



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Kansas Ecological Services Field Office
2609 Anderson Avenue
Manhattan, Kansas 66502-2801

November 6, 2006

MEMORANDUM

TO: Assistant Regional Director, Fisheries and Ecological Services
Region 6; Denver, Colorado

FROM: Field Supervisor, Ecological Services
Kansas Field Office; Manhattan, Kansas

SUBJECT: Intra-Service Section 7 Consultation on the Reintroduction of Black-Footed Ferrets
via a Section 10a(1)A Recovery permit in Logan County, Kansas

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed issuance of a recovery permit to reintroduce black-footed ferrets (*Mustela nigripes*) onto private properties in Logan County in northwestern Kansas, in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

We concur with the conclusion that the proposed reintroduction may affect the ferret. We also concur with the finding that the bald eagle (*Haliaeetus leucocephalus*) and whooping crane (*Grus americanus*) will not be affected by the proposed action, because neither individuals nor habitat for either species will be impacted by reintroduction efforts. The candidate species lesser prairie-chicken (*Tympanuchus pallidicinctus*) will likewise not be affected by the proposed action, because individuals and lekking and nesting habitat will not be impacted.

This biological opinion incorporates information from the Recovery Permit application, the intra-Service section 7 Biological Assessment and final rules/field work undertaken to reintroduce ferrets into other areas. This information provides knowledge of ferret mortality at other reintroduction sites and gives insight into what may happen with the proposed Kansas ferret reintroduction.

