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In Reply Refer To:
AESO/SE
22410-2008-F-0022

October 24, 2007

Memorandum

To: Assistant Regional Director, Fisheries - Ecological Services, Region 6
(Attn: Bridget Fahey, Branch Chief, Endangered Species)

From: Field Supervisor

Subject: Intra-Service Section 7 Consultation on the Reintroduction of Black-footed Ferrets via
a Section 10(a)(1)(A) Recovery Permit on Espee Ranch, Arizona

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service Arizona Ecological Services Office (AESO) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated October 19, 2007 and received by us on that day. At issue are impacts that may result from the proposed reintroduction of black-footed ferrets to the Espee Ranch, Coconino County, Arizona, under the provisions of a 10(a)(1) (A) recovery permit to be issued by your office. The proposed action may affect the black-footed ferret (*Mustela nigripes*) (ferret).

In your intra-service biological assessment (BA), you also requested our concurrence that the proposed action will have “no effect” on the California condor (*Gymnogyps californianus*), Mexican spotted owl (*Strix occidentalis lucid*), southwestern willow flycatcher (*Empidonax traillii extimus*), and the candidate species yellow-billed cuckoo (*Coccyzus americanus*). We concur with your determinations on those species.

This biological opinion is based on information provided in the August 20, 2007 intra-service BA, the August 13, 2007, Arizona Game and Fish Department (AGFD) Application for a 10(a)(1)(A) Recovery Permit, AGFD’s October 2007 draft “Black-footed Ferret Reintroduction Master Plan, Espee Ranch, Babbitt Ranches” (Reintroduction Plan), final rules/field work undertaken to reintroduce ferrets at other sites throughout the ferret’s range, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, reintroduction actions and their effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

CONSULTATION HISTORY

- August 7-10, 2007 We reviewed AGFD's 10(a)(1)(A) permit application and participated in a field trip to the Espee Ranch with Scott Larson, U.S. Fish and Wildlife Service South Dakota Ecological Services Office (SDES)
- August 20, 2007 We received the draft BA from SDES
- September 11-12, 2007 We participated in a field trip to the Espee Ranch with representatives of Babbitt Ranches, Inc., AGFD, the Navajo Nation, Region 6, Arizona State Lands Department, and The Nature Conservancy
- September 30, 2007 We submitted comments on the draft BA
- October 1, 2007 We discussed our comments on the draft BA with SDES
- October 19, 2007 We received your request for formal consultation
- October 23, 2007 We discussed the incidental take statement with SDES

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed action is the Fish and Wildlife Service Region 6 (Region 6) issuance of a five-year section 10(a)(1)(A) recovery permit to the AGFD to reintroduce ferrets onto checkerboard private and state trust land located in north-central Arizona (Figure 1). The reintroduction area is defined by the Espee Ranch, which is within the historical range of the ferret but currently contains unoccupied habitat.

The purpose of the action is to determine if a self-sustaining population of ferrets can be established in a Gunnison's prairie dog (*Cynomys gunnisoni*) complex in an area with various rural land-use activities including ongoing cattle ranching, and a history of sylvatic plague. Objectives of this project include determining ferret survival rates, kit production, and reproductive success for a five-year period.

Ferret reintroduction, including releases and management, will be conducted in accordance with annual ferret allocation proposals submitted by the AGFD to Region 6, the Reintroduction Plan (King and Van Pelt 2007), and information from previous releases that may be applicable (AGFD 2007). The Reintroduction Plan, incorporated herein by reference, outlines the goals of the reintroduction program, criteria for releases, and monitoring of ferrets and their habitat to ensure prairie dog numbers are capable of supporting a viable ferret population.

Releases will be conducted using primarily young-of-the-year captive-raised ferrets surplus to the captive breeding population and/or surplus wild-born ferrets translocated from previous

reintroductions, depending on availability. The AGFD currently manages a ferret reintroduction project in the Aubrey Valley and it is likely that some wild-born ferrets from that

