U.S. Department of the Interior
Bureau of Land Management

Casper District Office — February 1994

Environmental Assessment
Animal Damage Control on Public Lands
Administered by the U.S. Department of the Interior, Bureau of Land Management,
Casper District, Wyoming

The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield; a combination of uses that take into account the long term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

BLM/WY/EA-94/005+4210

WY-062-4-027

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CASPER DISTRICT OFFICE
1701 East E Street
Casper, Wyoming 82601

TAKE PRIDE IN AMERICA

6830

Dear Reader:

Enclosed is the **Environmental Assessment for Animal Damage Control on Public Lands Administered by the U.S. Department of the Interior, Bureau of Land Management, Casper District.** It was prepared in response to an animal damage control plan submitted by the Animal Plant Health Inspection Service (APHIS). It only addresses those actions within the management control of the BLM within the Casper District.

Comments should be sent to the above address and will be accepted until February 25, 1994. After that date all comments received will be taken into consideration before a decision is made on which alternative to select.

If you have questions feel free to call Glen Nebeker of my staff at (307)261-7600 or come into the office at the above address.

Sincerely,

District Manager

Enclosure

ENVIRONMENTAL ASSESSMENT

ANIMAL DAMAGE CONTROL ON PUBLIC LANDS ADMINISTERED BY THE U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CASPER DISTRICT

EA No. WY-062-4-027
February 1994

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PURPOSE OF, AND NEED FOR, THE PROPOSED ACTION

Introduction

The Bureau of Land Management (BLM) and the Animal and Plant Health Inspection Service (APHIS) recognize that native animals are resources of value and interest to the American people. Animal damage control (ADC) management may be required to minimize depredations to livestock and wildlife species; to protect threatened and endangered species; to maintain viable populations of native wildlife species; to preserve ecologically unique areas; to minimize rodent and other wildlife damage to cropland, grassland, and forestland; and, to suppress animal-borne diseases. ADC functions as a supplement to, not a substitute for, standard husbandry practices and techniques.

APHIS-ADC's enabling legislation is the Animal Damage Control Act of March 2, 1931, as amended (46 Stat. 1468; 7 U.S.C. 426-426b). That act authorizes and directs the Secretary of Agriculture *". . . to conduct . . . on national forests and other areas of the public domain as well as on state, territory, or privately owned lands . . . campaigns for the destruction or control of such animals (injurious to agriculture) . . . ."* APHIS-ADC had identified their mission as follows: *"To provide leadership in wildlife damage control to protect America's agricultural, industrial, and natural resources and to safeguard public health and safety."* Therefore, related to BLM-administered public lands, it is ADC's role, in coordination with the state, to control wildlife populations causing damage or posing a human health or safety problem on BLM-administered public lands.

BLM's organic act, the Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 U.S.C. 1701-1732) established a public land policy of retention, management, protection, development, and enhancement. BLM's mission is identified as follows: *"The BLM is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all time."* BLM's role is to manage public land under multiple-use and sustained-yield principles (and meet the intent and requirements of other federal acts pertaining to public land such as the Endangered Species Act of 1973, as amended).

As a land management agency, BLM's responsibility and authority related to animal damage control programs on BLM-administered public lands include the following:

To ensure that ADC activities do not create public safety problems.

To ensure that ADC activities are in conformance and consistent with applicable BLM land use plans and multiple-use objectives (for example, no use of traps, snares, or M-44s during bird hunting season).

To ensure that ADC activities do not conflict with special management areas such as wilderness areas, wilderness study areas, areas of critical environmental concern.

To ensure that ADC activities do not conflict with the recovery of listed federal species.

To ensure that ADC activities do not conflict with BLM policy to enhance populations of federal candidate species, BLM-listed sensitive species, or state-listed species.

To ensure that ADC activities do not jeopardize the viability of any wildlife populations, including predators.

In each of the six aforementioned areas, BLM has the authority control the location, timing, and methods used by APHIS-ADC. BLM also has authority to require the collection of adequate monitoring data to evaluate the scope of the depredation problem and the impact of the ADC program on target and nontarget species on BLM land. However, any restrictions and requirements imposed on APHIS-ADC must be related to meeting BLM's responsibilities. Restrictions beyond this are not appropriate. Examples of restrictions that are not appropriate for BLM to apply are:

Excluding or otherwise limiting APHIS-ADC control techniques such as aerial gunning, denning, preventative control, and M-44s only because they may be considered an objectionable practice.

Limiting APHIS-ADC to nonlethal control methods, or requiring them to use nonlethal control techniques prior to initiating lethal methods, because lethal methods may be considered objectionable.

Requiring livestock operators to use frightening devices, guard dogs, and to adopt husbandry practices such as tighter herding and bedding practices. (To the contrary, BLM should not support any husbandry practices that increase the likelihood of an adverse impact on rangeland ecosystems.)

Requiring APHIS-ADC to conduct more frequent trap\snare checks than state law or ADC policy stipulates.

Each of the preceding restrictions may be deemed appropriate by some or inappropriate by others, but the issues surrounding these restrictions are APHIS-ADC issues, not BLM's. These issues can be appropriately dealt with in the public and legal processes which are available through the national APHIS-ADC environmental impact statement and final decision.

"The ADC program uses an Integrated Pest Management (IPM) approach to prevent or minimize wildlife conflict. IPM, as used or recommended by the ADC pro-

gram, includes the integration and application of all practical methods of prevention and control to reduce wildlife damage. The ADC IPM approach incorporates resource management, physical exclusion, and wildlife management, or a combination of these methods. The selection of control methods and development of application strategies is predicated on consideration of the specific biological, sociocultural, economic, physical and other environmental circumstances associated with each situation.

In applying the IPM approach to wildlife damage management, the 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 control actions by ADC personnel" (USDA, APHIS 1993).

APHIS' ADC program policy is to provide assistance in resolving conflicts between wildlife and man in order to alleviate economic agricultural damage, minimize economic losses, and protect human health and safety. Integrated control method approaches used or recommended include mechanical control, habitat manipulation, chemical, and cultural methods which take into consideration the impact on other wildlife and such factors as economic, social, environmental, political, and administrative considerations.

The overall to minimize depredation, to reduce economic loss, and to control efforts towards specific animals or local populations causing damage to agriculture resources, other wildlife, forest and range resources, and human health and safety.

The objective of the proposed action (APHIS' proposed ADC plan) is to allow APHIS to conduct a mammalian damage control program on those BLM-administered public lands in those counties which they have cooperative agreements with the respective county predator animal boards (PABs). This plan outlines where, when, and in what manner APHIS proposes to carry out ADC activities on public lands within the Casper District.

The ADC plan has been prepared using the final ADC programmatic biological opinion dated July 28, 1992 (appendix A), the BLM's Manual 6830 ("Animal Damage Control Outline") dated August 4, 1988, the Interim Management Policy and Guidelines for Lands Under Wilderness Review - Update Document H-8550-1 dated November 10, 1987, tiered from the Memorandum of Understanding (MOU) between the BLM and APHIS-ADC in Wyoming dated May 12, 1989, which is tiered from the National MOU between the BLM and APHIS-ADC dated September 16, 1987, and the APHIS-ADC Animal Damage Control Policy Manual dated October 6, 1989.

The Casper District covers much of northeastern Wyoming, including Sheridan, Johnson, and Campbell counties in the Buffalo Resource Area; Crook, Weston, and Niobrara counties in the Newcastle Resource Area; and, Natrona, Converse, Platte, and Goshen counties in the Platte River Resource Area. The Casper District covers approximately 20,900,000 acres, of which approximately 2,247,000 surface acres are administered by the BLM.

This environmental assessment (EA) and the plan submitted by APHIS apply only to actions performed by APHIS on BLM-administered public lands within the Casper District, which encompass only 11% of the total acreage within the district. Most of this land is located in Johnson and Campbell counties; less than 1% of the lands in the remaining counties is managed by the BLM.

By Wyoming statute, the respective counties are designated as predatory animal districts. The affairs of each predatory animal district are administered by a board of directors elected by the respective county livestock owners. The respective county predator animal boards (PABs) have the ultimate responsibility and general supervision over control of predators that prey upon and damage livestock, other domestic animals, and wild game. The PABs have the options to conduct their own control program, pay bounties on predators, or enter into cooperative agreements with federal or state agencies for the purpose of controlling predatory animals. The various county PABs within the Casper District use all of these options depending on the county.

APHIS provides a service for, and shares in the cost of, control work with those counties with which they have cooperative agreements. They do not participate in predator control with those PABs with which they do not have agreements. The BLM has no authority to regulate the actions of the PABs or individuals wishing to control predators except when provided for in the state permit for aerial hunting and the certification for the placement of M-44s. As part of the process to get a permit for aerial hunting, the applicant must obtain authorization from the federal land management agency. The process for this authorization is outlined in BLM Information Bulletin WY-94-060, "Clarification of Policy on Aerial Gunning for Predator Control" (appendix B). The state of Wyoming will not certify individual operators to place M-44s on federal land (appendix C).

According to state statute, all wildlife is the property of the state. It is the purpose and policy of the state to provide an adequate and flexible system for control, propagation, management, protection, and regulation of all Wyoming wildlife. It is the responsibility of the Wyoming Game and Fish Commission (WGFC) to carry out this management. The BLM has no authority to regulate the number of animals managed for, or in the case of predators, the number killed as part of predator control actions.

Conformance With Land Use Plans

Planning decisions affecting ADC activities in the Casper District are contained in the Platte River Resource Area Resource Management Plan (RMP), the Buffalo Resource Area RMP, and the Newcastle Resource Area Management Framework Plan (MFP). The proposed ADC plan is in conformance with, and does not deviate from, the intent of each of these planning documents.

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Introduction

This section describes each alternative. Alternative 1, the Proposed Action, describes in detail the animal damage control plan submitted by APHIS and only pertains to those counties in which APHIS has cooperative agreements. It also contains a brief overview of the various control techniques which could be used. The other alternatives describe additional information to Alternative 1 or how they are different from it. Alternative 2, the Preferred Alternative, includes the same control techniques as Alternative 1 with some additional conditions including the potential for APHIS to participate in control activities in the rest of the counties in the Casper District if they develop agreements with either the country PABs or individual ranchers. Alternative 3 is the continuation of the current limited control process. Alternative 4 is the "No Action" Alternative which means that BLM would not authorize APHIS to perform control activities on public lands. Alternative 5, which will not be analyzed in detail, is that BLM would not apply any restrictions to APHIS on control activities on public lands.

Alternative 1: The Proposed Action

Introduction

The ADC plan specifies where, when, and under what restrictions animal damage control operations would be carried out as mutually agreed by the agencies. It applies only to those counties with which APHIS has agreements with the Predator Animal Boards (Crook, Goshen, Niobrara, Platte, Sheridan, and Weston counties). It does not include Campbell, Converse, Johnson, and Natrona counties. This ADC plan would be reviewed annually and a letter of authorization with amendments, if needed, would be prepared by the Casper BLM District Manager. That letter, together with this plan, would be a yearly plan of operation. This plan shall remain in effect until a new yearly plan is adopted. Examples of amendments which could occur include changes in category of control, methods of control, or target animals. Interested parties would be invited to inspect the annual plan.

APHIS' ADC program in the Casper District compiles data received from individuals who request ADC assistance using the following forms: Project Report (ADC Form 14), Damage Control Request (USDI Form 10/71), Weekly Field Activity Report (ADC Form 15), Monthly Field Activity Report (ADC Form 16), and Monthly M-44 Report Summary (ADC Form 19B). This specific information provides documentation on verified losses, reported losses, techniques used, and wildlife species affected.

The coyote is the principal target species, and control operations would generally concentrate on this animal. The overall intent is to reduce animal depredations as quickly as possible by directing ADC activities toward individual coyotes or local populations where historical or ongoing losses have been verified, requested, or are likely to occur (based on local populations and abundance of natural prey species). Local populations may include several animals within their established home range and may extend for several miles.

ADC activities would take into consideration those actions listed below. The district base map 1 and control categories were developed and based on the following criteria:

1. The effect of the proposed control program including potential conflicts on other authorized uses and resources on the land in question.

2. The need for, and objectives of, control measures based on agriculture production, protection of livestock, wildlife, and other resources, and watershed management.

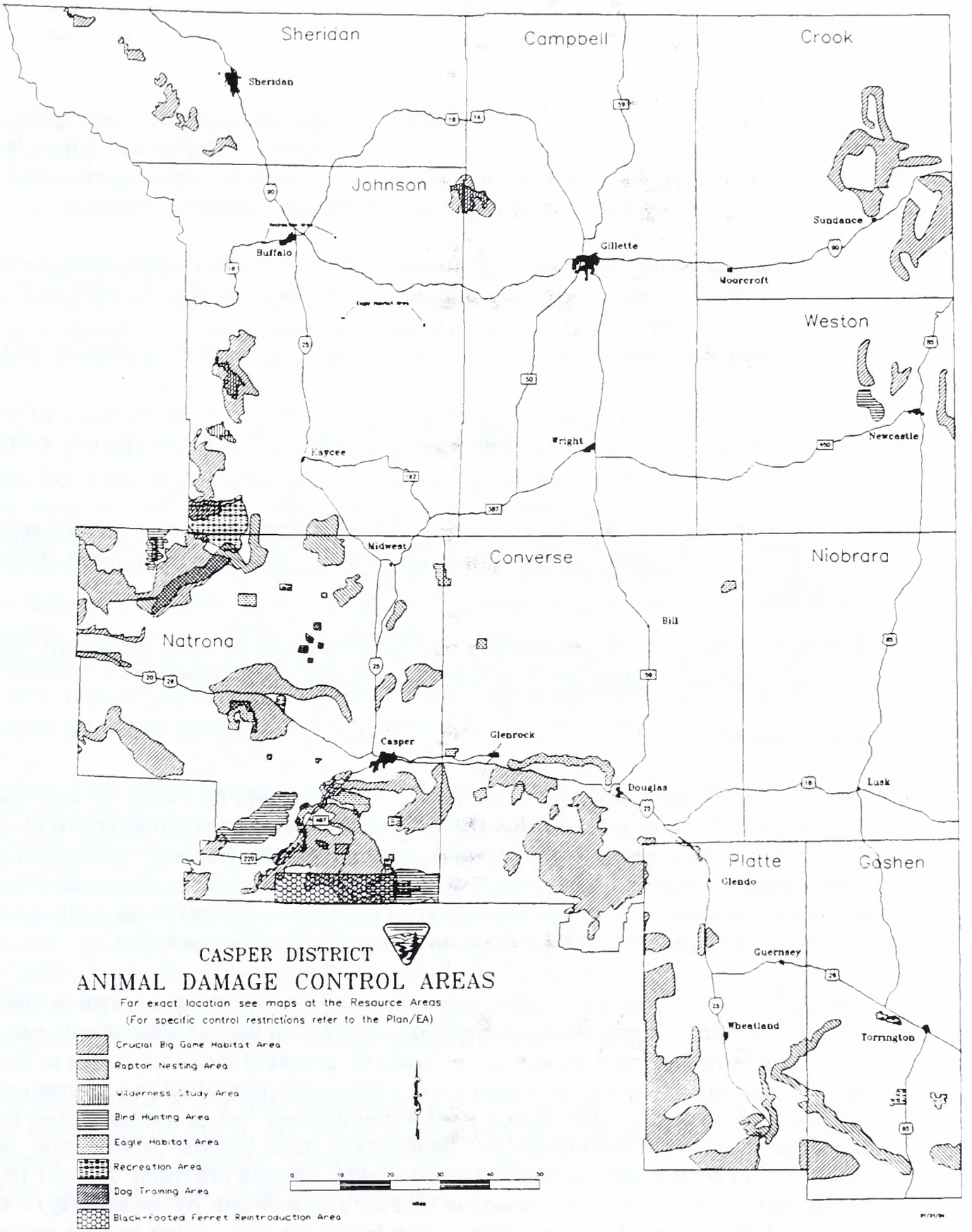
3. Identification of target species, possible affected species, planned methods of control, and applicable restrictions.

4. Conformance to existing regulations, land management plans, established policies, planned uses of recreational areas, areas of human habitation, and other land management practices.

5. Authorization of research necessary to develop a data base for the registration or implementation of new control or preventative methods.

6. The need for ADC programs which can address public health and safety concerns, including disease outbreaks within the district.

7. The need for control measures to protect endangered species or to safeguard wildlife species affected by predation.


Sheridan
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Buffalo
Gillette
Moorcroft
Weston
Newcastle
Wright
Kaycee
Midwest
Converse
Niobrara
Natrona
Bill
Casper
Glenrock
Douglas
Lusk
Platte
Goshen
Glendo
Guernsey
Wheatland
Torrington
CASPER DISTRICT
ANIMAL DAMAGE CONTROL AREAS
For exact location see maps at the Resource Areas
(For specific control restrictions refer to the Plan/EA)
Crucial Big Game Habitat Area
Raptor Nesting Area
Wilderness Study Area
Bird Hunting Area
Eagle Habitat Area
Recreation Area
Dog Training Area
Black-Footed Ferret Reintroduction Area

MAP 1

Description of ADC Techniques

Nonlethal Control

ADC encourages and implements a cooperative integrated predator management approach whenever physically and economically possible. Frequently, some form of nonlethal predator control is used by the livestock producer before implementing lethal control, and may include one or more of the following nonlethal methods.

Livestock-guarding animals are used by livestock operators, are frequently recom-mended by ADC, and may include guard dogs, llamas, or donkeys.

Sheepherders (shepherds) are used by livestock producers to protect their livestock.

Fencing is used where appropriate and is recommended often. It may consist of conventional or electrical fence.

Strobe lights and sirens are battery powered portable units which are available through the ADC program and frequently reduce predation in specific short-term situations.

Zon guns (propane cannons) are also effectively used on a temporary basis in re-ducing predation and are available through the ADC program.

Lethal Control

Lethal control is used when nonlethal control implemented by livestock has failed to prevent losses or when the potential risk of loss is high. Direct lethal control is aimed at individual animals responsible for the loss and may also be used on populations of a species within a certain distance of the loss. APHIS takes strict measures to ensure public safety, and protection of threatened or endangered wildlife, as well as protection of domestic livestock. The following are lethal control methods.

Aerial Shooting. Aerial shooting is widely used as a predator control method and is ideally suited in areas where vegetation and terrain do not preclude its use. The technique is not always selective for specific problem individuals but is species-specific and local population-specific since visual identification is a prerequisite for shooting. Fixed-wing aircraft are useful mainly over flat or gently rolling terrain. Because of their maneuverability, helicopters have greater utility over brushy ground, timbered areas, or rough terrain where animals are most difficult to spot. Good visibility is required for effective and safe operations, necessitating relatively clear and stable weather conditions. High temperatures, which reduce air density

and safety of low-level flight, hinder aerial shooting. In most areas aerial shooting is most effective in winter with snow cover because the summer vegetation reduces visibility of the coyote. This method is usually very costly per coyote "controlled."

The use of rotor-wing and fixed-wing aircraft would be authorized in all planned control areas. Aerial shooting by APHIS-ADC is closely supervised by APHIS to ensure that all applicable policies, regulations, and laws are followed. ADC would inform the BLM when and where aerial hunting would be undertaken.

Hot Pursuit. APHIS personnel in "hot pursuit" of a target animal by aircraft may pursue it into a "no planned control" or limited control area unless an obvious conflict would occur, such as approaching a dwelling or flying over a wintering elk or mule deer herd.

Ground Shooting. Some predators are shot from the ground, with or without the aid of predator calls. Ground shooting can be selective for the target species, but being sure that the animal being called is the offending animal is often next to impossible. Ground shooting can be directed at specific problem animals or used where other tools are not applicable because of hazards or weather conditions. Additionally, a hand-held call that mimics an injured rabbit, other prey species, or coyote pups, may be used to lure predators within gun range. Sirens on trucks are also used to elicit coyote howls for location. Visual identification of the target species before shooting assures that nontarget animals are not taken. This method may be relatively expensive because of the staff hours often required.

Trapping. The offset steel leg-hold trap is the most versatile and widely used tool for predator damage control. Traps are considered to be a nonlethal mechanical capture device, since disposition of the trapped animal is left to the discretion of the individual using them. In most cases, however, the trapped animal is killed. Scent sets are those which rely on a small amount of olfactory attractants placed nearby to entice the animal into the trap. Scent formulas vary but their objective is to attract target animals. The selectivity of steel leg-hold traps for targeting specific predator species is a function of effective and proper trapping techniques.

The use of all traps and trapping devices by ADC employees shall be in compliance with federal, state, and local laws, rules, and regulations, and would be authorized in all planned control areas. Traps are not allowed to be set less than 30 feet from an animal carcass.

Live Trapping. This technique is used primarily in controlling rabid skunks during isolated outbreaks of rabies. It is considered a technique used to supplement the use of leg-hold traps. This method incorporates the use of live traps to live capture target species where livestock and wildlife depredation occurs and is very selective in application. This method is often used in residential areas where other methods would be inappropriate and cause a risk to human safety.

Snares. Two types of snares are used: the neck snare and the leg snare. The neck snare is composed of a flexible wire cable that is placed through holes in fences and other small openings such as dens. They are used primarily in areas of extensive woven or net wire fencing. The snare is fashioned into a loop that is placed to encircle the animal's neck as it passes through or under the fence. The end of the snare cable is anchored to a solid object. A simple locking device which allows only tightening of the loop, causes strangulation of the snared animal.

Leg snares are constructed of flexible wire cable with a locking device which holds the loop closed on the animal's leg. The cable size is commensurate with the size of the target animal. Leg snares are used primarily in "cubby" sets or cover "blind" sets with an attractant bait placed a short distance from the snare.

The use of snares by ADC employees shall be in compliance with federal, state, and local laws, rules, and regulations, and would be authorized in all planned control areas.

Denning. In the spring of the year the female gives birth to young generally in an earthen burrow in the ground. Denning is the location and removal of the young from their den by excavating the den by hand, injecting smoke into the den to drive the animals out, or occasionally having a small dog retrieve them. The young are then destroyed, usually with a small caliber firearm. Denning is highly selective for the target species. It is also effective in reducing or eliminating predation in specific areas because the need to provide food for young is removed.

Where authorized by BLM, use of chemical toxicants for animal damage control would conform to all federal, state, and local regulations. Only sodium cyanide and zinc phosphide would be used on public land.

M-44s. The M-44 is a tubular-shaped, spring-activated device used to propel sodium cyanide into the mouth of the animal. When the device is driven into the ground, only the short head-section protrudes. The head portion is normally wrapped with a heavy cloth and is coated with various scents. An animal, attracted by the scent, grasps the protruding head of the device with its teeth and pulls, activating the spring plunger, which propels the cyanide into its mouth. Coma and death follow within seconds. The M-44 is intended to be selective for canids (members of the dog family) primarily because of the attractant (rotten meats) and the requirement that the device be triggered by a tug with the teeth. Sodium cyanide was re-registered for use in the M-44 by the Environmental Protection Agency in 1975 with 26 restrictions to minimize human and environmental risks (appendix C).

M-44s would be used only in accordance with current Environmental Protection Agency (EPA) regulations and restrictions (appendix C). M-44s shall be used on public lands only as authorized on a case-by-case basis by the authorized officer. Requests to the authorized officer for authorization to use M-44s on public land would originate with the APHIS ADC State Supervisor or his representative. In each case, documentation of livestock losses, including evidence that such losses were caused by coyotes, is required. M-44s would only be requested as part of an integrated control effort on all landownership in the control area.

In cases where BLM restrictions on M-44 use are more stringent than the EPA label restrictions, BLM restrictions would be adhered to (for example, distance from human habitation; also see the "No Planned Control" and "Limited Control" sections).

When BLM receives a request from APHIS to use M-44 devices on BLM-administered public lands, BLM would evaluate the season and location for multiple-use resource conflicts and, if necessary, make on-the-ground inspections with APHIS. APHIS would inform BLM of the location and area of M-44 use on private, state, and BLM-intermingled land so that BLM can deal with public concern.

Only APHIS employees would place M-44s on public lands.

