

Programmatic Southern Idaho Ground Squirrel Candidate Conservation Agreement with Assurances

I. Authority and Purpose

Sections 2, 7, and 10 of the Endangered Species Act of 1973, as amended 16 U.S.C §§ 1531-1544 (ESA) allow the U.S. Fish and Wildlife Service (Service) to enter into this Agreement. Section 2 of the ESA states that encouraging parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is a key to safeguarding the nation's heritage in fish, wildlife, and plants. Section 7 of the ESA requires the Service to review programs that it administers and to utilize such programs in furtherance of the purposes of the ESA. By entering into this Agreement, the Service is utilizing its Candidate Conservation Programs to further the conservation of the Nation's fish, wildlife, and plants. Lastly, section 10(a) of the ESA authorizes the issuance of permits to "enhance the survival" of a listed species.

The parties to this Agreement are the Idaho Department of Fish and Game (IDFG), the Idaho Governor's Office of Species Conservation (OSC), and the Service ("the agencies"). The purpose of this Agreement is to encourage voluntary implementation of proactive conservation measures by non-Federal landowners for southern Idaho ground squirrels (*Spermophilus brunneus endemicus*) in Adams, Washington, Payette, and Gem Counties, Idaho, in support of the agencies' ongoing efforts to conserve the species. The conservation measures would be implemented by the agencies and participating non-Federal landowners (Participating Landowners) and would generally consist of southern Idaho ground squirrel population and habitat protection and enhancement measures. Consistent with the Service's "Candidate Conservation Agreement with Assurances Final Policy" (64 FR 32726), the conservation goal of this Agreement is to protect and enhance southern Idaho ground squirrel habitat and populations on non-Federal lands within the historic range of the species in western Idaho. The conservation goal will be met by giving non-Federal landowners incentives to implement conservation measures through funding and regulatory certainty concerning land use restrictions that might otherwise apply should southern Idaho ground squirrels become listed under the ESA.

This Agreement is a programmatic plan covering non-Federal lands within the project area in Adams, Washington, Payette, and Gem Counties, Idaho (Figure 1). This area is approximately 1,051,752 acres in size. Upon approval of the Agreement, the IDFG would be issued a section 10(a)(1)(A) permit by the Service. Individual, Participating Landowners would be formally included under the permit and Agreement upon approval of a Site-Specific Ground Squirrel Conservation Plan (site-specific plan) for their land by the agencies, and completion of a Certificate of Inclusion. A template site-specific plan is attached as Appendix A and a Certificate of Inclusion is attached as Appendix B. The section 10(a)(1)(A) permit would authorize incidental take of southern Idaho ground squirrels by Participating Landowners, should it occur, as long as the permit conditions, including implementation of the Agreement and site-specific plan, are followed. Incidental take would be authorized for agricultural and recreational activities, including crop cultivation and harvesting, livestock grazing and production, farm equipment operation, hunting, fishing, dog training, camping, hiking, and use of recreational vehicles on and off established roads. Consistent with Regional Service policy, incidental take of southern Idaho ground squirrels as a result of pesticide use would not be authorized under the permit. The Agreement would constitute the Candidate Conservation Agreement with Assurances consistent

with the Service's final policy (Service and NMFS 1999). The permit would include ESA regulatory assurances set forth at 50 CFR §§ 17.22(d)(5).

The conservation measures under the Agreement are intended to reduce all threats to the southern Idaho ground squirrel that are controllable by Participating Landowners within the project area. Each site-specific plan will identify in detail how the applicable conservation measures would be implemented on an individual landowner's property considering baseline ground squirrel populations and habitat conditions, and the landowner's planned land use activities. For a Participating Landowner's site-specific plan to be approved, the site-specific plan must contain all conservation measures identified in the Agreement that are within the Participating Landowner's control.

In accordance with the Agreement, site-specific protective measures will be identified and implemented by the enrolled landowners and the agencies at each southern Idaho ground squirrel occupied site and reintroduction/translocation sites. Enrolled landowners and the agencies will cooperate in good faith to develop adequate site-specific southern Idaho ground squirrel protection measures. If the parties cannot reach agreement on these measures, and the Service determines the measures will not meet intended conservation benefits, the enrolled landowners will be found to not be in compliance with the conditions of the permit and the Service will retain the authority to immediately suspend the permit at its sole discretion, consistent with current regulations described in 50 CFR 13.27(a).

The Agreement has two general biological objectives intended to conserve southern Idaho ground squirrels. First, habitat enhancement or protection measures are intended to increase habitat quality and quantity or maintain good quality ground squirrel habitat. Second, population management through protection of individual ground squirrels and ground squirrel populations are intended to reduce direct and indirect ground squirrel mortality, and if appropriate, reintroduce/translocate ground squirrels to suitable, unoccupied habitat. The Agreement is intended to meet these biological objectives while also meeting the specific land use objectives of each participating landowner. Combining the biological and land use objectives will be the basis for specific conservation measures identified in each site-specific plan. The biological goal for success of the Agreement is the adequate protection of all occupied southern Idaho ground squirrel sites on the Participating Landowner's land enrolled under the Agreement and permit.

II. Background and Current Status of Southern Idaho Ground Squirrels

There are two distinct types of Idaho ground squirrels, and the current scientific nomenclature recognizes them as subspecies; the southern Idaho ground squirrel and the northern Idaho ground squirrel (*Spermophilus brunneus brunneus*) (Yensen 1991). Yensen (1991) thought that the two were close to species-level separation, and subsequent work has indicated that they could be validated as separate species (Gill and Yensen 1992, Gavin *et al.* 1999). The southern Idaho ground squirrel lives on lower elevation, paler colored soils formed by granitic sands and clays from the Boise Mountains while the northern Idaho ground squirrel is found at higher elevation areas with shallow reddish parent soils of basaltic origin. Marked differences in pelage coloration

are related to soil color with the southern Idaho ground squirrel being noticeably paler (Yensen 1985, Yensen 1991).

Life History

The southern Idaho ground squirrel spends much of its time underground. Adults emerge from seasonal torpor in late January or early February, depending on elevation and microhabitat conditions (Yensen and Sherman 1997). As with other small-eared ground squirrels in the northwest, the adults have a short active season above ground of 4 to 5 months, which is spent reproducing and foraging before the long seasonal torpor begins (Moroz *et al.* 1995, Yensen and Sherman 1997, Sherman 2000). Females are bred within the first few days of emerging from torpor. Young are born about three weeks later and emerge from the nest burrow in about 50 days. All age groups of the southern Idaho ground squirrel cease above ground activity by late June or early July to begin torpor.

Southern Idaho ground squirrels are found in the lower elevation shrub/steppe habitat of the Weiser River Basin. Their habitat is typified by rolling hills, basins and flats composed of lacustrine and fluvial sediments between 2,200-3,200 ft elevations. They inhabit an area once dominated by big sagebrush (*Artemisia tridentata*), bitterbrush (*Purshia tridentata*), and a variety of native forbs and bunchgrasses (Yensen 1991). Prescott and Yensen (1999) suggested that these ground squirrels prefer areas with a high percentage of native cover types, especially areas with big sage; however, some non-native features may enhance their survival as well, specifically alfalfa fields, haystacks or fence lines. The predominant vegetation in these areas was formerly big sagebrush-bunchgrass-forb association, with bitterbrush found in the sandier locations (Yensen 2000). The big sagebrush-bunchgrass-forb complex has dramatically changed so that exotic annuals and other non-native species have replaced much of the former vegetative composition.

A high quality diet of green vegetation and seeds is required to store enough fat to survive long months of torpor. Though dietary requirements of the southern Idaho ground squirrel have not been studied extensively (Yensen and Sherman 1997), they are likely to be similar to those of other ground squirrels in Idaho (Dyni and Yensen 1996). Southern Idaho ground squirrels are thought to prefer native species of perennial grasses and forbs that provide a reliable source of nutritious forage (Yensen 1999, Prescott and Yensen 1999, Yensen *et al.* 1992). However, currently the site known to contain the largest population of southern Idaho ground squirrels is the Rolling Hills Golf Course in Weiser where they apparently do well on irrigated lawn grasses. Prescott and Yensen (1999) found that occupied southern Idaho ground squirrel sites commonly were associated with human-created habitat features. It appears as though ground squirrels can successfully inhabit non-native habitats if nutrition and other requirements can be met.

Historical and Current Range

As of 2001, the known range of the southern Idaho ground squirrel occurs within an approximately 518,000-acre area extending from Emmett, Idaho, northwest to Weiser, Idaho and the surrounding area of Squaw Butte, Midvale Hill and Henley Basin in Gem, Payette and Washington Counties (Yensen 1991). Its range is bounded on the south by the Payette River, on

the west by the Snake River and on the northeast by lava flows with little soil development (Yensen 1991).

The historical range of southern Idaho ground squirrels is estimated to have formerly extended farther north as far as Goodrich, Idaho in Adams County (Yensen 1980, Yensen 1991); however, recent studies have shown a severe decline in the number of population sites in the northern part of their range. For example, the only known historical site in Adams County was not occupied in 1999 (Yensen 1999, Yensen 2000), and southern Idaho ground squirrels may currently be extinct in Adams County (Yensen 2001).