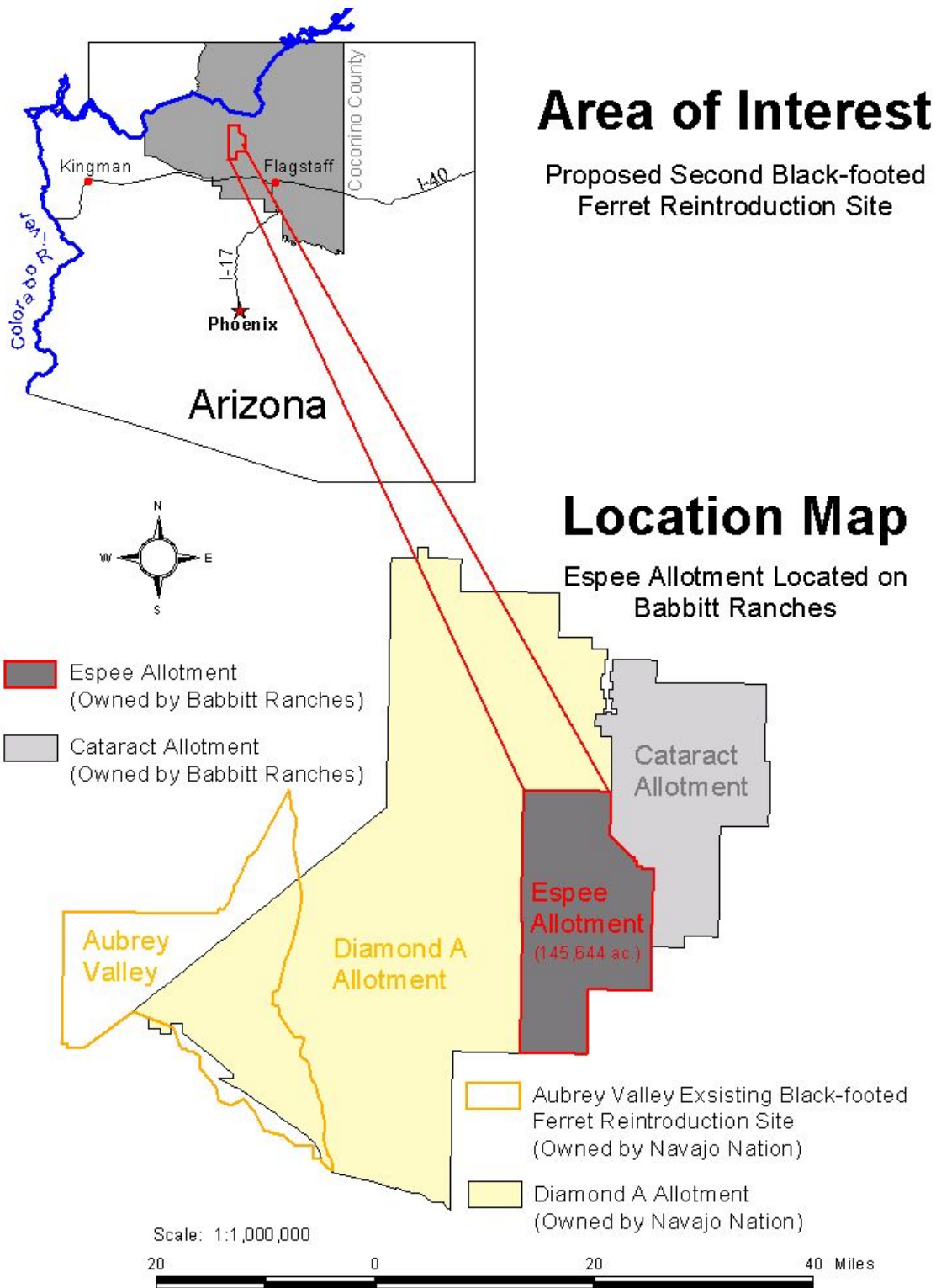


Figure 1. Reintroduction area (Espee Ranch) and adjacent land owners.

location could be translocated to the Espee Ranch. Multiple years of releases will likely be needed to establish a wild population. Gunnison's prairie dog colonies in the reintroduction area comprise about 29,000 acres (Figure 2) and prairie dog burrow densities on portions these colonies are very similar to the Aubrey Valley site where AGFD has had success with producing wild-born ferret litters and with long-term survival (AGFD 2007, King and Van Pelt 2007). The location of the reintroduction area is isolated from other substantial prairie dog complexes; thus it is unlikely that ferrets dispersing from the reintroduction area will find suitable habitat.

To monitor survival and dispersal, all released animals will be marked with transponder chips and some may be fitted with radio transmitters. The AGFD will monitor canine distemper and sylvatic plague in carnivores and sylvatic plague in prairie dogs in the release area.

The Reintroduction Plan also outlines the cooperative management techniques that will be used to ensure that ferret reintroduction and maintenance are compatible with existing and potential land uses. The AGFD, through the annual ferret allocation process and participation on national- and state-level Black-footed Ferret Recovery Implementation Teams, will apply current knowledge of ferret reintroduction, handling techniques, and management.

The Fish and Wildlife Service (FWS) and AGFD have incorporated precautions in the scientific design and protocol for handling and monitoring reintroduced captive-raised and wild-produced ferrets (King and Van Pelt 2007; Roelle et al. 2006). The 10(a)(1)(A) recovery permit will include this protocol for agency personnel or their agents to handle, monitor, and care for reintroduced ferrets and their offspring.

The AGFD intends to manage ferrets on prairie dog colonies wholly within the Espee Ranch, but they will work cooperatively with adjacent landowners as the need arises. If ferrets move off the Espee Ranch and the adjacent landowner wants the ferrets removed, the AGFD, with landowner permission, will attempt to recapture such ferrets. The AESO may assist with those efforts.

This proposal to reintroduce ferrets onto the Espee Ranch is being conducted under a section 10(a)(1)(A) recovery permit. Region 6 will evaluate the success of re-establishing ferrets on the reintroduction area after five years and either renew the permit, allow the permit to lapse, or work with AGFD and other cooperators to determine if another mechanism to continue the program on the Espee Ranch would be more appropriate. For the permit duration, there may be instances when consultation, under section 7 of the Act, is required. The AESO will be responsible for consulting with Federal agencies when a Federal action may affect the reintroduced ferrets.

