS ADC program, in addition to using an IPM approach to wildlife damage control and complying with all applicable Federal, State, and local laws and regulations, is guided by standard operating procedures that reduce potential impacts and assist in the monitoring of the program. The following are procedures used by the present APHIS ADC program:

• The APHIS ADC program routinely consults with USFWS, Federal land management agencies, and State wildlife management or natural resource agencies regarding program activities and impacts. USDA Forest Service and BLM are cooperating agencies in this final EIS.
• The APHIS ADC program is conducted under Memoranda of Understanding with other Federal and State agencies. These define working parameters and responsibilities of participating agencies.
• Control methods used by the APHIS ADC program are as species specific as possible and are used with consideration for public health and safety.
• Nonlethal methods are used and recommended whenever practical.
• Research is conducted to study and improve the selectivity of control methodologies and to develop nonlethal alternatives.
USDA APHIS has established a National Animal Damage Control Advisory Committee to advise the Secretary of Agriculture on policies and issues of concern in the national APHIS ADC program. The committee is composed of 20 individuals representing varied interests including agricultural producers, environmental and animal welfare organizations, and academic institutions.

The APHIS ADC program uses a management information system (MIS) in all but three States to assist in the assessment of program activities and impacts. The three States are working to implement the MIS in their programs.

The APHIS ADC program monitors program activities to ensure that local wildlife populations are not adversely impacted.

The APHIS ADC program has adopted the “reasonable and prudent alternatives” recommended in the USFWS Biological Opinion, to avoid potential adverse impacts to threatened and endangered species.

The APHIS ADC program consults with organizations that experience adverse sociocultural impacts and develops strategies for cooperation.

Measures to avoid or reduce potential risks of chemical methods have been identified and adopted.

Additionally, the APHIS ADC program conducts periodic evaluations to assess program effectiveness.

An APHIS ADC manual (ADC Directives) has been developed to provide uniform guidance to all APHIS ADC personnel.

The present program has several additional mitigation and monitoring measures that are in the process of being implemented. They are as follows:

The APHIS ADC program is completing nationwide implementation of the MIS to standardize data collection and reporting for the program. The MIS will assist APHIS ADC managers in more efficiently evaluating program impacts and effectiveness.

Training on NEPA; the Federal Insecticide, Fungicide, and Rodenticide Act; and ESA is being provided for APHIS ADC supervisors and managers.

An APHIS ADC strategic plan has been developed that addresses key program issues, such as professional recruitment and development, data needs, and program effectiveness in meeting present and future demands for wildlife damage control.

APHIS ADC is developing literature for livestock producers that encourages the use of animal husbandry practices and nonlethal damage control alternatives.

The Current Program Alternative also has several potential mitigation measures available for consideration, including the following:

Identify those proposed activities with a potential for adverse impacts when preparing annual work plans or other planning document. In cases where potential adverse impacts are anticipated, initiate consultations with the appropriate agencies to help identify mitigation measures and determine any required additional environmental documentation. This would ensure that site-specific impacts are identified, and appropriate mitigation measures implemented.

Provide training in NEPA compliance procedures and implementation to appropriate administrative and field staff.

Develop and use tranquilizer tabs on leghold traps to immobilize captured animals, thus reducing trap related injuries and increasing the likelihood that nontarget animals may be released successfully.
• Adopt a requirement for checking all traps and foot-snares daily to minimize the time that trapped animals will be restrained, thus reducing trap related injuries and increasing the likelihood that nontarget animals may be released successfully.

• Adopt the use of padded-jaw traps to reduce trap-related injuries to captured animals.

• Establish minimal husbandry standards as a prerequisite to receiving APHIS ADC services.

• Amend APHIS ADC pesticide labels as appropriate to provide species-specific protections for potentially affected threatened or endangered species.

• Implement APHIS ADC Directive(s) to provide species-specific protections for all threatened or endangered species that may be potentially affected by APHIS ADC program use of commercially registered pesticides.

Potential mitigation for the Nonlethal Control Program Alternative includes:

• Combine nonlethal control methods with damage compensation.

• Eliminate certain actions when nonlethal control methods fail to resolve a conflict (e.g., discontinue the raising of sheep where coyotes are a chronic problem; close airports when birds are a hazard to human safety).

• Make nonlethal control tools available without cost to resource managers.

• Increase research funding for nonlethal control methods.

Potential mitigation for the Nonlethal Before Lethal Control Program Alternative includes:

• Combine nonlethal before lethal control methods with damage compensation control methods until either nonlethal methods work or lethal methods are used.