Domestic Dogs. Using dogs in predator control is usually limited to resolving specific predator complaints. This method is also specific for the target species since visual identification of the target animal is made prior to shooting. Dogs trained for coyote denning are used either to locate dens, retrieve the

pups, or to lure adults to be shot. Greyhound packs have also been used effectively to chase and kill coyotes. Guard dogs are used by livestock producers rather than APHIS personnel.

Other Techniques

Other control techniques which are described as humane control methods but, to our knowledge, have not advanced to the stage where they could be labeled as practical field tools are available. For example, there is research ongoing in immunocontraception (reproduction control) and sterility tests. Taste aversion methods have been used widely in Canada but have not been used in the United States to any extent. These techniques are presently unavailable for use.

Planned ADC Activities

Predator damage control work is planned and authorized on an allotment or area basis. Following compilation of annual data, the proposed operations would be discussed and decisions would be made at the annual (more often, if needed) meeting between APHIS and BLM for needs and priorities for control. The methods used, control periods, and restrictions relate to specific areas which would be discussed and authorized each year.

Preventative predator damage control may be authorized when APHIS has made an evaluation and determined that livestock losses have occurred based on historic information. Control operations may be initiated before predator losses occur and before introducing livestock to a specific area with annual or documented predator losses. This would be done through annual preventative damage control requests made by permittees, when livestock are introduced into new areas, or if predators inhabit BLM-administered public lands that border private lands where predation is historical, ongoing, or may occur. To effectively address the large home range and resulting coyote prey activities, APHIS control activities may be extended from the allotment boundaries experiencing livestock damage or allotments where preventative control has been requested and predation is likely to occur, onto a neighboring allotment or area of BLM land that is adjacent to private lands or BLM lands that are experiencing damage or damage is likely to occur. Preventative control may be undertaken in areas of historic coyote predation because such predation tends to reoccur in many areas. Permittees must request control efforts through ADC personnel each calendar year. Such requests (ongoing damage control or preventative control) would be documented by ADC personnel on APHIS Form 14 (Project Report). APHIS personnel would contact any affected adjacent permittee regarding these plans.

The control areas shown on map 1 were identified in 1993 and could be changed dur-

ing the annual planning. This map should be used to determine the general locations of the restricted control areas. The exact locations should be determined while consulting with the particular BLM resource area office. The control area boundaries do not preclude the taking of a target animal who has been followed under hot pursuit from a control area into a restricted or no control area by ADC personnel where no obvious conflicts occur.

Authorized Control Areas

Planned control areas refer to the BLM-administered public lands where the full range of control methods may be employed season long, provided APHIS has on file a current request for control or where there is a verified historical record of recurring coyote predation in a particular area. A current request is one made within 30 days prior to the undertaking of control activities. This requirement would help assure that ADC activities are aimed at offending local populations, rather than the species as a whole. When coyotes are moving into planned control areas from adjacent "no planned control" areas, predator control in the "no planned control" areas may be approved on a case-by-case basis by the authorized officer. This situation is usually a problem only with pastured sheep rather than range-herded sheep that move regularly.

Posting Control Areas. Where traps and M-44s are in use, APHIS would post warning signs to alert the public.

Checking of Control Devices. Traps, snares, and other devices would be checked in accordance with label requirements, APHIS policy, and federal and state laws.

Modification of Control Areas. The BLM authorized officer may, at any time, deny any ADC activities on the public lands because of multiple-use conflicts or public safety reasons. The authorized officer may also modify areas where control is permitted as to the degree and type of control. These changes would be made after consultation with the State Director of APHIS.

Special Considerations and Restrictions

Human Safety Zones

No control would be allowed:

within 1 mile of any community, city, town, subdivision, or other area of concentrated human occupation;

within 1 mile of any residence unless all affected residents approve control activi-

ties or devices being used at a closer distance;

within ½ mile of any federal or state highway or BLM or county road; and,

within 1 mile of designated historic or recreational sites, recreational waters, trails, parks, rest areas, or similar public use areas. Aerial gunning would be considered on a case-by-case basis along the Oregon Trail, except in those areas with interpretive sites.

Limited Control Areas

In limited control areas, predator control activities would be subject to certain restrictions or to certain seasons. Effort would be made to avoid repetitive disturbance of wintering big game herds when they are encountered. Caution would be exercised near areas where wintering bald eagles are roosting or feeding on carrion. To avoid disturbing wintering big game and bald eagles, APHIS is required to coordinate with the BLM and Wyoming Game and Fish Department prior to aerial gunning. Control of black bear or mountain lion (trophy game animals) would be done only at the request and approval of the Wyoming Game and Fish Department.

Bird Hunting Areas/Dog Protection. To protect hunting dogs, no steel traps, snares, or M-44s would be set, left in place, or in grouse, chukar, or pheasant range during the open hunting seasons beginning about September 1 and ending about November 30 as shown on map 1. No steel traps, snares, or M-44s would be set within ½ mile of open waters used by waterfowl hunters during the entire hunting season (from about October 1 through December 31 and January during goose season).

Dog Training Areas. These areas, as shown on map 1, have been identified as areas used to train dogs for game bird hunting and small game hunting. Control devices (traps, snares, M-44s) would not be used in these areas at any time. Calling, denning, shooting, and aerial gunning is allowed, provided no individuals and their dogs are in the area(s).

Bald Eagle Wintering Concentration Areas. Aerial hunting would not be con-ducted between November 1 and March 31 in the areas shown on map 1 when bald eagles are concentrated in the specific areas identified. In the Jackson Canyon ACEC, no control is allowed without prior authorization from the BLM.

Raptor Nesting Areas. In raptor concentration areas, ADC activities during the nesting season (March 5 to July 15) would be approved by the authorized of-ficer on a case-by-case basis only based on a field inspection of the area.

Crucial Big Game Habitat. Aerial hunting would be limited in crucial big game winter range and on calving and lambing areas for elk and big horn sheep as shown on map 1. The limitation on aerial hunting means when big game ani-mals are present in these areas, and when it is highly likely that undue stress may occur from ADC activity. No aerial hunting would be conducted within ½ mile of these ranges unless approved by the district manager or the Wyoming Game and Fish Department.

APHIS-ADC would assure that aerial gunning, as a control method, would not adversely affect or harass big game animals on their winter or crucial winter ranges.

Wilderness Areas and Wilderness Study Areas (WSAs). There are no desig-nated wilderness areas in the Casper District. The three WSAs, Gardener Mountain and North Fork of the Powder River in Johnson County, and Fortification Creek in Johnson and Campbell counties, have been recommended as unsuitable for wilderness designation. APHIS-ADC does not currently conduct ADC activities in Johnson and Campbell counties. Therefore, wilderness area and WSA considerations and ADC actions are not a concern in this plan.

Rodent Control

Rodent control would be conducted only at the request and approval of the BLM authorized officer. The umbrella memorandum of understanding between BLM and APHIS, plus BLM's ADC manual, outlines each agency's responsibilities for rodent control.

Emergency Control

In an emergency situation such as an outbreak of bubonic plague in a prairie dog town or a local rabies epidemic in a carnivore population in areas of "no planned control" or restricted control, APHIS may request an exception but must request and receive approval from the authorized officer prior to beginning control operations. In an emergency situation involving immediate threats to public health or safety, APHIS may respond without prior approval, but must notify the authorized officer the same day control is initiated and when it is completed. Documentation of emergency response activities would be completed in the same manner as normal control activities. Once the emergency situation is over, the area shall revert to its prior control status.

Emergency animal damage control in WSAs, ACECs, and public safety zones must be authorized in advance by the BLM authorized officer on a case-by-case basis. In areas other than WSAs, ACECs, and established safety zones, the following procedures would be used for emergency actions.

Requesting Control. Livestock operators would request control from the ADC program.

Problem Evaluation. APHIS officials evaluate the losses or requests and determine if emergency control measures are warranted.

Submissions to BLM Authorized Officer. The APHIS District Supervisor would contact the BLM authorized officer. The proposed ADC work must be described with the fol-lowing information:

> Permittee needing assistance, reason for work (losses or preventative request), specific location, duration of the operation, and type of equipment or methods to be employed. The BLM authorized officer would coordinate the control request.

Authorization. Upon evaluation of the ADC request, the BLM authorized officer would notify the APHIS, ADC District Supervisor, if authorization for control is granted and which, if any, restrictions are in effect. Control operations may be initiated upon this notification.

Alternative 2: The Preferred Alternative

Introduction

This alternative incorporates everything described in the Proposed Action with the following additions or changes.

In addition to those counties identified in the Proposed Action, APHIS would also be authorized to carry out ADC actions in Johnson, Campbell, Natrona and Converse counties within the parameters of this alternative when they have agreements with the predator animal boards or individual ranchers.

Human Safety Zones

No control would be allowed in the Poison Spider Off-road Vehicle Area.

Limited Control Areas

Dog Training Areas. These areas, as shown on map 1, have been identified as areas used to train dogs for upland game bird hunting and small game hunting. Control devices (traps, snares, M-44s) and aerial gunning would not be used in these areas at any time. Calling, denning, and shooting would be allowed provided no individuals and their dogs are in the area(s).

Bald Eagle Wintering Concentration Areas. Aerial hunting would not be con-ducted in the areas shown on map 1 between November 1 and March 31.

Wilderness Areas and WSAs. There are no designated wilderness areas in the Casper District. The three WSAs, Gardner Mountain and North Fork of the Powder River in Johnson County, and Fortification Creek in Johnson and Campbell counties, have been recommended as unsuitable for wilderness designation. Management actions occurring on WSAs are directed by specific policies outlined in BLM Manual H-8550-1, "Interim Management Policy and Guidelines for Lands Under Wilderness Review." The manual accommodates ADC activities by the following policy statement:

> *Animal damage control activities directed at individual offending animals may be permitted, as long as this will not jeopardize the continued presence of any species in the area. Shooting of animals from aircraft may be allowed, only where specifically authorized by provisions of state law and upon the approval of the BLM authorizing officer.*

Since most ADC techniques require the use of motorized vehicles (such as ground shooting and trapping), impacts to WSAs are minimized by the following policy statement, also found in BLM Manual H-8550-1:

> *Recreational use of mechanical transport, including all motorized devices, as well as trail and mountain bikes, may only be allowed on existing ways and trails and within 'open' areas that were designated prior to the passage of FLPMA (October 21, 1976) [Federal Land Policy and Management Act of 1976]. If impacts of ORVs threaten to impair the area's suitability, the BLM may limit or close the affected lands to the types of ORVs causing the problems.*

Black-footed Ferret Reintroduction Area

No prairie dog control would be allowed in any black-footed ferret reintroduction area.

Two specific measures would be used to avoid capture or injury to ferrets from traps or snares:

> All snares would be equipped with stop devices two inches in diameter to preclude the capture of black-footed ferrets.
>
> All traps would be equipped with pan tension devices to preclude the capture of ferrets.

Rodent Control

The following guidelines apply to rodent control.

There must be documented resource damage or human health or safety concern.

A black-footed ferret survey, if necessary, must be done in accordance with U.S. Fish and Wildlife Service (FWS) guidelines.

BLM would conduct the survey on BLM-administered public lands; APHIS or the private landowner would be responsible for acceptable surveys on private lands.

A biological assessment must be prepared by BLM with concurrence of the FWS.

A site-specific environmental assessment must be prepared by the BLM.

Control work, if approved, must be supervised by APHIS with materials and labor furnished by BLM.

All contact with private landowners must be done by APHIS. Any agreements are between APHIS and the private landowner and pertain only to private land.

Alternative 3: No Action

Under this alternative, no ADC operations by APHIS would be authorized on BLM-administered public lands in the Casper District. Public lands are interspersed with private and state sections and parcels throughout the district. APHIS currently conducts ADC activities on many of these private and state lands. APHIS' ADC activities would be expected to continue under this alternative on private and state lands using all of the techniques previously outlined (including M-44 devices).

Alternative 4: Continuation of BLM Emergency Control Process

Under this alternative, the BLM would take no action on APHIS' proposed plan and operations would continue as they are conducted at present. Since April 1993, as a result of a nationwide policy decision, the Casper District has operated under "emergency control only" procedures. These procedures require that ADC activities may only be conducted for a five-day period, within a 3-mile radius, in response to a verified livestock predation loss. Following the request for control, the BLM has 24 hours to prepare an EA and give APHIS approval to proceed with control measures. Under this alternative, this basically would consist of designating all BLM-administered public lands within the Casper District as a no control area.

Alternative 5: No BLM Restrictions

This alternative proposes that the BLM would not apply restrictions to APHIS for control activities on public lands within the district. Although no restrictions would be placed on the activities of APHIS, they would still have to comply with such laws as the Endangered Species Act and the Migratory Bird Act. Also, APHIS has agreements with the Wyoming Game and Fish Department which limits their activity in such areas as big game crucial winter ranges. Combined with the above and the fact that there are only 11% BLM-administered public lands in the Casper District, the impacts of the alternative would be almost identical to those of Alternative 2. For these reasons this alternative was not analyzed in detail.

THE AFFECTED ENVIRONMENT

Introduction

This section describes resources that will, or may, be affected by implementing the alternatives. The following resources are either not present or will not be affected: cultural, historical, or paleontological resources; floodplains; prime or unique farmlands; hazardous materials; wetland or riparian zones; wild and scenic rivers; water; soils; air quality; minerals; or, wild horses.

For additional descriptions of, and information about the above resources, please refer to the *Platte River Resource Area Resource Management Plan/Draft Environmental Impact Statement* (EIS), the *Buffalo Resource Area Resource Management Plan/Draft EIS,* and the *Draft Resource Management Plan/EIS for Public Lands in the Newcastle Resource Area*.

Threatened or Endangered Species

Threatened or endangered species that could be affected by the proposed action and alternatives are the black-footed ferret, bald eagle, and peregrine falcon. These species either occur, or have a potential to occur, within the district. Below is a brief description of the current status of each species.

Black-Footed Ferret

There are no recent known populations of black-footed ferrets in the Casper District. However, over the past two decades, there were several probable and confirmed sightings of black-footed ferrets throughout the district. Our most recent data indicates that there were eight "possible to probable" sightings of black-footed ferrets in 1988; one sighting each in Campbell, Crook, Goshen, Johnson, and Platte counties, and three sightings in Natrona County (WGFD 1989).

Since the black-footed ferret is almost exclusively and obligaly associated of the prairie dog (*Cynomys* spp.), historical range of this mustelid is nearly identical to that of three prairie dog species. Two of these species inhabit the district: the white-tailed prairie dog (*Cynomys leucurus* Merriam) and the black-tailed prairie dog (*Cynomys ludovicianus ludovicianus* (Ord.). Consequently, the historical range of the black-footed ferret probably included the entire district. In spring 1991, 49 ferrets were released in the Shirley Basin of Wyoming. In the fall of 1993, approximately 20 were still alive.

Bald Eagle

The bald eagle is a common winter resident and occasional nester within the district. A number of roosts have been identified, but the Jackson Canyon roost on the west end of Casper Mountain is one of the most significant bald eagle roosting areas in the Rocky Mountain region. Other known bald eagle winter roosting sites are Little Red Creek Canyon near Jackson Canyon, several sites on Pine Mountain in Natrona County. There are also bald eagle winter feeding concentration areas along the North Platte River from Pathfinder Reservoir to near Casper, from Glenrock to Douglas, and between Glendo and Guernsey reservoirs.

Eight bald eagle nests have also been identified, and management of these areas are discussed in the Platte River, Newcastle, and Buffalo resource area RMPs as well as the *Final Bald Eagle Habitat Management Plan for the Platte River Resource Area and Jackson Canyon ACEC.*

Peregrine Falcon

Peregrine falcons are occasionally observed during migration in the district, but there are no recently recorded or documented nesting attempts. The Bureau of Reclamation conducted intensive surveys of the best potential habitat along the North Platte River, including Fremont and Wendover canyons, and the cliffs surrounding Glendo and Guernsey reservoirs, but no sign of nesting peregrines was found. The only peregrine falcon nesting habitat, as identified in the "American Peregrine Falcon - Rocky Mountain\Southwest Population Recovery Plan" (1984), occurs in the Black Hills in the Newcastle Resource Area. Several years ago, an attempt was made by the FWS, the U.S. Forest Service, and the Peregrine Fund to reintroduce peregrine falcons into the Black Hills. Young falcons were released and monitored throughout the summer, but the birds did not return the next summer following the winter migration. Currently, there is neither peregrine falcon nesting activity in the Black Hills nor in any other habitat in the district.

Wildlife Resources

Elk

Elk use BLM-administered public land both as summer and as winter or crucial winter range, associated with the southern and east slope of the Big Horn Mountains, the Black Hills, and the Medicine Bow Mountains (including Casper and Muddy mountains). In general, elk inhabit wind-blown, grassy slopes at elevations from 5,000 to 8,000 feet during the winter. A portion of the winter range is designated crucial winter range because these areas provide essential habitat during very severe, stressful winters. Winter concentration areas, especially crucial winter range areas, are protected by seasonal "no surface occupancy" stipulations. Parturition and summer feeding areas are characterized by dense timber and parkland meadows usually occurring above 8,000 feet (5,000 to 7,000 feet in the Black Hills).

Deer

Mule deer occur throughout the district. Resident populations are common in association with riparian, agricultural, and adjacent foothill areas. Migratory populations summer at elevations above 7,000 feet in mountain ranges within the district and winter around 4,000 to 7,000 feet in elevation, along ridge complexes, juniper foothills, and dry washes which offer sufficient cover and feed. Winter concentration areas for mule deer considered crucial are protected by seasonal "no surface occupancy" stipulations. White-tailed deer occur along most major drainages and are closely associated with riparian/agricultural areas.

Pronghorn Antelope

Pronghorn antelope occur throughout the district where movement is not restricted by barrier fences, topography, forests, and water distribution. Winter ranges generally occur between 4,000 and 7,000 feet elevation, in basins and benchlands where Wyoming big sagebrush communities dominate and snow depths remain relatively shallow and wind-blown. These areas are roughly associated with mule deer winter ranges in some areas, but are generally more widespread.

Moose

Moose occur only in the Big Horn Mountains within the district. Winter and summer ranges tend to be relatively close with animals using the same seasonal ranges year after year. Yearly ranges generally occur above 6,000 feet.

Predators, Furbearers, and Trophy Game

The coyote is common throughout the district and is the main target of ADC activities. Red fox occur throughout the district in habitats associated with lower elevation riparian or agricultural lands and is also a frequent target of ADC actions. The swift fox, a Category 2 Candidate species, is found in shortgrass prairie habitats in Goshen, Platte, and Niobrara counties. This species is currently being live-trapped to be released in Alberta and Saskatchewan, Canada. Because of their feeding habits, they are not likely to become an object of ADC concern. It should be noted that they are very easily trapped and have been found in coyote traps. Bobcats occur through-out the district where ridges, characterized by rocky outcrops and vegetative cover, provide hunting opportunities and hiding and escape habitat. Little is known about the distribution and population status of mountain lions and black bears (trophy game) in the district. Generally, mountain lions are associated with juniper- and pine-dominated canyon country in conjunction with deer and elk herds. Black bears usually inhabit mixed timber stands with associated parkland areas and riparian habitat along streams where berries are readily available in late summer and early fall. At times, drought conditions may cause bears to follow stream drainages to lower elevations in search of food.

Table 1 lists animals killed in the state of Wyoming during fiscal years 1986 through 1990 by APHIS personnel (USDA, APHIS 1986; APHIS 1987; APHIS 1988; APHIS 1989; APHIS 1990).

Table 2 presents the number of coyotes killed by APHIS using various techniques. These numbers represent only a small portion of the animals killed within the district. Those killed by county and commercial trappers, private ranchers, and recreational shooters are not available.

Game Birds

Upland game birds inhabiting the Casper District include sage grouse, sharp-tailed grouse, blue grouse, mourning dove, pheasant, chukar, hungarian partridge, turkey, and various waterfowl. Sage grouse are the most common and are widely distributed in areas with sage brush as the major component. Sharp-tailed grouse are found in the eastern and northern portions of the district in the transition zones between grasslands and forested areas. Turkeys are found in riparian areas associated with uplands and forests. Mourning doves are summer residents only. Chukar and Hungarian partridge are scarce and might occur in several areas within the district.

Raptors

Birds of prey that could be affected by the alternatives include golden eagles, rough-legged hawks, Swainson's hawks, ferruginous hawks, red-tailed hawks, northern har-

TABLE 1
ANIMALS KILLED BY APHIS IN WYOMING

Species	1986	1987	1988	1989	1990
Badger	[illegible]	[illegible]	2	[illegible]	18
Black Bear	0	1	1	1	2
Bobcat	12	7	[illegible]	14	[illegible]
Coyote	6,032	5,517	5,726	6,269	5,911
Red Fox	438	545	893	1,121	1,054
Mountain Lion	0	0	0	4	1
Opossum	0	0	0	3	0
Raccoon	[illegible]	5	5	34	102
Skunk	0	[illegible]	4	18	174
Porcupine	1	0	0	1	4
Beaver	4	14	0	0	0

TABLE 2
COYOTES TAKEN IN FISCAL YEAR 1992 BY APHIS BY METHOD

County	Trapped\Snared	Shot	Denned	M-44	Aerial
Natrona	105	99	118	30	161
Goshen	22	66	11	89	161
Crook	15	66	19	33	226
Weston	0	42	5	5	223
Niobrara	0	72	39	27	454
Platte	4	55	1	69	89
Sheridan	35	22	58	17	152
Johnson					
Campbell					
Converse					
Total					

riers, and various accipiters including Cooper's hawk, goshawk, and sharp-shinned hawk. Swainson's and ferruginous hawks are both candidate species for federal listing.

Nongame Animals

Prairie dogs exist throughout the district. Both black-tailed and white-tailed prairie dogs are present with the black-tailed variety generally inhabiting the more eastern shortgrass prairie habitats and the white-tailed species more common in the more western shrubgrass and desertgrass communities. Prairie dogs are of special importance because they are the most important prey of the endangered black-footed ferret as well as being an important prey species for other predators. Prairie dog towns also provide nesting habitat for burrowing owls.

Wilderness Areas and WSAs

There are three WSAs in the district, located in Johnson and Campbell counties (map 1). The Wyoming BLM wilderness recommendations to Congress propose to not designate these WSAs as wilderness areas. However, until Congress makes a final determination, these three areas must be managed as if they were designated.

ENVIRONMENTAL CONSEQUENCES

Introduction

This section describes the environmental consequences of each alternative.
These impacts take into account the animal damage control measures taken by APHIS, even though the BLM only manages 11% of the total surface area within the Casper District.

Predation to sheep and calves has historically been a problem to livestock operators in the Casper District. These losses are documented in the Casper District and state office ADC records, the Wyoming Agriculture Statistics Service, and the USDA Statistical Reporting Service. ADC specialists confirm losses to verify predation and to determine the species responsible. However, confirming predator losses is difficult, particularly where manpower is short. At times it may be necessary to rely on the experience of ranchers to report losses caused by predators (mainly coyotes).

ADC operations on public lands administered by the BLM have been performed by APHIS. By documenting depredation complaints and following up with control measures, APHIS has been able to reduce livestock losses in many areas where annual and historic predation occurs. APHIS also controls predators on public lands on request from livestock operators when within the parameters of an approved control

plan. Livestock losses are confirmed whenever possible by ADC program employees and are the main tool used in identifying and determining the species responsible for losses. These data represent only a portion of the livestock losses which actually occur.

As described in the "Introduction" section of this document, the BLM has no authority to direct the actions of the PABs or private individuals except for authorization of aerial hunting actions and the placement of M-44s. As previously mentioned, the WGFC manages the wildlife populations within the state. In addition to APHIS and the local PABs, recreation shooters, ranchers, aerial hunters with permits issued by the Wyoming Department of Agriculture, and trappers licensed by the Wyoming Game and Fish Department take predators on private and federal lands. For these reasons, determining what the total take is on coyotes or other predators would be highly speculative if not impossible. Coyotes, for example, are classified as predators by the state and may be taken any time of the year with no limit on numbers. Predator populations, to our knowledge, have never been determined in any biologic sense so no data exists which might prescribe a population parameter for predators. This EA illustrates numbers of coyotes or other predators taken by APHIS, but it cannot determine in any cumulative fashion the total number nor what effect that may have.