The population of southern Idaho ground squirrels was estimated at around 40,000 in 1985 (Yensen 1999). Surveys strongly suggest a precipitous decline in squirrel populations since the mid 1980s. A 1999 survey of 145 of the 180 known historical population sites indicated that only 53 sites (37%) were still occupied (Yensen 1999). Furthermore, 52 of the 53 occupied sites had what Yensen (1999) characterized as "remarkably low levels of activity". The percentage of active sites for southern Idaho ground squirrels decreases from south to north; 58% of the sites in Gem County still had squirrels (Yensen 1999). The percentage dropped to 46% in Payette County and decreased to 27% of the sites in Washington County. Ground squirrels were seen at only 19 of the occupied sites despite 28 person-days of careful surveys of 145 sites. Furthermore, at 18 of the occupied sites only a single individual was seen, fecal pellets were found at 13 sites and vocalizations were heard at only one site. The only population site in the study with a high level of squirrel activity was at the golf course in Weiser (Yensen 1999).

In the spring of 2000, Yensen (2000) surveyed the remaining 35 historical sites that had not been surveyed in 1999. From March-June 2000, the IDFG surveyed 93 exchange parcels of Bureau of Bureau of Land Management (BLM) lands and about 30 mi² of contiguous rangeland for southern Idaho ground squirrels (Yensen and Haak 2000). As a result of surveys conducted in 1999 and 2000, a total of 219 sites (occupied and unoccupied) were identified (Yensen 2000). Of the 219 sites, 98 (44 %) were active sites in the year 2000. Activity was not confirmed or remained undetermined at the other 121 (56%) sites. Ground squirrel activity was low at all the sites surveyed. For comparison, in the early 1980s, several thousand individuals would likely have been observed during a survey throughout the range of the southern Idaho ground squirrel (Yensen 2000). Of the 219 sites, 85% (186) were located on private lands, mostly ranches and farms, 12% (26) were under federal management by the BLM, and 3% (7) were on lands managed by the Idaho Department of Lands. These data do not represent a census of southern Idaho ground squirrels because they include only a small portion of the species' range.

A total of 76 new southern Idaho ground squirrel sites was identified during surveys in 2001 (Yensen 2001), and another 7 sites were identified during surveys in 2003 (Yensen 2003). The total number of known sites for the species range-wide is currently 302. However, consistent with results from surveys in recent years, the number of individual ground squirrels at each newly-identified site is very low. A number of additional sites were identified in 2003 that may support southern Idaho ground squirrels (sign was found but individuals were not detected); presence/absence surveys will be conducted at these sites during likely periods of peak ground

squirrel activity in 2004 (Yensen 2003). Yensen (2001) estimated the current range-wide population of southern Idaho ground squirrels to be from 2,000-4,500 individuals.

In May 2003, IDFG personnel surveyed the Rolling Hills Golf Course and the Weiser Cemetery, in Weiser for southern Idaho ground squirrels (IDFG 2003). Up to 26 individuals were observed in seven locations in the Rolling Hills Golf Course, and up to 38 individuals were observed in seven locations in the Weiser Cemetery. It is suspected that both locations support higher numbers of ground squirrels than were observed during the May surveys. Burrows were not enumerated at either location, however, 40 burrows were counted in a 200-meter section along Indian Head Road, which runs between the golf course and the cemetery. One ground squirrel was observed crossing Indian Head Road from the golf course to the cemetery. Ground squirrels were also observed moving between the cemetery grounds and adjacent fields to the west and south.

The IDFG also surveyed land near Emmett and Sweet, Idaho for ground squirrels in 2003. Biologists conducted southern Idaho ground squirrel surveys on BLM land north of Emmett during May and June 2003 (IDFG 2003). A combination of hiking and motorcycles was used to conduct the surveys; a total of 133 ground squirrels were observed at 23 locations. Surveys conducted during June 2003, on private land near Sweet detected 45 individuals (IDFG 2003). Habitat on this parcel is a mixture of irrigated and mowed grass, landscaping, and un-mowed areas. Ground squirrels may also occur on adjacent properties near Sweet; IDFG and Service will attempt to survey these areas in 2005.

Demography and Dispersal Investigations

Researchers from Boise State University and Albertson College of Idaho began a study of the status and potential regulating factors of the southern Idaho ground squirrel population in 2002 (Barrett *et al.* 2003). Seven sub-populations located in Gem, Payette, and Washington counties were chosen to serve as study sites. The number of ground squirrels captured at each study site varied from 17 to 121 individuals in 2002, and from 72 to 154 in 2003. Trapping began earlier in 2003 than it did in 2002. The estimated population sizes of breeding individuals ranged from 16 to 74 in 2002, and from 23 to 56 in 2003. The estimated juvenile population ranged from 45 to 186 in 2002, and from 93 to 199 in 2003. Average productivity in 2002 was estimated at 6.7 juveniles per female, and at 5.8 juveniles per female in 2003.

Researchers from Boise State University and Albertson College of Idaho began a study of the dispersal of yearling and juvenile southern Idaho ground squirrels, as well as factors that maximize success in translocating ground squirrels in 2003 (Panek *et al.* 2003). In the first year of tracking ground squirrel movements, the average yearling movements were approximately 197 ft (60m) for males and 240 ft (73m) for females. None of the yearlings dispersed from the study population. Out of 34 juvenile ground squirrels that were radio-collared, 6 (14%) dispersed from the study area. Gender was evenly split among the dispersers: 3 males and 3 females. All juveniles dispersed into areas currently occupied by ground squirrels. In addition, 11 of the collared squirrels dispersed within the population; distances ranged from 302 to 958 ft (92 to 292m).

Researchers also investigated translocation of southern Idaho ground squirrels in 2003 (Panek *et al.* 2003). Two groups of squirrels were translocated: one group was taken from the Van Deussen Ranch and transferred to property owned by Soulen Livestock Company, and the second group was taken from Zoo Boise and transferred to BLM land. Most of the ground squirrels that were transferred to the Soulen Livestock land moved approximately 300m away from the release site and many did not survive until the end of the 2003 active season. Results of this portion of the experiment indicate that additional factors not considered during the 2003 field season are influencing the success of ground squirrel translocation efforts. Many of the juveniles that were transferred from Zoo Boise remained in the area in which they were released.

Threats

Habitat deterioration is a threat to the species, and appears to be a leading cause of the apparent population decline of southern Idaho ground squirrels (Yensen 1999). In recent decades, invasion of exotic annuals has changed the species composition of vegetation and has altered the fire regime in a perpetuating cycle throughout much of the range of these squirrels (Whisenant 1990). Cheat grass (*Bromus tectorum*) and medusahead rye (*Taeniatherium asperum*) are of limited forage value to the ground squirrels, have highly variable annual productivity, and now dominate much of the squirrels' range (Yensen 1999, Yensen *et al.* 1992). Diversity of native forbs and grasses decreases where these exotics take over, limiting the dietary diversity available to ground squirrels (Yensen 1999). Without the reliable and nutritious diet provided by native grasses and forbs, these ground squirrels must rely on the highly variable productivity and nutritional value of exotic annuals. In years of low rainfall, low productivity of these exotics could prevent squirrels from storing enough fat to overwinter. Yensen *et al.* (1992) showed that populations of Paiute ground squirrels (*Spermophilus mollis*) were highly unstable and prone to extinction in areas invaded by exotic annuals.

Although deterioration of native shrub-steppe habitat and invasion of exotic annual grasses has likely had a negative effect on southern Idaho ground squirrels, the species does use non-native vegetation and alternate habitats successfully. Many ground squirrel populations occur where human-related land use impacts are greatest, for example, around ranch corrals, fencelines, and equipment storage areas. Currently the largest population of southern Idaho ground squirrels is located on and adjacent to the Rolling Hills Golf Course and the Weiser Cemetery where the areas are generally dominated by irrigated lawn grasses. In the spring of 2003, a population of southern Idaho ground squirrels was also documented at the public golf course in Payette, Idaho. Prescott and Yensen (1999) found that sites occupied by southern Idaho ground squirrels had significantly more big sagebrush (*Artemisia tridentata*) than unoccupied sites. Prescott and Yensen (1999) also observed all occupied southern Idaho ground squirrels sites had at least one of the following: fences, haystacks, sagebrush, or nearby houses, and concluded that ground squirrels have a better chance of survival when one or more of these characteristics is present at a site. Ground squirrels may have used areas with sagebrush because cover of perennial vegetation is likely greater in these areas and/or sagebrush cover probably provides more hiding cover from predators (Prescott and Yensen 1999). Ground squirrels may successfully use the human-related habitat features discussed above, such as fence lines and alfalfa fields, due to the cover these areas

provide to avoid predators and high quality forage created by hayfields and the availability of nutritious early successional plant species growing at disturbed sites.

Recreational shooting and other direct killing of southern Idaho ground squirrels is common and is a notable mortality factor of southern Idaho ground squirrels, although no studies have been conducted to determine the specific effects on ground squirrel populations. Evidence of recreational shooting was found at a southern Idaho ground squirrel population site where squirrel activity recently ceased (Yensen 1999). The IDFG recognizes the southern Idaho ground squirrel as a "Species of Special Concern". Species of Special Concern are protected, by state law, from "taking" (shooting, trapping, poisoning) or possession. In its 2002-2003 upland game regulations pamphlet (IDFG 2002), the IDFG notified the public that northern and southern Idaho ground squirrels are protected from shooting. Yensen (1998) suggested that the impact of recreational shooting on populations of southern Idaho ground squirrels should be evaluated throughout its range.

