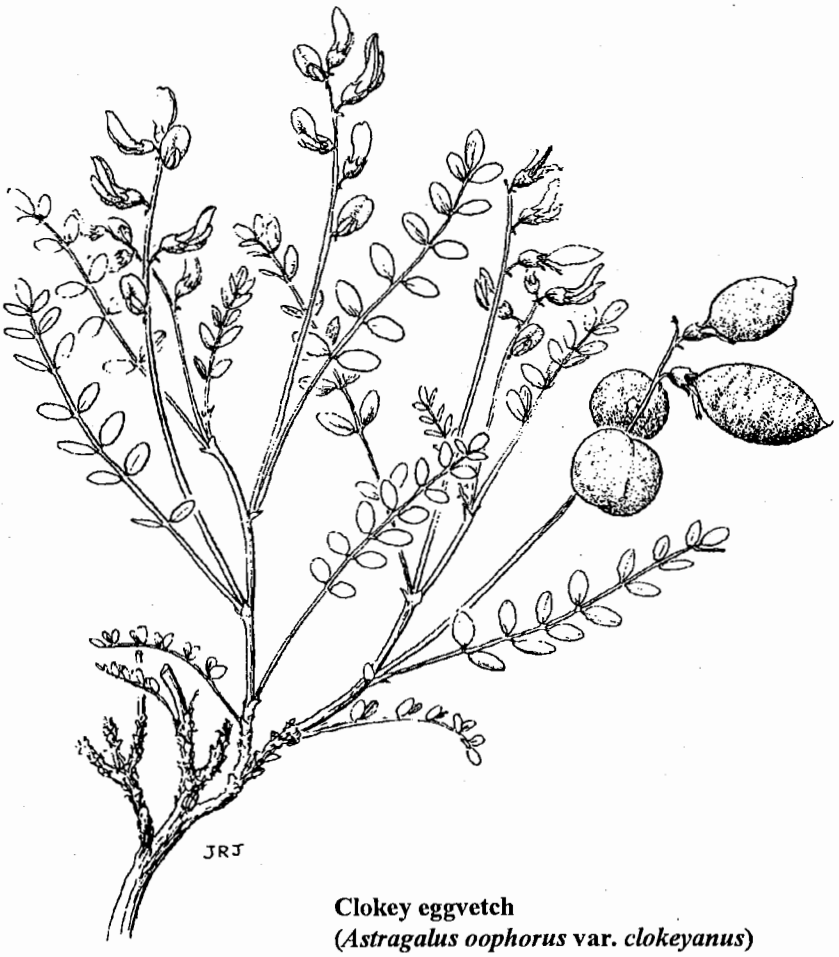
CONSERVATION AGREEMENT

for the
Spring Mountains National Recreation Area
Clark and Nye Counties, Nevada



Clokey eggvetch
(*Astragalus oophorus* var. *clokeyanus*)

U.S. Forest Service Intermountain Region
State of Nevada, Department of Conservation and Natural Resources
U.S. Fish and Wildlife Service, Pacific Region

April 13, 1998

Declaration of Support
for the
Spring Mountains National Recreation Area
Conservation Agreement

April 13, 1998

We acknowledge and support the cooperative efforts of the U.S. Fish and Wildlife Service, U.S. Forest Service, and Nevada Department of Conservation and Natural Resources that led to development and implementation of the Spring Mountains National Recreation Area Conservation Agreement. This agreement fully meets the intent of the National Interagency Memorandum of Understanding (94-SMU-058) to conserve species within their natural ecosystems.

Senator Harry Reid

Senator Richard Bryan

Bruce Babbitt, Secretary of the Interior

Bill Possiel, The Nature Conservancy

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The U.S. Forest Service, U.S. Fish and Wildlife Service, and Nevada Department of Conservation and Natural Resources appreciate the assistance provided by the following individuals and entities in preparing this Conservation Agreement: Jan Nachlinger, The Nature Conservancy of Nevada; George Austin, Bruce Boyd, and Bret Boyd, Nevada State Museum; Mary Kay Ramsey, formerly with the University of Nevada, Las Vegas; Stuart Weiss, Stanford University; and private researchers Don Sada and Frank Smith. We also acknowledge the many partners and stakeholders - Bureau of Land Management, Clark County, and Southern Nevada Water Authority; and various conservation and wildlife groups, community associations, town boards, mountain residents and commercial operators, off-highway vehicle enthusiasts, climbers, cavers, special use permitees, and wild horse advocates - all have worked together and with the Forest Service, Fish and Wildlife Service, and Nevada Department of Conservation and Natural Resources, in the spirit of compromise, to manage and conserve resources in the Spring Mountains.

This Conservation Agreement was prepared by Janet Bair, U.S. Fish and Wildlife Service, and Sara Mayben, U.S. Forest Service, Spring Mountains National Recreation Area; in coordination with Butch Padilla and Cris Tomlinson, Nevada Division of Wildlife; John Jones, Nevada Division of Forestry; and Glenn Clemmer, Nevada Natural Heritage Program. Additional review and/or technical support was provided by Teresa Prendusi, Dee Gardner, and Kathy Moskowitz, U.S. Forest Service; and Al Pfister, Dolores Savignano, Donna Withers, and Selena Werdon, U.S. Fish and Wildlife Service.