If the ferret population on the Espee Ranch becomes self-sustaining and surplus ferrets are available, it will be beneficial to translocate a segment of the annual production to other reintroduction sites. This currently happens at two sites at Conata Basin and Cheyenne River, South Dakota, where surplus young are captured annually and moved to other suitable sites.

If conditions become unsuitable at the Espee Ranch, or the reintroduction is terminated for other reasons, ferrets available to the Ranch for reintroduction would be available for release at other authorized reintroduction areas.

Land Ownership

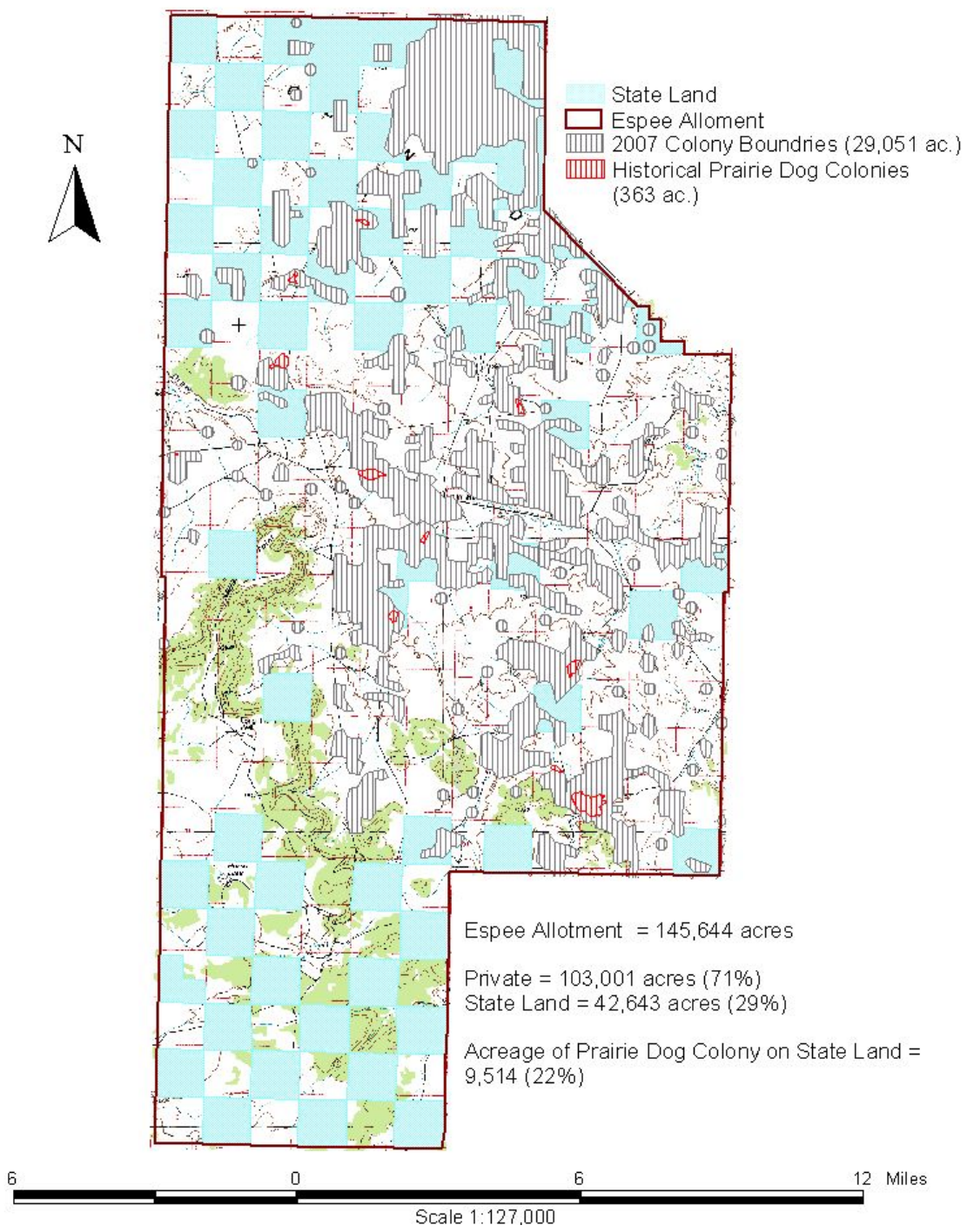


Figure 2. Prairie dog acreages/complexes and land ownership on the Espee Ranch.

The Espee Ranch is a cattle operation on 145,644 acres that includes 103,001 acres of private land and 42,643 acres of state land. Operations include, but are not limited to, fencing, water development and appurtenances, habitat restoration, localized prairie dog control around development, ranch-associated residential development, road improvement and development, and outdoor recreation.