Ground squirrels are sometimes considered pests by farmers and ranchers (Prescott and Yensen 1999). When available, alfalfa crops are one of the preferred food sources for southern Idaho ground squirrels, resulting in localized crop losses during years of high squirrel populations (Prescott and Yensen 1999). Badgers are often attracted to population sites of ground squirrels, where they dig large holes in the ground that can be dangerous to livestock (Prescott and Yensen 1999). Efforts to control ground squirrel populations are frequently undertaken regardless of species and most often include shooting or poisoning. Control efforts can adversely affect population sites of southern Idaho ground squirrels (Yensen 1998, Prescott and Yensen 1999, Yensen 2000). In fact, the population site known to contain the greatest number of southern Idaho ground squirrels is located at the Rolling Hills Golf Course, and has been subjected to control efforts in an attempt to exterminate the squirrels (Bruce Haak, pers. comm. 2000), although no control efforts have been conducted the past several years (Joe Hinson, pers. comm. 2002). Yensen (1998) suggested that use of pesticides associated with crop production and insect infestation may also play a role in the decline of this species.

Because the number of southern Idaho ground squirrels at occupied sites is generally small, a disease outbreak could have a severe effect (Moroz *et al.* 1995). Disease has been suggested as potentially contributing to the decline of southern Idaho ground squirrels (Prescott and Yensen 1999, Yensen 1999), though no epizootic infestation has been noticed in either subspecies of Idaho ground squirrel (Yensen *et al.* 1996, Yensen and Sherman 1997). Blood analyses to determine whether pandemic diseases are present have not been done. Plague, a contagious bacterial disease found in rodents, has not been identified in southern Idaho ground squirrels (Yensen *et al.* 1996). The disease is of particular concern, since once established, it could decimate the remaining small numbers of squirrels at occupied sites.

Predation has not been suggested as one of the causes of the southern Idaho ground squirrels' decline; however, predators can have a severe impact on prey populations that occur at critically low numbers. For example, badgers have been known to extirpate entire colonies of Washington ground squirrels (*Spermophilus washingtoni*) (Betts 1999). As with northern Idaho ground

squirrels, one can assume that southern Idaho ground squirrels are preyed upon by many species including red-tailed hawks (*Buteo jamaicensis*), prairie falcons (*Falco mexicanus*), northern harriers (*Circus cyaneus*), badgers (*Taxidea taxus*), long-tailed weasels (*Mustela frenata*), and gopher snakes (*Pituophis melanoleucus*) (Yensen and Sherman 1997).

Competition with Columbian ground squirrels (*Spermophilus columbianus*) may constitute a threat to southern Idaho ground squirrels. The restricted range of Idaho ground squirrels occurs within the much wider range of the Columbian ground squirrel, and they occur sympatrically in some localities (Dyner and Yensen 1996). Southern Idaho ground squirrels are known to be limited by inter-specific competition with Columbian ground squirrels (Moroz *et al.* 1995, Yensen and Sherman 1997, Haak 2000), including competition for burrow sites (Haak 2000) and for food resources (Dyner and Yensen 1996). Where the two species occur sympatrically, Columbian ground squirrels occupy the more productive, mesic habitat with deeper soils (Yensen 1980, Dyner and Yensen 1996, Haak 2000).

Habitat destruction and fragmentation appears to have resulted in a distribution of relatively isolated population sites of southern Idaho ground squirrels. Isolation of these small populations may play a role in the decline of this species. For example, genetic evidence indicates that different populations of the northern subspecies are isolated enough to be genetically distinct from one another (Gavin *et al.* 1999, Yensen and Sherman 1997); this is likely to be the case for the southern subspecies as well. Small, isolated populations are more susceptible to natural disasters, catastrophic invasions of predators, parasites, or diseases, and suffer from loss of viability associated with genetic drift and inbreeding (Moroz *et al.* 1995, Gavin *et al.* 1999).

The International Union for Conservation of Nature (IUCN) classified the southern Idaho ground squirrel as "vulnerable" (Hafner *et al.* 1998). The IDFG classified the southern Idaho ground squirrel as a "Species of Special Concern" in 1981. The Service received a petition from the Biodiversity Legal Foundation, dated January 26, 2001, to list the southern Idaho ground squirrel as threatened or endangered under the ESA. In a letter, dated February 26, 2001, the Service informed the Biodiversity Legal Foundation that due to funding constraints, it is not practicable for the Service to address the petition at this time. The letter also indicated that the Service anticipates making an initial finding in fiscal year 2002 as to whether the petition presents substantial information indicating that the listing may be warranted. On October 30, 2001, the Service formally identified the southern Idaho ground squirrel as a candidate for listing under the ESA (66 FR 54807).

III. Description of the Covered Area and Lands Eligible for Enrolment

The areas covered by the Agreement are the non-Federal lands within the project area in Adams, Gem, Payette, and Washington Counties, Idaho, delineated in Figure 1. The project area was delineated as the area where southern Idaho ground squirrels could possibly occur, or be translocated/reintroduced, based on the known historical and current range of the species, and general habitat requirements. The project area is approximately 1,051,752 acres in size and encompasses lower elevation shrub/steppe and grassland habitats generally between the towns of

Cambridge on the north, Weiser and Payette on the west, the Payette River on the south, and Emmett on the east. Approximately 68% of the project area is private land, 27% of the area is Federal land (primarily BLM), and 5% is managed by the Idaho Department of Lands. Most of the land is not irrigated and the dominant agricultural use is livestock grazing.

Within the covered area, enrolled lands must be specifically identified in each Participating Landowner's site-specific plan. Typically enrolled lands will be areas of low elevation shrub/steppe habitat dominated by sagebrush, bitterbrush and a variety of native forbs and bunch grasses or introduced grass species. These areas may border lands actively farmed to grow alfalfa or other foods attractive to ground squirrels. These lands could also include "greenlines" around stock ponds, springs or perennial streams. Eligible lands will likely have, or be capable of providing, woody debris, rocks, or other material suitable for cover and adequate soil type and depth for ground squirrel burrow sites.

IV. Conservation Measures and Obligations of the Parties

The conservation measures identified below are intended to reduce threats to southern Idaho ground squirrel habitat and populations that are controllable by non-Federal landowners within the project area. Each site-specific plan would identify in detail how the applicable conservation measures would be implemented on an individual landowner's property, considering the baseline ground squirrel population and habitat conditions and the landowner's planned land use activities. In the site-specific plan, Participating Landowners must agree to implement specific measures under all of the conservation categories identified below that are within their control on their property. In order to qualify for approval, the Participating Landowner's site-specific plan must result in a net improvement in ground squirrel habitat or populations on the enrolled lands. These conservation benefits must be such that, if one assumed that comparable conservation measures were implemented on all necessary properties, the combined benefits would preclude or remove the need to list the southern Idaho ground squirrel as a threatened or endangered species under the ESA.

Specific implementation details will be developed cooperatively between each Participating Landowner and the agencies, and identified in the site-specific plan based on the dual purposes of satisfying the landowner's land use objectives and providing for ground squirrel conservation needs. Site-specific protective measures will be identified and implemented by the enrolled landowners and the agencies at southern Idaho ground squirrel protected sites and reintroduction/translocation sites. Enrolled landowners and the agencies will cooperate in good faith to develop adequate site-specific southern Idaho ground squirrel protection measures. If the parties cannot reach agreement on these measures, and the Service determines the measures will not meet intended conservation benefits, the enrolled landowners will be found to not be in compliance with the conditions of the Agreement and permit and the Service will retain the authority to immediately suspend the permit at its sole discretion, consistent with current regulations described in 50 CFR 13.27(a).

Participating landowners that are unsuccessful in obtaining funding from outside sources (obligation A.7) will remain enrolled in the Agreement, and retain take authorization pursuant to the 10(a)(1)(A) permit issued to the IDFG, provided they are fully implementing their site-specific plan. The conservation and other measures identified below are general obligations and will be identified in greater detail in each Participating Landowner's site-specific plan.

A. Participating Landowners

1. Implement habitat maintenance or enhancement measures on the enrolled lands at all southern Idaho ground squirrel-occupied sites and sites identified for ground squirrel translocation/reintroduction. These measures could include, but are not limited to, maintenance of vegetation currently providing adequate ground squirrel habitat, reducing noxious weeds, seeding suitable plant species, fertilizing, prescribed burning, and providing rock jacks, woody debris or other material suitable for ground squirrel escape cover. Habitat enhancement measures are particularly desirable at sites dominated by cheat grass and/or medusahead rye.
2. Prohibit southern Idaho ground squirrel shooting, trapping, or poisoning to protect individual ground squirrels and ground squirrel populations.
3. Implement measures to minimize the effects of land use activities on southern Idaho ground squirrels at occupied sites and translocation/reintroduction sites to protect ground squirrel populations. These measures could include, but are not limited to, eliminating use of rodenticides in a manner likely to harm southern Idaho ground squirrels, modifications in pesticide application, and modification of mechanical ground cultivating activities. Consistent with Regional Service policy, incidental take of southern Idaho ground squirrels as a result of any pesticide use would not be authorized under the permit.