Conservation Agreement
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Spring Mountains National Recreation Area
Clark and Nye Counties, Nevada

I. PURPOSE

This Conservation Agreement (CA) has been developed to facilitate voluntary cooperation between the U.S. Forest Service (FS), U.S. Fish and Wildlife Service (FWS), and State of Nevada Department of Conservation and Natural Resources (DCNR), in providing long-term protection for the rare and sensitive flora and fauna of the Spring Mountains National Recreation Area (NRA). Successful implementation of protection-oriented resource management in the Spring Mountains will involve consideration of conservation values through early project planning, in conjunction with an ongoing program of species, habitat, and ecosystem inventory, monitoring, protection, restoration, research, and education. Specific actions necessary to implement this program are described in section VII.

If successfully implemented, this CA should provide long-term protection for all of the species of concern in the Spring Mountains, and should preclude the future need to list any of these species as threatened or endangered under the Endangered Species Act of 1973, as amended (ESA). Should the terms of this CA not be accomplished, and if declines in species status or habitat quality are documented, the FWS may eventually determine that listing of one or more of these species of concern under the ESA will be necessary to halt and reverse declining status trends.

II. INVOLVED PARTIES

A. U.S. Forest Service
Intermountain Region
324 25th Street
Ogden, Utah 84401
(801) 625-5605

B. U.S. Fish and Wildlife Service
Region 1 Office
911 N.E. 11th Avenue
Portland, Oregon 97232
(503) 231-6118

C. Nevada Department of Conservation and Natural Resources
123 West Nye Lane
Carson City, Nevada 89710
(702) 687-4360

III. AUTHORITY

The authority for the FWS and the FS to enter into this voluntary CA is in the Endangered Species Act of 1973, as amended; the Fish and Wildlife Act of 1956, as amended; the Fish and Wildlife Coordination Act, as amended, and the Economy Act. The authority for the Nevada DCNR to enter into cooperative agreements with Federal agencies is granted in Nevada Revised Statutes (NRS) 232.070. Additional authority is found in a 1994 Memorandum of Understanding (MOU) among the Departments of Agriculture, Interior, and Commerce, which establishes a general framework for cooperation in management of species that are tending towards Federal listing as threatened or endangered. Addendum 1 of the MOU adds State fish and wildlife agency leaders as cooperators under the representation of the International Association of Fish and Wildlife Agencies (Appendix A).

Three divisions of the Nevada DCNR are involved in implementation of this CA. The responsibility of the Nevada Division of Wildlife (NDOW) is for the management, propagation, and protection of species of fish and wildlife found within the borders of the State, and for regulating the public use of these resources for the benefit of the people of the State of Nevada.

Nevada Division of Forestry (NDF) administers a program for the conservation, protection, restoration, and propagation of selected species of flora and for the perpetuation of the habitats of such species. This program permits the State Forester/Firewarden to list native plant taxa as "threatened with extinction", and prohibits removal or destruction without a permit.

Nevada Natural Heritage Program (Heritage) is the State's clearinghouse for sensitive species data. Its ongoing mission is to compile, analyze, and disseminate data from all sources on occurrences of endangered, threatened, and sensitive plants, animals, and unique communities throughout Nevada.

In May 1994, the FWS and FS entered into an Interagency Agreement (IA) for the Spring Mountains Ecosystem Conservation Project (Appendix B). The purpose of the IA was to establish the basis for interagency cooperation in development of ecosystem-level management strategies in the Spring Mountains NRA, with the ultimate goal of development of conservation strategies and a CA that would manage and preserve the threatened, endangered, candidate, and sensitive species within the Spring Mountains NRA. The IA provided guidance and the framework for cooperation between the two agencies, and has resulted in development of this CA. Throughout this process, the FWS and the FS have recognized the role of the State as a partner in development of conservation strategies.

IV. BACKGROUND

Environmental Setting

The Spring Mountains ecosystem, located in Clark and Nye counties, Nevada (Figure 1), has long been recognized as an island of endemism, harboring flora and fauna found nowhere else in the world. Several features of this mountain range, most notably its extreme vertical relief, geographic isolation, and geographic position on the boundary of the warm Mojave Desert and the cooler Great Basin Desert, contribute to the diversity of the range. Charleston Peak, the highest peak in the range, is nearly 12,000 feet. The deserts surrounding the Spring Mountains, which are more than 9,000 feet lower than the summit of Charleston Peak, are barriers to migrations of cooler and more mesic-adapted plant and animal species. As a result, relict species have persisted through time in the Spring Mountains, while new species have evolved and become isolated (Nachlinger and Reese 1996). As presently known, 25 species (15 vascular plants, 1 mammal, 9 invertebrates) are endemic to the Spring Mountains ecosystem.

The vegetation of the Spring Mountains has been classified into six broad vegetation zones or types defined by elevational gradient and habitat characteristics: 1) Desert shrublands, 2) low elevation conifer woodlands, montane shrublands, and chaparral, 3) high elevation conifer forests and woodlands, 4) the alpine zone, 5) steep slopes and clifflands, and 6) riparian areas and springs. The vegetation is further hierarchically classified into 17 plant series with 33 associations. A recent focus on these plant communities has contributed to the current understanding of endemic and sensitive species habitats (Nachlinger and Reese 1996).