• Increase research funding for nonlethal methods.

• Seek APHIS ADC authority to regulate husbandry standards (night penning, fencing, guarding dogs, etc.).

Potential mitigation for the Compensation Program Alternative includes:

• Require that some minimum level of animal husbandry be practiced by the claimant to be eligible for compensation payment.

• Implement a partial compensation program.

• Implement compensation after a minimum economic loss has been reached.

• Transfer lethal chemical control methods solely registered for use by APHIS ADC to other agencies, States, and individuals.

• Expand the authorized users of lethal methods for use by agencies, States, and individuals.

• Increase law enforcement funds for other agencies to prevent expected abuse of wildlife control techniques.

• Seek regulatory, investigative, and law enforcement authority for APHIS ADC.

• Seek APHIS ADC's authority to alter habitat on public and private lands.

• Use forms of compensation other than actual cash for losses suffered.
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<td><strong>BIOLOGICAL IMPACTS</strong></td>
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<td>On Local Wildlife Species Diversity</td>
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<td>On Abundance of:</td>
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<td><strong>Target Species</strong></td>
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<td>Local Impacts</td>
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<td>Potential for significant adverse impact.</td>
<td>Potential for significant adverse impact.</td>
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<td><strong>Non-target Species</strong></td>
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<tr>
<td>Local Impacts</td>
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<td>Potential for significant adverse and beneficial impacts.</td>
<td>Potential for significant adverse and beneficial impacts.</td>
<td>Potential for significant adverse and beneficial impacts.</td>
<td>Potential for significant adverse impact.</td>
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<tr>
<td><strong>Threatened and Endangered Species</strong></td>
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<tr>
<td>Impacts of National or State Importance</td>
<td>Potential for significant beneficial impact from Federal, state, or local agency actions. Potential for significant adverse impact from the actions of individuals.</td>
<td>Significant beneficial impact. USFWS Section 7 Consultation identifies “reasonable and prudent alternatives” to ensure significant adverse impact will not occur.</td>
<td>Potential for significant beneficial and adverse impacts. Potential for significant adverse impact from actions of individuals.</td>
<td>Potential for significant beneficial and adverse impacts. Potential for significant adverse impact from actions of individuals.</td>
<td>Potential for significant beneficial and adverse impacts. Adverse impact more likely from the actions of individuals at partial compensation. No provision for APHIS ADC to protect T&amp;E species.</td>
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<tr>
<td><strong>SOCIOCULTURAL IMPACTS</strong></td>
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<tr>
<td>Ecological Interest Group</td>
<td>Generally would not favor eliminating APHIS ADC program activities. Generally would not favor an increase of uncoordinated damage control actions by individuals.</td>
<td>Generally do not oppose wildlife damage control concepts. May not approve of all APHIS ADC program activities.</td>
<td>Generally would approve of a nonlethal program. Generally would not favor an increase of uncoordinated damage control actions by individuals.</td>
<td>Generally would approve of a nonlethal before lethal control program. May not approve of all APHIS ADC program activities.</td>
<td>Generally would not favor a compensation program in lieu of APHIS ADC program activities. Generally would not favor an increase of uncoordinated damage control actions by individuals.</td>
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</table>
Comparison of Impacts of Alternatives Considered in Detail in This EIS

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<tr>
<td>ADC Service Recipients</td>
<td>Generally would disapprove of losing APHIS ADC assistance. Potential for increased stress and loss of agricultural community viability.</td>
<td>Generally approve of current APHIS ADC program practices.</td>
<td>Generally would approve of nonlethal methods as long as they are effective. May conduct lethal controls on their own. Potential for increased agricultural losses and increased stress.</td>
<td>Generally would favor parity compensation for wildlife damage. Generally would favor partial compensation for wildlife damage but would not favor loss of APHIS ADC program activities.</td>
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ECONOMIC IMPACTS

*Direct Impacts on Affected Parties*

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<td>Agricultural Losses Avoided or Risks Reduced</td>
<td>Significantly smaller impact than the Current Program Alternative is likely.</td>
<td>Relatively large impact compared to the other alternatives.</td>
<td>Smaller impact than the Current Program Alternative is likely.</td>
<td>Smaller impact than the Current Program Alternative is likely.</td>
<td>No impact, other than compensation of verified losses.</td>
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<td>Non-Agricultural Losses Avoided or Risks Reduced</td>
<td>Significantly smaller impact than the Current Program Alternative is likely.</td>
<td>Relatively large impact compared to the other alternatives.</td>
<td>Smaller impact than the Current Program Alternative is likely.</td>
<td>Smaller impact than the Current Program Alternative is likely.</td>
<td>Impacts from non-APHIS ADC activities only.</td>
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### Summary