Alternative 1: The Proposed Action

Threatened and Endangered Species

Black-Footed Ferret. Compliance with the 26 EPA restrictions on the use of M-44s and other plan restrictions would lead to no impacts on black-footed ferrets.

The biological opinion was that the loss of a single black-footed ferret would constitute jeopardy to the species, but if the reasonable and prudent alternatives identified on pages 14 through 16 of the formal consultation with the FWS (appendix A) were followed, an incidental take of a black-footed ferret would not take place.

Bald Eagle. Under this alternative, no impacts would occur that would be a threat to the continued existence of bald eagles or their habitats because all ADC actions, whether on public or private lands, are required to comply with the provisions of the Endangered Species Act.

The biological opinion was that the proposed action would not jeopardize the bald eagle population or its habitat and that if the reasonable and prudent alternatives identified on pages 34 through 35 of the formal consultation with the FWS (appendix A) were followed, an incidental take of a bald eagle would not take place.

Peregrine Falcon. Under this alternative, no impacts would occur to the continued existence of peregrine falcons or their habitats because all ADC activities, whether on public or private lands, are required to comply with the provisions of the Endangered Species Act.

The biological opinion was that the proposed action would not jeopardize the peregrine falcon population or its habitat (appendix A).

Wildlife Resources

Elk

Impacts to elk from ADC activities on public lands may occur if aerial gunning is conducted on crucial elk winter range without regard to the presence of elk in the areas. The stress/harassment would cause the elk to metabolize more body fat reserves and make it more difficult for the animals to survive severe winter conditions. If efforts are made to ensure that elk are not present in the areas prior to ADC efforts being initiated impacts would be insignificant.

Deer

Impacts to deer from ADC activities on public lands may occur if aerial gunning is conducted on crucial deer winter range without regard to the presence or absence of deer in the areas. The stress/harassment would cause the deer to metabolize more body fat reserves and make it more difficult for the animals to survive severe winter conditions. If efforts are made to ensure that elk are not present on the area prior to ADC activities being initiated impacts would be insignificant.

Pronghorn Antelope

Impacts to pronghorn antelope from ADC activities on public lands may occur if aerial gunning is conducted on crucial pronghorn winter range without regard to the presence or absence of antelope in the area. The stress/harassment would cause the antelope to metabolize more body fat reserves and make it more difficult for the animals to survive severe winter conditions. If efforts are made to ensure that pronghorn are not present on the area prior to ADC efforts being initiated impacts would be insignificant.

Moose

Under this alternative, there would likely be no impacts to moose due to ADC activities. No crucial winter ranges have been identified and only incidental contact might be expected between moose and ADC actions.

Predators, Furbearers, and Trophy Game

Coyotes represent the primary target of ADC actions with red foxes being the secondary target. Control of all the other species noted in Table 1 is generally localized and species specific, using control methods designed for individual control situations. Impacts to nontarget predators, furbearers, or trophy game animals during control actions for any individual species would occur from time to time, but the overall impacts are anticipated to be minimal.

Game Birds

Under this alternative some game birds, (most likely sage grouse) could be negatively impacted if ADC activities were to occur when birds are concentrated in crucial habitats. In areas of heavy predation, ADC actions may have a beneficial impact on some populations of both upland game birds and waterfowl by reducing pressures from predators. A reduction in fox numbers when populations are high can also reduce waterfowl nest predation.

Raptors

Under this alternative, few impacts would be anticipated to raptors, either nesting, fledgling, or wintering in the district. Raptors, as migratory birds and protected by the Migratory Bird Treaty Act (MBTA), would not be significantly impacted because all ADC activities, whether on public or private lands are required to comply with the provisions of the MBTA and other appropriate wildlife protection legislation (such as the Endangered Species Act). Prairie dog control could reduce some habitat for burrowing owls.

Nongame Animals

Under this alternative, no significant impacts are expected to occur to nongame animal species. The most likely nongame species to be impacted by ADC activities are white-tailed and black-tailed prairie dogs. Prairie dogs and other small mammals could accidently be caught in leghold traps, but this occurrence should be rare. The overall impacts are expected to be insignificant to the general nongame population levels.

Wilderness Areas and WSAs

No ADC actions are proposed in the WSAs; therefore, no impacts are anticipated because of the interim management policy for WSAs. This is summarized in Alternative 2.

Public Health and Safety

All anticipated impacts to public health and safety have been addressed in this alternative. No impacts are expected.

Economic Impacts

The purpose of ADC is to *". . . protect America's agriculture, facilities, and structures, and natural resources, and to safeguard public health and safety . . ."* (USDA, APHIS 1990b). In Wyoming, the primary beneficiary of ADC services are sheep producers, and to a lesser degree, cattle producers. To accomplish this mission in Wyoming, APHIS-ADC was funded approximately $1.45 million in fiscal year 1990 (USDA, APHIS 1990a). Funds for ADC originate mainly from federal and cooperative (state and county) sources. Domestic animal losses of $236,703 for fiscal year 1990 were reported by livestock operators, with most losses being lambs due to coyote predation (USDA, APHIS 1990). Expenditures and loss estimates for the counties in the Casper District are not available.

Table 3 shows the reported livestock losses which APHIS personnel have verified as kills by coyotes. They only have reports from those counties with which they have operation agreements.

Under this alternative, expenditures would be about the same as during fiscal year 1990 (statewide). ADC activities have a positive economic impact on livestock producers, and help to provide some rural communities (where ADC personnel reside, and where services are provided) with some economic stability.

The various conditions within this alternative should have no impact on the economics in the district. The restrictions would simply protect other valuable resources including public health and safety.

Alternative 2: The Preferred Alternative

The impacts of implementing this alternative would be the same as those described in the Alternative 1 with the following additions.

APHIS would also be allowed to implement control activities in Johnson, Campbell, Natrona, and Converse counties if agreements were developed with the local predator boards or with local individuals.

The additional restrictions for Dog Training Areas, Bald Eagle Concentration Areas, and the Black-footed Ferret Reintroduction Site would provide more protection in those areas.

TABLE 3
VERIFIED LOSSES TO COYOTES IN FISCAL YEAR 1992

County	Lambs	Ewes	Calves
Natrona	367	51	0
Goshen	41	10	7
Crook	172	6	3
Weston	69	14	7
Niobrara	272	7	3
Platte	16	4	2
Sheridan	58	1	1
Johnson			
Campbell			
Converse			
Total			

Alternative 3: No Action

The impacts of implementing this alternative would be very similar to those of Alternative 1, the Proposed Action. This is because the BLM would only be able to restrict APHIS' control activities on the 11% of the total acreage within the Casper District. APHIS would still participate with the local PABs in control activities on private lands within the district. With this small of a percent the change would be negligible.

Alternative 4: Continuation of BLM Emergency Control Process

The same restrictions would apply to this alternative as are outlined in the preferred alternative (Alternative 2), except that APHIS would be precluded from performing preventative predator control. Since APHIS would not be able to implement control measures until an actual livestock loss is confirmed, control measures would not be implemented in areas historically prone to predator losses prior to moving livestock into them. This would have an economic impact on livestock operators because predator numbers would not be reduced before livestock are moved in. In other words, losses which may have been prevented would have to take place before control measures could be implemented. It may also allow predator populations to gradually increase. Since the emergency procedures were initiated, 46 requests from April 1993 to the end of January 1994 have been approved for emergency control. Emergency procedures have resulted in 101 coyotes killed. Also during this time, there was actual confirmation that 118 sheep were killed by coyotes. No other predators have been taken by APHIS during this timeframe.

CONSULTATION AND COORDINATION

Coordination with APHIS on the revision of the plan and this EA began about two years ago. Formal consultation with the public began when a press release was issued on November 19, 1993. This release announced the preparation of the EA and public scoping meetings in Casper on November 30, 1993, Buffalo on December 1, 1993, and Newcastle on December 2, 1993. A total of 45 people attended these meetings. The main point of interest or discussion in all three meetings revolved around the definite need for predator control and the role APHIS serves as opposed to private and commercial control on federal lands. One person in Casper discussed his concerns against the use of M-44s, and one letter expressing concerns against the current animal damage control program has been received.

A minimum of 30 days from the issuance date of this EA will be allowed for public comment before a decision is made. Comments received will be addressed as part of the decision record.

REFERENCES

State of Wyoming, Game and Fish Department.

1988 "Possible Black-Footed Ferret Sighting Reports." Updated 12-15-88.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service.

1986 Annual Report, Fiscal Year 1986, Casper, Wyoming. 11 pp.

1987 Annual Report, Fiscal Year 1987, Casper, Wyoming. 13 pp.

1988 Annual Report, Fiscal Year 1988, Casper, Wyoming. 13 pp.

1989 Annual Report, Fiscal Year 1989, Casper, Wyoming. 14 pp.

1990a Annual Report, Fiscal Year 1990, Casper, Wyoming. 15 pp.

1990b Animal Damage Control Program - Draft Environmental Impact Statement. Washington, D.C.

U.S. Department of Agriculture, Animal and Plant Health Inspection Service.

1993 *Animal Damage Control Program: Supplement to the Draft Environmental Impact Statement.* Washington, D.C.

U.S. Department of the Interior. Fish and Wildlife Service.

1979 Final Environmental Impact Statement on Mammalian Predator Damage Management for Livestock Protection in the Western United States. Office of Environmental Coordination. Washington, D.C. 789 pp.

1984 American Peregrine Falcon Rocky Mountain/Southwest Population Recovery Plan. Rocky Mountain/Southwest Peregrine Falcon Recovery Team. 105 pp.

APPENDIX A

BLM Information Bulletin No. 92-713,
"Animal Damage Control (ADC)/Fish and Wildlife Consultation
on Threatened or Endangered Species"

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

September 28, 1992

In Reply
Refer To:
6800
6830 (230/240)
6840

OCT 9 - 1992

ROUTING	INITIAL/DATE	
SD		MR
ASD		L&RR
SRD		CPNS
SPA		ADMIN
SDDA		OF
	LEAD RESP.	

PRA

Information Bulletin No. 92- 713

All State Directors and SCD

Director

Subject: Animal Damage Control (ADC)/Fish and Wildlife Consultation on Threatened or Endangered Species

Attached is a copy of the formal consultation on the above subject. This should be taken into consideration and may be referenced when developing your environmental documentation of ADC plans and decisions.

J. David Almand

J. David Almand
Chief, Division of Wildlife and Fisheries

1 Attachment
1 - Formal Consultation (70 pp)

United States Department of the Interior

FISH AND WILDLIFE SERVICE

WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR
FISH AND WILDLIFE SERVICE

July 28, 1992

In Reply Refer To:
FWS/FWE/DES

JUL 28 1992

Mr. Robert Melland
Animal & Plant Health Inspection Service
U.S. Department of Agriculture
P.O. Box 96464
Washington, D.C. 20090-6464

Dear Mr. Melland:

This responds to Mr. James Glosser's March 15, 1990, request for reinitiation of the February 28, 1979, formal consultation with the United States Department of Agriculture (USDA) on its Animal Damage Control (ADC) Program as required under Section 7 of the Endangered Species Act of 1973. This consultation supersedes that initial consultation which was completed when ADC was part of the U.S. Fish and Wildlife Service (Service).

CONSULTATION HISTORY

In the intervening years since the February 1979 consultation, there have been substantial changes in the Endangered Species Act. There have also been a number of consultations with the U.S. Environmental Protection Agency (EPA) on registration of chemicals used by the ADC Program and several consultations with USDA on certain specific elements of the ADC Program itself. The Section 7 regulations now require the Service to issue Incidental Take Statements for unintended taking that may occur pursuant to the otherwise legal activities conducted subsequent to a consultation. This biological opinion provides incidental take levels for certain species along with reasonable and prudent measures to minimize or eliminate such take. Since reinitiation, the consultation period was formally extended for 60 days in July of 1990, and informally several times by mutual agreement between Service and USDA staff members. A consultation team of Regional representatives was appointed to draft the opinion. A preliminary draft was sent to the team members for input on April 19, 1991. Three drafts were prepared and circulated for formal Regional and USDA comment August 15, 1991; March 17, 1992; and a final draft on May 22, 1992.

An April 11, 1988, order of the U.S. District Court for the District of Minnesota enjoined any registrations of the aboveground uses of strychnine. However, according to the EPA's Office of General Counsel and the Department of the Interior Solicitor, the current court action does not prevent an agency from seeking formal consultation nor prohibit the Service from issuing a biological opinion pertaining to strychnine. Thus, the Service is thus treating strychnine use as if the injunction has been lifted.

PROPOSED ACTIONS

The proposed actions considered in this consultation include the operational, research, and technical assistance phases of the ADC Program as described in the document entitled "Compliance with Section 7 Endangered Species Act of 1973, as amended." In the operational phase, ADC personnel carry out the control work; in the research phase, ADC personnel conduct research to improve wildlife damage control methods and techniques; and in the technical assistance phase, personnel other than ADC personnel conduct the control work. Technical assistance is carried out as defined in Appendix B of the Draft Environmental Impact Statement (DEIS) issued in July 1990 on the ADC Program. Examples of ADC technical assistance include, but are not limited to, providing items such as chemicals and equipment as well as providing verbal or written advice, recommendations, information, demonstrations, and training in management of wildlife damage programs. All of the methods described below are used in the conduct of the program.

ANIMAL DAMAGE CONTROL METHODS

ADC employs a number of control tools and techniques discussed below, both chemical and non-chemical, in the implementation of its programs. These tools and techniques are diverse, situation-specific, and variable in scope, ranging from nonlethal measures to lethal control.

Cultural Practices

Cultural methods include a variety of practices that can be employed by agricultural producers to reduce resource exposure to wildlife depredation and loss. Implementation of these practices is appropriate when the potential for depredation can be reduced without significantly increasing the cost of production or diminishing the resource owner's ability to achieve land management and production goals. ADC recommends changes in cultural practices when a change of this type appears to represent a means of averting losses.

Animal Husbandry - This general category includes modifications in the level of care and attention given to livestock, shifts in the timing of breeding and births, altering the selection of resource to be produced, and the introduction of livestock custodians (e.g., herders, guard dogs) to protect livestock.

Crop Selection and Planting Schedules - The choice of crops and time of planting often has a direct bearing on the potential for losses to depredation. In some cases the time of planting can be adjusted to reduce or eliminate the availability of vulnerable crops to migratory wildlife species, and some crops are less prone to predation.

Lure Crops - Lure crops are planted or set aside for wildlife as an alternative food source to reduce the effect of depredation. To be successful, frightening techniques may be required also in the field being protected.

Habitat Modifications

Habitat modifications can restrict the access of wildlife or render the habitat less hospitable to wildlife. Habitat modifications used or recommended by ADC program are described below.

Physical Barriers - Several mechanical methods such as fences, netting, metal flashing, and spiked metal strips are advocated for suppression of damage to livestock, crops, buildings and facilities by birds and mammals. Two forms of physical barriers used to protect fish from foraging birds are: complete enclosures of ponds and raceways with screen or net, and partial enclosure using overhead wires, lines, net, or screen.

Habitat Management and Biological Control - Habitat can sometimes be managed not to support or attract certain wildlife species. Most of the habitat management application in the ADC program involves airport health and safety work, blackbird/starling winter roost problems, or orchards/field crop depredation complaints.

Aversive Tactics

Aversive tactics alter the behavior of the target animal to the extent that the potential for loss or damage to the property by this animal is greatly reduced or eliminated. Scaring and harassment are some of the oldest methods of combatting animal damage, and continue to be effective.

I. Nonchemical

Electronic Distress Sounds - Distress and alarm calls of various animals have been used independently and in conjunction with other scare devices to successfully scare or harass animals.

Gas Exploders - Gas exploders operate on acetylene or propane gas and are designed to scare the offending wildlife by producing loud explosions at controllable intervals. The exploders are placed around the problem site in areas known to receive heavy damage.

Pyrotechnics - Shell crackers or scare cartridges are 12-gauge shotgun shells containing a firecracker. Noise bombs, whistle bombs, racket bombs, and rocket bombs are fired from hand-held launch guns. Noise bombs, or bird bombs, are firecrackers that travel about 75 feet before exploding. A variety of other pyrotechnic devices, including firecrackers, rockets, and Roman candles are used for dispersing animals.

Effigies, Scarecrows, and Other Scaring Techniques - Owl decoys, reflective Mylar tape, and helium-filled balloons are used as scaring devices. Their effectiveness is enhanced when they are used in conjunction with auditory scare devices. Other devices such as scarecrows, ribbons, flagging, suspended pie plans, etc., are also used in animal damage control activities.

Lights - A variety of lights, including strobe, barricade, and revolving units have been used to frighten birds.

Water Spray Devices - Water spray from rotating sprinklers placed at strategic locations in or around ponds or raceways will repel certain birds, particularly gulls.

II. Chemical

Chemical Repellents - Repellents are compounds which prevent use of an area or consumption of food item resources. Repellents operate by producing an undesirable taste, odor, feel, or behavior pattern. The avian frightening agent Avitrol (4-Aminopyridine) is limited for use in specific areas and for protection of specific crops. Avitrol is a toxic chemical, but is used as an area repellent by limiting the treated bait particles through dilution. Use sites are monitored to assure bait consumption is by targeted species only.

Population Management

Many capture methods employed by the ADC program can be used as either lethal or nonlethal methods depending on the management objective. When the objective is a scientific collection or relocation, or if the animal captured is a nontarget, it can be released. If the captured animal is a target species and the object is population reduction in the local area, the animal is euthanized.

A. Nonlethal

Leghold Traps - Leghold traps are frequently used to capture animals such as coyote, bobcat, fox, mink, beaver, raccoon, skunk, muskrat, nutria, and mountain lion. These traps are the most versatile and widely used tool available to ADC for capturing many species.

Cage Traps - Cage traps were often used where lethal or more controversial tools would be inappropriate due to a potential hazard to pets, other wildlife, or humans. Cage traps are well suited for use in residential areas. These traps are used to capture animals ranging in size from mice to deer, but are generally impractical in capturing most large animals.

Snares - Snares, made of wire or cable, are among the oldest existing control tools. Snares can be used effectively to catch most species but are most frequently used within ADC to capture coyotes, beaver, and bears. Snares may be lethal or nonlethal.

Pole Traps - Pole traps can be effectively used to capture raptors (i.e., hawks and owls) because of their behavioral tendency to perch prior to making a kill. One to several poles, 5 to 10 feet high, are erected near the area where depredations are occurring. A padded-jaw, leghold trap (usually size 1-1/2) is set on the top of each pole. A steel wire is passed

through the trap chain and attached at both the top and base of the pole, to allow the bird to come to rest on the ground after being captured.

B. Lethal

1. Nonchemical

Leghold Traps - When the target animal is captured, the animal is generally euthanized. The method of euthanasia varies, but it is ADC policy to provide the quickest, most painless death possible to the animal.

Quick-kill Traps - A number of "quick-kill" traps are used in animal damage control work. They include Conibear-type, snap, gopher, and mole traps. The Conibear-type trap consists of a pair of rectangular wire rod frames attached on both sides, which close in a scissor-like fashion when triggered, killing the captured animal with a quick body blow. The larger size of the Conibear trap (i.e., #330) is restricted in ADC to use in shallow water or underwater and primarily to capture nutria and beaver. The smaller sizes (i.e., #220, #115, #110) can be used in aquatic situations to capture nutria or muskrat, but are also used in dry land sets for trapping skunks, weasels, rats, and armadillos.

Snap traps (i.e., rat and mouse traps) are used to collect and identify rodent species that are causing damage, so that species-specific control tools can be applied.

Mole traps are used to control surface-tunneling moles (i.e., Nash moletrap and harpoon trap). Soil is pressed down in the active tunnel and the trap is placed with the trigger against the compressed area. When the mole re-opens the tunnel, the trap is triggered.

Gopher traps (e.g., Macabee gopher trap) are placed in burrows to control pocket gophers. These traps are set in active burrows and are selective to the animal targeted.

Shooting

Ground Hunting - Lethal reinforcement is often necessary to ensure the continued success in bird scaring and harassment efforts.

Shooting is an integral facet of predator control. Trap-wise coyotes, while difficult to trap, are often vulnerable to calling. Shooting can be selective for offending individuals and has the advantage that it can be directed at specific damage situations.

Aerial Hunting - Shooting from aircraft is a commonly used coyote damage control method. Aerial hunting is species-selective and can be used for immediate control where livestock losses are severe, providing weather, terrain, and cover conditions are favorable. Aerial hunting can be effective in removing offending coyotes which have become "trap-wise" and/or are not susceptible to calling and shooting.

Hunting Dogs - Dogs are essential to successful hunting of mountain lion and bear. Dogs trained for coyote denning are also valuable in luring offending coyote adults within shooting distance.

Denning - Denning is the practice of seeking out the dens of depredating coyotes or red fox and eliminating the young, adults, or both to stop ongoing and/or prevent further depredations on livestock. Denning is used primarily in the Western States. The usefulness of denning as a damage control method is proven, however, since locating dens is difficult and time consuming, and den use is restricted to approximately 2 to 3 months of the year, its practical use is limited.

2. Chemicals

a. Toxicants

Several toxic chemicals have been developed for use in the control of animal damage. Because of their efficiency, such toxicants have been widely employed. Since toxicants are generally not species-specific, and their use may pose a hazard to some nontarget species.

The following section describes the chemicals used in the current ADC program:

Zinc Phosphide - Zinc phosphide is a metallic toxicant used as a rodenticide.

Sodium Cyanide - Sodium cyanide is used in the M-44, a spring-activated ejector device developed specifically to take coyotes and other canine predators. The M-44 device consists of a capsule holder which is wrapped with fur, cloth, or wool; a spring-powered ejector mechanism; a capsule containing approximately 0.1 grams of powdered sodium cyanide (plus inert ingredients); and a 5 or 7 inch hollow stake.

Sodium cyanide is a fast-acting toxicant that, upon contact with moisture, either rapidly breaks down or is quickly metabolized. When sodium cyanide contacts water it quickly hydrolyses into hydrocyanic gas and sodium hydroxide. Cyanide which is ingested, kills the animal and is protein-bound, rendering it harmless to other animals that might scavenge the carcass.

Strychnine - Strychnine is a white, crystalline, bitter-tasting toxicant. It is very toxic to most mammals and birds, with the exception of gallinaceous birds which are relatively resistant. Strychnine is often retained in the gut of the consuming animal and consequently may pose a secondary hazard to scavengers. ADC currently restricts normal program use of strychnine to field rodent and nuisance bird control efforts. Strychnine is not used as a predacide except in emergency situations involving human health and safety.

Strychnine-treated grain is used in the control of damage caused by a variety of field rodents. When used as a field rodenticide, strychnine-treated milo or oats are thinly scattered in or near the rodent's den, burrow, or area where damage is occurring.

Anticoagulants - Several anticoagulant rodenticides are used to control commensal rodents and some field rodents. Common anticoagulants include warfarin, diphacinone, and chlorophacinone. Anticoagulants were originally multiple-dose toxicants (i.e., several feedings were required to achieve a lethal dose), however some recent formulations require only a single feeding to be effective.

DRC-1339 - DRC-1339 is a chemical used to control starlings and blackbirds in and around cattle and hog feedlots and poultry yards. This chemical is highly toxic to starlings, generally less toxic to other birds, and relatively nontoxic to most mammals. There is minimal danger to raptors or to mammalian carnivores that might eat DRC-1339 poisoned starlings since hawks and mammals are resistant to DRC-1339. DRC-1339 causes most birds to die at the roosting site.

Compound 1080 - Currently, the only registered, non-experimental, use of this chemical in controlling predators is as the active ingredient in the Livestock Protection Collar.

b. Fumigants

Gas Cartridges - Fumigants or gases are used to control burrowing wildlife. In the ADC program, fumigants are only used in rodent burrows and in predator dens. The ADC program manufactures and uses den and burrow cartridges specifically formulated for both of the above-stated purposes. These cartridges are hand placed in the active burrow or den of the target animal, and the entrance is tightly sealed with soil. The burning cartridge causes death from a combination of oxygen depletion and carbon monoxide poisoning.