Various areas within the Spring Mountains are particularly rich in terms of species diversity, numbers of endemic species, and unique plant communities. These "biodiversity hotspots" are defined as areas of any size with any number of ecologically significant elements sharing habitats in the same area (The Nature Conservancy [TNC] 1994, Figure 2). Significant elements may include federally listed species, candidate species, locally and regionally endemic species, locally rare species, and unique communities, such as riparian streams and springs. During the course of management planning and baseline information collection, 39 biodiversity hotspots were identified, including 10 very high, 13 high, and 16 moderate priority hotspots for conservation management (TNC 1994). A list of biodiversity hotspots is provided in Appendix C.

Forest Service Management of the Spring Mountains National Recreation Area

Public Law 103-63, dated August 4, 1993 (the Spring Mountains NRA Act), established the Spring Mountains NRA, including approximately 316,000 acres of Federal lands managed by the Toiyabe National Forest in Clark and Nye counties, Nevada. In establishing the Spring Mountains NRA, three purposes were identified:

Figure 1
Spring Mountains NRA
Management Areas

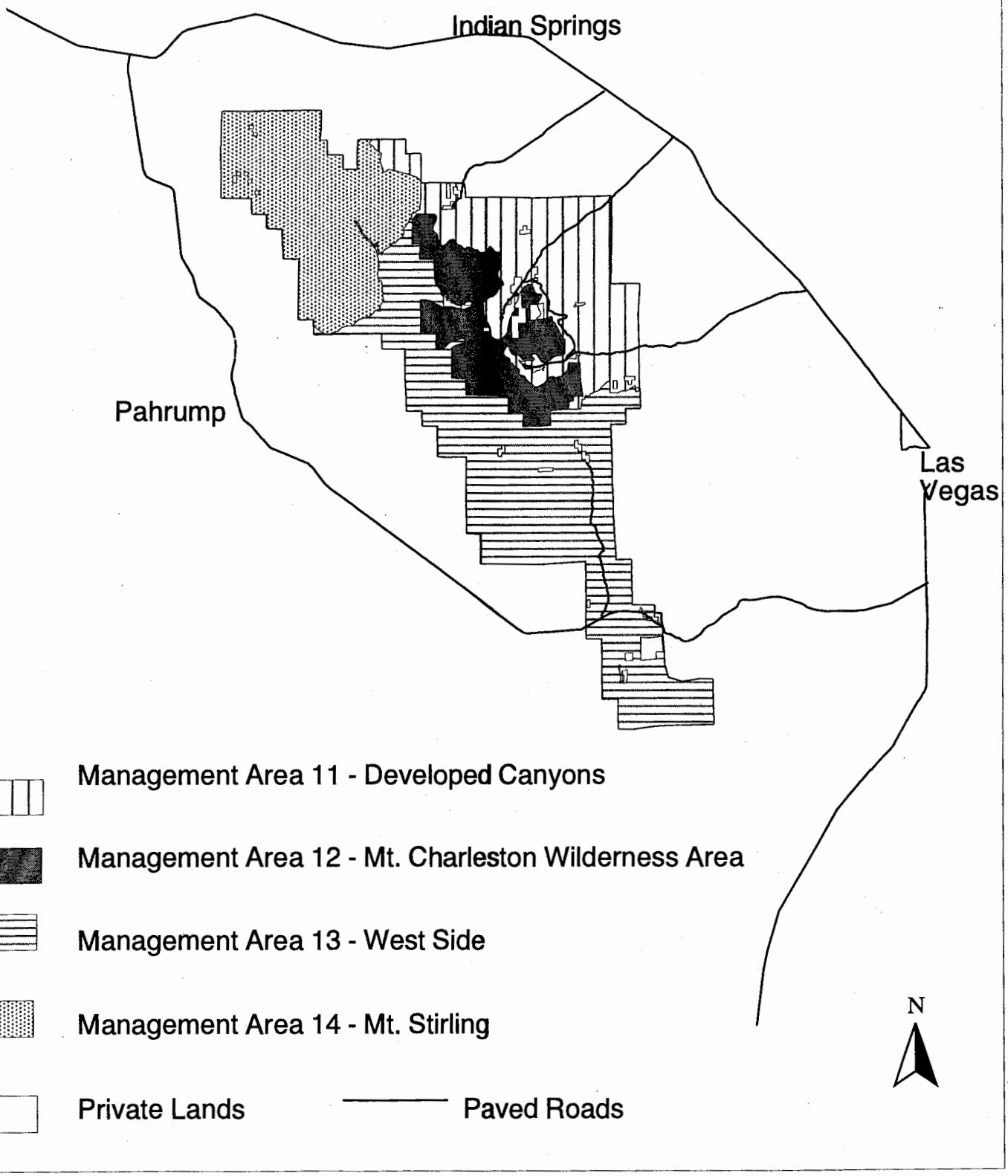
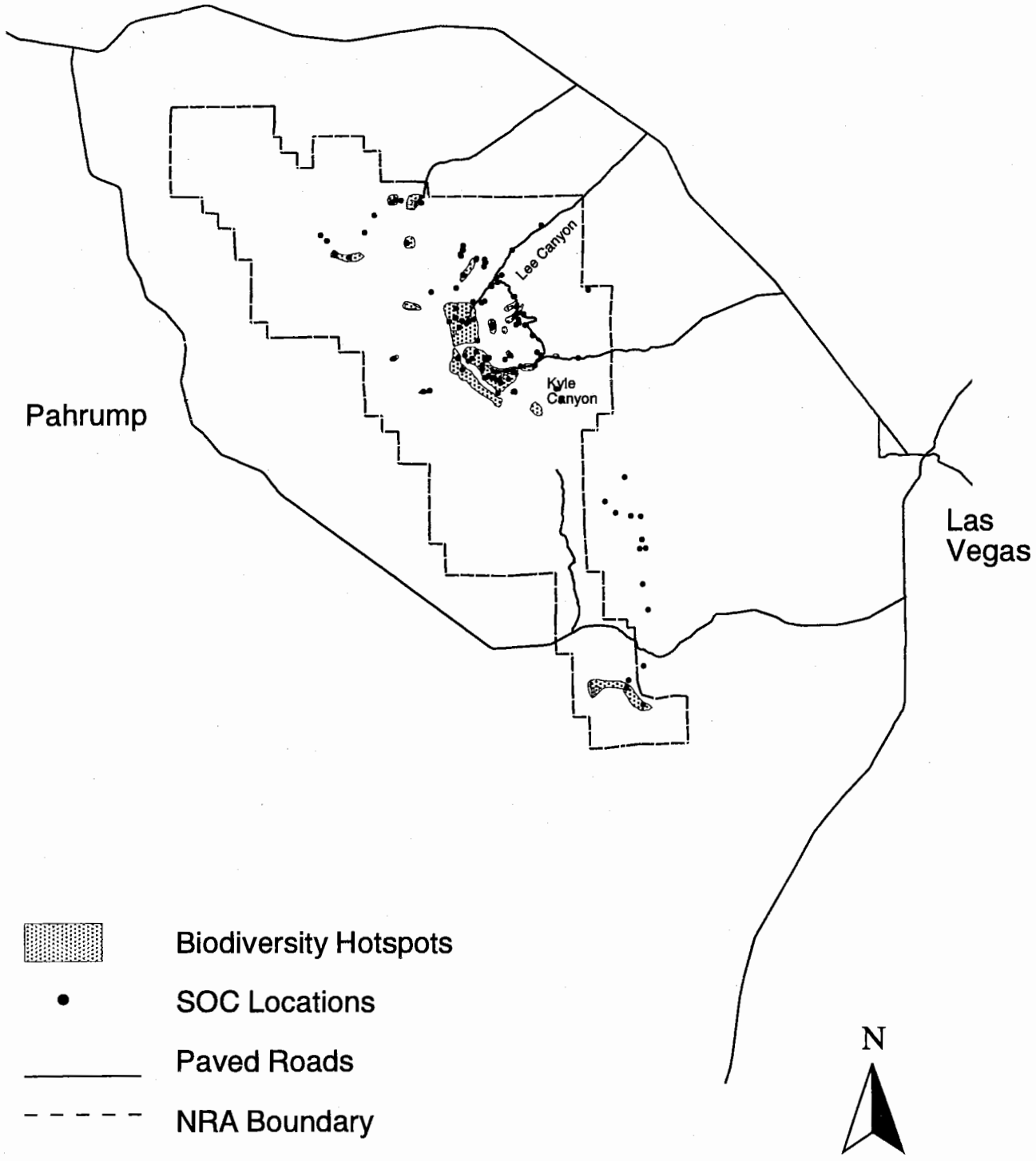