STATUS OF THE SPECIES

The black-footed ferret was listed as endangered in 1967 (32 FR 4001, March 11, 1967) and again in 1970 (35 FR 8491-8498, June 2, 1970) under early endangered species legislation and was “grandfathered” into ESA in 1973. Critical habitat was not designated. Experimental, non-essential populations have been designated for seven reintroduction sites in the U.S. including Aubrey Valley, Arizona (61 FR 11320-11336, March 20, 1996), which is currently the only reintroduction area on a Gunnison’s prairie dog colony. Reintroduction efforts in 2001 in Chihuahua, Mexico, in 2006 on the Lower Brule Indian Reservation, South Dakota and in 2007 on Wind Cave National Park, South Dakota, did not utilize experimental, non-essential designations. The Lower Brule and Wind Cave sites utilized a 10(a)(1)(A) recovery permit.

The ferret is an endangered carnivore with a black face mask, black legs, and a black-tipped tail. It is approximately 18 to 24 inches long and weighs up to 2.5 pounds. The black-footed ferret is the only ferret species native to North America, and may be extinct as a naturally occurring species in the wild (except where it has been reintroduced).

The 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). Ferrets prey primarily on prairie dogs (*Cynomys* spp.) and use their burrows for shelter and denning (Henderson et al. 1969; Hillman and Linder 1973; Forrest et al. 1985). Since ferrets depend almost exclusively on prairie dogs for food and shelter, and ferret range overlaps that of certain prairie dog species (Anderson et al. 1986) with no documentation of ferrets breeding outside of prairie dog colonies, we believe that ferrets were historically endemic to the range of three prairie dog species. There are specimen records of ferrets from the ranges of black-tailed prairie dog (*Cynomys ludovicianus*), white-tailed prairie dog (*Cynomys leucurus*), and Gunnison’s prairie dog (Anderson et al. 1986), which collectively occupied approximately 100 million acres (40 million hectares) of intermontane and prairie grasslands (Biggins et al. 1997, Clark 1986, Ernst et al. 2005). Forrest et al. (1985) concluded that ferret densities at Meeteetse, Wyoming, the last known wild population, were linearly correlated with white-tailed prairie dog colony size, with an average density of one adult ferret per 99-148 acres (40-60 hectares) of occupied prairie dog habitat. Gunnison’s prairie dogs generally occur at higher densities than white-tailed prairie dogs (Knowles 2002), which may mean adult ferret per acre ratio may be greater than in white-tailed colonies, but may higher densities may also facilitate the spread of plague.

The ferret breeds at one year of age, from mid-March through early April; and gestation is about 42-45 days. Litter sizes average about 3.5 (Wilson and Ruff 1999). Juveniles disperse in late summer/early fall. The ferret leads a solitary existence, except for the period when mother and young are together (Forrest et al. 1985). It is a “searcher” predator and is generally nocturnal, appearing above ground at irregular intervals and for irregular durations (Clark et al. 1986).

Based on studies at Meeteetse in the 1980s, natural mortality of ferrets in the wild is high. Population 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 be approximate 78.5 percent. The mean life expectancy of free-ranging ferrets in the Meeteetse population was 0.9 years (Biggins et al. 2005).

The black-footed ferret's close association with prairie dogs was an important factor in its decline. Widespread poisoning of prairie dogs, conversion of prairie dog habitat for agricultural cultivation, and sylvatic plague dramatically reduced prairie dog abundance and distribution by 95 to 98 percent over the last century (FWS 1988). The severe decline of the prairie dog resulted in a near extinction of the ferret, though the ferret's decline also is attributable to other factors, such as secondary poisoning from prairie dog toxicants and 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 (FWS 1988). A wild population was discovered in Mellette County, South Dakota, in 1964 (Henderson et al 1969, Hillman and Linder 1973). This population was studied but disappeared by 1974 (FWS 1988). The last confirmed sighting of a ferret in South Dakota was in 1979 in Todd County. Afterward, some believed that the species was extinct until 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. Eighteen survivors were taken into captivity in 1986-1987 to prevent extinction, seven of which served as founder animals for a captive propagation program aimed at eventually reintroducing the species into suitable habitat in the wild.

Since 1991, there have been 13 black-footed ferret reintroduction projects in 10 distinct areas (Table 1). Successfully reintroduced, self-sustaining populations currently exist at Shirley Basin, Conata Basin, and Cheyenne River Sioux Reservation. Wild animals from Conata Basin and Cheyenne River have been trapped for translocation to other reintroduction sites. Black-footed ferret releases were discontinued at 2 reintroduction sites due to habitat limitations (Badlands National Park) and plague impacts (Ft. Belknap Reservation). Therefore, there are currently 11 active sites in North America containing reintroduced black-footed ferrets that have experienced varying degrees of success. In 2006, three new reintroduction sites were selected in preliminary ferret allocations – Lower Brule Sioux Reservation; Wind Cave National Park, South Dakota and northwestern Kansas. Lower Brule Reservation recently had its first ferret releases. These 3 new sites are much smaller than previous reintroduction sites, but provide an opportunity for: 1) new sites outside the known distribution of plague, 2) cooperative efforts with new partners, and 3) potential refugia in the event of increased plague activity (FWS 2006).