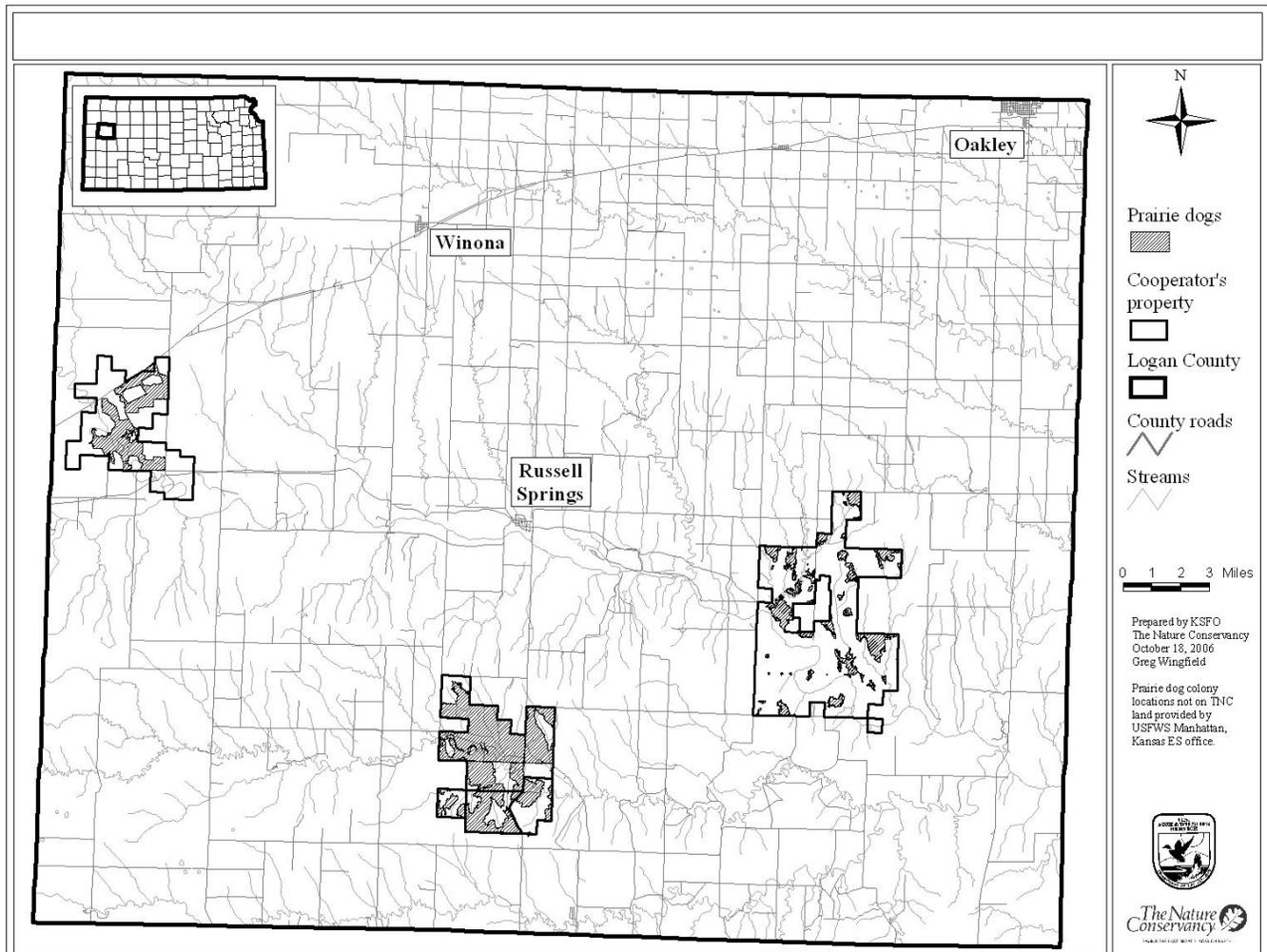
BIOLOGICAL OPINION

It is our biological opinion that the proposed reintroduction of ferrets in Logan County in northwestern Kansas is not likely to jeopardize the continued existence of the ferret. The overall effect of the proposed action will promote conservation and recovery of black-footed ferrets even though some individual ferrets may be lost to incidental human actions and natural causes.

PROJECT DESCRIPTION

Under the proposed action, the Service would reintroduce captive-raised ferrets considered excess to the captive breeding program, or wild-born kits from other established reintroduction sites, onto private lands in northwest Kansas. Logan County is currently unoccupied habitat within the historical range of the ferret. If conditions become unsuitable at the proposed site, ferrets available for reintroduction would likely be released at other authorized reintroduction areas in Arizona, Colorado/Utah, Mexico, Montana, South Dakota, or Wyoming. The Service is undertaking this ferret reintroduction in conjunction with cooperating landowners via a section 10(a)(1)(A) recovery permit. In addition, each cooperating landowner will sign a cooperative agreement with the Service to coordinate recovery of ferrets in Kansas and identify party responsibilities. The cooperators' properties are located in Logan County in northwestern Kansas (Figure 1).

Figure 1. Prairie dog colonies proposed for reintroduction of black-footed ferrets in Logan County, Kansas.



Reintroduction will be conducted using captive-raised ferrets excess to the captive breeding population (the only known population of black-footed ferrets, except for possible survivors of

previous reintroductions). At least 20 ferrets would be released in the first year of the reintroduction effort, possibly as early as late fall or early winter 2006-2007, and additional releases as may be deemed appropriate to establish a wild population. The prairie dog colonies where the reintroduction will occur involve approximately 10,000 acres of black-tailed prairie dogs, split between multiple non-contiguous landowners. There is minimal other suitable ferret habitat nearby so this will be a relatively small ferret reintroduction attempt. However, the prairie dog densities on these colonies are believed sufficient to offset the limited acreage of any one property.

To monitor survival and dispersal, all released ferrets will be marked with transponder chips and some released animals may be fitted with radio transmitters. Ferret releases and management would be conducted in accordance with annual ferret allocation proposals submitted to the Service. A number of federal, state and nongovernmental partners are cooperating with the Service to facilitate this reintroduction and ongoing monitoring and habitat management.

The effects of marking and monitoring ferrets are considered in the authorization of agency personnel to manage ferret reintroductions. The Service will incorporate precautions in the scientific design and protocol for handling and monitoring reintroduced captive-raised and wild-produced ferrets prior to any reintroduction. This protocol will authorize agency personnel or their agents to handle, monitor, and care for reintroduced ferrets and their offspring.