Figure 2
Spring Mountains NRA
Biodiversity Hotspots and
Species of Concern Locations



(1) To preserve the scenic, scientific, historic, cultural, natural, wilderness, watershed, riparian, wildlife, threatened and endangered species, and other values contributing to public enjoyment and biological diversity in the Spring Mountains of Nevada;

(2) to ensure appropriate conservation and management of natural and recreation resources in the Spring Mountains; and,

(3) to provide for the development of public recreation opportunities in the Spring Mountains for the enjoyment of present and future generations.

The Spring Mountains NRA Act also provides for protection of watersheds and the maintenance of free flowing streams and the quality of ground and surface waters in accordance with applicable law, and the use of prescribed fire to improve or maintain habitat. The law specifies the enhancement of public outdoor recreation benefits, including, but not limited to, hunting, fishing, trapping, hiking, horseback riding, backpacking, rock climbing, camping, and nature study, and the management and use of natural resources in a manner compatible with the purposes for which the NRA is established.

The Spring Mountains NRA Act directed development of a general management plan for the NRA as an amendment to the Toiyabe National Forest Land and Resource Management Plan. The Plan Amendment was completed in October 1996. Specific direction is provided in this plan for managing ecosystem health and biological diversity, riparian area protection and restoration, restoration of seral stages for communities of species adapted to disturbance, elimination of term livestock grazing (although grazing may be used to achieve ecosystem health goals), reductions in wild horse and burro populations, and management of ecologically sensitive areas. The NRA Plan Amendment specifically focuses on balancing ecosystem conservation, protection of cultural and heritage resources, continuance of current uses of the Spring Mountains, and additional opportunities for recreation.