SITE (YEAR INITIATED)	PRAIRIE DOG SPP.	FERRETS RELEASED	MINIMUM FALL POPULATION
Shirley Basin, WY (1991)	Wtpd	224	149
UL Bend NWR, MT (1994)	Btpd	208	18
Badlands NP, SD (1994)	Btpd	175	0
Aubrey Valley, AZ (1996)	Gpd	173	35
Conata Basin, SD (1996)	Btpd	150	245
Ft. Belknap Res., MT (1997)	Btpd	167	0
Coyote Basin, UT (1999)	Wtpd	168	33
Cheyenne River Res., SD (2000)	Btpd	189	112

BLM 40-complex, MT (2001)	Btpd	95	10
Wolf Creek, CO, (2001)	Wtpd	156	13
Janos, Mexico (2001)	Btpd	219	<10
Rosebud Res., SD (2003)	Btpd	69	22
Lower Brule Res., SD (2006)	Btpd	32	Recent release

Table 1. Current status of the black-footed ferret in the wild (from FWS 2006)

If current ferret reintroduction efforts are not successful in the foreseeable future, or if other wild populations of the species are not located, ferrets will not be recovered in the wild as directed by the Act and outlined in the Black-Footed Ferret Recovery Plan (FWS 1988).

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

A. STATUS OF THE SPECIES IN THE ACTION AREA

The Espee Ranch is within the range of the Gunnison's prairie dog, and ferrets are believed to have occurred throughout the Gunnison's range (FWS 1988), which includes parts of Arizona, Colorado, New Mexico, and Utah. Four specimens of ferrets were collected in Arizona; the most recent (and the most recent documented occurrence) was from Government Prairie near Parks in 1931, about 40 miles southeast of the Espee Ranch. Ferrets do not currently occur in the action area (King and Van Pelt 2007). The closest location of reintroduced ferrets is Aubrey Valley, 20 miles from the Espee Ranch.

Surveys of potential ferret habitat in Arizona, outside tribal lands, indicated the Espee Ranch area ranked among the best habitat in the early 1990's (Van Pelt 1995). Prairie dog colonies recently mapped on the Espee Ranch occupy about 29,000 acres (Figure 2), which is about 20% of the acreage of the allotment, and prairie dog densities are comparable to densities at the Aubrey Valley ferret reintroduction site (AGFD 2007). Although there have been incidents of sylvatic plague in this area of northern Arizona (Van Pelt 1995), recent carnivore sampling and prairie dog mapping do not indicate recent epizootic outbreaks.

B. FACTORS AFFECTING THE SPECIES' ENVIRONMENT IN THE ACTION AREA

Although ferrets do not currently occur in the action area, there are activities occurring that affect what we consider to be suitable ferret habitat in the action area. These activities include cattle ranching, prairie dog hunting, predator hunting/trapping, roads, a gravel pit, and various relatively small-scale development (e.g., electric transmission line). Toxicants were historically used in the Espee Ranch for prairie dog control but have not been used since the early to middle 1900's (AGFD 2007).

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

All ferret releases on the Espee Ranch will be undertaken through coordination with the FWS Black-Footed Ferret Coordinator who will make a determination that such ferrets are surplus to those 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 six geographically separated facilities, which protects against the threat of extinction from catastrophic events. Approximately 200 to 300 ferret kits are produced each year in excess of numbers needed to maintain the captive population. Animals selected from the captive ferret population for reintroduction purposes will be as genetically redundant with the captive population as possible. Therefore, loss of reintroduced animals in this experimental population will not significantly impact the goal of preserving genetic diversity of the species or adversely affect any aspect of the captive population's viability.

Because this proposed action will not occur near known wild populations of ferrets, the action is not expected to affect any wild populations of the species. Ferrets that may be translocated from existing ferret reintroduction sites, such as Aubrey Valley or Conata Basin in South Dakota, will come from "nonessential experimental" populations. Nevertheless, the population at donor sites will be evaluated to ensure that removal of individuals does not adversely affect those populations. We do not expect ferrets to move between the Espee Ranch and the Aubrey Valley. The Aubrey Valley is separated from the Espee Ranch by 20 miles and over 4.5 miles (7 kilometers) of steep and rocky terrain in the pinon-juniper vegetation type that comprise the Aubrey Cliffs, which is unsuitable for prairie dogs and ferrets. The longest nightly moves observed for ferrets were about seven kilometers (Biggins and Fagerstone 1984; Richardson et al.1987).

Because primarily young-of-the-year ferrets will be used in the reintroduction, we can establish a baseline for comparison with the modeled juvenile mortality rates of about 78.5 percent in a stable population (Harris et al 1989). For captive-raised ferrets, it would be reasonable to expect higher juvenile mortality 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, and have not been taught to hunt or avoid predators as well as wild-born ferrets. We expect that translocated wild-born ferrets would experience a mortality rate closer to the modeled rate.