Aluminum phosphide - Aluminum phosphide tablets are used as a fumigant in the control of prairie dogs.

c. Stressing Agents

PA-14 - The avian stressing agent PA-14 is the only chemical registered for control of roosting blackbirds and starlings during the winter months. PA-14 is a surfactant that lowers the surface tension of water. When PA-14 solution is sprayed on birds, the chemical action of the surfactant breaks down the feathers' natural waterproofing characteristics. Feathers become soaked and matted from the PA-14 solution and lose the insulating value. When applied during low temperatures, and if the birds are sufficiently wetted, insulation loss cannot be offset by increased metabolism, and the treated birds' body temperature eventually drops to the lethal level.

In the past, the Service has conducted numerous informal and formal consultations on specific ADC projects to consider the possible effects of those projects on endangered and threatened species in a particular geographic area. This process will continue in any instance where Service, ADC or other Federal agency personnel identify possible adverse impacts to threatened or endangered species.

One major objective of this consultation is to provide for closer routine coordination between USDA and the Service on Section 7 responsibilities. Toward this end, the Service will provide information on newly listed species and will review possible impacts of new and existing control techniques. In return, ADC personnel will keep the Service up-to-date on program changes, new techniques and non-target losses.

FORMAT

"May effect" determinations have been made for 22 species. The opinion will address each of those individually with status information, effects of the proposed action, and biological opinion with reasonable and prudent alternatives as appropriate.

An incidental take statement follows the biological opinion, with its reasonable and prudent measures and implementing terms and conditions, as appropriate. Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Under the terms of §7(b)(4) and §7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. The measures described in the incidental take statement are nondiscretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in §7(o)(2) to apply.

The Federal agency has a continuing duty to regulate the activity that is covered by the incidental take statement. If the agency fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of §7(o)(2) may lapse.

The biological evaluation submitted by USDA contained 144 species (Enclosure 1).

SPECIES NOT LIKELY TO BE ADVERSELY AFFECTED

The Service does not believe that any of the following species will be adversely affected by any aspect of the ADC Program:

Mammals

1. Listed bats: Ozark and Virginia big-eared, gray, and Indiana. Habitat modifications mentioned in the evaluation are so minor in nature that the Service has determined 'no affect'.

2. Ungulates: Columbian white-tailed deer and woodland caribou. Although ADC suggested that leghold traps and neck snares may affect these two cervids, the Service is unaware of any such occurrences in the past. The limited overlap between the ranges of the species and the area of operational ADC activity further reduces the likelihood of exposure.

3. Sonoran pronghorn: There have been no ADC activities in the range of this species since 1968. Any new activity may require consultation at that time.

4. Eastern cougar: This subspecies is believed to be extirpated.

5. Florida panther: The panther occurs outside the operational area of the ADC program. Leghold traps or snares are not recommended by ADC within the species' range.

6. Northern flying squirrels: The high country distribution of these squirrels in Virginia and North Carolina results in little opportunity for exposure. In addition, ADC does not use or recommend rodenticides within the species' ranges.

7. Delmarva fox squirrel: There is virtually no field rodent control conducted in the range of the fox squirrel and, ADC would not recommend use of toxicants within the species' range.

8. Red wolf: Limited distribution in the wild (eastern North Carolina) precludes the likelihood of exposure. If further releases are successful, it will be necessary to review ADC activities to insure continued protection.

9. Mt. Graham red squirrel: ADC does not use or recommend toxicants within the species' limited range.

10. Hualapai vole: ADC does not use or recommend toxicants within the species' limited range.

11. Listed mice: Alabama beach mouse, Anastacia Island beach mouse, Choctowatchee beach mouse, Perdido Key beach mouse, Key Largo cotton mouse, southeastern beach mouse, salt marsh harvest mouse. ADC does not use or recommend toxicants within these species' ranges.

12. Other listed rodents: Fresno kangaroo rat, Morro Bay kangaroo rat, Tipton kangaroo rat, giant kangaroo rat, Key Largo woodrat. ADC does not use or recommend rodenticides within these species' ranges.

Birds

13. Masked bobwhite: ADC does not use or recommend use of chemicals within the limited range of this species.

14. Puerto Rican species: Puerto Rican nightjar, Puerto Rican parrot, Puerto Rican plain pigeon and yellow-shouldered blackbird. There is no registered use for zinc phosphide, strychnine, DRC-1339 or avitrol in Puerto Rico.

15. Brown pelican: Pelicans nest and feed in estuarine and marine habitats, so there is no opportunity for exposure.

16. Pacific Island birds: Hawaiian common moorhen, Hawaiian coot, Hawaiian duck, Hawaiian goose, Hawaiian stilt, Newell's Townsend's shearwater, large Kauai thrush, small Kauai thrush, Molokai thrush, Laysan finch, Nihoa finch, and Nihoa millerbird. ADC does not use or recommend use of toxicants in areas where these species might be exposed to them.

17. California least tern and California clapper rail: Impact would likely be beneficial for predator control for skunks, raccoons and red foxes.

18. Eskimo curlew: Species is so rare, if it exists at all, that neither adverse nor beneficial impact is anticipated.

19. Interior least tern: Species aquatic feeding habits preclude exposure.

20. Light-footed clapper rail: Species aquatic feeding habits and wetland habitat preference preclude the likelihood of exposure.

21. Piping plover: Impacts would likely be beneficial as gull control could reduce competition for nesting space.

22. Black-capped vireo: Impacts would likely be beneficial as control of cowbirds would reduce nest parasit...

23. Roseate tern: Impacts would likely be beneficial as gull control could reduce competition for nesting space.

24. Wood stork: Aquatic feeding habits preclude the likelihood of exposure.

Reptiles

25. Alabama red-bellied turtle and flattened musk turtle: The red-bellied turtle is an herbivore and the musk turtle feeds on mollusks. Thus,

the feeding habits of the turtles preclude the likelihood of exposure to toxicants.

26. American crocodile and American alligator: The limited range of the American crocodile (extreme southern Florida) and habitat preference (saltwater estuaries) preclude likelihood of exposure to any aspect of the ADC Program. The American alligator is listed only as similar in appearance in order to protect the American crocodile.

27. Sea turtles - green, loggerhead, leatherback, Kemp's ridley and hawksbill: Control activities to protect turtle nests from predation would be beneficial.

28. Mona boa, Mona ground iguana, and Monito gecko: No toxicants are registered for use in Puerto Rico. Other predator control activities are beneficial.

29. Fish, clams, crustaceans, and plants: ADC evaluation describes possible impacts from use of PA-14 on bird roosts with subsequent runoff of this material. The Service does not believe this will occur. The low toxicity of these toxicants, combined with the unlikely possibility of much material getting into aquatic habitat, minimizes the chances of exposure.

AFFECTED SPECIES

The Service concurs with ADC that the following threatened or endangered species will be adversely affected by some aspect of the ADC Program:

Mammals (7) PAGE

Birds (8)

Reptiles (5)

Amphibians (1)

BLACK-FOOTED FERRET (*Mustela nigripes*) - E

BIOLOGICAL OPINION

Status of the species

The black-footed ferret is a large, buckskin-colored weasel with black face mask, black tipped tail and black feet, and can weigh up to 3 pounds. They depend upon prairie dogs for both food and shelter and have never been found where prairie dogs do not exist. Today, at least partly due to the extensive prairie dog poisoning campaigns of the 1930's, the black-footed ferret is one of the rarest native mammals in North America.

Since the turn of the century, the ferret's habitat (prairie dog colonies) decreased by as much as 95 percent, primarily as a result of land-use changes and practices that include prairie dog control (Choate et al. 1982, Anderson et al. 1986, Flath and Clark 1986). From over 100 million acres in the late 1800's, prairie dog colonies are estimated to be reduced to about 2 million acres; only a portion of which may be suitable for ferret survival and recovery.

The last known wild black-footed ferrets were found in Meeteetse, Wyoming, but this species once ranged from the great plains of Canada to intermontane regions of the interior Rocky Mountains and Southwest.

The likelihood of other populations of ferrets being found in the wild is considered low, and if some remain, the probability of their continued survival and viability in the wild for long periods of time is considered low by population biologists. However, the occurrence of ferrets within the historic range of the species must still be considered possible by the Service.

There are currently nearly 300 captive ferrets managed cooperatively by the Wyoming Game and Fish Department and the Fish and Wildlife Service in facilities at: Wyoming Game and Fish Department's Sybille Wildlife Research and Conservation Education Unit, Wheatland, Wyoming; Henry Doorly Zoo in Omaha, Nebraska; and the Conservation and Research Center near Front Royal, Virginia; the Louisville Zoological Park in Louisville, Kentucky; and the Cheyenne Mountain Zoo in Colorado Springs, Colorado; the Phoenix Zoo in Arizona; and Toronto Metropolitan Zoo, Canada. In the spring of 1991, forty-nine ferrets were released in the Shirley Basin, Wyoming. As of November, 1991, ten or fewer were considered likely to be alive. The Service, States, and other Federal agencies have begun to identify prairie dog complexes approximately 10,000 acres in size and of sufficient quality to be considered for ferret reintroductions. This requires mapping prairie dog colonies in each State and selecting complexes of prairie dog colonies to evaluate and rank nationally for reintroductions of black-footed ferrets. Once the final sites have been selected, areas considered not suitable for recovery of the species can be cleared by the Service under the proposed "Block Clearance" Program and, after review, can be removed from areas with currently recommended control restrictions.

Effects of the Proposed Action

Appendix F of the DEIS on the ADC Program identifies a potential adverse impact on the black-footed ferret from the use of aluminum phosphide, gas cartridges, and zinc phosphide to control prairie dogs, and leghold traps to control coyotes. Appendix F also identifies a potential positive impact for ferrets from the use of M-44s and leghold traps for coyote control. ADC personnel believe that if coyotes and other predators are controlled, there will be less chance of their killing a ferret or prairie dog, the ferret's primary food source, although coyotes probably would not kill enough prairie dogs to negatively affect black-footed ferret numbers. Predator control (primarily of coyotes) in and around prairie dog towns also would decrease the possibility of introducing diseases which may negatively impact black-footed ferrets.

The DEIS states that the preferred prairie dog control tool in areas where ferrets may exist is zinc phosphide rather than strychnine grain baits. Use of zinc phosphide in areas where ferrets may exist would occur only after ferret surveys were conducted and no evidence of ferrets was found. The DEIS also states that any impact on ferrets from the loss or reduction of the availability of prey is speculative.

Primary and secondary poisoning of ferrets combined with the cumulative impact of control programs on their primary habitat (prairie dog colonies) will have an adverse impact on the survival and recovery of this species. As prairie dog colonies become smaller and their spacing more distant, it can be theorized that ferret populations would suffer the following consequences: (1) reduced gene flow; (2) decreased ability to disperse to new colonies; and (3) lowered mating success.

BIOLOGICAL OPINION

Even with ferret surveys and successful reproduction in captivity, the survival and recovery of the species is unlikely with a large annual rate of habitat loss. Loss of a single black-footed ferret in the wild would constitute jeopardy to the species. It is, therefore, my biological opinion that those components of the ADC Program described above are likely to jeopardize the continued existence of the black-footed ferret, because of the possible mortality that could result.

REASONABLE AND PRUDENT ALTERNATIVES

The Section 7 regulations have defined reasonable and prudent alternatives as alternative actions, identified during formal consultation, that can be implemented in a manner consistent with intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Service believes would avoid the likelihood of jeopardizing the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

The reasonable and prudent alternative to preclude jeopardy during prairie dog control is for ADC personnel to 1) work with the States, landowner, and/or land agency to map prairie dog colonies in the vicinity of each colony that is proposed for control, and 2) ensure that prairie dog control shall not occur in any prairie dog complex larger than 1,000 acres, unless the area has been block cleared by the Service's block clearance process. A prairie dog complex consists of two or more neighboring prairie dog towns, each less than 7 kilometers (4.34 miles) from each other. Once the area of proposed action is mapped, the following criteria shall be applied to preclude jeopardy to the black-footed ferret as a result of the use of toxicants by ADC personnel:

1. A black-tailed prairie dog colony or complex of less than 80 acres having no neighboring black-tailed prairie dog towns may be treated without a ferret survey. A midrange of 102 acres (61 to 294 acres) of occupied black-tailed prairie dog habitat is believed necessary to support a single ferret, so it is highly unlikely that a ferret would be found in an isolated colony of less than 80 acres. A neighboring prairie dog town is defined as a colony less than 7 kilometers from the town to be treated, based on the longest distance that the ferret has been observed to travel during the night (Biggins et al. 1985, Richardson et al. 1987).

2. A white-tailed prairie dog colony or complex of less than 200 acres having no neighboring white-tailed prairie dog towns may be treated without a survey. It is estimated to require between 196 and 475 acres of white-tailed prairie dogs to support a single ferret.

3. Urban situations (e.g., playgrounds, golf courses, etc.) may be treated without conducting ferret surveys. The appropriate Service office should be contacted in advance of any treatment to determine whether an "urban situation" exists.

4. For black-tailed prairie dog colonies or complexes over 80 acres but less than 1,000 acres, and white-tailed prairie dog colonies or complexes over 200 acres but less than 1,000 acres, prairie dog control may be allowed after completing a black-footed ferret survey within 30 days of proposed treatments provided no ferrets or their sign are found. If all colonies in the complex are surveyed without sign of ferrets, no future survey for ferrets would be required. These surveys will be coordinated with the appropriate Service office.

5., For prairie dog complexes over 1,000 acres, no control shall be allowed until the complex has been evaluated by appropriate State and/or Federal agencies (those agencies participating on State working groups for ferret recovery) for its potential as a recovery site and until the complex has been block cleared. One thousand acres would be a minimum complex size for consideration as a black-footed ferret reintroduction site and would likely require intensive management of habitat for a ferret population (USFWS 1988). The Black-footed Ferret Recovery Plan calls for the establishment of at least 10 populations with no fewer than 30 breeding adults in each population by the year 2020.

6. ADC personnel shall maintain records of the number of acres of prairie dog towns or complexes controlled and the type of chemicals used for the control. These records shall be provided to the Service and EPA on an annual basis.

7. Surveys should be supervised by biologists trained in ferret survey techniques and ferret biology at a Service-approved training workshop. Currently, only the University of Wyoming conducts such a course. Ferret surveys should be reviewed by the Service for compliance with survey standards and Section 7 of the Endangered Species Act. The Service will work with ADC personnel to determine or evaluate the possibilities of developing a core in-house training program for ADC personnel to ensure that proper and appropriate ferret surveys are carried out.

Because the Service finds jeopardy to the ferret, the Agency is required to notify the Service of its final decision whether the reasonable and prudent alternative will be implemented.

INCIDENTAL TAKE STATEMENT

Assuming the implementation of the reasonable and prudent alternatives described above, the Service does not anticipate that the proposed action will result in any incidental take of the black-footed ferret.

GRIZZLY BEAR (Ursus arctos horribilis) - T

BIOLOGICAL OPINION

Status of the Species

Grizzly bear populations in the conterminous United States are restricted to northcentral and northeastern Washington, northern and eastern Idaho, western Montana, and northwestern Wyoming. Only six areas are known to sustain either self-perpetuating or remnant populations, excluding southern Colorado, where a grizzly bear was killed in the fall of 1979 in a remote section of the San Juan National Forest. These areas include the Yellowstone Grizzly Bear Ecosystem (YGBE), the Northern Continental Divide Grizzly Bear Ecosystem (NCDGBE), the Cabinet-Yaak Grizzly Bear Ecosystem (CYGBE), the Selkirk Mountains Grizzly Bear Ecosystem (SMGBE), the Selway-Bitterroot Grizzly Bear Ecosystem (SBGBE), and the North Cascades Grizzly Bear Ecosystem (NCGBE).

The primary components of the grizzly bear habitat include food, cover, and denning habitat. Grizzly bears are successful omnivores, and in some areas may be entirely herbivorous. Grizzly bears must avail themselves of large quantities of food in order to survive denning and post-denning periods. They are opportunistic feeders and will prey or scavenge on almost any available food including ground squirrels, ungulates, carrion, and garbage. This search for food is a prime influence on movements. Upon emergence from

the den, they seek the lower elevations, drainage bottoms, avalanche chutes, and ungulate winter ranges, where their food requirements can be met.

Limited reproductive capacity of grizzly bears precludes any rapid increase in the population. Mating appears to occur from late May through mid-July, with a peak in mid-June. The age of first reproduction and litter size varies and may be related to the nutritional state of the bear. Litter sizes range from 1 to 4 with the mean of about 2.

The current population of grizzly bears is estimated at between 800 and 1,000 bears (USFWS 1982a). The YGBE population is estimated between 200 and 350, while the NCGBE population is believed to be between 440 and 680 bears (USFWS 1982a). In the US, the CYGBE population is estimated at less than 15 individuals. The decline in the bear populations has been related to habitat loss and indirect human-caused mortality. Most of the actions adversely impacting the grizzly bear occur on Federal lands. Some non-Federal actions that would adversely impact the grizzly bear include habitat destruction and direct human-caused mortality (e.g., both legal and illegal shooting of bears) on private lands.

Effects of the Proposed Action

Secondary poisoning of grizzly bears by aboveground use of strychnine baits is possible if enough rodent carcasses containing strychnine are consumed following rodent control. In an April 1, 1980, biological opinion, the Service concluded that below ground use of strychnine-treated grain for pocket gopher control was not likely to jeopardize the continued existence of the grizzly bear. Aboveground use of strychnine is presently prevented by a court injunction issued April 11, 1988. Further action is required by the EPA before the injunction can be lifted.

In Montana, Columbian ground squirrel control using strychnine baits may occur in or adjacent to grizzly recovery areas if the court injunction is lifted. Aboveground use of strychnine inside grizzly recovery areas in Wyoming and eastern Idaho (Yellowstone ecosystem) would be low since the recovery area is primarily on public lands where aboveground use of strychnine would be restricted to case-by-case evaluations by the Forest Service or National Park Service and/or used below ground in conifer plantations for pocket gophers.

Existing label restrictions (prior to the injunction) prohibit the aboveground use of strychnine baits in the geographic range of the grizzly bear except under programs and procedures specifically approved by the EPA. Where feasible, the user is required to pick up and burn or bury all visible carcasses of ground squirrels in or near treated areas. The aboveground use of strychnine for porcupine control is specifically prohibited in areas known to be occupied by the grizzly bear and lastly, the user is advised by label to contact the Service or State fish and game office for specific information on the presence of endangered species.

The M-44 is capable of killing a grizzly bear if a grizzly bear pulls the M-44 and receives sodium cyanide orally. Grizzly bears might kill sheep or lambs wearing 1080 collars or feed on carrion of dead collared sheep. Although compound 1080 is highly toxic to some warm blooded animals, there is no information on the toxicity of compound 1080 to grizzly bears. There is a reported LD50 for other bears of 0.5 to 1.0 mg/kg, suggesting that both a large collar (60 ml) and a small collar (30 ml) could be toxic to even a large grizzly bear.

ADC Program policy is not to use M-44s or toxic collars containing compound 1080 in areas occupied by grizzlies. In addition, the EPA label use restrictions on M-44s state that these devices shall not be used in areas where federally listed threatened and endangered species might be adversely affected. Label restrictions for the 1080 livestock protection collar also require the Service to be contacted prior to its possible use in certain areas of Idaho, Montana, Washington, and Wyoming. If it is determined by the Service or the user that the use of the collar may adversely affect a grizzly bear, the collar cannot be used in those specific areas.

The ADC Program includes the live capture of grizzly bears (in accordance with the Interagency Grizzly Bear Guidelines) and other species with leghold traps, cage traps, foot snares, and tranquilizing drugs/guns. In some cases, a problem bear that meets the criteria for removal outlined in the Interagency Grizzly Bear Guidelines may have to be killed. Grizzly bears also may be caught in traps set for other species (e.g., coyote and wolf). Capture of a grizzly in any of these devices could result in injury or death to the bear. A grizzly bear cub could be caught and held by a leghold trap or a snare set for coyotes. However, a review of 20 years of Montana data indicates no non-target grizzly bear has been taken by traps or snares. An adult or juvenile grizzly bear could be killed in a neck snare set to capture a coyote, black bear, or mountain lion. Grizzly bears also have been accidentally killed from overdoses of drugs while attempting relocation. Based on past records, loss of a non-target grizzly bear appears to be rare. In our review of ADC records and other data compiled on grizzly bear mortality for all ecosystems, there has been no accidental mortality of non-target grizzly bears during the past five years as a result of the ADC Program.

BIOLOGICAL OPINION

It is my biological opinion that the ADC Program is not likely to jeopardize the continued existence of the grizzly bear, except for the Cabinet-Yak Grizzly Bear Ecosystem, where take of one bear would represent joepardy to that recovery unit.

REASONABLE AND PRUDENT ALTERNATIVES - CYGBE Recovery Unit

The Section 7 regulations have defined reasonable and prudent alternatives as alternative actions, identified during formal consultation, that can be implemented in a manner consistent with intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal

authority and jurisdiction, that are economically and technologically feasible, and that the Service believes would avoid the likelihood of jeopardizing the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

The reasonable and prudent alternative necessary to preclude jeopardy to this recovery unit is:

1. All cage (culvert) traps and foot snares set for black bears in areas occupied by grizzly bears shall be checked at least once a day;

2. Neck snares (for coyotes) without break-away locks shall not be used in areas occupied by grizzly bears; and

3. Neck snares shall not be used for black bears or mountain lions in areas occupied by grizzly bears.

INCIDENTAL TAKE STATEMENT

There is the possibility of incidental take of grizzly bears as a result of leghold traps, snares (legs and neck), and use of tranquilizing guns. Records show eight grizzly bears have been accidentally killed in the last five-year period by various agencies while capturing and handling grizzlies. Due to the potential to accidently kill a grizzly bear during legitimate control operations, the anticipated level of incidental take as a result of the ADC Program is one grizzly bear in Wyoming and the Northern Continental Divide area (ecosystem) of Montana. Any incidental take should be reported within 5 working days to the Helena Field Office, U.S. Fish and Wildlife Service, P.O. Box 10023, Federal Building & U.S. Courthouse, 301 S. Park, Room 494, Helena, Montana 59626-0023.

The Service has determined that this level of impact is not likely to result in jeopardy to the species, except that no take can be authorized for the CYGBE recovery unit, as take of one bear would represent jeopardy to that recovery unit.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of the grizzly bear:

1. ADC personnel shall take all precautions possible to reduce any possible incidental take, including training on the use of drugs for animal immobilization and restraint.

2. ADC personnel shall monitor incidental take to ensure compliance with anticipated take levels.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the USDA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. All cage (culvert) traps and foot snares set for black bears in areas occupied by grizzly bears shall be checked at least once a day.

2. Neck snares (for coyotes) without break-away locks shall not be used in areas occupied by grizzly bears.

3. Neck snares shall not be used for black bears or mountain lions in areas occupied by grizzly bears.

4. The Service Fish and Wildlife Enhancement Office, in the Regions of the species occurrence, should be notified within 5 days of the finding of any dead or injured grizzly bears in or adjacent to an ADC Program work area. Cause of death, injury, or illness, if known, also should be conveyed to those offices.

GRAY WOLF (Canis lupus) - E
Minnesota - T

BIOLOGICAL OPINION

Status of the Species

The gray wolf inhabits the northeastern third of Minnesota, portions of the northern third of Wisconsin, and portions of the Upper Peninsula and Isle Royale of Michigan (USFWS 1992). The gray wolf also occurs, as a result of ongoing natural recolonization, in Idaho, north-central Washington, and northwestern Montana. Successful reproduction of wolves has been recorded in southeast British Columbia, Canada, along the North Fork of the Flathead River, Glacier National Park, and other areas in northwest Montana, and the north Cascades of Washington.