If a rodenticide (Fumitoxin®) will be used, specific application procedures designed to avoid harm to southern Idaho ground squirrels will be developed collaboratively with the Service and those procedures will be identified in the Participating Landowner's site-specific plan. At a minimum, the following procedures will be conducted to minimize indirect effects to southern Idaho ground squirrels: (1) Fumitoxin® will only be used by a certified applicator, (2) Fumitoxin® will only be placed in active pocket gopher burrows, (3) the pocket gopher burrow will be dug out, the Fumitoxin® placed in the burrow under ground, and the hole covered to avoid harm to ground squirrels or other non-target species, (4) the site will be checked daily, and (5) all Fumitoxin® label instructions will be followed. Use of these methods are unlikely to impact southern Idaho ground squirrel populations since the use of the rodenticide is confined to individual gopher burrows, and will be applied only by a certified applicator. While take of southern Idaho ground squirrels from any pesticide use will not be covered under the proposed action, the Service will provide guidance to landowners and applicators, on a site-specific basis, on how to avoid take of southern Idaho ground squirrels during use of Fumitoxin®. In addition, the

Service or IDFG will monitor any nearby southern Idaho ground squirrel populations before and after application of Fumitoxin® to ensure no take has occurred.

Enrolled landowners will notify the IDFG and the Service at least one (1) month prior to new ground disturbing activities within ground squirrel protected areas. Such new activities shall include excavations of all types, but shall not include normal plowing of established fields in which alfalfa, grass hay or other crops are grown. If ground squirrels have expanded to adjacent lands beyond the boundaries of a protected area or to the cultivated fields within protected areas, the agencies and the enrolled landowners will develop measures to minimize any incidental take that could result from ground disturbance activities.

4. Allow translocation of southern Idaho ground squirrels into unoccupied, suitable habitat if necessary for ground squirrel population conservation purposes.
5. If appropriate, control use of occupied southern Idaho ground squirrel sites by Columbian ground squirrels and badgers.
6. Allow agency access to Participating Landowner's property to identify occupied southern Idaho ground squirrel sites and document habitat conditions, implement conservation measures, and monitor effectiveness and compliance with the Agreement and site-specific plan.
7. Actively pursue funding, if necessary, to implement the site-specific plan. This could be in the form of, for example, providing in-kind cost-share or application for funds under the Farm Bill, Partners for Fish and Wildlife Program, or the Private Stewardship Grants Program.

B. Idaho Department of Fish and Game

1. Hold the section 10(a)(1)(A) permit issued in association with the Agreement.
2. Develop mutually agreeable site-specific plans in cooperation with Participating Landowners, the Service, and OSC.
3. Carry out any responsibilities for implementing conservation or other measures assigned to the IDFG under this Agreement and in any site-specific plan.

By March 1 of each year, the agencies will notify the enrolled landowners if southern Idaho ground squirrels have expanded beyond the boundaries of any ground squirrel protected area or into cultivated fields that are within or adjacent to protected areas. If ground squirrels have expanded to adjacent lands beyond the boundaries of a protected area or to the cultivated fields within protected areas, the agencies and the enrolled landowners will develop measures to minimize any incidental take that could result from

ground disturbance activities.

4. In some cases, it may be necessary for the IDFG/Service to translocate southern Idaho ground squirrels from water impoundment dikes in order for a landowner to comply with State law requiring removal of burrowing animals from these sites to ensure dike integrity and provide for human safety. In some cases where southern Idaho ground squirrel populations increase to the point where they are causing damage to a landowner's crops, it may also be necessary to translocate southern Idaho ground squirrels to reduce the population or compensate landowners for the fair-market value of their crop losses. In these cases the IDFG will work with the Service, OSC, and the Participating Landowner on a case-by-case basis to address these issues.
5. Carry out responsibilities for effectiveness and compliance monitoring assigned to IDFG under this Agreement and in any site-specific plan.
6. Provide necessary available state funding to support implementation of the Agreement and any site-specific plan. Actively pursue funding, if necessary, to implement the Agreement and each site-specific plan. This could in the form of, for example, ESA section 6 or other related funding programs, or other IDFG programs.
7. Prepare annual reports in accordance with the Agreement and the site-specific plans.

C. Governor's Office of Species Conservation

1. Develop mutually agreeable site-specific plans in cooperation with Participating Landowners, the Service, and the IDFG.
2. Actively pursue funding, and provide necessary available state funding to support implementation of the Agreement and any site-specific plan.
3. In some cases, it may be necessary for the IDFG/Service to translocate southern Idaho ground squirrels from water impoundment dikes in order for a landowner to comply with State law requiring removal of burrowing animals from these sites to ensure dike integrity and provide for human safety. In some cases where southern Idaho ground squirrel populations increase to the point where they are causing damage to a landowner's crops, it may also be necessary to translocate southern Idaho ground squirrels to reduce the population or compensate landowners for the fair-market value of their crop losses. In these cases the OSC will work with the IDFG, Service, and the Participating Landowner on a case-by-case basis to address these issues.

D. U.S. Fish and Wildlife Service

1. Develop mutually agreeable site-specific plans in cooperation with Participating Landowners, the OSC, and the IDFG.

2. Upon approval of the Agreement, issue the IDFG a section 10(a)(1)(A) permit, in accordance with 50 CFR 17.32 (d), that would provide Participating Landowners authorization for incidental take of southern Idaho ground squirrels and provide regulatory assurances should the species be listed under the ESA in the future. The permit would authorize incidental take of southern Idaho ground squirrels, consistent with the Agreement and each site-specific plan, resulting from otherwise lawful activities on the enrolled lands. Incidental take would be authorized for agricultural and recreational activities, including crop cultivation and harvesting, livestock grazing and production, farm equipment operation, hunting, fishing, dog training, camping, hiking, and use of recreational vehicles on and off established roads. Consistent with Regional Service policy, incidental take of southern Idaho ground squirrels as a result of any pesticide use would not be authorized under the permit.
3. Carry out any responsibilities for implementing conservation or other measures agreed to by the Service under this Agreement.

By March 1 of each year, the agencies will notify the enrolled landowners if southern Idaho ground squirrels have expanded beyond the boundaries of any ground squirrel protected area or into cultivated fields that are within or adjacent to protected areas. If ground squirrels have expanded to adjacent lands beyond the boundaries of a protected area or to the cultivated fields within protected areas, the agencies and the enrolled landowners will develop measures to minimize any incidental take that could result from ground disturbance activities.

4. In some cases, it may be necessary for the Service/IDFG to translocate southern Idaho ground squirrels from water impoundment dikes in order for a landowner to comply with State law requiring removal of burrowing animals from these sites to ensure dike integrity and provide for human safety. In some cases where southern Idaho ground squirrel populations increase to the point where they are causing damage to a landowner's crops, it may also be necessary to translocate southern Idaho ground squirrels to reduce the population or compensate landowners for the fair-market value of their crop losses. In these cases the Service will work with the IDFG, OSC, and the Participating Landowner on a case-by-case basis to address these issues.
5. Carry out responsibilities for effectiveness and compliance monitoring assigned to Service under this Agreement.
6. Provide necessary available Service funding to support implementation of the Agreement and any site-specific plan. Actively pursue available funding, if necessary, to implement the Agreement and each site-specific plan. This could be in the form of, for example, ESA-related funding, or other Service funds.

7. Assist the IDFG in preparation of annual reports in accordance with the Agreement and the site-specific plans.

V. Expected Conservation Benefits

As identified in the Service's Candidate Conservation Agreement with Assurances Final Policy (Service and NMFS 1999), the Service must determine that the conservation measures and the expected benefits, when combined with those benefits that would be achieved if it is assumed that similar conservation measures were also implemented on other necessary properties, would preclude or remove the need to list southern Idaho ground squirrels.

When making a decision to list a species under the ESA, the Service is required to determine whether the species is threatened by any of the following factors: (1) the present or threatened destruction, modification, or curtailment of its habitat or range, (2) overutilization for commercial, recreational, scientific, or educational purposes, (3) disease or predation, (4) the inadequacy of existing regulatory mechanisms, or (5) other natural or manmade factors affecting the species continued existence. There are threats to the southern Idaho ground squirrel related to each of these factors.

A. **Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range**

Habitat deterioration appears to be a leading cause of the population decline of southern Idaho ground squirrels (Yensen 1999). Invasion of exotic annuals has changed the species composition of vegetation and has altered the fire regime in a perpetuating cycle throughout much of the range of these ground squirrels (Whisenant 1990). Use of occupied areas by livestock (grazing and seed transport) and humans (vehicles used for transportation and recreation) may contribute to the spread of nonnative plant species, however, the extent of these influences is uncertain. Cheat grass and medusahead rye are of limited forage value to the squirrels, have highly variable annual productivity, and now dominate much of the southern Idaho ground squirrel's range (Yensen 1999, Yensen *et al.* 1992). Diversity of native forbs and grasses decreases where these exotics take over, limiting the dietary diversity available to ground squirrels (Yensen 1999). Without the reliable and nutritious diet provided by native grasses and forbs, these squirrels must rely on the highly variable productivity and nutritional value of exotic annuals. In years of low rainfall, low productivity of these exotics could prevent squirrels from storing enough fat to overwinter successfully. Yensen *et al.* (1992) showed that populations of Pauite ground squirrels were highly unstable and prone to extinction in areas invaded by exotic annuals.