The AESO anticipates that there may be high mortality among reintroduced ferrets in the reintroduction area, mainly due to natural causes such as predation, but some mortality may result from monitoring, trapping, handling, marking, and processing of the released ferrets; vehicle collisions; or normal ranching. The AESO believes that mortality due to natural causes

in the release area will not be greater than the reintroduced ferret population's ability to replace lost individuals through reproduction. Conversely, since there are no substantive prairie dog complexes close to the Espee Ranch it is likely ferrets that leave the release area will be lost to predation because of the absence of cover from a prairie dog borrow system or to starvation due to the lack of prairie dog prey.

Other ferret release sites have experienced occasional ferret deaths due to handling and monitoring mainly when using anesthetics to mark animals or apply medicines and vaccines. Such losses also could occur with this reintroduction effort. Marking and monitoring may also adversely affect ferrets by harassing them through capture and handling. Region 6's proposal requires the AGFD to use the precautions contained in the scientific design and protocol for handling and monitoring reintroduced ferrets outlined in Roelle et al (2006) and techniques incorporated in the Reintroduction Plan (King and Van Pelt 2007) to reduce the adverse 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 AGFD or FWS employees during this proposed project are expected to be minimal. Few ferrets were injured, with 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 seven States since 1991.

Although other rare species have been reintroduced into the wild (red wolf, California condor, and Mexican gray wolf), no fully tested biological protocol is available to ensure reintroduction success of ferrets returned to the wild. However, the reintroduction techniques used at Aubrey Valley, Arizona: Conata Basin, Cheyenne River Sioux Reservation, and the Rosebud Sioux Reservation in South Dakota; and Shirley Basin, Wyoming, have proven successful when ferret releases have occurred on large prairie dog towns. Under this proposal, ferrets will be released on a prairie dog complex with challenges similar to Aubrey Valley; with the efforts of the AGFD these challenges were overcome and that site currently produces ferret litters. The AESO believes that the reintroduction protocols and management system outlined in the Reintroduction Plan (King and Van Pelt 2007) and allocation request (Van Pelt and King 2007) have addressed both the needs of the ferret and the human community in the reintroduction area. This system should provide the best opportunity for success, but we recognize that due to the possible effects of plague, this reintroduction attempt may be more tenuous than sites undertaken in plague-free areas. This reintroduction effort may provide important answers to questions regarding ferret reintroductions into large-scale Gunnison's prairie dog colonies with a history of plague.

Normal ranching activities adjacent to the Espee Ranch may include control of prairie dogs. Even though there are no extensive prairie dog colonies adjacent to the reintroduction site, prairie dogs are noted for their ability to expand colonies, especially in times of drought. Therefore, we anticipate that normal ranching operations outside the reintroduction area could involve prairie dog control, including the use of toxicants or shooting. Additionally, at other reintroduction sites ranchers' pet dogs have been known to catch ferrets, and ferrets have been killed by vehicle collisions. Dogs can also act as agents for the spread of canine distemper. These normal ranching activities may result in adverse effects to individual ferrets but are not expected to reach a level that would compromise the reintroduction effort.

Some prairie dog shooting by recreational hunters is likely to occur on prairie dog colonies both on and off the Espee Ranch lands. Shooting within the Espee Ranch is not expected to be extensive because such shooting is largely associated with public roads and trails, which are few in number on the Ranch. Prairie dog shooting is currently allowed in Aubrey Valley and has not significantly impacted overall prairie dog densities. Due to its remote location, shooting at the Espee Ranch is expected to be considerably less than that which occurs in Aubrey Valley. Arizona imposes a closed season on prairie dog shooting from April 1 to June 15. The AGFD will monitor the shooting levels to determine if additional restrictions are necessary.

Region 6's action to permit the reintroduction of ferrets to the Espee Ranch may result in adverse effects to individual ferrets that disperse or range off the Espee Ranch to adjacent lands that are not managed for ferret conservation. Ferrets that move onto adjacent lands will face decreased survival due to lack of adequate prey and shelter, and predation. We expect that most if not all ferrets that leave the Espee Ranch will die. Therefore, once habitat on the Espee Ranch is saturated with ferrets, it will be useful to remove a segment of the annual production and make those ferrets available for other reintroduction sites.

If a ferret is known to have moved off the Espee Ranch lands and the affected landowner wants it removed from their property, the AGFD will work with that landowner to recapture such ferrets and return them to either the Espee Ranch or to other sites at the direction of the FWS Black-Footed Ferret Coordinator. This action will reduce the likelihood that dispersing ferrets would be lost.

Substantial benefits of this action are the development of techniques and knowledge that might be attained from successfully reintroducing ferrets onto an operating cattle ranch and in an area with a history of plague. One of the difficulties recognized with ferret reintroductions involve the fairly large prairie dog acreages (10,000 acres) that have been suggested as needed to undertake a ferret reintroduction (FWS 1988). Few remaining prairie dog complexes exist of the size on Espee Ranch and with so few jurisdictional entities controlling an area. The Espee Ranch represents one of the last large-scale known complexes where ferrets have yet to be reintroduced. Numerous reintroduction attempts have been made on smaller complexes on which the efforts have failed, believed largely due to plague or to too much inter-colony distance making ferret movement highly susceptible to predation (Roelle et al 2006). The Espee Ranch provides an opportunity to evaluate a ferret reintroduction on a large-scale prairie dog complex on an operating cattle ranch that may have occasional plague epizootics.