The Service intends to manage ferrets for recovery in the defined area of the cooperator's properties, and best efforts will be made to recapture those that move out into areas where survival is likely to be lower (depending on landowner permission).

This proposal to reintroduce ferrets into black-tailed prairie dog colonies in Kansas is being conducted under a section 10(a)(1)(A) recovery permit. The Service's Kansas Ecological Services Field Office will be responsible for addressing all associated section 7 consultation and NEPA requirements for this ferret reintroduction. The location of the recovery areas are somewhat isolated from other large prairie dog colonies where it is unlikely that ferrets dispersing from the reintroduction sites will find suitable long-term habitat.

STATUS OF THE SPECIES

The ferret is an endangered carnivore with a black face mask, black legs, and a black-tipped tail. It is approximately 18-24 inches long and 2.5 pounds. The black-footed ferret is the only ferret species native to North America, and is likely extinct as a naturally occurring species in the wild except where ferrets have been reintroduced. Black-footed ferrets prey primarily on prairie dogs and use their burrows for shelter and denning. There are specimen records of black-footed ferrets from ranges of three species of prairie dogs: black-tailed prairie dogs (*Cynomys ludovicianus*), white-tailed prairie dogs (*Cynomys leucurus*), and Gunnison's prairie dogs (*Cynomys gunnisoni*) (Anderson et al. 1986).

The black-footed ferret's historical range, based on specimens collected since its identification, includes 12 states (Montana, North Dakota, South Dakota, Wyoming, Utah, Colorado, Nebraska, Kansas, Oklahoma, Texas, New Mexico, and Arizona) and the Canadian Provinces of Alberta and Saskatchewan. There is prehistoric evidence of the ferret from Yukon Territory, Canada, to

New Mexico and Texas (Anderson et al. 1986). Since ferrets depend almost exclusively on prairie dogs (*Cynomys* spp.) for food and shelter (Henderson et al. 1969; Hillman and Linder 1973; and Forrest et al. 1985); and, given that ferret range overlaps that of certain prairie dog species (Anderson et al. 1986), it is believed that black-footed ferrets were historically endemic to the entire black-tailed prairie dog range.

Widespread poisoning of prairie dogs, conversion of prairie dog habitat to agricultural cultivation, and sylvatic plague dramatically reduced prairie dog abundance and distribution by 95 to 98 percent over the last century (USFWS 1988). The severe decline of the prairie dog resulted in the near extinction of the ferret, though the ferrets decline is also attributable to other factors, such as secondary poisoning from prairie dog toxicants or high susceptibility to canine distemper and sylvatic plague.

Though the ferret was widespread, the historical abundance of the species was never clear due to its nocturnal and secretive habits. The species is well-documented historically from western Kansas, with at least 38 known specimens collected, and 28 of 82 specimens housed in the National Museum of Natural History originating from Kansas (Choate et al. 1982). A wild population was discovered in Mellette County, South Dakota, in 1964. This population was studied but disappeared by 1974, with the last member of this population dying in captivity in 1979. At that time, some biologists believed the species was extinct; however, another wild population was discovered near Meeteetse, Wyoming, in 1981. The Meeteetse population was extensively studied and underwent a severe decline in 1985-1986 due to canine distemper and sylvatic plague outbreaks, which are fatal to infected ferrets. Ultimately, eighteen survivors were taken into captivity in 1986-1987 to prevent extinction and to serve as founder animals for a captive propagation program aimed at eventually reintroducing the species into suitable habitat in the wild. If current reintroduction efforts in several western states are not successful in the foreseeable future, the species will not be recovered in the wild as directed by ESA and outlined in the Black-Footed Ferret Recovery Plan (USFWS 1988).

ENVIRONMENTAL BASELINE

Although the black-footed ferret is historically well documented from the State of Kansas (Choate et al. 1982), there are no specific records from Logan County, and none of the cooperating landowners has any recollection of seeing ferrets on their property in the past. Logan County is within the range of the black-tailed prairie dog and ferrets are believed to have been ubiquitous throughout that prairie dog species' range (USFWS 1988).