B. **Overutilization for Commercial, Recreational, Scientific, or Educational Purposes**

Recreational shooting of ground squirrels is common and can have a detrimental effect on populations of southern Idaho ground squirrels. Evidence of recreational shooting was found at a southern Idaho ground squirrel population site where squirrel activity recently ceased (Yensen 1999). The IDFG recognizes the southern Idaho ground squirrel as a "Species of Special

Concern" (IDFG 1994). Species of Special Concern by State law are protected from taking (shooting, trapping, poisoning) or possession. In its 2002-2003 upland game regulations pamphlet (IDFG 2002), the IDFG notified the public that northern and southern Idaho ground squirrels are protected from shooting. While an undetermined number of southern Idaho ground squirrels have been collected during a 30 year period for scientific and taxonomic study, scientific collection is not considered a significant factor in their overall decline (Moroz *et al.* 1995).

C. Disease or Predation

Because the number of southern Idaho ground squirrels at occupied sites is generally small, a disease outbreak could have a severe effect on this species (Moroz *et al.* 1995). Disease has been suggested as potentially contributing to the decline of these ground squirrels (Prescott and Yensen 1999, Yensen 1999), though no epizootic infestation has been noticed in either subspecies of Idaho ground squirrel (Yensen *et al.* 1996, Yensen and Sherman 1997). Blood analyses to determine whether pandemic diseases are present have not been done but should be considered in the future. Plague, a contagious bacterial disease found in rodents, has not been identified in southern Idaho ground squirrels (Yensen *et al.* 1996). The disease is of particular concern, once established, it could decimate the remaining small numbers of squirrels at occupied sites.

Predation has not been suggested as one of the causes of the southern Idaho ground squirrels' decline; however, predators can have a severe impact on prey populations that occur at critically low numbers. For example, badgers have been known to extirpate entire colonies of Washington ground squirrels (Betts 1999).

D. Inadequacy of Existing Regulatory Mechanisms.

Currently, the southern Idaho ground squirrel is not protected by federal or local laws. The IDFG classified the southern Idaho ground squirrel as a "Species of Special Concern" in 1981. Because of this status, the species is protected by State law from taking (shooting, trapping, poisoning) or possession.

The state and federal agencies are aware of the apparent population decline of the southern Idaho ground squirrel. However, there is no requirement for an agency to cooperate with the Service in conserving unlisted or candidate species. Only species that are proposed for listing are covered by the conference procedures of Section 7(a)(4) of the ESA.

E. Other Natural or Manmade Factors Affecting the Species Continued Existence

Ground squirrels are considered pests by many farmers and ranchers (Prescott and Yensen 1999). When available, alfalfa crops are one of the preferred food sources for southern Idaho ground squirrels, resulting in localized crop losses during years of high squirrel populations (Prescott and Yensen 1999). Badgers are often attracted to population sites of ground squirrels, where they dig large holes in the ground that can be dangerous to livestock (Prescott and Yensen 1999). Efforts to control ground squirrel populations are frequently undertaken regardless of species and most

often include shooting or poisoning. Control efforts can adversely affect population sites of southern Idaho ground squirrels (Yensen 1998, Prescott and Yensen 1999, Yensen 2000). In addition, Yensen (1998) suggested that use of pesticides associated with crop production and insect infestation may also play a role in the decline of this species.

Competition with Columbian ground squirrels may constitute a threat to southern Idaho ground squirrels. Southern Idaho ground squirrels are known to be limited by interspecific competition with Columbian ground squirrels (Moroz *et al.* 1995, Yensen and Sherman 1997, Haak 2000), including competition for burrow sites (Haak 2000) and for food resources (Dyini and Yensen 1996). Where the two species occur sympatrically, Columbian ground squirrels occupy the more productive, mesic habitat with deeper soils (Yensen 1980, Dyini and Yensen 1996, Haak 2000).

Habitat destruction and fragmentation appears to have resulted in a distribution of relatively isolated population sites of southern Idaho ground squirrels. Isolation of these small populations may play a role in the decline of this species. For example, genetic evidence indicates that different populations of the northern subspecies are isolated enough to be genetically distinct from one another (Gavin *et al.* 1999, Yensen and Sherman 1997); this is likely to be the case for the southern subspecies as well. Small, isolated populations are more susceptible to natural disasters, catastrophic invasions of predators, parasites, or diseases, and suffer from loss of viability associated with genetic drift and inbreeding (Moroz *et al.* 1995, Gavin *et al.* 1999).

F. Relationship of the Agreement to the Five Threat Factors

The Agreement is intended to reduce threats to southern Idaho ground squirrels under each of the five threat categories. Conservation benefits for southern Idaho ground squirrels from implementation of the Agreement and the site-specific plans are expected in the form of enhancement and restoration of southern Idaho ground squirrel habitat and populations and expansion of the current population of the species to currently unoccupied habitat within the project area. Since non-Federal landowners control most of the sites containing southern Idaho ground squirrels, conservation of southern Idaho ground squirrels would be enhanced by creating a plan that encourages the implementation of ground squirrel conservation measures by landowners.

Deterioration of native shrub-bunchgrass-forb habitat complex could be the leading cause of the population decline of southern Idaho ground squirrels (Yensen 1999). Human and livestock use of occupied areas may contribute to habitat degradation (68 FR 10388), although the extent of this influence is unknown. Habitat destruction and fragmentation appear to have resulted in a distribution of relatively isolated population sites of southern Idaho ground squirrels. In addition, most of these sites support a low number of ground squirrels. Under the Agreement and site-specific plans, habitat protection/enhancement measures would be implemented at ground squirrel-occupied and reintroduction/translocation sites on participating landowner's enrolled lands. Under the Agreement and site specific plans, both individual animals and their habitat will be protected from land use activities that may have adverse affects at sites occupied by southern Idaho ground squirrels, or sites identified as translocation/reintroduction sites.

The habitat protection/enhancement measures would be intended to provide a high quality, more dependable forage base for ground squirrels. These habitat enhancement measures would include the rehabilitation of areas to native vegetation or other plant species that would provide high quality forage for ground squirrels if the site is lacking an adequate amount of quality forage. Native vegetation species that could be used for habitat enhancement include: basin big sagebrush (*Artemisia tridentata*), Wyoming sagebrush (*Artemisia wyomingensis*), bitterbrush (*Purshia tridentata*), gray rabbitbrush (*Chrysothamnus nauseosus*), medic (*Medicago spp.*), Sandberg's bluegrass (*Poa secunda/sandbergii*), squirreltail (*Sitanion hystrix*), onion (*Allium acuminatum*), lupine (*Lupinus arbustus or leucophylus*), Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass (*Agropyron spicatum*), lomatium (*Lomatium grayii or triternatum*), desert dandelion (*Tragopogon dubius*), tapertip hawksbeard (*Crepis acuminata*), false dandelion (*Agoseris glauca*), and cinquefoil (*Potentilla gracilis*). Non-native species that could be considered for habitat maintenance or improvements could include: Kentucky bluegrass (*Poa pratensis*), danthonia (*Danthonia californica*), and Mediteranian kochia. This species list is based partially on plant species known to be consumed by northern Idaho ground squirrels (Dyner and Yensen 1996) and from preliminary food habits data for southern Idaho ground squirrels (Eric Yensen, pers. comm. 2002). Due to the pervasive invasion of exotic annual vegetation throughout the range of the southern Idaho ground squirrel, without active management to change the vegetation composition at important ground squirrel sites, such as proposed under this Agreement, current habitat conditions and the resulting negative effects to ground squirrels are not expected to improve.

Direct mortality from recreational shooting of southern Idaho ground squirrels is a potential threat to the species. To date, protection from shooting of southern Idaho ground squirrels has been limited, and southern Idaho ground squirrels likely remain vulnerable to this type of mortality. Under the Agreement and site-specific plans, ground squirrels would be protected from shooting, trapping or poisoning. The Agreement and site-specific plans are expected to eliminate or significantly minimize ground squirrel mortality from shooting and other forms of direct mortality.

Many sites occupied by southern Idaho ground squirrels in the past are currently unoccupied. Isolation of small populations of southern Idaho ground squirrels as a result of habitat deterioration and fragmentation is likely not conducive to long-term survival of the species. Small, isolated populations are more susceptible to diseases and predators. The Agreement and site-specific plans are expected to benefit southern Idaho ground squirrels by increasing ground squirrel populations on enrolled lands from habitat enhancement and other protection measures, and expanding the current range of the species by translocating/reintroducing ground squirrels into currently suitable, but unoccupied habitat. Ground squirrel populations should be less vulnerable to the effects from disease and predators as population sizes increase. In addition, this Agreement contains provisions for the control of badgers, a primary predator of ground squirrels, if necessary for ground squirrel conservation purposes.