Therefore, this reintroduction effort at the Espee Ranch is an effort to create a successful ferret reintroduction site on a large site with attributes similar to Shirley Basin, Wyoming, where ferrets have experienced considerable expansion in white-tailed prairie dog colonies even though plague has been known to occasionally erupt in the colonies. 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 a portion of the ferret's historical range.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future

Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Ranching and rural lifestyles along with some development are expected to continue to dominate private lands adjacent to the Espee Ranch for the foreseeable future. Normal ranching operations and hunting are a part of that lifestyle and are expected to continue. Some prairie dog shooting is likely to occur on prairie dog colonies both on and off the Espee Ranch lands. Shooting within the Espee Ranch is not expected to be extensive and will be evaluated by the AGFD to determine if changes are appropriate.

CONCLUSION

After reviewing the current status of the black-footed ferret, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the AESO's biological opinion that the reintroduction of ferrets on the Espee Ranch, as proposed, is not likely to jeopardize the continued existence of the ferret.

We base this conclusion on the following:

- Ferrets that will be used in this effort are not essential to the survival of the species.
- Precautionary measures will be implemented to reduce losses within the reintroduced population.
- The overall effect of the proposed action will be beneficial, by increasing knowledge about ferret conservation and potentially establishing a new self-sustaining population of ferrets.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR 17.3) as intentional or negligent 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. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. 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 to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by Region 6 so that they become binding conditions of any grant or permit issued to the AGFD, as appropriate, for the exemption in section 7(o)(2) to apply. Region 6 has a continuing duty to regulate the activity covered by this incidental take statement. If Region 6 (1) fails to assume and implement the terms and conditions or (2) fails to require the AGFD 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 section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the AGFD must report the progress of the action and its impact on the species to Region 6 as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The FWS, along with the AGFD and other partners, have reviewed land uses within the Espee Ranch. We believe these uses are compatible with the objectives of the proposed ferret reintroduction but that some incidental take could still occur. Based on information from other reintroduction sites, we anticipate a low level of incidental take, including injury or death, due to land-use practices including ranching, recreation, or vehicle collisions. It is 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.

We also reviewed land uses that occur off Espee Ranch lands that may subject ferrets to take. In addition to those practices identified above, reintroduced ferrets that move off Espee Ranch lands may also be subjected to incidental take from other activities including, but not limited to, prairie dog control or development of ranch lands into other enterprises, for the duration of this permitted activity. Such anticipated take is an indirect effect of the proposed action, is included in this incidental take statement, and therefore will not be a violation of the Act. Accordingly, adjacent landowners will not need individual incidental take permits for otherwise legal activities that may unintentionally take ferrets that leave the Espee Ranch.

The incidental take level described herein covers accidental or unintentional take in the form of harm (injury or death) and harassment (disturbance) caused by otherwise legal human activities within Espee Ranch and lands outside the Ranch.

We anticipate that all ferrets that move off the Espee Ranch lands will be lost due to natural causes (e.g., predation or starvation) or incidental take. Based on the lack of habitat outside the Espee Ranch, we expect most off-ranch loss to be due to natural causes. Ferret movement off the Espee Ranch is most likely to happen as the habitat within the ranch becomes occupied by ferrets. With landowner permission, the AGFD will attempt to recapture these ferrets and relocate them to the Ranch or other suitable areas determined by the FWS's National Black-Footed Ferret Coordinator.

We anticipate that take of ferrets may occur through authorized agency activities both on and off the Espee Ranch. Within the Espee Ranch take will occur through implementation of the Reintroduction Plan, which includes spotlighting surveys, pursuit, trapping, marking, examination, handling, and transport of ferrets. As described above, if ferrets are detected off the ranch, similar activities may occur off the ranch in an attempt to remove those ferrets. In addition, those ferrets may be translocated to another reintroduction area. Potentially, every

ferret on and off the Espee Ranch will be subject to take in the form of harassment through one or more of the above-described agency activities. Agency activities may also result in the injury or death of ferrets. However, we anticipate the rate of death and injury to be very low based on implementation of established monitoring and processing protocols and information gathered from other sites.

Based on data from studies of ferrets in the wild at Meeteetse, Wyoming, data from other reintroduction sites, and population modeling (see administrative record), the AESO estimates the annual incidental take level from human-caused mortality will be up to 12 percent of the estimated fall-monitored ferret population in the Espee Ranch. 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 in 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 the injury and death below the 12 percent level.

The AESO anticipates that the following take of ferrets could occur as a result of the proposed action:

1. No more than 12% of the current year's estimated fall ferret population will be killed or wounded as a result of normal land-use practices and agency activities within the Espee Ranch. If observed injury or mortality of 6% of the estimated fall ferret population is reached, the AESO and Region 6 will evaluate whether reinitiation of consultation is appropriate. We are assuming a detection ratio of observed:actual number of ferrets of 50%.
2. No more than an additional 5% of the current year's fall ferret production will be reported as killed or wounded as a result of normal land-use practices off the Espee Ranch.
3. All ferrets in the release area and off the Espee Ranch are likely to be non-lethally taken through harassment (spotlighting, marking, examining, handling, transporting), pursuit, trapping and/or capturing.