The key components of wolf habitat include: (1) a sufficient, year-around prey base of ungulates and alternate prey, (2) suitable and somewhat secluded denning and rendezvous sites, and (3) sufficient space with minimal exposure to humans. The primary prey for wolves in Minnesota, Wisconsin, and Michigan include deer, moose, and beaver. Wolves in the Rocky Mountains feed on elk, bison, ground squirrels, snowshoe hare, and grouse. On a biomass basis, ungulates comprise the bulk (more than 90 percent) of the wolves' diet during summer and fall in the Rocky Mountains.

In the Northern Rockies, wolf pups are born any time from late March to late April or possibly early may. Most wolves appear particularly sensitive to human activity near den sites and may abandon them if disturbed. Critical

Habitat for the northeastern population comprises 9,845 square miles in Beltrami, Itasca, Koochiching, Lake, Lake of the Woods, Roseau, and St. Louis Counties, Minnesota, and Isle Royal National Park in Michigan.

As of March 1991, the wolf population in and adjacent to Montana is estimated to be about 50 wolves in 5 packs. No more than 15 wolves were believed to be present in central Idaho as of August 1987. There are no recent population figures for the gray wolf (eastern timber wolf) but it is estimated that there are approximately 1,200 to 1,300 of these wolves occurring in Minnesota, Wisconsin, and Michigan. The population decline of the easter timber wolf was a result of (1) intensive human settlement, (2) direct conflict with domestic livestock, (3) a lack of understanding of the animal's ecology and habits, (4) fears and superstitions concerning wolves, and (5) the extreme control programs designed to eradicate the wolf (Young and Goldman 1944). These same factors apply to the decline in all wolf populations in the United States. Reasons for the decline of the Northern Rocky Mountain wolf also are given as land development, loss of habitat, poisoning, trapping, and hunting. Non-Federal actions adversely impacting the wolf primarily include hunting and trapping of wolves on non-Federal lands.

Effects of the Proposed Action

According to the DEIS on the ADC Program, the use of M-44s to control coyotes, the aboveground use of strychnine to control rodents and rabbits, and the 1080 toxic collar to control coyotes could adversely affect the gray wolf. In addition, leghold traps for beaver, raccoon, and problem wolves and coyotes, and neck snares to control problem wolves and coyotes also may affect the gray wolf. An accidental shooting of a wolf while hunting coyotes is an extremely remote possibility because wolves are distinguishable from the air, and because ADC uses trained and experienced gunners in areas where wolves are known or suspected, but such incidents have occurred. Wolf relocation will occasionally cause the accidental death of or injury to wolves (e.g., accidental overdose of drugs while tranquilizing wolves, or injury from traps).

The Service believes that the Interim Wolf Control Plan (Plan) approved in August 1988, will promote the conservation of the species. The Plan, amended in December 1989, now includes Idaho, Montana, Wyoming and northeast Washington. Control plans are nearing completion for North and South Dakota and Washington. A Federal or State agency or Indian Tribe that has a permit from the Service under Section 10 of the Endangered Species Act may conduct wolf control actions in accordance with the Plan. These control actions include: (1) capturing problem wolves on public or private lands and relocating them to remote areas of public lands; (2) placing problem wolves in captivity; or (3) killing problem wolves. Verbal approval followed by written authorization from the Service is required prior to killing a wolf.

The Northern Rocky Mountain Wolf Recovery Plan clearly states that efficient and professional control of problem wolves will promote conservation of the

species (USFWS 1987). The Service developed the Interim Wolf Control Plan and authorized (permitted) ADC personnel to conduct wolf control in accordance with this plan, specifically to help ensure the survival and recovery of the species. While the issue of the ADC Program participation in wolf control in the Northern Rocky Mountains was temporarily resolved in FY 1991 by a Congressional appropriation to the Service to contract ADC personnel to control problem wolves, the underlining issue of funding remains unresolved.

Poisoning from aboveground use of strychnine may exist if the court injunction is lifted and if dead or dying species affected by the control programs are consumed. The aboveground use of strychnine on private lands in Idaho or Washington should have little effect on wolf numbers, since there is very little private range or cropland in gray wolf areas of these two States. Primary use of strychnine aboveground in Montana will be for Columbian ground squirrel control. The gray wolf is likely to consume any strychnine-poisoned animals encountered. Outdoor, aboveground strychnine use in wolf range in Minnesota would be extremely unlikely even if the court injunction is lifted. In Minnesota, where conflicts between wolves and livestock growers are most frequent, there are no known cases of wolf mortality resulting from the legal uses of strychnine in the last decade. Furthermore, there are only two suspected cases of wolf mortality from illegal strychnine use; both of these cases involved sheep carcasses laced with strychnine near farms where wolf depredation was alleged to be a problem.

Use of M-44s and 1080 toxic livestock collars is prohibited in occupied gray wolf range. Direct mortality to the gray wolf could occur as a result of using neck snares or shooting. Toxicants and neck snares are nonselective and could kill animals not intended to be killed (e.g., a nonproblem wolf). The ADC Program does not use snares or leghold traps to control coyotes in Minnesota (Wetzel, pers. comm. 1990). The live-capture of problem wolves by leghold traps and other methods may cause stress to the animals. Leghold traps in sizes No. 3N or smaller are not likely to adversely affect adult wolves, but may pose a threat to juvenile wolves. Aerial hunting for coyotes by a trained and experienced aerial gunner has recently resulted in death of a wolf in North Dakota. This incident occurred in an area not occupied by wolves for many years.

"Occupied gray wolf range" will be defined as (1) an area in which gray wolf presence has been confirmed by State or Federal biologists through interagency wolf monitoring programs, and the Fish and Wildlife Service has concurred with the conclusion of wolf presence, or (2) an area from which multiple reports judged likely to be valid by the Fish and Wildlife Service have been received, but adequate interagency surveys have not yet been conducted to confirm presence or absence of wolves.

The Forest Service and Bureau of Land Management must evaluate each application for strychnine use. An environmental assessment is normally prepared with opportunity for public review. The Service reviews the

assessment and, if necessary, conducts separate formal consultation. Thus, the Service has additional opportunities to restrict the aboveground use of strychnine and other toxic chemicals within the habitats of the gray wolf on Federal lands.

In accordance with the existing label, strychnine baits should not be used in the geographic range of the gray wolf except under programs and procedures approved by the EPA. Before baiting, the user is advised to contact the Fish and Wildlife Service or the local State fish and wildlife office for specific information on endangered species. EPA label and use restrictions do not allow the M-44 device to be used in areas where federally listed endangered and threatened animal species may be adversely affected. Therefore, the use of M-44s is prohibited in areas known to be occupied by gray wolves. The use of M-44s in any other areas identified by the Service as gray wolf range will not be allowed without prior consultation with and approval by the Service.

A biological opinion issued to EPA on June 14, 1985, concluded that use of the 1080 toxic livestock collar was not likely to jeopardize the subspecies Canis lupus lycaon (eastern timber wolf) but likely to jeopardize the subspecies Canis lupus irremotus (northern Rocky Mountain wolf). Reasonable and prudent alternatives also were given to the EPA, which in turn provided label restrictions to preclude jeopardy. Those label restrictions also require that the livestock collar not be used in areas where gray wolves may occur.

BIOLOGICAL OPINION

Based on the above information, it is my biological opinion that the use of snares, steel traps and aerial shooting in the ADC Program is not likely to jeopardize the continued existence of the gray wolf nor adversely modify its critical habitat.

INCIDENTAL TAKE STATEMENT

Incidental take of gray wolves may result from use of leghold traps, snares (legs and neck) and tranquilizing guns, and from accidental shooting by aerial coyote hunters. Records show one wolf has been accidentally killed by ADC personnel in the last five-year period. In view of the potential to accidentally kill of a gray wolf during legitimate control operations, the anticipated level of incidental take as a result of implementing the ADC Program is one wolf in each of the State occupied by the eastern and Rocky Mountain subspecies per year.

The Service has determined that this level of impact is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of the gray wolf:

1. ADC personnel shall take all possible precautions to reduce incidental take, including training on the use of drugs for animal immobilization and restraint.

2. ADC personnel shall monitor incidental take to ensure compliance with anticipated take levels.

3. Non-target wolves inadvertently captured alive must be immediately released.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the USDA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. An incidental take in excess of one wolf in any State (in a given calendar year) will result in cessation of the activity causing take and reinitiation of consultation between the Fish and Wildlife State Office, the ADC State office, and the involved land manager.

2. All leghold traps shall be checked at least once a day in areas known to be occupied by gray wolves.

3. Neck snares shall not be used in areas known to be occupied by gray wolves except for areas where wolves may be a target species.

4. Number 3N or smaller traps may pose a threat to juvenile wolves and therefore should not be used in proximity to occupied dens and rendezvous sites. Upon documentation of wolf pups in the vicinity of control areas, the use of leghold traps shall be in coordination with the Fish and Wildlife Service.

5. The Service's Fish and Wildlife Enhancement Office, in the Regions of the species' occurrence, shall be notified within 5 days of the finding of any dead or injured gray wolf. Cause of death, injury, or illness, if known, also shall be conveyed to those offices. Addresses are:

(Region 1 - Washington, Idaho)
U.S. Fish and Wildlife Service
Lloyd 500 Building, Suite 1692
500 N.E. Multnomah Street
Portland, OR 97232
(503) 429-6150

(Region 3 - Minnesota, Michigan, Wisconsin)
U.S. Fish and Wildlife Service
Federal Building, Fort Snelling
Twin Cities, MN 55111
(612) 231-3276

(Region 6 - Montana, Wyoming)
U.S. Fish and Wildlife Service
P.O. Box 25486
Denver Federal Center
Denver, CO 80225
(303) 236-8166

6. ADC personnel shall participate fully in interagency wolf monitoring programs.

7. ADC personnel also shall informally consult on an annual basis with the State offices of the Fish and Wildlife Service on the current status of the wolf in areas where recolonization is occurring.

SAN JOAQUIN KIT FOX (Vulpes macrotis mutica) - E

BIOLOGICAL OPINION

Status of the Species (largely from USFWS 1991g)

The San Joaquin kit fox is a small canid that weighs approximately 5 pounds (Hall and Kelson 1959). This subspecies was historically distributed within an 8,700 square mile area in central California, extending in the north from the vicinity of Tracy in the upper San Joaquin Valley, south to the general vicinity of Bakersfield. Intensive agriculture, urbanization, and other land-modifying actions have eliminated extensive portions of this habitat. Kit foxes currently are limited to the remaining grassland, saltbush, open woodland, alkaline sink valley floor habitats , and similar habitats located along eastern and western bordering foothills and adjacent valleys and plains (O'Farrell 1983). Foraging for a variety of rodents and lagomorphs typically occurs at night, although animals have been observed stalking California ground squirrels (Spermophilus beecheyi) during daylight hours, and pups may be observed during the day at den sites. Dens are usually constructed on gentle slopes or level areas. As few as one or as many as 32 or more entrances may be excavated at each site. Kit foxes will also opportunistically utilize man-made structures such as culverts or pipes, or may enlarge abandoned ground squirrel burrows as denning sites (O'Farrell 1983).

Remaining kit fox populations are represented by family groups that have been isolated from other groups by fragmentation of their habitat. This makes this subspecies subject to local extirpation and genetic loss from activities that would impact these family groups (Knudson, per. comm. 1992).

This species is imminently in danger of extinction because of continuing rapid loss of habitat. Although agricultural conditions and oil and gas development are by far the greatest source of loss, urban expansion, predation, and road kills also contribute substantially to the vulnerability of this species. Two other wild canids, the introduced red fox and coyote compete for food resources with the smaller kit fox. This

competition for food resources increases during drought periods when the food resources these species rely on decline to low population levels. The kit fox is also preyed upon by the coyotes and red fox. Expanding red fox populations throughout the San Joaquin Valley present a serious threat to the kit fox. Coyote control programs are being implemented in the San Joaquin kit fox' range and red fox control programs are being pursued in other areas where they are posing a threat to listed species.

Effects of the Proposed Action

Adverse impacts to the San Joaquin kit fox from ADC activities could occur. Leg-hold traps, snares and M-44 devices, shooting, and denning, which are commonly used to control coyotes can pose risks to kit fox because of the possibility of inadvertently capturing or killing individual kit foxes. Rodent control agents such as anticoagulants and fumigants, also pose risks to kit foxes because of the dangers of primary or secondary poisoning.

BIOLOGICAL OPINION

Because of the potential for rodent control activities to take the fox, it is my biological opinion that the ADC Program is likely to jeopardize the continued existence of the San Joaquin kit fox.

REASONABLE AND PRUDENT ALTERNATIVES

The Section 7 regulations have defined reasonable and prudent alternatives as alternative actions, identified during formal consultation, that can be implemented in a manner consistent with intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Service believes would avoid the likelihood of jeopardizing the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

The reasonable and prudent alternative to preclude jeopardy during coyote and rodent control is as follows:

1. Snares, M-44 devices, toxicants and fumigants shall not be used to control predator species within the recognized occupied range of the San Joaquin kit fox.

2. Leghold traps used within the kit fox range shall be equipped with built-in pan tensioning devices such that at least 4.5 pounds of pressure is required to spring the trap. Tensioning devices shall be permanently attached, either by the manufacturer or by ADC personnel, in such a manner that they are unlikely to become inadvertently detached during use. Easily detachable tensioning devices shall not be permitted.

3. Shooting shall be conducted only by ADC personnel trained and experienced in canine identification to prevent inadvertent shooting of San Joaquin kit foxes.

4. Use of chemical agents to control rodents within the range of the San Joaquin kit fox shall be subject to the following restrictions:

a. All methods of rodent control utilizing EPA registered compounds must be applied with strict observance of EPA approved label restrictions.

b. Zinc phosphide, a compound known to be minimally toxic to kit foxes, shall be the only chemical utilized for rodent control within the occupied range of the San Joaquin kit fox.

and

5. Any take of kit foxes is to be reported immediately to the Sacramento Field Office.

U.S. Fish and Wildlife Service
2800 Cottage Way, Room E-1803
Sacramento, CA 95825
(916) 978-4613

Because the Service finds jeopardy to the ferret, the Agency is required to notify the Service of its final decision whether the reasonable and prudent alternative will be implemented.

INCIDENTAL TAKE STATEMENT

Assuming implementation of the reasonable and prudent alternative, the Service does not anticipates that any kit foxes will be taken as a result of this action.

JAGUARUNDI (Felis yagouaroundi cacomitili) - E
OCELOT (Felis pardalis) - E

Because the ADC Program's operations in Texas may affect the jaguarundi and ocelot, the ADC office in San Antonio, Texas, initiated formal Section 7 consultation with the Service's Corpus Christi Field Office on August 10, 1989. That consultation involves the use of leghold traps, snares, and M-44s in south Texas (the only area in the United States within which ocelot and jaguarundi occur). These predator control tools appear to be the only ADC measures used in this area that may adversely affect these two cats. The Corpus Christi Field Office is currently working on a biological opinion that will be issued sometime during 1992. In view of that pending opinion, we will not address those two species here.

UTAH PRAIRIE DOG (Cynomys parvidens) - T

BIOLOGICAL OPINION

Status of the Species

The Utah prairie dog is a burrowing rodent in the squirrel family. This species is confined to disjunct areas in southwest Utah including Beaver, Garfield, Iron, Kane, Piute, Sevier, and Wayne Counties. There is a positive correlation between available moisture and prairie dog abundance and density. Prairie dogs appear to prefer swale type formations where moist herbage is available even during drought periods. A well-drained area is necessary for home burrows. Prairie dogs must be able to inhibit a burrow system approximately 3.3 feet underground without becoming wet. The vegetative height within the colony must be low enough to allow standing prairie dogs to scan their environment for predators.

Prairie dogs are predominantly herbivores. Grasses are preferred food items during all seasons. The flowers and seeds of forbs also are preferred. Although forbs other than alfalfa are not always highly preferred items, they may be critical to a prairie dog town's survival during drought. Cicada (insects) are a preferred animal food item and are readily taken when available. In colonies at low elevations where moist herbage is available, breeding occurs in the early spring and lactation continues into June. Females are capable of giving birth annually to litters that average three to four young usually born in April USFWS 1991f).

The Utah prairie dog population was estimated to be about 95,000 in the 1920s (Heggen and Hassenyager 1977), declining to a 1976 spring count of 2,160 adult animals (Turner 1979). Overall numbers have increased during the period 1976-1989 with the 1989 spring count of 7,377.

The decline of the Utah prairie dog was caused by human-related alteration and by poisoning, which resulted from the belief that prairie dogs compete with domestic livestock for forage. At present, the Utah prairie dog is still threatened by the loss of habitat over much of its range. In addition, the damage caused by local concentrations of prairie dogs has provoked farmers in some areas to kill them illegally to protect crops and cropland.

Effects of the Proposed Action

A May 25, 1988, biological opinion issued to the EPA concluded that no jeopardy to the Utah prairie dog would occur as a result of the aboveground use of strychnine. Label restrictions require that strychnine not be used aboveground for jackrabbit, prairie dog, ground squirrel, kangaroo rat, and vole control in areas occupied by the Utah prairie dog in Garfield, Iron, Kane, Piute, Sevier, and Wayne Counties, Utah. These restrictions should extend also to Beaver County, Utah, which has suitable but currently unoccupied Utah prairie dog habitat.

Zinc phosphide, aluminum phosphide, and burrow fumigants also could adversely affect the Utah prairie dog. However, ADC personnel do not conduct nor recommend prairie dog control within the range of the Utah prairie dog. The control method most likely to take Utah prairie dogs is the steel trap deployed for coyote control. Pan tension devices are used for legHold traps placed in Utah prairie dog habitat for coyote control.

BIOLOGICAL OPINION

Given the above restrictions, it is my biological opinion that use of zinc phosphide, aluminum phosphide burrow fumigants and steel traps will not jeopardize the continued existence of the Utah prairie dog.

INCIDENTAL TAKE STATEMENT

The Service does not anticipate the proposed action will result in any incidental take of the Utah prairie dog.

ALEUTIAN CANADA GOOSE (Branta canadensis leucopareia) - T

BIOLOGICAL OPINION

Status of the Species

Historically, the Aleutian Canada goose, a small subspecies of the Canada goose, was known to breed on most of the larger islands in the Aleutian Islands and in the Commander and northern Kuril Island chains (USFWS 1991e). When the species was listed as endangered in March 1967, its only known nesting site was Buldir Island in the western Aleutian Islands, Alaska. Subsequently, remnant flocks have been found on Chagulak Island in the eastern Aleutians (Bailey and Trapp 1984), and Kaliktagik in the Semidi Islands (Hatch and Hatch 1983). The decline of this subspecies is largely attributed to predation resulting from the introduction of foxes and other small mammals to the Aleutian Islands during the period 1836 to 1930 (USFWS 1991e).

Historically, recreational and subsistence take of this subspecies in the Pacific Flyway was a significant factor preventing the remnant breeding segments from recovering. The actual wintering areas were not known until the recovery of the first banded birds was reported in late 1974 in California. The wintering habitat for this subspecies has been the focus of study from 1974 to the present (Byrd and Woolington 1983). Areas in California and Oregon, essential to winter survival, have been identified and partially protected by inclusion of the lands used in the National Wildlife Refuge System or California's Department of Fish and Game Wildlife Area and State Park systems. Additionally, staging and migration areas, and additional wintering areas in Alaska, Washington and Oregon have been closed to the hunting of this and/or other subspecies of Canada goose, offering further protection.

On the principal wintering grounds in California, hunting closure zones have been in effect since 1975, in order to protect these geese. These closure zones have been largely responsible for allowing the wild population to increase from 790 birds in 1975 to as many as 7,800 birds in January of 1992. The Aleutian Canada goose was first listed as "endangered" in March 11, 1969. On December 12, 1990, the Aleutian Canada goose was reclassified as "threatened." This reclassification has not changed the level of protection afforded it under the Endangered Species Act (USFWS 1991e).

Extensive recovery efforts have concentrated primarily on the western Aleutians flock (Buldir, Agattu, and Nizki) because the eastern Aleutian and Semidi Island flocks were unknown when the first recovery plan was developed. A revised plan has been prepared. The recovery team currently considers the three island group flocks to be separate "breeding segments." Each breeding segment has its own recovery agenda and target population levels in the revised recovery plan. The recovery team considers the three breeding segments to constitute a single population of the Aleutian Canada goose subspecies (USFWS 1991e).

With the continued growth of the Aleutian Canada goose numbers there is likely to be an expansion of its range, primarily in and about the current use areas in California, namely the northern coast, the Sacramento Valley, and the San Joaquin Valley and, secondarily, into parts of western Oregon and southwestern Washington. Aleutian Canada geese are regularly reported in the Willamette Valley of Oregon in September and early October. The greatly reduced goose hunting required for protection of the Dusky Canada goose and the abundance of winter pasture, makes this area a likely spot for range expansion by Aleutians (Bartonek 1990).

Effects of the Proposed Action

Avitrol, used in bird control, and zinc phosphide and aboveground strychnine grain baits used for rodent control, could adversely affect this species if ingested. However, recent mortalities diagnosed by the National Wildlife Health Research Center at Madison, Wisconsin were attributable to cholera, lead poisoning or shooting. No poisonings from the above chemicals have been reported.

BIOLOGICAL OPINION

It is my biological opinion, based on the continuing recovery of the species, that the ADC Program will not jeopardize the continued existence of the Aleutian Canada goose.

INCIDENTAL TAKE STATEMENT

The Service anticipates that one Aleutian Canada goose could be taken as a result of the proposed action. This take will be in the form of kill. The continued expansion of the population will increase potential for exposure to these chemicals.

The Service has determined that this level of impact is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of the Aleutian Canada goose:

1. Measures shall be taken to prevent use of avitrol, zinc phosphide and strychnine on the wintering grounds.

2. Measures will be taken to coordinate with the Fish and Wildlife Service prior to any use off these chemicals on the breeding grounds.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the Endangered Species Act, ADC personnel must comply with the following terms and conditions which implement the reasonable and prudent measures described above:

1. The chemicals listed above shall not be used when Aleutian geese are present in known or likely habitats in Butte, Sutter, Colusa, Glenn, Stanislaus, Merced, Contra Coast, Humboldt and Del Norte Counties, California, as well as Tillamook, Coos, and Curry counties, Oregon unless proposals for use are first reviewed and approved by the Fish and Wildlife Service, Office of Fish and Wildlife Enhancement, Sacramento, California; Incidental take on the wintering grounds shall be reported to that office within 5 days.

2. Proposals to use any of these chemicals on the species' breeding grounds shall first be reviewed and approved by the Fish and Wildlife Service Regional Office, Anchorage, Alaska, and any incidental take should be reported to that office within 5 days.

U.S. Fish and Wildlife Service
Anchorage Fish and Wildlife Enhancement
411 West 4th Avenue
Anchorage, AK 99501
(907) 271-4575

The incidental take statement provided in this opinion satisfies the requirements of the Endangered Species Act, as amended. This statement does not constitute an authorization for take of listed migratory birds under the more restricted provisions of the Migratory Bird Treaty Act. The Service is developing a program to address incidental take under the Migratory Bird Treaty Act.

BALD EAGLE (Haliaeetus leucocephalus) - E
BALD EAGLE - T (5 STATES)

BIOLOGICAL OPINION

Status of the Species

The bald eagle is a wide ranging species, found in all of the 48 contiguous states at some point in its life cycle. Currently, bald eagles are federally listed as endangered in 43 states and threatened in 5 states (Washington, Oregon, Minnesota, Wisconsin and Michigan). Breeding concentrations occur in the Pacific Northwest, Great Lakes States, Maine, the Chesapeake Bay, and Florida. A unique, desert-nesting population is found in Arizona (USFWS 1982c).

The locations of wintering concentrations of bald eagles are predictable but more loosely defined, and usually occur in response to prey availability (ice-free areas affording fishing opportunities, waterfowl concentrations, etc.) and favorable habitat conditions (roost sites, etc.).