**Table S-1 (Continued)**

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<td><strong>Damage Control Expenditures</strong></td>
<td>Small or large, depending on role of the public sector.</td>
<td>Relatively small impact compared to the other alternatives.</td>
<td>Larger impact than the Current Program Alternative is likely.</td>
<td>Larger impact than the Current Program Alternative is likely.</td>
<td>Small or large, depending on role of the public sector.</td>
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<tr>
<td><strong>Indirect Impacts on Affected Parties</strong></td>
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<td>Agricultural Losses Avoided or Risks Reduced for Third Parties</td>
<td>Significantly smaller impact than the Current Program Alternative is likely.</td>
<td>Relatively large impact compared to the other alternatives.</td>
<td>Significantly smaller impact than the Current Program Alternative is likely.</td>
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<td>Significantly smaller impact than the Current Program Alternative is likely.</td>
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<tr>
<td>Non-Agricultural Losses Avoided or Risks Reduced for Third Parties</td>
<td>Significantly smaller impact than the Current Program Alternative is likely.</td>
<td>Relatively large impact compared to the other alternatives.</td>
<td>Significantly smaller impact than the Current Program Alternative is likely.</td>
<td>Smaller impact than the Current Program Alternative is likely.</td>
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<td>Positive Contribution to the Local Economy</td>
<td>Significantly smaller impact than the Current Program Alternative is likely.</td>
<td>Relatively large impact compared to the other alternatives.</td>
<td>Smaller impact than the Current Program Alternative is likely.</td>
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<td><strong>Direct Public Impacts</strong></td>
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<td>APHIS ADC Program Expenditures</td>
<td>None</td>
<td>Relatively small impact compared to the other alternatives.</td>
<td>Larger impact than the Current Program Alternative is likely.</td>
<td>Larger impact than the Current Program Alternative is likely.</td>
<td>Significantly larger impact than the Current Program Alternative is likely.</td>
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<td>Potentially Harmful Environmental Effects</td>
<td>Significantly larger impact than the Current Program Alternative is likely.</td>
<td>Relatively small impact compared to the other alternatives.</td>
<td>Larger impact than the Current Program Alternative is likely.</td>
<td>Larger impact than the Current Program Alternative is likely.</td>
<td>Significantly larger impact than the Current Program Alternative is likely.</td>
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<td><strong>Indirect Public Impacts</strong></td>
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<tr>
<td>Non-APHIS ADC Program Expenditures</td>
<td>Large or small depending on role of the public sector, and public liability.</td>
<td>Relatively small impact compared to the other alternatives.</td>
<td>Larger impact than the Current Program Alternative is likely.</td>
<td>Larger impact than the Current Program Alternative is likely.</td>
<td>Large or small depending on role of the public sector, and public liability.</td>
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**PHYSICAL IMPACTS**

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## Summary

Table S-1 (Continued)

### Comparison of Impacts of Alternatives Considered in Detail in This EIS

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<td>Water (Surface and Groundwater)</td>
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<td>Local Impacts</td>
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<td>No significant impact.</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
</tr>
<tr>
<td>Soil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impacts of National or State Importance</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
</tr>
<tr>
<td>Local Impacts</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
<td>No significant impact.</td>
</tr>
<tr>
<td>Hazards to Humans</td>
<td>Potential for significant adverse impact to the general public and to individuals implementing wildlife damage controls.</td>
<td>Potential for localized and infrequent adverse impact to the general public and to individuals implementing wildlife damage controls.</td>
<td>Potential for significant adverse impact to the general public and to individuals implementing wildlife damage controls.</td>
<td>Potential for significant adverse impact to the general public and to individuals implementing wildlife damage controls.</td>
<td>Potential for significant adverse impact to the general public and to individuals implementing wildlife damage controls.</td>
</tr>
</tbody>
</table>

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\( \text{a} \) Impacts under the Current Program Alternative are based on information for FY 1988 as a representative, "snapshot" year for the APHIS ADC program.

\( \text{b} \) Compensation would be provided by APHIS for losses to agricultural crops and livestock only.

\( \text{c} \) Threatened and endangered species can be target or non-target species under certain conditions or can be protected by the program. An effect on a threatened or endangered species is considered of national importance.

\( \text{d} \) Issues and viewpoints expressed by various sociocultural groups are presented.