The plan provides management emphasis for four primary areas in the Spring Mountains (FS 1996, Figure 1). In all management areas, fire management and vegetation treatments to reduce fire spread are stressed. Prescribed fire and prescribed natural fire will be used in appropriate vegetation types, where lives and property can be protected. Specific management area emphases are as follows:

Management Area 11 - Developed Canyons: The NRA Plan Amendment limits new development in upper Kyle and Lee canyons, while distributing use and facilities to areas of the Spring Mountains NRA outside of the developed canyons. The plan places high emphasis on protection of native species, ecological processes, and heritage resources, incorporating these considerations into the management of recreation areas. Wild horse and elk populations in Cold Creek are to be reduced, while managing recreation use to allow riparian areas to recover.

Management Area 12 - Mt. Charleston Wilderness: The NRA Plan Amendment stresses restoration and protection of the special characteristics of this wilderness, including rare plants, an untrammeled appearance, and opportunities for primitive recreation. Some recreational uses (e.g., campfires, overnight camping, and stock use on some trails) are restricted in order to protect wilderness and ecological values. With the exception of limited construction of hiking trails and climbing routes, no new development will occur, and evidence of past use (e.g., roads, fire rings, water developments) are to be removed. Prescribed natural fires will burn within specific parameters.

Management Area 13 - West Side: The NRA Plan Amendment provides for increased levels of recreation development and service and increased multi-use trails and campsites at appropriate locations, to distribute recreational use throughout this area. The plan will also provide increased protection for heritage resource sites and the unique environment of Carpenter Canyon.

Management Area 14 - Mt. Stirling: The NRA Plan Amendment seeks to retain Mt. Stirling's essentially undeveloped, roadless character, avoiding development of major recreation facilities. Management treatments will be designed to mimic or restore ecological processes such as fire, while maintaining the existing Mt. Stirling Wilderness Study Area suitability for wilderness designation pending Congressional action.

An important emphasis of the NRA Plan Amendment is in providing protection for sensitive species and ecosystems without imposing undue burdens on existing users of the NRA. New opportunities for recreation are to be provided in less sensitive areas, as appropriate. This approach recognizes that increasing demands for recreation and other human uses of the Spring Mountains ecosystem will continue as a result of rapid urban growth in the adjacent Las Vegas Valley. The plan provides the basis for developing recreation sites away from the most sensitive species and habitats, thus diminishing a trend towards unregulated recreation in very sensitive areas (FS 1996).

Ecosystem Management in the Spring Mountains

The FS announced adoption of ecosystem management on June 4, 1992. The Plan Amendment for the Spring Mountains NRA is based on an ecosystem approach to the care and use of national forests. Ecosystem management of National Forest system lands emphasizes an ecological approach in conducting multiple-use management of the National Forests, recognizing that the needs of people and environmental values must be blended in such a way that the National Forests represent diverse, healthy, productive, and sustainable ecosystems (FS 1996).

This CA is intended to reflect an ecosystem management approach to conservation of endemic and sensitive species. Thus, the following guidelines (based on Grumbine 1994) have been adopted as the basis for sustaining viable species, populations, habitats, and ecosystem integrity:

1. Maintain viable populations of all native species in their natural habitats.

2. Represent, within protected areas, all native ecosystem types across their natural range of variation.

3. Maintain evolutionary and ecological processes (i.e., disturbance regimes, hydrological processes, nutrient cycles, etc.).

4. Manage over periods of time long enough to maintain the evolutionary potential of species and the ecosystem.

5. Accommodate human use and occupancy within these constraints.

In achieving this focus, ecosystem management efforts for the Spring Mountains within the context of this CA will emphasize management recognition of the hierarchical context of ecosystems and seek connections among all levels, including species, populations, ecosystems, and landscapes. This emphasis must include working across administrative and political boundaries to establish interagency and public cooperation and support, an ongoing program of research and monitoring, flexible management programs, and acknowledgment that humans are fundamental and unavoidable influences on ecological patterns and processes.

Other Plans and Programs

Three other resource management planning processes that are currently underway consider species of concern and other ecological resources in the Spring Mountains ecosystem:

Bureau of Land Management (BLM), Red Rock Canyon National Conservation Area (NCA): This area formerly consisted of 83,440 acres of public lands on the southeastern flanks of the Spring Mountains ecosystem. Under Public Law 103-450, dated November 2, 1994, the BLM's Red Rock Canyon NCA was expanded in size to 195,610 acres. The expanded NCA includes much of the lower elevation, eastern flanks of the Spring Mountains ecosystem. While a General Management Plan is being prepared for management of this newly expanded area, an Interim General Management Plan provides management guidance (BLM 1995). Interim objectives emphasize protection and conservation of resources in conjunction with management of visitors, facilities, and wild horses.

Bureau of Land Management, Las Vegas District: Lands below 4,500 feet along much of the western and northern flanks of the Spring Mountains ecosystem are under the management authority of BLM's Las Vegas District. Current management direction is provided in several existing plans, primarily, the Clark County Management Framework Plan (BLM 1984), and the Esmeralda-Southern Nye Resource Management Plan/ Environmental Impact Statement - Planning Area B (BLM 1986). The Stateline Resource

Management Plan (RMP), currently in draft stage, will eventually provide management guidance for approximately 3.7 million acres of public lands in southern Nevada (BLM 1992). The draft RMP focuses on six management issues: Land tenure, desert tortoise, mineral development, off-highway vehicle use, special management areas, and utility corridors.