The Service has identified five bald eagle populations for recovery purposes: the Pacific states, Northern states, Southwest, Southeast, and Chesapeake Bay. Since the cancellation of DDT by the EPA in 1972, bald eagle breeding populations in all of these areas have been increasing. On February 7, 1990, the Service published a Notice of Intent (55 FR 4209) to reclassify the bald eagle from endangered to threatened throughout all or portions of its range, but to date no formal reclassification proposal has been published. The nesting population in the contiguous states for 1990 was 3,014 pairs estimated at 3,014 pairs (Kjos 1992).

Effects of the Proposed Action

Bald eagles may be taken as a result of both chemical and nonchemical methods of control.

I. Chemical Control Methods

Strychnine

Bald eagles are both predators and scavengers, with fish being a primary food item. They also feed on carcasses of nearly any vertebrate, making the species vulnerable to poisoning following consumption of animals killed by chemical control methods.

According to the ADC Biological Evaluation, the aboveground use of strychnine to control rodents, rabbits and "nuisance birds" may affect bald eagles. Aboveground use of strychnine may result in poisoning bald eagles if dead or dying animals are consumed. Strychnine is very toxic to most mammals and birds, (except gallinaceous birds which are relatively resistant). The main hazard to bald eagles comes from consuming cheek pouches or intestinal parts of animals containing high amounts of

strychnine. The possibility of bald eagles picking up a poisoned animal exists because many poisoned rodents and all birds die aboveground.

In its May 25, 1988, biological opinion to the EPA on the aboveground uses of strychnine, the Service cited reports indicating that 28 bald eagles were known to have been poisoned or killed by aboveground use of strychnine between 1964 and 1986. While many of these strychnine poisonings may have been due to improper or inappropriate application methods, at least six deaths were the result of approved use of strychnine for ground squirrel control.

ADC non-target kill records indicate that no bald eagles have been taken by any program use of strychnine during the past five years.

Strychnine labels advise users to contact the Regional Office of the U.S. Fish and Wildlife Service or the state Fish and Wildlife Office for specific information on endangered species. In addition, current labels for strychnine grain baits contain restrictions which, if followed, should help protect eagles from secondary uptake of strychnine. Users are required to pick up carcasses of rodents, etc., that are found aboveground and dispose of them properly. However, bald eagles may be attracted to dying as well as dead rodents and birds, and the requirement that carcasses be removed may not totally eliminate the hazard at a control site.

ADC personnel currently restrict use of strychnine to field rodent and nuisance bird control efforts.

BIOLOGICAL OPINION

1. Bald Eagle Recovery Units (except Southwest)

Assuming that ADC personnel follow current label restrictions, it is my biological opinion that aboveground use of strychnine is not likely to jeopardize the continued existence of this species, except the southwest recovery unit as outlined below.

2. Bald eagle (Southwest Recovery Unit)

As stated earlier, necropsies on bald eagle carcasses between 1964 and 1986 revealed that 28 mortalities were attributable to strychnine poisoning. Some of the eagle carcasses were recovered near rodent control areas. Three of the 28 eagle carcasses were collected in Arizona.

The threat of strychnine poisoning exists in the Southwest, especially if the toxicant is applied near bald eagle nesting and roost sites. The small number of breeding territories in the region renders this population particularly vulnerable to the adverse effects of aboveground use of strychnine. Currently there are 24 occupied territories in Arizona and two in New Mexico (USFWS, Region 2, file data. 1992). Any losses of breeding bald eagles from this region constitute a significant threat to the continued existence of the species.

Therefore, it is my biological opinion that the aboveground use of strychnine in Arizona and New Mexico from mid-November through mid-July (approximate nesting period), is likely to jeopardize the continued existence of the Southwestern population of bald eagles.

REASONABLE AND PRUDENT ALTERNATIVES - Southwest bald eagle recovery unit

The Section 7 regulations have defined reasonable and prudent alternatives as alternative actions, identified during formal consultation, that can be implemented in a manner consistent with intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Service believes would avoid the likelihood of jeopardizing the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

1. In concert with the EPA, ADC personnel must develop new label and use restrictions that would prohibit the aboveground use of strychnine within a 10-mile radius of known bald eagle nest sites in Arizona and New Mexico during the aforementioned nesting period and at known roost sites year-around or;

2. ADC personnel must contact the Service's Albuquerque and New Mexico Field Offices for specific bald eagle habitat locations and nesting periods. If the proposed application is within eagle habitat when the birds may be nesting or roosting, the use of strychnine shall be prohibited. If it is determined that the use is outside of the delineated habitat, the chemical could be applied.

Because this biological opinion has found jeopardy, the USDA is required to notify the Service of its final decision on the implementation of either reasonable and prudent alternative.

II. Nonchemical Control Methods - All populations

Leghold Traps

Leghold traps are frequently used to capture mammals such as coyote, bobcat, fox, mink, beaver, raccoon, skunk, muskrat, nutria, wolves, and mountain lion. In some situations a carcass or a large piece of meat (i.e., a draw station) is used to attract target animals into an area where traps are set. It is ADC Program policy to set leghold traps no closer than 30 feet from a draw station to prevent the capture of non-target animals. Exceptions to this policy are made for trapping mountain lions where traps are set at lion food cache sites that are usually in timbered areas. The trap can be set under a wide variety of conditions, and pan tension devices are used to prevent smaller animals from springing the trap, thus allowing a degree of selectivity not available with many other methods.

The leghold trap often permits the release of non-target animals. However, some bald eagles incidentally captured in leghold traps may die or require

removal from the wild. Personnel at the University of Minnesota's Raptor Center indicate that legnold trap injuries comprise approximately 19 percent of the bald eagle injuries treated at the Center each year. Gang or multiple set leghold traps pose additional problems for bald eagles. Eagles captured in one trap will struggle or flail their wings, often resulting in a wing being caught in a second trap. Thus the trapped bird may sustain both leg and wing injuries. In addition, target species captured in multiple trap sets may attract opportunistic bald eagles intent on feeding on the captured animal. During feeding activity, the eagle may be trapped in a second trap.

BIOLOGICAL OPINION - All populations

Despite the foregoing, there is no evidence to indicate that ADC trapping activities are having significant adverse effects on bald eagles. Bald eagle populations are increasing throughout the United States. ADC personnel have reported one loss of eagles from leghold traps used as part of their Program in the last five years. Therefore, it is my biological opinion that the ADC trapping program will not jeopardize the continued existence of the bald eagle.

Snares

Snares are among the oldest existing control tools. Snares can be used to catch a variety of target species, but are most frequently used within the ADC Program to capture coyotes, beaver, bear, and mountain lion. Snares can be used effectively wherever an animal moves through a restricted lane of travel. As snares are typically deployed in this manner, there is normally minimal risk to bald eagles. The Service has been informed of the killing of two bald eagles by snares in the State of Maine in February, 1989. The birds were taken by Maine Department of Inland Fisheries and Wildlife personnel engaged in coyote trapping activities. The use of bait was the principal factor for attracting these eagles, and the snares were set so close to clearings that bait was visible to these birds from the ground. These incidents demonstrate that snares may pose a risk to bald eagles under certain circumstances. However, they are the only occurrences known. ADC Program policy is not to set snares within 30 feet of exposed bait.

BIOLOGICAL OPINION - all populations

It is my biological opinion that the use of snares will not jeopardize the continued existence of the bald eagle in the United States.

INCIDENTAL TAKE STATEMENT
(all populations)

Assuming implementation of the reasonable and prudent alternatives described above, the Service does not anticipate that the proposed action will result in an incidental take of bald eagles in the Southwest population. The

Service anticipates that no more than two bald eagles per year could be taken in the remaining four populations as a result of strychnine use. This take is expected in the form of kill.

The Service has determined that this level of impact is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of the bald eagle:

1. Strychnine shall not be used within five miles (except Southwest population which is 10 miles) of an active nest, active winter or summer roost, or hack site.

2. When bald eagles are in the immediate vicinity of a proposed control program, ADC personnel must conduct daily checks for carcasses or trapped individuals. Carcasses of target animals taken with any chemical that may pose a secondary poisoning hazard must be immediately removed and disposed of in a manner that prevents scavenging by any non-target species.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the USDA must comply with the following terms and conditions which implement the reasonable and prudent measures described above.

1. ADC personnel shall contact either the local State fish and game agency or the appropriate regional or field office of the Service to determine nest and roost locations.

2. If a bald eagle is incidentally taken in the Southwest population, use of the control method will be halted immediately, and ADC must reinitiate consultation.

3. The appropriate U.S. Fish and Wildlife Service office shall be notified within 5 days of the finding of any dead or injured bald eagle. Cause of death, injury, or illness, if known, should be provided to those offices.

4. Leghold traps (except those used to trap mountain lions) shall be placed a minimum of 30 feet from aboveground bait sets.

The incidental take statement provided in this opinion satisfies the requirements of the Endangered Species Act, as amended. This statement does not constitute an authorization for take of listed migratory birds under the more restricted provisions of the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The Service is developing a program to address incidental take under the Migratory Bird Treaty Act.

PEREGRINE FALCON (Falco peregrinus anatum) - E
ARCTIC PEREGRINE (Falco peregrinus tundrius) - T

BIOLOGICAL OPINION

Status of the Species

The peregrine falcon is a medium-sized raptor. The anatum subspecies breeds in the boreal forest regions of Alaska and the Yukon Territory, and south of the tree line in northern and eastern Canada to northern Mexico. American peregrine falcons winter from southern United States to South America, with northern populations tending to winter farther south. The Arctic subspecies breeds in the tundra regions of Alaska, Canada, and Greenland, and winters in South America. Limited critical habitat has been designated in Lake, Napa and Sonoma Counties, California.

Extensive use of organochlorine pesticides is considered the primary reason for the decline of peregrine falcons (USFWS 1991d). Since restrictions were placed on the use of DDT in the early 1970s, populations stabilized, and in 1978 began to increase. Based on recent literature (1990), there are approximately 670 anatum pairs in the western United States (Burnham and Cade 1992). Peregrine falcons in the eastern United States were extirpated by the late 1970s, and a captive release program resulted in the establishment of over 100 breeding pairs by 1990 (USFWS 1991d). Population increases continue to the present in nearly all areas. American peregrine falcons, especially those at higher latitudes are highly migratory as is much of their prey. As a result, both peregrines and their prey spend a large portion of the year outside the boundaries of the United States.

Effects of the Proposed Action

As peregrine populations continue to increase throughout the United States, more breeding pairs and more wintering birds are occupying large cities. This increases the likelihood of their feeding on pigeons poisoned by aboveground use of strychnine during routine control operations. Such poisoning has occurred in the past in Baltimore, Maryland and Norfolk, Virginia, and at least four peregrines succumbed to strychnine during the early 1980s. These deaths were not related to the ADC Program, and the Service is not aware of any recent deaths. ADC personnel recognize the hazards of aboveground use of strychnine and restrict the aboveground use to strictly regulated field rodent and nuisance bird control. Most control activities would likely be in urban areas, feedlots, grain storage facilities, and around bridges.

BIOLOGICAL OPINION

It is my biological opinion that the use of strychnine in the ADC Program will not jeopardize the continued existence of the peregrine falcon or adversely modify its critical habitat.

INCIDENTAL TAKE STATEMENT

The Service does not anticipate that the proposed action will result in incidental take of the peregrine falcon.

NORTHERN APLOMADO FALCON (Falco femoralis septentrionalis) - E

BIOLOGICAL OPINION

Status of the Species

Habitat of this endangered species includes open terrain with scattered trees or shrubs. In the United States, this falcon may be found almost year-around (June through February) on the Laguna Atascosa National Wildlife Refuge, Cameron County, Texas. Between 1986 and 1989, 18 northern aplomado falcons (falcons) were successfully hacked on this Refuge. Texas has had some scattered sightings of wild falcons in the recent past (Frio County, 1980; Laguna Atascosa National Wildlife Refuge, 1983 and 1986; and Sabal Palm Grove, Cameron County, 1989). Individual falcons have also been sighted on the Gabrielson and Palmview Units of the Rio Grande Valley National Wildlife Refuge, Hidalgo County, and in the vicinity of Brownsville, Fafurrias and Valentine, Texas. The Laguna Atascosa National Wildlife Refuge and some adjoining private land was the only area in the United States categorized as habitat occupied by northern aplomado falcons in 1990. In June 1991, this falcon was confirmed in Otero County, New Mexico. Modification of this falcon's grassland habitat as a result of agricultural development and pesticide use, and brush invasion are the causes of this bird's decline (USFWS 1990b).

The northern aplomado falcon feeds upon birds, insects, rodents, and reptiles. Most of its hunting occurs before noon or during late afternoon within approximately 1/2 mile of its nest, though hunts may also occur up to 2 1/2 miles from the nest (USFWS 1990b).

Effects of the Proposed Action

Although the ADC Program could affect the northern aplomado falcon prey base by reducing the number of available blackbirds and small rodents through the use of avicides and rodenticides, the possibility is considered remote because the species feeds on such a variety of prey. The rodenticides used do not pose secondary poisoning hazards.

BIOLOGICAL OPINION

It is my biological opinion that the ADC Program is not likely to jeopardize the continued existence of the northern aplomado falcon.

INCIDENTAL TAKE STATEMENT

The Service does not anticipate that the ADC Program will result in any incidental take of the northern aplomado falcon.

ATTWATER'S PRAIRIE CHICKEN (Tympanuchus cupido attwateri) - E

BIOLOGICAL OPINION

Status of the Species

This endangered Gulf coastal prairie subspecies once inhabited an area from southwestern Louisiana to the Nueces River, Texas. It is now restricted to Texas and numbers approximately 456 birds. Its distribution is also significantly reduced, and individual isolated populations located in various counties have dropped to as few as two Attwater's prairie chickens in one of the seven counties inhabited by this bird. Current (USFWS, Region 2, file data 1992) distribution of the Attwater's prairie chicken is as follows:

County	Population
Austin	48
Colorado	50
Victoria	2
Galveston	26
Refugio	330
Goliad	2 (incidental)

The Attwater's prairie chicken inhabits both cultivated and uncultivated lands, including areas grazed by livestock. It is largely an herbivorous bird, though it also eats some insects. Coastal prairie is essential for nesting cover, but the prairie chicken also utilizes cultivated areas of corn, cotton, milo, peanuts, rice, sorghum, and soybeans. The Attwater's prairie chicken is found in various types of vegetative cover depending on the season. Light to little cover may be used for courtship, while heavier cover is used for roosting. Medium to heavy cover is important for nesting, loafing, and escape. Feeding occurs in all types of cover (USFWS 1983).

Effects of the Proposed Action

Chemicals used by the ADC Program such as zinc phosphide coated grain to control rodents could kill prairie chickens, but this chemical's pesticide registration prohibits such use within Attwater's prairie chicken habitat. The use of leghold traps for predator control within the habitat of this bird is the only apparent part of the ADC Program that could adversely affect this species. Predators of the prairie chicken include armadillos, coyotes, house cats, dogs, various raptors, opossums, raccoons, and skunks. Trapping predators could have a beneficial effect upon prairie chicken nest depredation and individual birds. Conversely, leghold traps set for

some of these animals could catch prairie chickens, resulting in their death or injury.

BIOLOGICAL OPINION

ADC leghold trapping potentially occurs within prairie chicken habitat. Though the probability of these traps catching a prairie chicken is low, loss of one or more of these birds could be devastating to distribution and genetic makeup of the population, therefore, it is my biological opinion that the use of leghold traps by the ADC Program is likely to jeopardize the continued existence of Attwater's prairie chicken.

REASONABLE AND PRUDENT ALTERNATIVES

The Section 7 regulations have defined reasonable and prudent alternatives as alternative actions, identified during formal consultation, that can be implemented in a manner consistent with intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Service believes would avoid the likelihood of jeopardizing the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

A reasonable and prudent alternative to preclude jeopardy is to use tensioning devices on the leghold traps in prairie chicken habitat to prevent prairie chickens from tripping the trap.

Because this biological opinion has found jeopardy, the USDA is required to notify the Service of its final decision on the implementation of the reasonable and prudent alternatives.

INCIDENTAL TAKE STATEMENT

The Service does not anticipate that the proposed action will result in the incidental take of the Attwater's prairie chicken if the reasonable and prudent alternative is implemented.

WHOOPING CRANE (Grus americana) - E

BIOLOGICAL OPINION

Status of the Species

The wild whooping crane populations consist of the major Aransas-Wood Buffalo whooping crane flock and a much smaller Rocky Mountain flock developed by cross-fostering into sandhill crane nests. The former migrates 2,500 miles in the spring (April), from the Texas Gulf Coast to Wood Buffalo National Park, Northwest Territories, Canada (Smith et al. 1986). Their fall migration through the Dakotas, eastern Montana, Nebraska, Kansas, western Oklahoma and central Texas, begins in September and is largely

complete by November, with some stragglers arriving in December. The Rocky Mountain flock migrates in March and April from New Mexico and passes through Colorado and Wyoming and summers in Wyoming, Idaho, and Montana. The fall migration of the Rocky Mountain population occurs from mid-September through early November, reversing the spring route.

This crane's habitat includes a broad range of natural and man-influenced wetlands, croplands, and pasture. This omnivorous bird eats natural foods (insects, frogs, fish, plant tubers, acorns, berries, clams, crayfish, aquatic insects, etc.) and cultivated grains (barley, corn, milo, sorghum, wheat) left after harvest (Lewis 1980).

Cranes using the migration habitat are most likely to be exposed to chemicals used in the ADC Program. Data from the Wood Buffalo flock indicates individuals do not always use the same stopovers for roosting and feeding. Evidence indicates that repeated use of sites is primarily a random happening. Two major United States staging areas are the Platte River, Nebraska, and the San Luis Valley, Colorado. Critical habitat for the migration route and wintering areas has been designated in Colorado, Idaho, Kansas, Nebraska, Oklahoma, and Texas.

Effects of the Proposed Action

ADC personnel restrict their own use of and do not recommend use of Avitrol, DRC-1339, zinc phosphide rodent baits, or strychnine grain baits where whooping cranes are known or believed to be present. Therefore, the ADC Program's use of these chemicals limits the possibility of adverse effects upon the whooping crane.

BIOLOGICAL OPINION

It is my biological opinion that the toxicants used in the ADC Program are not likely to jeopardize the continued existence of the whooping crane or adversely modify its critical habitat.

INCIDENTAL TAKE STATEMENT

The Service does not anticipate that the ADC Program will result in any incidental take of the whooping cane.

MISSISSIPPI SANDHILL CRANE (Grus canadensis pulla) - E

BIOLOGICAL OPINION

Status of the Species

Most Mississippi sandhill cranes (Grus canadensis pulla) survive on the Mississippi Sandhill Crane National Wildlife Refuge in Jackson County, Mississippi. This bird's present range is from the Pascagoula River (east), to the Jackson County line (west), to the vicinity of Simmons Bayou (south),

to 4 miles north of the town of Vancleave (north). The entire population has been estimated at less than 100 birds every year since 1929 (USFWS 1991b).

Savannas are the preferred habitat of the Mississippi sandhill crane and are inhabited year-around. Crane feeding habitats vary with the season. In the summer the birds feed upon the natural foods found in swamps, savannas, and open forests including insects, earthworms, crayfish, small reptiles, frogs and other amphibians that can be captured on the ground. During the other three seasons the birds eat small corn and chufa (introduced plants). Although some nesting occurs in forested areas, most takes place in open savannas and swamp openings. Nesting territories are generally used for more than 1 year, some for 10 to 17 years (USFWS 1991b). Critical habitat has been designated in Jackson County, Mississippi.

In the mid-1970s, a captive population of Mississippi sandhill cranes was established at the Patuxent Wildlife Research Center in Laurel, Maryland. Developed with wild Mississippi sandhill crane eggs, the captive population numbered 32 adults in 1989. Captive releases to the Mississippi Sandhill Crane Refuge began in 1981, and by 1983 there were 13 free-flying captive-raised cranes on the Refuge. A total of 96 captive-raised cranes had been released by 1989, and 53 of these have survived. By 1990, eight captive-raised cranes had attempted to nest (USFWS 1991b).

In response to predation by canids at the Mississippi Sandhill Crane National Wildlife Refuge, M-44 predator control devices were used on the Refuge by Service personnel. Subsequently, crane No. 646, a Patuxent captive-reared immature bird released onto the Refuge in late 1984, was killed when it set off a sodium cyanide loaded M-44 device in November 1985. Use of M-44's was immediately discontinued within the Refuge (Pers. Comm., Refuge Manager 1992).

Also two captive-reared cranes (Nos. 857 and 861) were accidentally caught in leghold traps in 1987 on the Refuge. Both birds were taken to the Louisiana State University Veterinary School where they later died. The cause of death of crane No. 857 was capture myopathy and aspergillus. The cause of death for crane No. 861 was not listed. Consequently, the use of leghold traps on the Refuge has been discontinued (Pers. Comm., Refuge Manager 1992).

Effects of the Proposed Action

Because Mississippi sandhill cranes frequently forage off the Refuge within Jackson County, Mississippi, there may be potential for the cranes to come in contact with predator control devices. An M-44 device placed in a foraging area could kill any crane coming in contact with it. Leg-hold traps would also pose a risk of injury or death in crane foraging habitat.

BIOLOGICAL OPINION

Due to the Mississippi sandhill crane's limited population and precarious status, the loss of any individual would pose a serious threat to the survival and recovery of the species. Therefore, it is my biological opinion that the use of M-44s and steel traps in the ADC Program is likely to jeopardize the continued existence of the Mississippi sandhill crane. Critical habitat will not be adversely modified.

REASONABLE AND PRUDENT ALTERNATIVES

The Section 7 regulations have defined reasonable and prudent alternatives as alternative actions, identified during formal consultation, that can be implemented in a manner consistent with intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Service believes would avoid the likelihood of jeopardizing the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

As a reasonable and prudent alternative to preclude jeopardy to the Mississippi sandhill crane, the ADC Program shall not use M-44 devices or leghold traps in designated Critical Habitat and other known nesting, roosting and foraging habitat used by this species: The Fish and Wildlife Service (Refuge Manager, Mississippi Sandhill Crane National Wildlife, 7200 Crane Lane, Gautier, MS 39553, telephone 601/497-6322) shall be contacted prior to any ADC work involving the use of these predator control methods in Jackson County, Mississippi to determine if the Mississippi sandhill crane occurs in the work area.

Because this biological opinion has found jeopardy, the USDA is required to notify the Service of its final decision on the implementation of the reasonable and prudent alternatives.

INCIDENTAL TAKE STATEMENT

Assuming the implementation of the reasonable and prudent alternatives described above, the Service does not anticipate that the proposed action will result in any incidental take of the Mississippi sandhill crane.

CALIFORNIA CONDOR (*Gymnogyps californianus*) - E

BIOLOGICAL OPINION

Status of the Species

This large, formerly widespread vulture has an historic range that includes the California Coastal Ranges, Central Transverse Range, Southern Sierra Nevada Mountains, to Arizona, New Mexico and Texas. California condor habitat includes rocky cliffs and trees for roosting, open grasslands and

oak woodlands for foraging (Koford 1953). Reproduction occurs at 6 years of age, with a low reproductive rate. A nesting pair only raises one chick/year and 6 months is required for young to fledge (Snyder 1983).

Only 52 birds remain including 50 in captivity at the San Diego and Los Angeles Zoos. During January 1992, two California condors were reintroduced into a portion of their former range in southern California. Decline of the species has occurred as a result of shooting, lead poisoning, secondary poisoning from coyote control, loss of foraging areas due to urbanization, and agricultural development (Wilbur 1980). Critical habitat has been designated in Ventura, Los Angeles, Santa Barbara, San Luis Obispo, Kern and Tulare Counties, California.

Effects of the Proposed Action

In California, strychnine is registered for rodent control. Condors can be exposed to strychnine by consuming poisoned rodents. M-44 devices loaded with sodium cyanide are used to control coyotes. A condor could accidentally trigger an M-44 during foraging, and be poisoned by cyanide. An immature female California condor was apparently killed by an M-44 on November 23, 1983 in Kern County, California.

BIOLOGICAL OPINION

It is my biological opinion that the ADC Program's use of sodium cyanide for coyote control and strychnine for rodent control is likely to jeopardize the continued existence of the California condor. Critical habitat will not be adversely modified.