Competition with Columbian ground squirrels may constitute a threat to southern Idaho ground squirrels at specific sites. The use of southern Idaho ground squirrel occupied sites by Columbian ground squirrels will be controlled, if appropriate. Badgers and Columbian ground squirrels will be controlled on a limited, case-by-case basis in the event that either of these two species poses a threat to the viability of a southern Idaho ground squirrel population at a particular site.

Under the Agreement, it may be necessary for the IDFG and/or the Service to translocate southern Idaho ground squirrels from water impoundment dikes in order for a landowner to comply with State law requiring removal of burrowing animals from these sites to ensure dike integrity and provide for human safety. The determination of whether ground squirrel burrows in a water impoundment dike threaten its viability (and thereby require translocation of the animals) will be made by a team consisting of representatives from the IDFG, the Service, and the landowner. Also it is possible that in some cases southern Idaho ground squirrel populations could increase to the point where they are causing damage to a landowner's crops. In these cases, it may also be necessary for the IDFG and/or the Service to translocate southern Idaho ground squirrels to reduce the population or compensate landowners for the fair-market value of their crop losses. Planting or providing attractive vegetation for ground squirrels (forage species) away from the dike to divert ground squirrel activity from the dike will also be investigated by the Agencies and enrolled landowners. None of these situations are expected to compromise the effectiveness of the Agreement's conservation measures since: (1) it is expected that these circumstances will occur only in rare cases, if at all; (2) in the case of removing ground squirrels from dikes, it would likely involve very few individual animals; and (3) in the case of removing animals to reduce crop damage, if there were enough animals to cause crop damage, the ground squirrel population would be large enough to easily sustain some reducing without damaging the population.

The Agreement addresses the threats to southern Idaho ground squirrels under all five factors upon which the Service would base a future ESA listing decision. Conservation commitments include measures to protect/enhance habitat, which is likely the single greatest threat to southern Idaho ground squirrels. Conservation measures also include commitments to reduce direct ground squirrel mortality, as well as commitments to reintroduce/translocate ground squirrels into unoccupied habitat, thereby expanding the species' distribution. Should all necessary landowners within the project area participate and provide conservation measures similar to those in this Agreement such as habitat enhancement, reduction or elimination of shooting, trapping and poisoning, and translocation/reintroduction of ground squirrels to unoccupied habitat, a substantial conservation benefit would be realized for the species. The Agreement and site-specific plans are expected to result in a larger number and more widely distributed population of ground squirrels. If the Agreement was implemented on all necessary properties, the Service believes that the need to list southern Idaho ground squirrels would likely be precluded or removed.

VI. Funding

The agencies and Participating Landowners will provide funding to implement southern Idaho ground squirrel conservation measures and other measures necessary to successfully implement

the Agreement and site-specific plans. State, federal, and private funding sources will be considered, such as those noted above.

In April 2003, the Leopold Stewardship Fund agreed to provide up to \$15,000 of funding for the development of this Agreement and Participating Landowner's site specific plans, and implementation of conservation measures under the Agreement. The Leopold Stewardship Fund is a partnership effort between the Sand County Foundation and Environmental Defense Fund. The purposes of the Leopold Stewardship Fund are to provide financial assistance to landowners for voluntary conservation actions beneficial to at-risk species. The Environmental Defense Fund will act as the financial agent for the Leopold Stewardship Fund on this project.

The agencies have been active in southern Idaho ground squirrel conservation and working cooperatively with private landowners and other State and Federal agencies to conserve the species for years. The agencies have funded ground squirrel survey and research efforts to document population status and identify threats to the species. In 2001, the IDFG received funding in the amount of \$96,720 through section 6 of the ESA to fund implementation of southern Idaho ground squirrel conservation agreements such as this Agreement. These funds will be used to at least partially support implementation of this Agreement.

If funds are available, the IDFG or OSC will pay Participating Landowners for each site where populations of ground squirrels will be translocated/reintroduced on their enrolled lands. To provide an incentive for Participating Landowners to allow translocation of southern Idaho ground squirrels on their land where there would otherwise be no or few ground squirrels, payments will be \$3,500 per site in a one-time payment. Participating Landowners can participate under this Agreement without funding from the agencies if they choose to otherwise implement the site-specific plan.

VII. Assurances Provided

Upon approval of the Agreement, and satisfaction of all other applicable legal requirements, the Service will issue a permit, in accordance with section 10(a)(1)(A) of the ESA, to the IDFG authorizing incidental take of southern Idaho ground squirrels by Participating Landowners as a result of otherwise-lawful land use activities on the enrolled lands. Incidental take would be authorized for agricultural and recreational activities, including crop cultivation and harvesting, livestock grazing and production, farm equipment operation, hunting, fishing, dog training, camping, hiking, and use of recreational vehicles on and off established roads. The Service provides Participating Landowners the ESA regulatory assurances found at 50 CFR §§ 17.22(d)(5), 17.32(d)(5).

Consistent with the Service's Candidate Conservation Agreement with Assurances Final Policy (64 FR 32726), conservation measures and land, water, or resource use restrictions in addition to the measures and restrictions described in this Agreement and the site-specific plan will not be imposed with respect to the covered land use activities on the participating landowner's enrolled land should southern Idaho ground squirrels become listed under the ESA in the future. These

assurances are authorized by the enhancement of survival permit issued under section 10(a)(1)(A) of the ESA for the enrolled lands identified in the site-specific plans. In the event of unforeseen circumstances, the Service will not require the commitment of additional land, water, or other natural resources beyond the level otherwise agreed to for the species in this Agreement and the site-specific plans without the consent of the Participating Landowners. The permit will authorize Participating Landowners to incidentally take southern Idaho ground squirrels as long as such take is consistent with this Agreement, the site-specific plan, and the permit.

Changed circumstances are those factors that negatively affect ground squirrels and that can reasonably be anticipated and planned for under the Agreement. Wildfires occur throughout the covered area, and in some cases could have a negative affect on ground squirrels. Due to the variation in possible effects to the species and necessary conservation measures, it is not possible to identify specific measures to address wildfires at this time. During the term of the Agreement and any site-specific plan, should a wildfire occur at any ground squirrel-occupied site or site designated as a translocation/reintroduction site, the Participating Landowners and the agencies will work in good faith to develop and implement conservation measures to minimize post-fire effects to ground squirrels.

VIII. Duration of the Agreement, Permit and Site-Specific Plan

The duration of this Agreement will be 20 years from the date upon which the agencies have signed it. The permit issued in accordance with this Agreement will become effective on the date southern Idaho ground squirrels become listed, and will expire on the same date upon which this Agreement expires.

Given the probable ground squirrel response time to transplanting and habitat management, the Service estimates it may take 10 years of implementing the Agreement and site-specific plans to fully reach a net conservation benefit for the species, although some level of benefits will likely occur within two to three years. Therefore, the duration of any individual site-specific plan will be a minimum of 10 years; the duration will be identified in each site-specific plan.

Upon agreement of the agencies, the term of the Agreement and permit can be extended to accommodate Participating Landowners interested in signing up under the Agreement and permit after year 10 of the Agreement. The Service will notify the IDFG and OSC 90 days prior to expiration of the Agreement to allow sufficient time to extend the Agreement, if desired.

Inclusion under the Agreement and permit will only apply to those Participating Landowners who enroll lands under this Agreement prior to any future effective ESA listing date of southern Idaho ground squirrels. Future non-enrolled landowners wishing incidental take authorization for southern Idaho ground squirrels after any future effective ESA listing date, could apply for authorization through the Service's Habitat Conservation Plan or Safe Harbor Agreement permitting programs.

IX. Monitoring and Reporting

A. Monitoring

All enrolled lands will be surveyed for occupancy by southern Idaho ground squirrels within 2 years of enrollment. Additional surveys will be conducted during the first five years of enrollment to identify potential reintroduction/translocation sites. Beyond the initial surveys, the agencies will fund monitoring and ground squirrel survey efforts under the Agreement to the extent that funds are available. Generally, two kinds of effectiveness monitoring will be conducted by the Service and the IDFG on an annual basis to validate the conservation measures: population and habitat monitoring.

An intensive population census will be conducted on a sample of population sites that are included under the site-specific plans. Sample locations will be selected from sites identified in the site-specific plans to encompass a variety of conservation options being implemented. Ground squirrels will be trapped and marked at each of the sampled population sites. Trapped ground squirrels will be aged (juvenile, yearling, adult), weighed, sex determined, and marked with numbered ear tags. This will allow biologists to determine, over a number of years, the population structure and dynamics at each sampled site, and how ground squirrels are responding to habitat conservation measures and other variables.

An extensive population census will be done annually at a sample of population sites that are not measured intensively. If available, 20-30 sites will be monitored, and if 20 or less occupied sites occur on the enrolled lands all sites will be monitored. Extensive population census does not require that animals be trapped, but includes conducting time/count transects to determine the relative size of the population. These counts will be conducted at least twice during the season when ground squirrels are active, once before the juveniles emerge from burrows, and once after they become active above ground. Extensive population censuses will allow biologists to determine a relative index of the numbers of ground squirrels over a period of five to ten years. The combination of the intensive and extensive census monitoring will allow biologists to create a meta-population model that has predictive value for determining population site persistence and the natural range of variation of the overall population of southern Idaho ground squirrels.