The Service conducted habitat assessments on the cooperators' properties in July 2006, and concluded that habitat suitable for an experimental reintroduction of black-footed ferret exists (USFWS 2006, unpublished data), albeit in smaller acreages than traditionally used for reintroduction attempts.

Data indicate that active prairie dog burrows on these properties ranged from 33 to 52 burrows per acre, with ferret family ratings varying based on acreage, but high enough to support a reintroduction attempt.

EFFECTS OF THE ACTION

All ferret releases in Kansas will be undertaken through coordination with the Service's Black-Footed Ferret Coordinator who will make a determination that such ferrets are not needed for the captive breeding program and are thus available for reintroduction efforts. At this time, the primary repository of genetic diversity for the species is the captive population of 240 ferrets cooperatively managed in 6 facilities. Animals selected for reintroduction purposes will be as genetically redundant as possible with the captive population; hence, any loss of reintroduced animals in this experimental population will not significantly impact the goal of preserving genetic diversity of the species. The captive population is being protected against the threat of extinction from a single catastrophic event through the splitting of the captive population. Approximately 200-300 ferret kits are produced each year in excess of numbers needed to maintain the captive population. Therefore, survival and recovery of the captive population will not be adversely affected by direct, indirect, or cumulative effects of the proposed action.

Because this proposed action will not occur near known wild populations of ferrets, the action is not expected to adversely affect any wild populations of the species. Although the Service expects natural mortality and some human-caused mortality during reintroduction, the captive population will not be adversely affected by use of ferrets that are excess to the captive population needs.

Based on studies at Meeteetse in the 1980s, natural mortality of ferrets in the wild is high. Data presented by Forrest et al. (1988) were used for computer simulation modeling by Harris et al. (1989) and indicated juvenile mortality rates of a stable population to approximate 78.5 percent. Because young-of-the-year ferrets will be used in the reintroduction effort (at least initially), this offers a baseline for comparison. For captive-raised ferrets, it would be reasonable to expect higher juvenile mortality. This would be expected because captive-raised ferrets have been sheltered from adverse environmental factors and, therefore, have not developed the same degree of disease resistance as wild-bred ferrets, have not been imprinted on prairie dogs as food to the degree that wild-bred ferrets would be, have not been taught to hunt, or avoid predators.

The Service anticipates that there may be high mortality among reintroduced ferrets in the reintroduction areas, mainly due to predation and natural causes, but some also may result from handling and monitoring of the released ferrets or normal ranching activities that occur in the area. The Service believes that natural predation to ferrets that remain in the release areas will not overwhelm the reintroduced ferret populations' ability to replace lost individuals through natural reproduction. Conversely, since there are no large prairie dog colonies close to any of the cooperators' prairie dog colonies, it is likely ferrets that leave the release areas will be lost to predation absent the security of a prairie dog borrow system.

Other ferret releases sites have experienced occasional ferret deaths due to handling and monitoring mainly when using anesthetics to mark animals or apply medicines and vaccinations. Such losses also could occur with this reintroduction effort. Marking and monitoring may adversely affect ferrets by harassing them while being captured and handled. The Service's proposal requires the use of precautions contained in the scientific design and protocol for handling and monitoring reintroduced ferrets outlined in Roelle et al (2006) to reduce the effects of marking and monitoring. These methods have been used at all other ferret reintroduction sites and are tailored to fit circumstances at each site.

The adverse effects of handling and monitoring the ferrets by permitted Service employees or their cooperating partners during this proposed project is expected to be minimal. Few ferrets were injured (and minimal mortalities) as a result of permitted handling of ferrets during the studies of the wild population at Meeteetse from 1981-1986, or from other reintroduction efforts in six states since 1991.