REASONABLE AND PRUDENT ALTERNATIVES

The Section 7 regulations have defined reasonable and prudent alternatives as alternative actions, identified during formal consultation, that can be implemented in a manner consistent with intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Service believes would avoid the likelihood of jeopardizing the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

The following reasonable and prudent alternative would preclude jeopardy to the California condor:

1. M-44s should be used in single sets (not closer than 1000 feet from one another). The sets shall be placed so that they do not protrude above the ground level, and shall be covered or capped so they are not visible, and

2. Strychnine use will not be permitted in condor foraging habitat.

These reasonable and prudent alternatives apply to California condor foraging habitat within Ventura, Kern, Santa Barbara, and San Luis Obispo Counties.

Because this biological opinion has found jeopardy, the USDA is required to notify the Service of its final decision on the implementation of the reasonable and prudent alternatives.

INCIDENTAL TAKE STATEMENT

The Service does not anticipate the action will result in incidental take if the reasonable and prudent alternatives are implemented.

DESERT TORTOISE (Gopherus agassizii) - T

BIOLOGICAL OPINION

Status of the Species

The desert tortoise is a large terrestrial turtle which has ranged historically over most of the southern California deserts, in Arizona and the southern part of Utah (USFWS 1980). By 1980, it was eliminated from the Coachella and Imperial Valleys of California (USFWS 1990a). In its desert habitat it feeds on cactus, annual forbs, grasses, and flowers. Ten to 20 years is required to reach breeding age and rate of reproduction is low. Young are soft-shelled and heavily preyed upon, especially by ravens. The species forages from March to June, estivates during the summer in burrows, may emerge in the fall, and hibernates from October to March (Karl 1984).

The total number of individuals is unknown, but estimates are that 100,000 tortoises survive in the Mojave and Sonoran deserts (Lowe et al. 1990). Reasons for the continuing decline include urbanization, off-road vehicle use, mining, energy development, upper respiratory disease (URDS) that has resulted in an estimated 50% of present mortality, losses to pets, vandalism, and the population explosion of ravens (Berry 1984).

The Beaver Dam Slope population of this species, located in southwestern Washington County, Utah, was listed as a threatened species with 309 square miles of critical habitat on August 20, 1980. Subsequently, the entire Mojave population of the desert tortoise (including the Beaver Dam Slope population) was listed as threatened on April 22, 1990. The Mojave population includes all desert tortoises north and west of the Colorado River in California, southern Nevada, southwestern Utah, and Northwestern Arizona. The March 15, 1990 Biological Evaluation of the ADC Program only included the Beaver Dam Slope population, so the majority of the tortoise population and its habitat were not covered in the evaluation.

Effects of the Proposed Action

As stated in the Biological Evaluation, EPA label restrictions preclude the use of gas cartridges and aluminum phosphide in designated critical habitat of the desert tortoise. However, critical habitat has been designated only for the Beaver Dam Slope population.

Gas cartridges made up of potassium and sodium nitrate and the use of aluminum phosphide in predator dens and rodent burrows in the remaining habitat of the Mojave population in Utah, California, Nevada, and Arizona would kill non-target animals including desert tortoises. Additionally, tortoises could be inadvertently crushed in burrows by ADC vehicles.

BIOLOGICAL OPINION

There is potential for exposure from the registered application of aluminum phosphide, and from the use of potassium and sodium nitrate because tortoise burrows may be accidentally treated. This impact would be extremely rare because tortoise burrows are much larger than those of the target species, therefore, it is my biological opinion that ADC Program use of aluminum phosphide, as well as the use of potassium and sodium nitrate, is not likely to jeopardize the continued existence of this species, or adversely modify its critical habitat.

INCIDENTAL TAKE STATEMENT

The Service anticipates that one desert tortoise could be taken as a result of the proposed action. The incidental take is expected to be in the form of kill because of the possibility of crushing a tortoise in burrows located under roads or trails while conducting a control program. These burrows may collapse under the weight of an all terrain vehicle (ATV) or standard-sized vehicle. The Service also anticipates that one tortoise could be taken by burrow fumigants.

The Service has determined that this level of impact is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the desert tortoise:

1. Measures shall be implemented to prevent desert tortoises from being killed by any project-related activity.

2. Measures shall be implemented to minimize loss and degradation of desert tortoise habitat by ATVs.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the Endangered Species Act, ADC personnel must comply with the following terms and conditions which implement the reasonable and prudent measures described above:

1. Discovery of one dead or sublethally taken tortoise caused by any of the chemicals, requires immediate cessation of its use within the species range and reinitiation of consultation on that chemical for the tortoise.

2. Aluminum and magnesium phosphide, and sodium and potassium nitrate shall be used within the desert tortoise range only by qualified individuals. Such persons shall be limited to qualified wildlife biologists, or to agents of county agricultural commissioner offices, university extension offices, or representatives of State or Federal wildlife agencies.

3. The size of all access and right-of-way roads associated with ADC Program activities shall be minimized.

4. All vehicle traffic during control activities shall be restricted to roadways and areas that have been cleared of tortoises. The agency requesting control shall provide information to ADC personnel prior to undertaking the proposed action regarding areas where vehicular traffic is not allowed.

GOPHER TORTOISE (Gopherus polyphemus) - T

BIOLOGICAL OPINION

Status of the Species

The gopher tortoise is a large 5.9 to 14.6 inches long, dark-brown to grayish-black terrestrial turtle with elephantine hind feet, shovel-like forefeet, and a gular projection beneath the head on the yellowish plastron or undershell.

This tortoise feeds primarily on grasses, grass-like plants, and legumes. Its diet may also include mushrooms, fleshy fruits, and possibly some animal matter. Sometime between late April and mid-July, the female digs a nest in sandy soil, lays a clutch of 4 to 12 eggs, and after refilling the hole leaves the eggs for incubation by the sun's heat. Hatching occurs in August and September. The juvenile tortoises suffer a heavy natural predation loss of almost 97 percent through the first 2 years of life. Those that survive grow to sexual maturity slowly over a period of 13 to 21 years, depending on the portion of the range and the sex of the turtles. Females usually reach reproductive maturity at 19 to 21 years old. The low reproductive rate is accentuated by the fact that there is some evidence to indicate that not all females nest every year. The juveniles that are

born and survive may live an average of 40 to 60 years, sometimes 80 to 100 (USFWS 1990c).

The gopher tortoise most often lives on well-drained sandy soils in transitional (forest and grassy) areas. It is commonly associated with a pine overstory and an open understory with a grass and forb groundcover and sunny areas for nesting. Most of the gopher tortoise's life is spent in and around the burrow. The burrow becomes a more or less permanent home although there may be alternate burrows in the area. Several other species also may share gopher tortoise burrows. Some commonly known burrow associates include the eastern indigo snake, the eastern diamondback rattlesnake, and the gopher frog. This species occurs in sandy coastal plain areas from extreme southern South Carolina to the southeastern corner of Louisiana, and throughout most of Florida (USFWS 1990c).

Less than 20 percent of the historically available habitat remains for the western population of the gopher tortoise. The population segment from the Tombigbee and Mobile Rivers in Alabama, westward, is classified as threatened, and for convenience is termed the western population. The entire western population is within the original range of the longleaf pine. Using statistics of the U.S. Department of Agriculture, the Fish and Wildlife Service estimates that present ownership distribution of gopher tortoise habitat is approximately 20 percent in the National Forest, 10 percent in other public ownership, 30 percent in forest industry and 40 percent in other private ownership. No estimate is available for the gopher tortoise's total population size. Biologists were able to document only 11 active burrows in Louisiana in 1981, with only one remaining in 1984. There is an indicated decline in population densities ranging from 67 percent in Alabama to 91 percent in Louisiana (USFWS 1991a).

Conversion of gopher tortoise habitat to urban areas, croplands, and pasturelands along with adverse forest management practices has reduced the western portion of the historic range. Taking gopher tortoises for sale or use as food or pets also has had a serious effect on some populations. The seriousness of the loss of adult tortoises is magnified by the length of time required for tortoises to reach maturity and their low reproductive rate. Current estimates of human predation and road mortality alone are at levels that could offset any annual addition to the population. A number of other species also prey upon gopher tortoises including the raccoon, the primary egg and hatchling predator; gray foxes; striped skunks; armadillo; dogs; snakes; and raptors. Imported fire ants also have been known to prey on hatchlings. Reported clutch and hatchling losses often approach 90 percent (Landers et al. 1980).

Effects of the Proposed Action

Toxic baits used in the ADC Program for rodent or predator control could potentially be consumed by the tortoise, but this is considered extremely unlikely in view of their normal diet. In addition, the burrows of the gopher tortoise are commonly utilized by a wide variety of other wildlife, including such potential target species of the ADC Program as fox, skunk,

armadillo, opossum, raccoon, and rabbit. Use of aluminum phosphide, gas cartridges, and other fumigants within gopher tortoise habitat could result in harm or killing of the species, however, woodchucks are the only species treated with fumigants within the species range.

BIOLOGICAL OPINION

It is the my biological opinion that the ADC Program is not likely to jeopardize the continued existence of the gopher tortoise because of restrictions on virtually all fumigants.

INCIDENTAL TAKE STATEMENT

The Service anticipates that one tortoise may be taken by use of fumigants. The Service has determined that this level of impact is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take:

1. Use of toxic baits (including zinc phosphide, diaphacinone strychnine, and any anticoagulants) and use of fumigants (including aluminum phosphide, gas cartridges, or other burrow fumigants) shall be prohibited within or in close proximity to potential gopher tortoise habitat in Louisiana, Mississippi, and Alabama, unless the following terms and conditions are met:

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the USDA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. Habitat must be adequately surveyed by qualified personnel who have determined that the habitat does not contain active tortoise burrows. This restriction should also apply to potential gopher tortoise habitat that has recently been converted to other uses but has not been completely destroyed. The Service's Jackson Field Office (see address below) can assist ADC personnel in identifying areas of potential tortoise habitat, providing names of qualified personnel for conducting surveys, providing survey techniques, etc.

2. If any incidental take does occur, consultation must be reinitiated with the Jackson Field Office and use of the of the responsible method must cease immediately.

U.S. Fish and Wildlife Service
Enhancement - Suite A
6578 Dogwood View Parkway
Jackson, Mississippi 39213
601/965-4900

BLUNT-NOSED LEOPARD LIZARD (Gambelia silus) - E

BIOLOGICAL OPINION

Status of the Species

The blunt-nosed leopard lizard is a large, robust, lizard that may exceed 15 inches in length (Montanucci et al. 1975). This species was distributed historically throughout the San Joaquin Valley and adjacent interior foothills and plains, extending from central Stanislaus County south to extreme northeastern Santa Barbara County (Montanucci 1965). The lizard prefers open, sparsely vegetated areas of low relief and inhabits valley sink scrub and valley saltbush scrub vegetational communities. The area occupied by this species has been significantly reduced and fragmented by agricultural development, petroleum and mineral extraction, livestock grazing, pesticide application, and off-road vehicle use. Today its distribution is limited to scattered parcels of undeveloped land, with the greatest concentrations occurring on the west side of the Valley floor and in the foothills of the Coast Range. The population is declining (USFWS 1985b).

Farming began in the San Joaquin Valley with the advent of the gold rush and the need to supply the new settlers with food. It accelerated in the 1920's when development of electricity made feasible the use of electrical pumps to tap groundwater supplies. In response to declining groundwater supplies, Federal and State water projects were developed to sustain agriculture. Petroleum and mineral development also occurred resulting in the continuing loss of blunt-nosed leopard lizard habitat. Cumulatively, agriculture, oil and gas development, induced urban growth and the attendant loss of more habitat have contributed to the species' decline. Today urban expansion continued because of the relatively inexpensive land prices in the San Joaquin Valley compared to coastal real estate costs. Improved transportation corridors have facilitate this development. Although these and other factors have eliminated over 90 percent of the native habitats throughout the San Joaquin Valley, irrigated agriculture has had the most profound effect on the blunt-nosed leopard lizard's decline.

The 1980 blunt-nosed leopard lizard Recovery Plan identified habitat essential for the survival and recovery of the species; essential habitat consists of highest quality wildlands currently remaining. The plan, revised in 1988, is being updated again to reflect continuing habitat loss. Between 1983 and 1985, the California Department of Fish and Game documented a reduction from 439,670 acres to 415,350 acres of unidentified essential

habitat for the lizard, a loss of 24,320. Unpublished information, subsequently obtained from the Department of Energy indicates that as much as 80 percent of the identified essential habitat has been lost (USFWS 1985b).

Effects of the Proposed Action

Blunt-nosed leopard lizards typically utilize the San Joaquin kit fox dens and small mammal burrows for shelter. Therefore, some predator or rodent control methods used underground, especially fumigants, could inadvertently harm or kill leopard lizards.

BIOLOGICAL OPINION

It is my biological opinion that use of fumigants in the ADC Program will not jeopardize the continued existence of the blunt-nosed leopard lizard because existing label restrictions preclude use of gas cartridges and that is the major toxicant used. Mortality from other toxicants is far less likely.

INCIDENTAL TAKE STATEMENT

The Service anticipates that one lizard may be taken by underground control methods. The Service has determined that this level of impact is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of the blunt-nosed leopard lizard:

1. Continue to restrict use of fumigants within the range of the blunt-nosed leopard lizard.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the USDA must comply with the following terms and conditions, which implement the reasonable and prudent measure described above.

1. Existing label restrictions prohibiting use of gas cartridges manufactured and distributed by ADC personnel within the range of the San Joaquin kit fox and blunt-nosed leopard lizard shall be continued and adhered to. Fumigants used by ADC personnel for predator control also shall not be used within the range of the blunt-nosed leopard lizard.

2. No rodent control method or agent not discussed or restricted above shall be used within areas likely to be inhabited by blunt-nosed leopard

lizards unless further consultation with the Service is conducted and Service concurrence in any proposed activities is obtained.

3. If one dead or sublethally affected specimen is discovered, use of that pesticide must cease and consultation on that chemical for that species must be reinitiated. Any incidental take shall be reported immediately to the Sacramento Field Office.

U.S. Fish and Wildlife Service
2800 Cottage Way, Room E-1803
Sacramento, CA 95825
(916) 978-4613

EASTERN INDIGO SNAKE (Drymarchon corias couperi) - T

BIOLOGICAL OPINION

Status of the Species

The eastern indigo snake is a large, docile, non-poisonous snake growing to a maximum length of about 8 feet. The color in both young and adults is shiny bluish-black, including the belly, with some red or cream coloring about the chin and sides of the head. Indigo snakes probably reach sexual maturity at 3 to 4 years of age. Based on observations of captive indigos at Auburn University, mating begins in November, peaks in December, and continues in March. Clutches averaging eight to nine eggs laid in late spring hatch approximately 3 months later. The snakes remain active to some degree throughout the winter, often emerging from their own dens whenever air temperatures exceed 50 degrees Fahrenheit (Odum et al. 1977).

This species is currently known to occur throughout Florida and in the coastal plain of Georgia. Historically the range also included southern Alabama, southern Mississippi, and the extreme southeastern portion of South Carolina. The indigo snakes seems to be strongly associated with high, dry, well-drained sandy soils, closely paralleling the sandhill habitat preferred by the gopher tortoise. During warmer months, indigos also frequent streams and swamps, and individuals are occasionally found in flat woods. Gopher tortoise burrows and other subterranean cavities are commonly used as dens and for egg laying. The home range of indigos varies considerably according to season. Based on a study conducted in southwest Georgia, an average seasonal range of 4.8 hectares during the winter (December through April), 42.9 hectares during late spring or early summer (May through July), and 97.4 hectares during late summer and fall (August through November) (Speake et al 1978). The most extensive monthly movements occurred during August. Of a total of 108 dens sites located, 77 percent were in gopher tortoise burrows, 18 percent were in or under decayed stumps and logs, and 5 percent were under plant debris. The study area included windrows of debris piled up in the 1960's during site preparation for a slash pine plantation. The snakes showed some tendency

to prowl and locate their dens near these windrows. This same study also indicated that during May-July that at least 10 percent, and in August-November at least 5 percent, of all indigo snake activity occurred within 150 feet of tortoises. The indigo subdues its prey (including venomous snakes) through the use of its powerful jaws, swallowing the prey usually still alive.

The eastern indigo snake population is declining (USFWS 1982b). The decline is attributed to a loss of habitat due to such uses as farming, construction, forestry, pasture, etc., and to over-collecting for the pet trade. The snake's large size and docile nature have made it much sought after as a pet. The effect of Rattlesnake Roundups on the indigo snakes are speculative. Both indigos and rattlers utilize the burrows of gopher tortoises at certain times. Rattlesnake hunters often pour gasoline down these burrows to drive out the snakes. While some indigos may be killed by this practice, the actual degree of impact on the population is unknown (USFWS 1978). Recovery tasks currently being implemented include habitat management through controlled burning, testing experimental miniature radio transmitters for tracking of juvenile indigo snakes, maintenance of a captive breeding colony at Auburn University, a recapture of formerly released snakes to confirm survival in the wild, presentation of education lectures and field trips, and efforts to obtain landowner cooperation in indigo snake conservation efforts.

Effects of the Proposed Action

Chemical rodent and/or predator control efforts in habitat utilized by the eastern indigo snake may result in incidental take of the indigo snake. The species is not a carrion eater and therefore is not expected to be affected by use of baits for rodent control. However, use of burrow fumigants within areas occupied by the eastern indigo snake could likely result in direct mortality to individuals of the species. Gas cartridges are the only burrow fumigant currently used in the region.

BIOLOGICAL OPINION

It is my biological opinion that the use of fumigants in the ADC Program is not likely to jeopardize the continued existence of the eastern indigo snake because most den sites are in gopher tortoise burrows and these burrows are easily distinguished from those of other species.

INCIDENTAL TAKE STATEMENT

The Service anticipates one indigo snake may be taken by fumigants. The Service has determined that this level of impact is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measure is necessary and appropriate to minimize incidental take:

1. Use of fumigants within the range of the Eastern indigo snake must be strictly controlled.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the USDA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. Use of aluminum phosphide, gas cartridges, or other burrow fumigants in or adjacent to areas containing active or inactive gopher tortoise burrows (potential habitat of the eastern indigo snake) is prohibited in the states of Florida and Georgia without prior approval from the Service's Jacksonville Field Office (see address below), and in the state of Alabama without prior approval from the Service's Jackson Field Office (see address below).

2. If incidental take does occur, the USDA must cease using the responsible method and reinitiate consultation with the appropriate Field Office (see address below).

U.S. Fish and Wildlife Service
3100 University Blvd., S., Suite 120
Jacksonville, Florida 32216
904/791-2580

U.S. Fish and Wildlife Service
Enhancement - Suite A
6578 Dogwood View Parkway
Jackson, Mississippi 39213
601/965-4900

SAN FRANCISCO GARTER SNAKE (Thamnophis sirtalis tetrataenia) - E

BIOLOGICAL OPINION

Status of the Species

The San Francisco garter snake is a slender serpent of the family Colubridae (Fitch 1965). Historically, San Francisco garter snakes occurred in scattered freshwater wetland and pond areas on the San Francisco Peninsula from approximately the San Francisco County line south along the eastern and western bases of the Santa Cruz Mountains, at least to the Upper Crystal Springs Reservoir, and along the coast south to Año Nuevo Point, San Mateo County, and Waddell Creek, Santa Cruz County, California (Barry 1978).

Recent studies have documented garter snake movement over several hundred yards away from wetlands into upland hibernation habitats in small mammal burrows.

Recently confirmed populations of the San Francisco garter snake occur at Año Nuevo State Reserve, Pescadero Marsh Natural Preserve, San Francisco State Fish and Game Refuge (including both lower and upper Crystal Springs Reservoirs), Sharp Park Golf Course (Laguna Salada), Mori Point, Cascade Ranch, and Millbrae (San Francisco Airport). The following reported locations and/or "populations" have not been confirmed as extant by the Service or the California Department of Fish and Game: San Bruno Mountain, Whitehouse Creek, Denniston Creek, La Honda Creek, Colma Creek, San Gregorio Creek, San Mateo Creek, Sanchez Creek, and near Edgewood and Canada Roads. Additional San Francisco garter snakes have been reported from agricultural ponds situated along the immediate coast between Pescadero Point and the Cascade Ranch (USFWS 1985a).

Urban development and road construction, especially in wetlands and adjacent uplands, pose serious threats to the San Francisco garter snake. Channelization of creeks and removal of streamside vegetation by grazing cattle deprive garter snakes of the frogs they prey upon. Five state parks are the only publicly managed areas that today harbor San Francisco garter snakes. None of the two dozen privately owned habitats where they occur is secure (USFWS 1985a).

The recovery plan sets a goal of six populations, each with two hundred adult snakes, surviving for five consecutive years before the species can be reclassified as threatened.

Effects of the Proposed Action

This garter snake uses rodent burrows on a seasonal basis. This subspecies could be harmed if aluminum phosphide, gas cartridges, or other fumigants were used in rodent burrows containing one or more snakes. Its limited geographic distribution suggests the likelihood of exposure to these chemicals may be remote, although some populations occur in and around agricultural lands, notably vegetable truck farms and livestock grazing lands.

BIOLOGICAL OPINION

It is my biological opinion that the ADC Program will not jeopardize the continued existence of the San Francisco garter snake.

INCIDENTAL TAKE STATEMENT

The Service anticipates that one San Francisco garter snake may be taken by fumigants. The Service has determined that this level of impact is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the San Francisco garter snake.

1. Fumigant use should be strictly controlled within the known range of the garter snake.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the ADC must comply with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. Aluminum phosphide, gas cartridges, and other fumigants shall not be used in San Mateo County, California, unless proposals for use are first reviewed and approved by the Fish and Wildlife Service, Office of Fish and Wildlife Enhancement, Sacramento, California.

U.S. Fish and Wildlife Service
2800 Cottage Way, Room E-1803
Sacramento, CA 95825
(916) 978-4613

2. Discovery of one dead or sublethally taken garter snake caused by any of the chemicals requires immediate cessation of its use and reinitiation of consultation on that chemical for the garter snake.

WYOMING TOAD (*Bufo hemiophrys baxteri*) - E

BIOLOGICAL OPINION

Status of the Species

A glacial relic, the Wyoming toad was separated from its closest relative during the last Ice Age. Historically, the Wyoming toad was restricted to within 30 miles of the city of Laramie, but currently it is known only to inhabit floodplains, ponds, and seepage lakes in the shortgrass communities of the Laramie Basin of Wyoming. Larvae of the toads feed primarily on algae while the adults are primarily insectivorous and opportunistic in their selection of food. It is believed that toads hibernate in rodent burrows. The adult toads emerge from winter dormancy in late May or early June, after daily air temperatures approach 80 degrees fahrenheit. Breeding then begins in warm, shallow floodplain ponds where the eggs are laid. Tadpoles normally complete their transformation to adults by early August.

From the 1940's through the early 1970's, the Wyoming toad was abundant throughout its limited range. Rapid declines were observed in the mid-1970's; by the late 1970's, the Wyoming toad had become rare; and in the

early 80's, only a few individuals were found (Baxter and Stromberg, 1980, Stromberg, 1981, Vankirk, 1980, Baxter et al, 1982, Baxter and Stone, 1985, Lewis et al, 1985). A single healthy population was located in 1987, southwest of Laramie. A total of 7 toads were first discovered and during a second survey in late summer, 57 toads were located. Reasons for the decline of the Wyoming toad are uncertain. Theories include predation, disease, changes in agricultural practices, pesticide usage including baytex (fenthion) for mosquito control, and climatic changes (USFWS 1991c). Since 1988, surveys have revealed that this population appears to be stable. There are no known non-Federal actions that are expected to impact species in the future.