Habitat analysis will be done each year at a sample of sites to determine the effectiveness of conservation measures where habitat maintenance or enhancement has been implemented. Areas where habitat treatments are applied will be compared to control areas where habitat conservation measures are not implemented. The comparison of these treated and untreated sites will enable determination of which vegetation prescriptions are the most desirable for southern Idaho ground squirrels, and allow for refinement of habitat conservation measures. Plant species composition will be determined at each occupied ground squirrel site before and after habitat enhancement measures are implemented to document changes in species composition.

The Service and the IDFG will conduct compliance monitoring on an as-needed basis. Monitoring costs for personnel are estimated to be approximately \$16,000/year (\$5000/person for a 3.2 month field season), not including travel costs, for each site-specific plan.

B. Reporting

Enrolled landowners will notify the IDFG and the Service at least one (1) month prior to new ground disturbing activities within ground squirrel protected areas. By March 1 of each year, the agencies will notify the enrolled landowners if southern Idaho ground squirrels have expanded beyond the boundaries of any ground squirrel protected area or into cultivated fields that are within or adjacent to protected areas.

The IDFG will be responsible for completion of an annual report on Agreement implementation by 1 February each year. Information in annual reports will include, but is not limited to: (1) a summary of the site-specific plans approved over the past year (including a list of landowners and their contact information and a map of all enrolled lands), (2) habitat management or other activities conducted under each site-specific plan over the past year, (3) effectiveness of these management activities in meeting the desired results, (4) status of habitat or other ground squirrel management actions conducted in previous years, (5) results of ground squirrel population, productivity, and habitat surveys, if any, on the enrolled lands, (6) the results of any ground squirrel translocation/reintroduction efforts, and (7) recommendations for future ground squirrel management activities consistent with the Agreement. A copy of the report will be made available to the agencies and each participating landowner.

X. Level of Incidental Take

Under this Agreement, the southern Idaho ground squirrel will be treated as if it is listed under the ESA, regardless of its current regulatory status. Incidental take of southern Idaho ground squirrels will be reported by each Participating Landowner upon approval of the landowner's site-specific plan regardless of the species' listing status. Should the southern Idaho ground squirrel be listed under the ESA, incidental take will be authorized through the section 10(a)(1)(A) permit, consistent with the terms of this Agreement, the permit, and the Participating Landowner's site-specific plan for the enrolled lands. Covered activities that present a risk of incidental take are otherwise lawful crop cultivation and harvesting, livestock grazing and production, farm equipment operation, and recreational activities. The level of incidental take can best be described using two categories of enrolled lands: sites occupied by southern Idaho ground squirrels and therefore protected, and areas not occupied by southern Idaho ground squirrels.

Within protected ground squirrel sites, incidental take of southern Idaho ground squirrels is expected to be minimal. Under the Agreement, these sites are intended to be core conservation areas supporting populations of southern Idaho ground squirrels over the long-term. Conservation measures in the Agreement and site-specific plans are intended to ensure impacts to the species from land use activities in these areas will be kept to a minimum. Incidental take will

be authorized for up to two individual ground squirrels per ground squirrel-occupied (protected) site per year. While land use activities consistent with specific conservation measures conducted within these areas may have minimal negative effects on ground squirrels, some minor chance of incidental take could occur. It is this level of infrequent, minor, incidental take that is intended to be authorized under the permit within these occupied sites. The actual level of incidental take is unquantifiable, but is expected to range from none to minor disturbance and harassment or, in some rare cases, injury or death of ground squirrels from equipment operation or livestock trampling. Conservation measure IV.A.3., above, is included in the Agreement to minimize direct mortality from plowing, cultivating, or other ground-disturbing activities within and adjacent to occupied sites. If direct mortality cannot be avoided, this will give the agencies the opportunity to translocate ground squirrels prior to ground disturbance. A notification requirement will be included as a condition of the permit that requires Participating Landowners to notify the agencies one month (30 days) prior to new ground disturbance activities within identified ground squirrel-occupied sites. Such new activities shall include excavations of all types, but shall not include normal cultivation or plowing of established fields in which alfalfa, grass hay or other crops are grown. By March 1 of each year, the agencies will notify a Participating Landowner if southern Idaho ground squirrels have expanded beyond the boundaries of any ground squirrel-occupied site or into cultivated fields that are within or adjacent to an occupied site. If ground squirrels have expanded to adjacent lands beyond the boundaries of an occupied site or to the cultivated fields within an occupied site, the agencies and the Participating Landowner will develop measures to minimize any incidental take that could result from ground disturbance activities. If two southern Idaho ground squirrels are determined to have been incidentally taken within any occupied site area during any calendar year, the agencies and the Participating Landowner will identify and implement additional protective measures to minimize any further incidental take.

The greatest level of incidental take would likely occur on enrolled lands outside of sites known to be occupied by southern Idaho ground squirrels. This level of incidental take is unquantifiable. The timing and extent of incidental take would likely be highly variable, depending on the specific land use activities occurring on the lands and the presence of ground squirrels. In some cases, incidental take may not occur at all, while in others incidental take may occur in the form of complete loss of all ground squirrels. For example, if the land use activity proposed is occasional livestock grazing, incidental take most likely will not occur; whereas, if crop cultivation is the land use activity, all ground squirrels may be eliminated from the area.

Overall, given the Agreement's conservation goal of providing long-term ground squirrel conservation on enrolled lands within occupied sites, the long-term conservation of southern Idaho ground squirrels is expected to be enhanced by the Agreement and site-specific plans even with some authorization of incidental take under the permit. The actual level of incidental take is largely unquantifiable, and will be dependent on the specific measures outlined in site-specific plans. Prior to the Agreement being approved, and issuance of the permit to the IDFG, the Service will analyze the site-specific impacts to southern Idaho ground squirrels, including the level of incidental take, to satisfy the Service's responsibilities under sections 7 and 10 of the ESA.

XI. Public Involvement

This Agreement will be circulated for public review and comment, and comments received will be considered and, if appropriate, the Agreement modified, prior to the Service making a decision on approval of the Agreement and issuance of the permit. If the Agreement is approved, no further formal public review will occur concerning each site-specific plan, as long as the site-specific plan is consistent with the approved Agreement.

XII. Additional Provisions

A. Modifications of the Agreement. Any party may propose modifications to this Agreement by providing written notice to the other parties. Such notice shall include a statement of the proposed modification and the reason for the modification. The parties will use their best efforts to respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon the other parties' written approval and completion of any necessary environmental analysis as required by the National Environmental Policy Act or ESA.

B. Amendment of the Permit. The permit issued under this Agreement may be amended in accordance with all applicable legal requirements, including but not limited to the ESA, the National Environmental Policy Act, and the Service's permit regulations. The party proposing the amendment shall provide a statement of the proposed amendment and the reasons for the amendment.

C. Permit Suspension or Revocation. The Service may suspend or revoke the permit for cause in accordance with the laws and regulations in force at the time of such suspension or revocation. Cause includes the failure to adequately fund or implement conservation measures under any site-specific plan. The Service also, as a last resort, may revoke the permit if continuation of permitted activities would likely result in jeopardy to covered species (50 CFR 13.28(a)). Prior to revocation, the Service would exercise all possible measures to remedy the situation.

D. Remedies. Each party shall have all remedies otherwise available to enforce the terms of this Agreement and the permit, except that no party shall be liable in damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement or any other cause of action arising from this Agreement.

E. Dispute Resolution. The parties agree to work together in good faith to resolve any disputes.

F. Availability of Funds. Implementation of this Agreement is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this Agreement will be construed by the parties to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury. The parties acknowledge that the Service will not be required

under this Agreement to expend any federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

G. No Third-party Beneficiaries. This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the parties to this Agreement with respect to third parties shall remain as imposed under existing law.

H. Relationship to Authorities. The terms of this Agreement shall be governed by and construed in accordance with applicable federal law. Nothing in this Agreement is intended to limit the authority of the Service to fulfill its responsibilities under federal laws. All activities undertaken pursuant to this Agreement or the permit must be in compliance with all applicable state and federal laws and regulations.

I. Succession, Transfer or Early Termination. This Agreement and permit shall be binding on and shall inure to the benefit of the parties and their respective successors and transferees, in accordance with applicable regulations (currently codified at 50 CFR 13.24 and 13.25).

In the event a Participating Landowner sells all or part of the enrolled lands prior to the full term of the site-specific plan, the participating landowner will notify the agencies at least 60 days in advance of the potential sale, and notify the prospective landowner of the existence of this Agreement and the site-specific plan (and/or have previously recorded these documents) in order for the potential new owner to decide whether to continue the site-specific plan. In the event the new landowner does not wish to continue this Agreement and request transfer of the permit pursuant to 50 CFR 13.25(b), the Participating Landowner terminates this Agreement for other reasons, or the Service suspends or revokes the permit, the Participating Landowner will reimburse the agencies a pro-rated amount, calculated as: $(\text{Total Funding Received} \div \text{Original Term of the Site-Specific Plan}) \times (\text{Number of Years Remaining to be Completed Under the Site-Specific Plan})$. Reimbursement is not required for any funds used by the Participating Landowner for completed ground squirrel habitat or population conservation projects. If the new landowner does not become a party to this or a similar Agreement, and the permit is not transferred or a new permit is not issued, the new landowner will not receive the benefits of the permit authorizing incidental take of southern Idaho ground squirrels.