The reintroduction techniques used at Conata Basin, Cheyenne River Sioux Reservation, and the Rosebud Sioux Reservation, all in South Dakota, have proven successful when ferret releases have occurred on plague-free black-tailed prairie dog colonies. In this particular instance, ferrets will be released on smaller prairie dog complexes than have been traditionally attempted, which may result in a reduced probability of success. However, based on prior reintroduction experience, the Service is optimistic that the reintroduction protocol and management system has addressed both the needs of the ferret and the human community in the reintroduction area. The opportunity for success is high, and regardless of ultimate outcome, this reintroduction attempt may provide important answers to minimum size complexes suitable for reintroduction efforts, and will further promote long-range species recovery.

Other normal ranching activities within the cooperators' properties and adjacent lands include control of prairie dog dispersal through use of toxicants. Even though there are not currently many large extant prairie dog colonies adjacent to any reintroduction site, prairie dogs are noted for expansion especially in times of drought. Therefore, we anticipate that normal ranching operations in the region will continue to use toxicants to control prairie dogs.

Additionally, ranchers' pet dogs have been known to catch ferrets and ferrets have been found on roads killed by vehicle collisions. These normal ranching activities may result in adverse effects to individual ferrets, but are not expected to at a level to compromise the reintroduction effort.

The Service's action to permit the reintroduction of ferrets to Logan County may result in adverse effects to individual ferrets that wander out of the release areas to adjacent lands that are not managed for ferret conservation. Ferrets that wander onto adjacent lands will face decreased survival due to expected increased predation and the lower quality of these lands for ferret conservation due to scarcity of prairie dog colonies. We expect that most ferrets that leave the release sites will be lost. Therefore, once any release site is saturated with ferrets, it may be useful to remove a segment of the annual production and make those ferrets available for other reintroduction sites. This currently happens at Conata Basin where surplus young are captured annually and moved to other suitable sites.

If a ferret is known to have moved off the release area and an adjacent landowner wants it removed from their property, the Service will work with adjacent private landowners to recapture such ferrets and return them to either the release area or to other sites at the direction of the Service's Black-Footed Ferret Coordinator. This action will reduce the likelihood that dispersing ferrets would be killed or injured. However, some ferrets will not be detected and may die from predation or starvation when moving onto adjacent private lands because many private landowners lethally control black-tailed prairie dogs, the ferret's primary prey. Without a prey base, dispersing ferrets are more likely to die. We consider this adverse effect to be interrelated with the proposed action; "but for" the Service's issuance of a

section 10(a)(1)(A) permit, these ferrets would not face the prospect of mortality on private lands that are not part of the recovery area.

Substantial benefits of this action are the development of techniques and knowledge that might be attained from successfully reintroducing ferrets onto smaller complexes of prairie dogs than traditionally attempted. One of the difficulties recognized with ferret reintroductions involve the fairly large prairie dog acreages (more than 10,000 acres) that have been suggested as needed to undertake a ferret reintroduction (USFWS 1988). This figure is large enough that few remaining prairie dog complexes exist of that size, including any of the individual properties in Kansas. Recent information from the Heck Table area in Conata Basin indicates that under certain circumstances (plague free, high-density prairie dogs in suitable terrain) ferrets can experience success with much less prairie dog acreage. However, numerous reintroduction attempts have been made on smaller complexes that have failed, largely believed due to plague or too much distance between colonies making ferret movement highly susceptible to predation (Roelle et al 2006).

Therefore, this is an effort to create successful ferret reintroduction sites on smaller colonies, but ones that have the attributes believed necessary for establishment of ferrets. Further, if this effort is successful, it is likely to reduce the threat of extinction facing the ferret by establishing an additional population of ferrets in the easternmost portion of the ferret's range. The eastern portion of the ferret's range is believed among the least susceptible areas to outbreaks of sylvatic plague. Finally, if the Service is successful in establishing a population it will demonstrate how ferrets may be established on considerably smaller acreages of prairie dogs than previously believed and may open up other sites throughout the ferrets range to having a small site of 1,500 to 2,000 acres of prairie dogs. This acreage figure is believed to be less intimidating to potential partners and may be more realistic in being able to locate ferret reintroduction sites in the eastern part of it range.