Effects of the Proposed Action

ADC personnel provided no information to the Service on effects to amphibians by the pesticides used by the ADC Program. The Service presently lacks adequate information on the feeding habitats of the Wyoming toad to determine if the aboveground use of these pesticides in the Laramie Basin will affect the survival and recovery of this species. The possibility of toads ingesting or absorbing pesticide baits or residues and being affected or killed is unknown. Toads may hibernate in rodent burrows and could contact strychnine or zinc phosphide-contaminated dead rodents in these burrows. Applicators may inadvertently or intentionally apply baits into rodent burrows, increasing the likelihood of strychnine or zinc phosphide/toad contact. Gas cartridges and aluminum phosphide used to control ground squirrels and other burrowing animals would be likely to kill any Wyoming toads in the burrow.

BIOLOGICAL OPINION

Because this species consists of very few individuals in a very localized population, and because little is known about the effects of grain bait, or the likelihood of mortality from gas cartridges or aluminum phosphide, it is my biological opinion that the use of these materials by the ADC Program is likely to jeopardize the continued existence of the Wyoming toad.

REASONABLE AND PRUDENT ALTERNATIVES

The Section 7 regulations have defined reasonable and prudent alternatives as alternative actions, identified during formal consultation, that can be implemented in a manner consistent with intended purpose of the action, that can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that the Service believes would avoid the likelihood of jeopardizing the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

As a reasonable and prudent alternative, the Service shall be contacted prior to any ADC work involving toxicants in the Laramie River Basin in Albany County, Wyoming. Strychnine, zinc phosphide, aluminum phosphide,

or gas cartridges shall not be used in areas of the Basin where it is determined by the Service that the Wyoming toad may occur.

Because this biological opinion has found jeopardy, the USDA is required to notify the Service of its final decision on the implementation of the reasonable and prudent alternatives.

INCIDENTAL TAKE STATEMENT

Assuming the implementation of the reasonable and prudent alternative described above, the Service anticipates that the proposed action will not result in any incidental of the Wyoming toad.

Summary Comments

The dynamic nature of the ADC Program demands close coordination with the Service at field, Regional and Central office levels to assure that any incidental take is reported and steps are taken to correct the circumstances that caused it. The Service suggests that annual coordination meetings, involving appropriate Washington staff from the Fish and Wildlife Service and ADC, will serve this purpose.

Further, the Service's central office should receive the annual reports of target and non-target species taken during all operations.

Reinitiation

This concludes formal consultation on the Animal Damage Control Program. Reinitiation of formal consultation is required if the amount or extent of incidental take is exceeded, if new information reveals effects of the action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion, if the action is subsequently modified in a manner that caused an effect to the listed species or critical habitat that was not considered in this opinion, or if a new species is listed or critical habitat designated that may be affected by the action. If reinitiation is required, the responsible ADC office must immediately reinitiate with the appropriate Fish and Wildlife Service office.

acting Director, U.S. Fish and Wildlife Service

Enclosure 1

SPECIES WITH "MAY AFFECT" DETERMINATIONS
SUBMITTED BY USDA

Mammals (27)

1. Alabama beach mouse (Peromyscus polionotus ammobates)
2. Black-footed ferret (Mustela nigripes)
3. Brown/grizzly bear (Ursus arctos pruinosus)
4. Carolina northern flying squirrel (Glaucomys sabrinus coloratus)
5. Choctawhachee beach mouse (Peromyscus polionotus alloprys)
6. Columbian white-tailed deer (Odocoileus virginianus leucurus)
7. Delmarva fox squirrel (Sciurus niger cinereus)
8. Eastern cougar (Felis concolor cougar)
9. Florida panther (Felis concolor coryi)
10. Gray bat (Myotis grisescens)
11. Gray wolf (Canis lupis monstrabilis)
12. Indiana bat (Myotis sodalis)
13. Jagarundi (Felis yagouaroundi cacomitli)
14. Morro bay kangaroo rat (Dipodomys heermanni morroensis)
15. Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)
16. Ocelot (Felis pardalis)
17. Ozark big-eared bat (Plecotus townsendii ingens)
18. Perdido Key beach mouse (Peromyscus polionotus trissyllepsis)
19. Red wolf (Canis lupus)
20. Salt marsh harvest mouse (Reithrodontomys raviventris)
21. San Joaquin kit fox (Vulpes macrotis nereis)
22. Sonoran pronghorn (Antilocapra americana sonoriensis)
23. Utah prairie dog (Cynomys parvidens)
24. Virginia big-eared bat (Plecotus townsendii virginianus)
25. Virginia northern flying squirrel (Glaucomys sabrinus fuscus)
26. Hualapai Mexican vole (Microtus mexicanus hualpaiensis)
27. Woodland caribou (Rangifer terandus caribou)

Birds (37)

28. Aleutian Canada goose (Granta canadensis leucopareia)
29. American peregrine falcon (Falco peregrinus anatum)
30. Arctic peregrine falcon (Falco peregrinus tundrius)
31. Attwater's greater prairie chicken (Tympanuchus cupido attwateri)
32. Bald eagle (Haliaeetus leucocephalus)
33. Black-capped vireo (Vireo atricapillus)
34. Brown pelican (Pelecanus occidentalis)
35. California clapper rail (Rallus Longerostris obsoletus)
36. California condor (Gymnogyps californianus)
37. California least tern (Sterna albifrons browni)
38. Eskimo curlew (Numenius boralis)
39. Hawaiian common moorhen (Gallinula chloropus sandvicensis)
40. Hawaiian coot (Fulica americana alai)
41. Hawaiian duck (Anas wyvilliana)

42. Hawaiian goose (Nesochen sandvicensis)
43. Hawaiian stilt (Himantopus mexicanus knudseni)
44. Large Kauai thrush (Myadestes myadestinus)
45. Laysan duck (Anas laysanensis)
46. Laysan finch (Telespyza cantans)
47. Least tern (Sterna antillarum)
48. Light-footed clapper rail (Rallus longirostris levipes)
49. Masked bobwhite (Colinus virginianus ridgwayi)
50. Mississippi sandhill crane (Grus canadensis pulla)
51. Molokai thrush (Myadestes lanaiensis rutha)
52. Newell's Townsend's shearwater (Puffinus auricularis newelli)
53. Nihoa finch (Telespyza ultima)
54. Nihoa millerbird (Acrocephalus familiaris kingi)
55. Northern Aplomado falcon (Falco femoralis septentrionalis)
56. Piping plover (Charadrius melodus)
57. Puerto Rican nightjar (Caprimulgus noctitherus)
58. Puerto Rican parrot (Amazona vittata)
59. Puerto Rican plain pigeon (Columba inornata wetmorei)
60. Roseate tern (Sterna dougallii)
61. Small Kauai thrush (Myadestes palmeri)
62. Whooping crane (Grus americana)
63. Wood stork (Mycteria americana)
64. Yellow-shouldered blackbird (Agelaius xanthomus)

Reptiles (14)

65. Alabama red-bellied turtle (Pseudemys alabamensis)
66. American alligator (Alligator mississippiensis)
67. American crocodile (Crocodulus acutus)
68. Desert tortoise (Gopherus agassizii)
69. Eastern indigo snake (Drymarchon corais couperi)
70. Flattened musk turtle (Sternotherus depressus)
71. Green sea turtle (Chelonia mydas)
72. Hawksbill sea turtle (Eretmochelys imbricata)
73. Kemps's Ridley sea turtle (Lepidochelys kempii)
74. Leatherback sea turtle (Dermochelys coriacea)
75. Loggerhead sea turtle (Caretta caretta)
76. Mona boa (Epicrates monensis monensis)
77. Mona ground iguana (Cyclura stejnegeri)
78. Monito gecko (Sphaerodactylus micropithecus)

Amphibians (1)

79. Wyoming toad (Bufo hemiophrys baxteri)

Fishes (17)

80. Alabama cavefish (Speoplatyrhinus poulsoni)
81. Amber darter (Percina antesella)
82. Bayou darter (Etiostoma rubrum)

83. Blackside dace (Phoxinus cumberlandensis)
84. Cape Fear shiner (Notropis mekistocholas)
85. Fountain darter (Etheostoma fonticola)
86. Leopard darter (Percina pantherina)
87. Ozark cavefish (Amblyopsis rosae)
88. San Marcos gambusia (Gambusia georgei)
89. Shortnose sturgeon (Acipenser brevirostrum)
90. Waccamaw silverside (Menidia extensa)
91. Slackwater darter (Etheostoma boschungi)
92. Slender chub (Hybopsis monacha)
93. Smoky madtom (Noturus baileyi)
94. Snail darter (Percina tanasi)
95. Spotfin chub (Hybopsis monacha)
96. Yellowfin madtom (Noturus flavipinnis)

Clams (25)

97. Alabama lamp pearly mussel (Lampsilis virescens)
98. Appalachian monkeyface pearly mussel (Quadrula sparsa)
99. Birdwing pearly mussel (Conradilla caelata)
100. Cumberland bean pearly mussel (Villasa [=Micromya] trabilis)
101. Cumberland monkeyface pearly mussel (Quadrula intermedia)
102. Curtis' pearly mussel (Epioblasma [=Dysnomia] florentine curtisi)
103. Curtus' mussel (Pleurobema curtum)
104. Dromedary pearly mussel (Dromus dromus)
105. Fat pocketbook (Potamilus [=Proptera] capax)
106. Fine-rayed pigtoe pearly mussel (Fusconaia cuneolus)
107. Green-blossom pearly mussel (Epioblasma [Disnomia] torulosa gubernaculum)
108. Judge Tait's mussel (Pleurobema taitianum)
109. Louisiana pearlshell (Margaritifera hembeli)
110. Orange footed pimpleback pearly mussel (Plethobasis cooperianus)
111. Pale lilliput pearly mussel (Toxolasma [=Crunculina] cylindrella)
112. Pink mucket pearly mussel (Lampsillis orbiculata orbiculata)
113. Rough pigtoe (Pleurobema plenum)
114. Shiny pigtoe pearly mussel (Fusconaia edgariana)
115. Stirrup shell (Quadrula stapes)
116. Tan riffle shell (Epioblasma walkeri)
117. Tar River spinymussel (Elliptio steinstansana)
118. Tuberculed-blossom pearly mussel (Epioblasma [=Dysnomia] torulosa torulosa)
119. Turgid blossom pearly mussel (Epioblasma [=Dysnomia] turgidula)
120. White warty-back pearly mussel (Plethobasis cicatricosus)
121. Yellow-blossom pearly mussel (Epioblasma [=Dysnomia] florentina florentina)

Crustaceans (2)

122. Cave crayfish (Cambarus zophonastes)
123. Nashville crayfish (Orconectes shoupi)

Plants (21)

124. Aconitum noveboracense
125. Arenaria cumberlandensis
126. Baptisia arachnifera
127. Betula uber
128. Echinacea tennesseensis
129. Isotria medeoloides
130. Lindera melissifolia
131. Lysimachia asperulaefolia
132. Oxypolis canbyi
133. Penstemon haydenii
134. Pityopsis ruthii
135. Sagittaria fasciculata
136. Sarracenia oreophila
137. Sarracenia rubra
138. Sarracenia alabamensis
139. Scutellaria montana
140. Solidago albopilosa
141. Solidago shortii
142. Solidago spithamaea
143. Trifolium stoloniferum
144. Zizania texana

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cc: 3012-MIB-FWS/Directorate RF
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3012-MIB-FWS/CCU
3024-MIB-FWS/AFWE RF
434-ARSLQ-FWS/DAFWE RF
452-ARLSQ-FWS/DES (CEnright)
452-ARLSQ-FWS/DES RF

FWS/DES:CEnright:jma:358-2171:7/28/92:aac42.rec (Disk: Enrights Storage - Alerts/Briefings)

APPENDIX B

BLM Information Bulletin No. WY-94-060, "Clarification of Policy on Aerial Gunning for Predator Control

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Wyoming State Office
P.O. Box 1828
Cheyenne, Wyoming 82003-1828

In Reply Refer To:
6830 (932)

November 10, 1993

Information Bulletin No. WY-94-060

To: District Managers

From: State Director

Subject: Clarification of Policy on Aerial Gunning for Predator Control

Questions have arisen on the statewide policy on aerial gunning for predator control by someone other than Animal and Plant Health Inspection Service (APHIS), over public lands administered by the Bureau. These persons are seeking the Bureau's permission to aerial gun over the public lands we administer per the directions in the Wyoming Department of Agriculture Predatory Animal Control Regulations.

A summary of the major provisions of these regulations include the following:

. . . Persons desiring State permits must secure approval of individual county predator control Districts where they wish to hunt . . ., no aerial hunting over private property without written permission of the private property owner. . ., and written authorization from the appropriate Federal agency.

The existing emergency control procedures apply only to APHIS actions. Predator Animal Boards (PABs) or those private individuals authorized by the PABs may perform predator control on or over Public Lands so long as they comply with all Wyoming State Statutes.

Prior to issuing the authorization, the following is a suggested list of documentation and coordination actions to require:

1. Require a copy of the supporting paperwork submitted by the local Predator Control District to the Wyoming Department of Agriculture, and/or ADC Form 14.

2. Require a copy of the permit granted by the State Department of Agriculture.

3. Consult with APHIS on any concerns they may have with the request. Require written concurrence from APHIS for authorization.

4. Seek the applicant's cooperation by personally discussing and reviewing the plans and constraints we have in place.

This sequence of actions should provide a basis for our decision and continue our cooperation with APHIS, PABs and state government agencies.

Any questions should be directed to Jim Murkin at 307-775-6113 or El Spencer at 307-775-6096.

Ron Bruhaker

Distribution

Director (240), Rm. 204, LS	1
SCD (SC-210)	1
CF	2

APPENDIX C

M-44 CYANIDE CAPSULES; M-44 EPA USE RESTRICTIONS; EPA REGISTRATION NO. 35978-1

in

Using the M-44 in Coyote Damage Control,
Wyoming Department of Agriculture, 1993)

The EPA placed 26 restrictions on the use of the M-44. These restrictions are part of the label, and must be followed completely. It is a violation of both federal and state law to "use a pesticide in a manner inconsistent with its labeling." State law provides for a $500 fine, and one year in jail for subsequent offenses. Federal law provides for fines up to $25,000, and one year in jail. Following are the 26 EPA Use Restrictions, along with a brief explanation.

1. **Use of the M-44 device shall conform to all applicable federal, state, and local laws and regulations.**

   Annual inspections by the Wyoming Department of Agriculture will ensure that applicators conform to all federal, state, and local laws and regulations.

2. **Applicators shall be subject to such other regulations and restrictions as may be prescribed from time to time by the U.S. Environmental Protection Agency (EPA).**

   Applicators will be notified by the Wyoming Department of Agriculture if other regulations or restrictions are prescribed.

3. **Each applicator of the M-44 device shall be trained in: (1) safe handling of the capsules and device, (2) proper use of the antidote kit, (3) proper placement of the device, and (4) necessary recordkeeping.**

   This restriction requires that prior to using the M-44, the applicator must attend an approved training school, where these four issues will be discussed.

4. **M-44 devices and sodium cyanide capsules shall not be sold or transferred to, or entrusted to the care of any person not supervised or monitored by the Wyoming Department of Agriculture.**

This restriction allows only the licensed applicator to have capsules, and prohibits them from giving or selling them to any unlicensed applicator. Licensed M-44 applicators will be monitored, as per restriction #1.

5. **The M-44 device shall only be used to take wild canids: (1) suspected of preying on livestock, poultry, and federally designated threatened or endangered species, or (2) that are vectors of a communicable disease.**

   This restriction prohibits the use of the M-44 to protect game animals.

6. **The M-44 device shall not be used solely to take animals for the value of their fur.**

   The M-44 cannot be used only to take furs, as its use is for the protection of livestock, poultry, and federally designated threatened or endangered species. It is legal to save the furs from coyotes and foxes taken by the M-44 coincidental to the protection of livestock.

7. **The M-44 device shall only be used on or within 7 miles of a ranch unit or allotment where losses due to predation by wild canids are occurring or where losses can be reasonable expected to occur based upon recurrent prior experience of predation on the ranch unit or allotment. Full documentation of livestock depredation, including evidence that such losses were caused by wild canids, will be required before applications of the M-44 are undertaken.**

   The livestock owner will have to document his losses prior to any use of M-44 devices on his property. The Wyoming Department of Agriculture provides the necessary form for this documentation. Each order of sodium cyanide capsules from the Wyoming Department of Agriculture is required to be accompanies by the Record of Livestock Losses. Failure to submit this form with the order will result in delays, and the order will not be processed until the Record of Livestock Losses is on file.

8. **The M-44 device shall not be used: (1) in areas within national forests or other federal lands set aside for recreation use, (2) areas where exposure to the public and family pets is probable, (3) in prairie dog towns, or (4) except for the protection of federally designated threatened or endangered species in national and state parks; national for state monuments; federally designated wilderness areas; and wildlife refuge areas.**

   The USDA/APHIS/ADC is the only authorized agency to use M-44 one federal land. The prairie dog town restriction is designated to protect the Black-Footed Ferret. In many cases prairie dog towns would be ideal M-44 locations, however, coyotes will cross other areas to reach the prairie dog town, and suitable

locations can be selected along coyote travel routes to and from their destination.

9. **The M-44 device shall not be used in areas where federally listed threatened or endangered animal species might be adversely affected. Each applicator shall be issued a map, prepared by or in consultation with the U.S. Fish and Wildlife Service, which clearly indicates such areas.**

   It is the applicator's responsibility to consult with the U.S. Fish and Wildlife Service regarding any areas where federally listed threatened or endangered animal species might be adversely affected.

10. **One person other than the individual applicator shall have knowledge of the exact placement location of all M-44 devices in the field.**

    This person's name is required to be on the reporting forms in the space provided.

11. **In areas where more than one governmental agency is authorized to place M-44 devices, the agencies shall exchange placement information and other relevant facts to ensure that the maximum number of M-44's allowed is not exceeded.**

    The Wyoming Department of Agriculture coordinates with USDA/APHID/ADC in any area in which more than one agency is involved.

12. **The M-44 device shall not be placed within 200 feet of any lake, stream, or other body of water, provided that natural depression areas which catch and hold rainfall only for short periods of time shall not be considered "bodies of water" for purposes of this restriction.**

    Two hundred feet is not very far. If a suitable location can be found near a waterhole, one can also be found two hundred feet away.

13. **The M-44 device shall not be placed in areas where food crops are planted.**

    Food crops are grains, sugar beets, pinto and great northern beans, and other crops which are planted for human consumption. The key words here are "planted" and "human consumption." Do not use M-44's in a wheat field unless the field has been harvested. They are allowable for use in a hay field.

14. **The M-44 device shall be placed at least at a 50-foot distance or at such a greater distance from any public road or pathway as may be necessary to remove it from the sight of persons and domestic animals using any such public road or pathway.**

Pertaining to this restriction, a public road or pathway in Wyoming is defined as any road which is fenced on both sides or dedicated to, or maintained by a government agency. A pickup trail across private land is not a public road or pathway. Common sense must prevail; do not place M-44's where the public can see them.

15. **The maximum density of M-44's placed in any 100-acre pastureland areas shall not exceed ten (10); and the density in any one (1) square mile of open range shall not exceed twelve (12).**

    In some instances, this will require coordination and cooperative efforts between neighbors. One well placed M-44 will take coyotes and will be more successful than numerous poorly set devices.

16. **No M-44 device shall be placed within 30 feet of a livestock carcass used as a draw station. No more than four M-44 devices shall be placed per draw station, and no more than five draw stations shall be operated per square mile.**

    Coyotes range over a large area and draw stations properly placed will, in many cases, be effective. If the coyote is attracted to the draw station he will find the M-44. If the maximum number of five draw stations is used then only two M-44's for three of the stations is allowed, and the two remaining stations will only be allowed three M-44's. (Refer back to EPA Use Restriction #15, maximum density per square mile = 12.)

17. **Supervisors of applicators shall check the records, warning signs, and M-44 devices of each applicator at least once a year to verify that all applicable laws, regulations, and restrictions are being strictly followed.**

    Each applicator is required to submit their records once a month. Inspections by the Wyoming Department of Agriculture will ensure that applicators conform to all federal, state, and local laws and regulations.

18. **Each M-44 device shall be inspected by the applicator at least once every week, weather permitting access, to check for interference or unusual conditions and shall be serviced as required.**

    If no access is able to be gained to a device for inspection, (i.e., device is buried under a snow drift), make this notation on the monthly M-44 report.

19. **Damaged or nonfunctional M-44 devices shall be removed from the field.**

    Indicate on the monthly M-44 report Form the number of damaged, nonfunctional, or missing devices, so an inventory can be maintained.

20. **A M-44 device shall be removed from an area if, after 30 days, there is no sign that a target predator has visited the site.**

    If the problem has been solved, or if the target predator has not visited the site, the device shall be removed as required.

21. **All persons authorized to possess and use sodium cyanide capsules and M-44 devices shall store such capsules and devices under lock and key.**

    PLEASE BE CAREFUL! cyanide can, in the right circumstances, kill almost any animal. It is also required to placard the locked box with *Danger - Poison* signs. Be sure to store the capsules under lock and key.

22. **Used sodium cyanide capsules shall be disposed of by deep burial, or at a proper landfill site.**

    Bury empty capsules in an isolated area two or three feet deep. Caked or faulty capsules should also be buried in an isolated area. Bury each capsule as soon as possible; do not collect them for later disposal.

23. **Bilingual warning signs in English and Spanish shall be used in all areas containing M-44 devices. All such signs shall be removed when M-44 devices are removed.**

    a. **Maintain entrances or commonly used access points to area in which M-44 devices are set shall be posted with warning signs to alert the public to the toxic nature of the cyanide and to the danger to pets. Signs shall be inspected weekly to ensure their continued presence and ensure that they are conspicuous and legible.**

    b. **An elevated sign warning persons not to handle the device shall be placed within 25 feet of each individual M-44 device.**

    Each shipment of capsules will contain some signs; additional signs can be purchased from the Wyoming Department of Agriculture. The public is usually informed about M-44 devices and the dangers of sodium cyanide, so the use of signs in the best way to prevent accidents.

24. **Each authorized or licensed applicator shall carry an antidote kit when placing and/or inspecting M-44 devices. The kit shall contain at least six pearls of amyl nitrite and instructions on their use. Each authorized or licensed applicator shall also carry on his person instructions for obtaining medical assistance in the event of accidental exposure to sodium cyanide.**

At least one antidote kit containing six pearls of amyl nitrite is required to be purchased by the applicator when the first box of sodium cyanide capsules is ordered. The applicator must carry the kit on their persona at all times while placing or inspecting M-44's. If an accidental discharge should occur while setting or inspecting the devices, it will be more convenient for the applicator to have the antidote kit in their pocket, if needed. Keep in mind that the amyl nitrite carries a labeled expiration date, and should be replaced prior to the expiration date on each kit.

25. **In areas where the use of the M-44 device is anticipated, local medical people shall be notified of the intended use. The notification may be through a poison control center, local medical society, the Public Health Service, or directly to a doctor or hospital. They shall be advised of the antidotal and first-aid measures required for the treatment of cyanide poisoning. It shall be the responsibility of the supervisor to perform this function.**

    The Wyoming Department of Agriculture has contacted the appropriate agencies/facilities. However, M-44 applicators should also contact their local medical facilities/services and provide the necessary first aid information to their local physicians as a means of assuring that appropriate first aid measures are available.

26. **Each authorized M-44 applicator shall keep records dealing with the placement of the device and the results of each placement. Such records shall include, but need not be limited to:**

    a. **The number of devices placed.**

    b. **The location of each device placed.**

    c. **The date of each placement, as well as the date of each inspection.**

    d. **The number and location of devices which have been discharged and the apparent reason for each discharge.**

    e. **Species of animals taken.**

    f. **All accidents or injuries to humans or domestic animals.**

    These records are required to be kept. All of the above items are reported on the Monthly M-44 Report form. The monthly M-44 report form is self-carboning paper. The original set is sent to the Wyoming Department of Agriculture, which the applicator retains the copy.

REGISTRATION OF THE M-44 DEVICE AND SODIUM CYANIDE CAPSULES IS DEPENDENT UPON ALL 26 RESTRICTIONS BEING FOLLOWED BY ALL PRIVATE AND COMMERCIAL M-44 APPLICATORS.