EFFECT OF THE TAKE

In this biological opinion, the AESO determines that this level of anticipated take is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, Region 6 must comply with the following reasonable and prudent measures (1 and 2) and their implementing terms and conditions (lettered items) that also outline required reporting/monitoring requirements. These reasonable and prudent measures and terms and conditions are non-discretionary.

We believe prairie dog colonies off Espee Ranch lands are not necessary to the success of the Espee Ranch ferret reintroduction efforts; therefore, management of prairie dogs or other activities on those lands that may result in incidental take of ferrets are not restricted by this action.

The following reasonable and prudent measures, and implementing terms and conditions, are necessary and appropriate to minimize take of ferrets:

1. Region 6 shall condition the 10(a)(1)(A) permit to maximize the probability of success of ferret reintroduction by allowing for adaptive management, implementing up-to-date scientific procedures, providing public education, and requiring that AGFD coordinate with neighboring land users.
 - A. Region 6 shall require the AGFD to implement an information and education program that provides the public and agency personnel in the affected counties in Arizona and the region with information about ferret recovery efforts and to seek cooperation in reporting the taking or occurrence of ferrets in or near the area. This information program shall include precautions and care that should be taken in handling sick or injured ferrets. This action will enhance effective treatment and care of injured ferrets and, when dead ferrets are located, to ensure proper preservation of ferret remains. The program should inform the finder or investigator that he or she has the responsibility to ensure that evidence associated with the specimen is preserved.
 - B. Region 6 shall ensure that the AGFD will work with Babbitt Ranches to seek their assistance in designing improved management strategies for attaining the goals and objectives of the proposed action.
 - C. Region 6 shall require the AGFD, if requested by the landowner, to attempt to capture and remove ferrets from properties adjacent to Espee Ranch lands.
 - D. Region 6 shall require that, as appropriate, emerging strategies and contingencies to minimize unnecessary harm to ferrets shall be cooperatively added to the Reintroduction Plan and implemented by the AGFD and cooperating agencies or their agents.
 - E. Region 6 shall require that, as appropriate, emerging scientific procedures for ferret management shall be cooperatively added to the Reintroduction Plan and implemented by the AGFD and cooperating agencies or their agents.
 - F. Region 6 shall require that the AGFD coordinate with land-users adjacent to the Espee Ranch to seek their assistance in designing improved management strategies for attaining the goals and objectives of the proposed action.
2. Region 6 shall ensure that the information to evaluate the success of the reintroduction is accomplished via appropriate monitoring and reporting measures.
 - A. Region 6 shall require that the AGFD reintroduction area supervisor/manager assign a primary ferret program contact for agencies, private landowners, and public users in the affected area; submit follow-up reports of injured or killed ferrets; and immediately notify the FWS's Law Enforcement Office as described below in the "Disposition of Dead or Injured Listed Species" section.

B. Region 6 shall require that the AGFD, in conjunction with the FWS and cooperating agencies, document the actual instances or the potential of ongoing activities or circumstances that may present unanticipated hazards to ferrets.

C. Region 6 shall require AGFD to record and manage information on ferret mortalities as described in the section 10(a)(1)(A) recovery permit.

Review requirement: The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. Region 6 must immediately provide an explanation of the causes of the taking and review with the AESO the need for possible modification of the reasonable and prudent measures.

If the incidental take level of 12 percent of the entire ferret population (as determined by fall annual monitoring) attributable to the proposed action is reached in any year within the Espee Ranch, the entire reintroduction project will be reevaluated in coordination with the AESO to determine whether better management measures are needed or could be undertaken to reduce ferret mortality from human factors and to determine if section 7 consultation should be reinitiated.

Disposition of Dead or Injured Listed Species

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office (2450 W. Broadway Rd, Suite 113, Mesa, Arizona, 85202, telephone: 480/967-7900) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act 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.

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

2. We recommend the AGFD continue to participate in the Statewide Black-footed Ferret Recovery Implementation Team and the National Black-footed Ferret Recovery Implementation Team.

In order for the AESO to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the AESO requests notification of the implementation of any conservation recommendations. This can occur during annual Black-footed Ferret Recovery Implementation Team meetings or through other methods at the AGFD's discretion.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The AESO appreciates your efforts to identify and minimize effects to listed species from this project. For further information please contact John Nystedt (x104) or Brenda Smith (x101) at (928) 226-0614 of our Flagstaff Suboffice. Please refer to the consultation number 22410-2008-F-0022 in future correspondence concerning this project.

/s/ Steven L. Spangle

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
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 Chairperson, Havasupai Tribe, Peach Springs, AZ
 (Attn: Kerry Christensen, Natural Resources Department)
 Chairperson, Hualapai Tribe, Peach Springs, AZ (Attn: Clifton Siyuja, Wildlife Department)
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