Clark County Habitat Conservation Plan: The Clark County Desert Conservation Plan, signed in 1995, mitigates the impacts of take of desert tortoise under section 10(a)(1)(B) of the ESA, in a permit area comprised of approximately 525,000 acres in Las Vegas Valley (FWS 1995). Mitigation is accomplished through collection of a mitigation fee for development in the permit area. These funds are targeted for conservation of species at risk in Clark County through ecosystem protection. A multi-species plan is being developed to provide assurance to Clark County citizens, developers, businesses, and resource users that additional ESA listings will not jeopardize economic development. Assurances will be given to the County for those species ("covered species") that have been provided conservation measures as if they were listed. These assurances provide the County with the guarantee that they will not be required to provide additional mitigation dollars or land if the species is listed in the future. Implementation of conservation measures for species in the Spring Mountains NRA should provide a basis for declaring that a species is covered.

V. SPECIES AND HABITATS INVOLVED

Species Named in this Agreement and their Conservation Ranking

This section summarizes the species of concern for this CA and highlights those of greatest concern. Appendix D provides a summary of the species of concern, their distribution, habitat requirements, and conservation status. Fifty-seven species are specifically addressed within the context of this CA, including 27 plants, 9 mammals, 5 birds, 1 fish, 3 reptiles, and 12 invertebrates. An additional 11 species are listed at the end of Appendix D. These species are southern Nevada and regional endemic species that are fairly common and/or widespread across their range, and are currently not subject to large scale threats. While these species, are not of specific management concern at this time, they may also benefit from implementation of this CA.

Species included in Appendix D are ranked and categorized by Federal and State entities based on their susceptibility and vulnerability to species disturbance. The major categories are as follows:

Threatened and Endangered Species: These are species listed under the ESA. The listed species known to occur in the NRA are desert tortoise and Lahontan cutthroat trout (a single, introduced population). Listed species with potential to occur in the NRA are peregrine falcon and southwestern willow flycatcher. Section 7(a) of the ESA requires Federal agencies to consult with the FWS when a Federal action may affect a listed species, to insure that any action authorized, funded or carried out by a Federal agency is

not likely to jeopardize the continued existence of those species or result in destruction or adverse modification of critical habitat.

Candidate Species: This category includes species currently being considered by FWS for listing under the ESA. The only remaining candidate species occurring in the Spring Mountains NRA, Clokey eggvetch, was removed from candidate status on March 30, 1998 (63 Federal Register 16217).

Fund For Animals Lawsuit Settlement Agreement Species: In 1991, three endemic plant species of the Spring Mountains NRA were among 401 species included in a nationwide lawsuit settlement agreement between FWS and the Fund For Animals et al., requiring FWS to review the species status and determine whether or not listing under the ESA was necessary to provide for their long-term protection. The Spring Mountains species named in the settlement agreement are Charleston tansy, Charleston kittentails and Clokey eggvetch. In 1996, Charleston tansy and Charleston kittentails were determined not warranted for listing, based on Federal agency efforts to conserve the species, in particular, development and implementation of this CA (61 FR 7595, 61 FR 7457). As previously mentioned, Clokey eggvetch was removed from candidate status in 1998. This decision was based, in part, on conservation actions implemented in the Spring Mountains during and following preparation of this CA.

"Sensitive" is a category used by the FS to designate species for which long-term survival may be of concern due to FS management, because of current or predicted downward trends in population numbers, density, or habitat capability. FS policies require the Spring Mountains NRA to: 1) Ensure that management practices do not cause sensitive species to be federally listed under the ESA, 2) maintain viable populations of native and desired non-native wildlife, fish, and plant species, and 3) develop management objectives for sensitive species.

"Species of concern" is a non-regulatory designation used by the FWS to indicate species that are rare, believed sensitive to human disturbance, or subject to threat. The NRA Plan Amendment also recognizes species of concern that are not designated as sensitive by FS. Most are former candidates for listing under the ESA, for which the FWS lacks sufficient information on vulnerability and threats to base a proposal to list them as threatened or endangered. With the exception of species listed as threatened or endangered under the ESA, all of the species included in the main body of Appendix D are regarded as species of concern.

State Protected Species: The State of Nevada provides protection for selected species of native flora and fauna by placing them on the Critically Endangered Plant Species List or the Protected List of Wildlife Species. Under Nevada State law, it is unlawful to remove or destroy such species of flora, except under special permit issued by the State Forester

Firewarden (NRS 527.270), or capture, remove, or destroy such species of wildlife, except under special permit issued by NDOW (NRS 503.585).

State Heritage Program Rank: The conservation status of native United States species is periodically ranked by the network of affiliated State-agency based Natural Heritage Programs, using standardized methods developed by TNC. Status at State, National, and global (range wide) levels is ranked on a scale of 1 to 5, with 1 being the most vulnerable and 5 the most secure. While Heritage program rankings provide no legal protection, the FWS, FS, and other management agencies use these rankings to prioritize rare species conservation needs.