CUMULATIVE EFFECTS

Ranching and rural lifestyles are expected to continue to dominate Logan County and adjacent areas for the foreseeable future. Hunting is a part of that lifestyle as well and is expected to continue with some prairie dog shooting likely to occur on prairie dog colonies both on and off the release sites. Shooting within the release areas will occur only during daylight hours, when ferrets are primarily inactive and underground; therefore, it is not expected to adversely affect ferrets.

CONCLUSION

Because ferrets used in this effort will not be essential to the survival of the species, and because precautionary measures will be implemented to reduce losses within the reintroduced population, the proposed action is not likely to jeopardize the continued existence of the black-footed ferret. The overall effect of the proposed action will be beneficial and will promote conservation, increased knowledge, management capabilities, and recovery of this species. This action may also provide important insights and knowledge helpful in the recovery of other endangered species.

INCIDENTAL TAKE

Section 9 of the ESA, as amended, prohibits any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of a listed species without a special exemption. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered taking within the bounds of ESA, provided that such taking is in compliance with the incidental take statement. In this case, the Service, along with cooperating agencies, have reviewed traditional private and agency-authorized land uses within the reintroduction area. We believe these uses are compatible with the objectives of the proposed ferret reintroduction, provided cooperative ferret reintroduction and management plans are implemented to reduce potential adverse impacts from existing and potential land uses in the area.

A low level of unintentional mortality is anticipated from traditional private land uses and authorized agency actions. Three wild ferrets were reported killed, presumably by vehicle collisions, during studies of ferrets in the wild at Meeteetse between 1982-1986. These studies estimated a total of 351 ferrets in the area during these years. If we assume that there were as many unreported ferret mortalities as reported ferret mortalities during Meeteetse studies (e.g., see Bangs et al., *Journal of Wildlife Management* 53:557-563 for statistics on unobserved human-caused wildlife mortality), we conclude that about 1.7 percent of the wild ferrets between 1982-86 were possibly killed by vehicle collisions.

Ferret mortalities from human activities other than vehicle collisions, such as capture by dogs (a rancher's dog killed the original ferret that led to the discovery of the Meeteetse ferret colony) or other unavoidable accidents, are also likely. In addition, it would be reasonable to expect that captive-raised ferrets released during the course of the proposed action may be more susceptible than wild ferrets to human activities due to their relative naiveté in the wild. The information contained in the effects section concerning natural mortality of ferrets introduced into the wild can be used to bracket the anticipated level of incidental take. Human-caused mortality is expected to be greater than 1.7 percent, but should be less than 21.5 percent (100 percent minus the estimated natural mortality of 78.5 percent). With a range of 1.7 percent to 21.5 percent, the midpoint of this range is 11.6 percent.

Thus, based on the best available data, the Service sets an anticipated annual incidental take level from human-caused mortality of 12 percent. In the first year following black-footed ferret releases, incidental take will be measured against the total number of ferrets released. In subsequent years, incidental take will be measured against the total number of ferrets known or estimated to exist in the wild over the reintroduction area (i.e., ferrets that survived release from previous years, their offspring, and any additional released ferrets). Implementation of the terms and conditions below should reduce incidental take below the 12 percent level.

The Service has obtained only limited additional information on incidental take from reintroduction sites in Wyoming, Montana, South Dakota, Arizona, and Colorado/Utah. There have not been sufficient data obtained to revise the anticipated incidental take figures at this time. Only four ferrets are known to have been lost as a result of vehicle collision between 1991 and 2001 (one in Wyoming, one in South Dakota, two in Arizona).

This incidental take level covers accidental and unintentional take caused by otherwise legal human activities within the reintroduction area not covered under a permit. The take may be in any form, mentioned or intended in the definition of take as noted above, that result in the death or removal of an injured individual from the wild.