J. Notices and Reports. Notices or reports required by this Agreement shall be delivered in writing to:

Supervisor, Snake River Fish and Wildlife Office
U.S. Fish and Wildlife Service
1387 S. Vinnell Way, Room 368
Boise, Idaho 83709

208-378-5243 (Telephone)
208-378-5262 (Fax)

Regional Supervisor
Idaho Department of Fish and Game
3101 South Powerline Road
Nampa, Idaho 83686
208-465-8465 (Telephone)
208-465-8467 (Fax)

Administrator
Governor's Office of Species Conservation
P.O. Box 83720
Boise, Idaho 83720
208-334-2189 (Telephone)
208-334-2172 (Fax)

K. Notification Requirement. Enrolled landowners will notify the IDFG and the Service at least one (1) month (30 days) prior to new ground disturbing activities within ground squirrel protected areas. Such new activities shall include excavations of all types, but shall not include normal plowing of established fields in which alfalfa, grass hay or other crops are grown. By March 1 of each year, the agencies will notify the enrolled landowners if southern Idaho ground squirrels have expanded beyond the boundaries of any ground squirrel protected area or into cultivated fields that are within or adjacent to protected areas. If ground squirrels have expanded to adjacent lands beyond the boundaries of a protected area or to the cultivated fields within protected areas, the agencies and the enrolled landowners will develop measures to minimize any incidental take that could result from ground disturbance activities.

XIII. Literature Cited

- Barrett, J. S., J. C. Munger, and E. Yensen. 2003. Effects of an altered landscape on the demography of the southern Idaho ground squirrel (*Spermophilus brunneus endemicus*). Annual Report submitted to U.S. Bureau of Land Management, Boise, Idaho. BLM Challenge Cost Share Task # DAF020015.
- Betts, B. J. 1999. Current status of Washington ground squirrels in Oregon and Washington. *Northwestern Naturalist* 80: 35-38.
- Dyni, E. J., and E. Yensen. 1996. Dietary similarity in sympatric Idaho and Columbian ground squirrels (*Spermophilus brunneus* and *S. columbianus*). *Northwest Science* 70:99-108.
- Gavin, T. A., P. W. Sherman, E. Yensen, and B. May. 1999. Population genetic structure of the northern Idaho ground squirrel. *Journal of Mammalogy* 80:156-168.
- Gill, A. E., and E. Yensen. 1992. Biochemical differentiation in the Idaho ground squirrel, *Spermophilus brunneus* (Rodentia: Sciuridae). *Great Basin Naturalist* 52:155-159.
- Haak, B. 2000. Northern Idaho ground squirrel population monitoring and habitat mitigation, 2000 annual report. RA No. 99-A-17-0044. Idaho Department of Fish and Game, Nampa, Idaho. 12 pp.
- Hafner, D. J., E. Yensen and G. L. Kirkland (Eds.) 1998. North American rodents. Status survey and conservation action plan. International Union for Conservation of Nature. Gland, Switzerland. 171 pp.
- Idaho Department of Fish and Game. 1994. Rare, Threatened and Endangered Plants and Animals of Idaho. Conservation Data Center, Boise, Idaho. Third Edition. 39 pp.
- Idaho Department of Fish and Game. 2002. Upland Game Seasons and Rules – Regulations 2002-2003. Boise, Idaho. 32 pp.
- Idaho Department of Fish and Game. 2003. Spring 2003 Southern Idaho Ground Squirrel Investigation Report. Prepared by Kevin Warner. IDFG, Nampa, Idaho. 5 pp. + appendices.
- Moroz, P., S. Jeffries, F. Gordon, A. Hansen, W. Owen, J. Rohlman, C. Lunte, R. Howard, C. Harris, and L. Lewis. 1995. Idaho ground squirrel, *Spermophilus brunneus brunneus* habitat conservation assessment, conservation strategy. Idaho Interagency Conservation/Prelisting Effort. Idaho Department of Fish and Game, Boise, Idaho. 18 pp.

- Panek, K. C., and J. C. Munger. 2003. Southern Idaho ground squirrels: dispersal and translocation, 2003 field season. Annual report submitted to the U.S. Fish and Wildlife Service. Biology Department, Boise State University, Idaho. 6 pp.
- Prescott, D. J., and E. Yensen. 1999. Habitat variables correlated with presence of southern Idaho ground squirrels, *Spermophilus brunneus endemicus*. 19 pp.
- Sherman, P. W. 2000. Distribution and behavior of Washington ground squirrels in Central Washington. Unpublished report. Cornell University, Ithaca, N.Y. 13 pp.
- (Service and NMFS) U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1999. Announcement of Final Policy for Candidate Conservation Agreements with Assurances. 64 FR 32726 (June 17, 1999).
- Whisenant, S.G. 1990. Changing fire frequencies on Idaho's Snake River Plain: Ecological and management implications. *In*: (E.D. McArthur, E.M. Rommey, and P.T. Tueller, Eds.) Proceedings: Symposium on cheatgrass invasion. General Technical Report Int-276. USDA Forest Service, Intermountain Research Station, Ogden, Utah.
- Yensen, E. 1980. Population status of the Idaho ground squirrel. A publication of the Center for Research, Grants, and Contracts. Boise State University, Idaho. 9 pp.
- Yensen, E. 1985. Taxonomy, distribution, and population status of the Idaho ground squirrel. Status Report prepared for the U.S. Fish and Wildlife Service, Snake River Basin Office, Boise, Idaho. 41 pp.
- Yensen, E. 1991. Taxonomy and distribution of the Idaho ground squirrel, *Spermophilus brunneus*. *Journal of Mammalogy* 72:583-600.
- Yensen, E., D. L. Quinney, K. Johnson, K. Timmerman, and K. Steenhof. 1992. Fire, vegetation changes, and population fluctuations of Townsend's ground squirrels. *American Midland Naturalist* 128:299-312.
- Yensen, E., C. R. Baird, and P. Sherman. 1996. Larger ectoparasites of the Idaho ground squirrel. *Great Basin Naturalist* 56(3):237-246.
- Yensen, E., and P. Sherman. 1997. Mammalian species: the Idaho ground squirrel, *Spermophilus brunneus*. *Journal of the American Society of Mammalogists*. 560:1-5.
- Yensen, E. 1998. Known localities of *Spermophilus endemicus*. A report for U. S. Fish and Wildlife Service, Snake River Basin Office, Boise, Idaho. 7 pp.

Yensen, E. 1999. Population survey of the southern Idaho ground squirrel, *Spermophilus brunneus endemicus*. A report for U. S. Fish and Wildlife Service, Snake River Basin Office, Boise, Idaho. 16 pp.

Yensen, E. 2000. Additional surveys for southern Idaho ground squirrels, *Spermophilus brunneus endemicus*. A report for U. S. Fish and Wildlife Service, Snake River Basin Office, Boise, Idaho. 9 pp.

Yensen, E., and B. Haak. 2000. Population survey of the southern Idaho ground squirrel. BLM Challenge Cost Share Project; Agreement No. 203. Department of Interior, Bureau of Land Management, Boise, Idaho. 16 pp.

Yensen, E. 2001. Population estimate for the southern Idaho ground squirrel (*Spermophilus brunneus endemicus*). A report for the U.S. Fish and Wildlife Service, Snake River Basin Office, Boise, Idaho. 20 pp.

Yensen, E. 2003. Survey for southern Idaho ground squirrels on Soulen Livestock Company lands. A report for the U.S. Fish and Wildlife Service, Snake River Basin Office, Boise, Idaho. 18 pp.

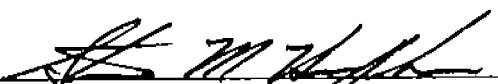
Personal Communications

Bruce Haak. 2000. Regional Biologist, Idaho Department of Fish and Game, Nampa, Idaho.

Joe Hinson. 2002. Rancher, Weiser, Idaho.

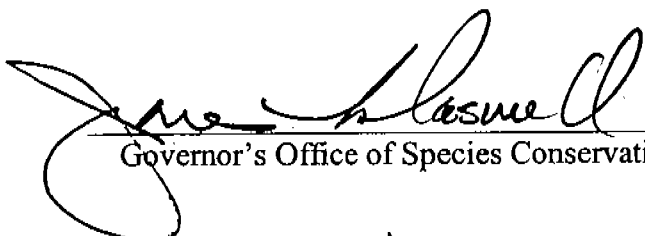
Eric Yensen. 2002. Professor of Biology, Albertson College, Caldwell, Idaho.

IN WITNESS WHEREOF THE PARTIES HERETO have executed this Agreement to be in effect as of the date that the Service issues the permit.



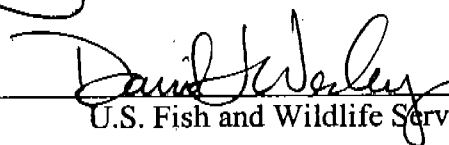
Idaho Department of Fish and Game

Mar 14, 2005
Date



Governor's Office of Species Conservation

3/14/05
Date



U.S. Fish and Wildlife Service

3/17/05
Date