Habitats for the Species of Concern in the Spring Mountains

The species of concern addressed in this CA occur in one or more of four primary vegetation zones and two azonal habitat types. The Spring Mountains NRA plant community classification (Nachlinger and Reese 1996) defines 17 series with 33 associations within the six zones and types. The zones and types have also been ranked in terms of average biodiversity significance. These rankings are the average value of plant species biodiversity significance within each area, a value based on considerations of global and local distribution and abundances, habitat specificity, and vulnerability to human disturbance (Nachlinger and Reese 1996). The zones and types, characteristic or dominant plant species, average biodiversity significance, and the numbers of species of concern occurring within them are discussed below. Table 1 lists the species of concern by their occurrence within each zone or type.

Alpine Zone (11,335 - 11,900 feet elevation): The alpine zone of the Spring Mountains includes the highest elevations of Charleston Peak, as well as the ridge line south of the peak, and east to Mummy Mountain. The alpine zone is characterized by a single, distinctive plant association (the hidden ivesia series), which ranks highest in terms of biodiversity significance among all series and associations in the mountain range because of the number of endemic species that occur there. Eight plant and one invertebrate species of concern are endemic to the alpine zone of the Spring Mountains.

Springs and Riparian Areas (4,000 - 10,160 feet elevation): There are approximately 200 springs and riparian areas in the Spring Mountains ecosystem, occurring from high to low elevations. In the NRA, springs and riparian areas are classified into 3 series with 11 distinct plant associations, variously characterized by wild rose (*Rosa woodsii* var. *ultramontana*), western water birch (*Betula occidentalis*), salt cedar (*Tamarix ramosissima*), desert baccharis (*Baccharis sergiloides*), narrowleaf willow (*Salix exigua*), and other shrubs, herbaceous perennials, and grasses. These areas vary in terms of biodiversity significance from very low to very high (Nachlinger and Reese 1996). Springs and riparian areas provide habitat for 29 species of concern, including 15 species endemic to the Spring Mountains.

Steep Slopes and Clifflands (4,000 - 8,925 feet elevation): Steep slope and cliff habitats are distributed throughout a 5,000 foot elevational range in the NRA. These areas include five series or associations that are either vegetationally barren or characterized by dwarf mountain mahogany (*Cercocarpus intricatus*) in association with cliff jamesia (*Jamesia americana*), rock spirea (*Petrophyton caespitosum*), and Jaeger ivesia. Steep slopes and cliffs can be a relatively significant source of biodiversity, providing important habitat for various plants, bats, and birds of prey, including 11 species of concern, one of which is endemic to the Spring Mountains.

High Elevation Conifer Forest and Woodland Zone (7,100 to 11,470 feet elevation): The high elevation forests and woodlands, which are vegetationally characterized by various associations of white fir (*Abies concolor*), ponderosa pine (*Pinus ponderosa* var. *scopulorum*), curleaf mountain mahogany (*C. ledifolius* var. *intermontanus*), limber pine (*Pinus flexilis*), and bristlecone pine (*Pinus longaeva*), are overall, extremely diverse in terms of species, and rank very high in terms of biological significance. These areas provide habitat for 34 species of concern, including 21 species that are endemic to the Spring Mountains.

Low Elevation Conifer Woodland, Montane Shrubland, and Chaparral Zone (4,970 to 8,900 feet elevation): The low elevation woodlands, shrublands, and chaparral zone is characterized by various associations of single-leaf pinyon (*Pinus monophylla*), Utah juniper (*Juniperus osteosperma*), big sagebrush (*Artemisia tridentata*), and point leaf manzanita (*Arctostaphylos pungens*), in association with singleleaf mountain mahogany (*C. intricatus*), desert ceanothus (*Ceanothus greggii*), and silktassel (*Garrya flavescens*). These associations rank high in terms of biological significance, and provide habitat for 18 of the species of concern, including 7 species that are endemic to the Spring Mountains.

Desert Shrublands Zone (3,800 to 6,510 feet elevation): This zone includes five series and eight associations, variously dominated by creosote bush (*Larrea tridentata*), matchweed (*Gutierrezia microcephala*), blackbrush (*Coleogyne ramosissima*), Utah juniper, cliffrose (*Purshia mexicana* var. *stansburiana*), big sagebrush, and other shrub species. These associations rank relatively low in terms of biodiversity significance, but do provide habitat for 10 of the species of concern, including 1 endemic species.

Of the six primary vegetation or azonal habitat types discussed here, the springs and riparian zones and the high elevation conifer forests and woodlands harbor the greatest numbers of species of concern, followed by the alpine zone. Accordingly, many of the conservation actions outlined in this CA emphasize protection and conservation of ecological resources at the ecosystem level. However, the CA must ensure that individual species are afforded the protection they need so as to avoid declining status trends which could lead towards listing species under the ESA.

TABLE 1. Species named in the Spring Mountains Conservation Agreement and their distribution across six primary vegetation zones and azonal habitat types. (Abbreviations: Al = alpine zone, SR = Springs and riparian areas, Cf = Steep slopes and clifflands, Hi = high elevation conifer forest and woodland zone, Lo = low elevation conifer woodland, montane shrubland, and chaparral zone, DS = desert shrublands zone. [1] indicates species endemic to the Spring Mountains ecosystem, [2] indicates species endemic to southern Nevada and/or neighboring areas, [†] indicates species for which recent status survey information is available.