Ferrets that leave the release areas are expected to be lost most likely due to predation. These ferrets, if not lost to predators, could theoretically end up on other distant prairie dog colonies that through normal ranching operations are subjected to toxicants. Ferrets on such colonies would likely be lost as well. Given the monitoring capabilities at ferret reintroduction sites, the whereabouts of ferrets off the release areas will likely be unknown. However, through this take statement, it is important to provide assurances that normal ranching operations including the use of toxicants can continue. Thus, any ferrets off the release sites taken due to normal ranching operations, such as legal toxicant use, are covered by this take statement.

REASONABLE AND PRUDENT MEASURES

The Service specifies the following reasonable and prudent measures that are necessary and appropriate to minimize unavoidable and unintentional mortality of black-footed ferrets.

1. The Service shall implement the conditions outlined in the Recovery Permit issued to the Kansas Field Office for these activities.
2. The Service and cooperating agencies shall implement an information and education program that provides the public and agency personnel in and around Logan County, Kansas, and the region with details of ferret recovery efforts, and seeks cooperation in reporting any taking or occurrence of ferrets outside the designated reintroduction areas.
3. The Service and cooperating agencies and organizations will work closely with land users in the area and seek their assistance in designing improved management strategies for attaining the goals and objectives of the proposed action.
4. The Field Supervisor, Fish and Wildlife Service, Ecological Services, Manhattan, Kansas, will record and manage information on ferret mortalities as described in the section 10a(1)A recovery permit.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of Section 9 of the ESA, the following terms and conditions, which implement the reasonable and prudent measures described above, must be followed.

1. The Service will assign a primary ferret program contact for agencies, private landowners, and the public users in the affected area; and follow-up on reports of injured or killed ferrets. The Kansas Field Supervisor, Ecological Services, will notify the Service's Law Enforcement Division and the Recovery Coordinator. Discussions and

actions to follow-up these notifications and to collect and determine disposition of any live or dead specimens will follow as soon as possible.

2. The Service will ensure, in conjunction with cooperating agencies and organizations, that the ferret population and its habitat be monitored annually and the potential of ongoing activities or circumstances which may present unanticipated hazards to ferrets be documented. When appropriate, strategies and contingencies to minimize unnecessary harm to ferrets should be cooperatively developed and implemented by the Service, cooperating agencies, private landowners, or their agents.
3. The Service and cooperators will assist in ensuring that agencies and the public be reasonably informed about the presence of ferrets in the affected area via public information and education programs and media outlets. This information program shall include reporting recommendations and contacts in case a sick or injured ferret is found. This action will enhance effective treatment and care of handling specimens and, when dead ferrets are located, to ensure proper collection and preservation of ferret remains.
4. The Service will require that persons locating a dead, injured or sick ferret or taking a ferret will immediately notify the Field Supervisor, Fish and Wildlife Service, Ecological Services, Manhattan, Kansas.

If the incidental take level of 12 percent of known animals in the population is reached in any year, the entire reintroduction project will be reevaluated to determine whether better management measures are needed or could be undertaken to reduce ferret mortality from human factors. If this incidental take level is exceeded, Section 7 consultation should be reinitiated immediately on the reintroduction effort to avoid violation of Section 9(a)(1) of the ESA. The Field Supervisor will provide the Regional Office an explanation of the probable causes of all known takings of ferrets at that time.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

We recommend contingencies be developed to deal with a disease epizootic (plague or canine distemper, etc.) which may occur in the area and which would require the rescue of a reestablishing(-ed) ferret population in the proposed management area. Disease contingency strategies should be included in annual ferret allocation proposals submitted to the Service.

We recommend Kansas Ecological Services Field Office continue to participate in the National Black-footed Ferret Recovery Implementation Team planning and meetings.

CONCLUSION

This concludes formal consultation on this action. Reinitiating formal consultation is required if the level of incidental take is exceeded, if new information reveals effects of the action that may impact listed species in a manner or to an extent not considered in this opinion, or if the action is subsequently modified in a manner that may cause an effect to listed species which was not considered during this consultation.

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