	VEGETATION/HABITAT TYPES					
SPECIES	**Al**	**SR**	**Cf**	**Hi**	**Lo**	**DS**
PLANTS						
Rough angelica (*Angelica scabrida*)[1†]		X		X		
Charleston pussytoes (*Antennaria soliceps*)[1†]	X	X		X		
Rosy King sandwort (*Arenaria kingii* ssp. *rosea*)[1†]				X		
Clokey milkvetch (*Astragalus aequalis*)[1†]		X		X	X	
Black woolypod (*Astragalus funereus*)				X	X?	X?
Halfring milkvetch (*Astragalus mohavensis* var. *hemigyrus*)[2†]						X
Clokey eggvetch (*Astragalus oophorus* var. *clokeyanus*)[2†]				X	X	
Spring Mountains milkvetch (*Astragalus remotus*)[1]						X
Upswept moonwort (*Botrychium ascendens*)		X				
Dainty moonwort (*Botrychium crenulatum*)		X				
Clokey thistle (*Cirsium clokeyi*)[1]	X	X		X		
Jaeger draba (*Draba jaegeri*)[1†]	X	X		X		
Charleston draba (*Draba paucifructa*)[1†]		X		X		
Nevada willowherb (*Epilobium nevadense*)				X	X	
Clokey greasebush (*Glossopetalon clokeyi*)[1†]			X			
Smooth pungent greasebush (*Glossopetalon pungens* var. *glabra*)[2]			X			
Pungent dwarf greasebush (*Glossopetalon pungens* var. *pungens*)[2]			X			
Hidden ivesia (*Ivesia cryptocaulis*)[1†]	X					
Jaeger ivesia (*Ivesia jaegeri*)[2†]			X			
Death Vly. beardtongue (*Penstemon fruticiformis* var. *amargosae*)[2]			X			X
Charleston beardtongue (*Penstemon leiophyllus* var. *keckii*)[1]		X		X		

	VEGETATION/HABITAT TYPES					
SPECIES	**Al**	**SR**	**Cf**	**Hi**	**Lo**	**DS**
Bean cinquefoil (*Potentilla beanii*)[1]	X	X		X		
Clokey mountain sage (*Salvia dorrii* var. *clokeyi*)[2†]				X	X	
Clokey catchfly (*Silene clokeyi*)[1†]	X			X		
Charleston tansy (*Sphaeromeria compacta*)[1†]	X			X		
Charleston kittentails (*Synthyris ranunculina*)[1†]	X	X		X		
Charleston grounddaisy (*Townsendia jonesii* var. *tumulosa*)[2†]				X	X	
MAMMALS						
Townsend big- eared bat (*Corynorhinus townsendii pallescens*)†		X	X	X	X	X
Spotted bat (*Euderma maculatum*)		X?	X?	X?	X?	X?
Allen's lappet-browed bat (*Idionycteris phyllotis*)†		X	X	X	X	
Western small-footed myotis (*Myotis ciliolabrum*)†		X	X		X	
Long-eared myotis (*Myotis evotis*)†		X		X	X	
Fringed myotis (*Myotis thysanodes*)†		X	X	X	X	X
Long-legged myotis (*Myotis volans*)†		X	X	X	X	X
Yuma myotis (*Myotis yumanensis*)†		X	X		X	
Palmer's chipmunk (*Tamias [=Eutamias] palmeri*)[1†]		X		X	X	
BIRDS						
Northern goshawk (*Accipiter gentilis*)				X		
Southwestern willow flycatcher (*Empidonax traillii extimus*)		X?		X?		
American peregrine falcon (*Falco peregrinus anatum*)			X?			
Flammulated owl (*Otus flammeolus*)				X		
Western burrowing owl (*Speotyto cunicularia hypogea*)						X
FISH						
Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*)		X				
REPTILES						
Desert tortoise (*Gopherus agassizii*)						X
Banded Gila monster (*Heloderma suspectum cinctum*)		X				X

	VEGETATION/HABITAT TYPES					
SPECIES	**Al**	**SR**	**Cf**	**Hi**	**Lo**	**DS**
Chuckwalla (*Sauromalus obesus*)			X			X
INVERTEBRATES						
Spring Mountains acastus checkerspot (*Chlosyne acastus* ssp.)[1†]		X		X	X	
Bret's blue (*Euphilotes battoides* ssp.)[1]		X			X?	
Dark blue (*Euphilotes enoptes* ssp.)[1†]		X		X	X	
Morand's checkerspot (*Euphydryas anicia morandi*)[1†]	X			X	X	
Spring Mountains comma skipper (*Hesperia comma* ssp.)[1†]		X		X	X	
Spring Mountains icarioides blue (*Icaricia icarioides* ssp.)[1†]		X		X		
Mt. Charleston blue butterfly (*Icaricia shasta charlestonensis*)[1†]				X		
Charleston ant (*Lasius nevadensis*)[1]				X		
Nevada admiral (*Limenitus weidemeyerii nevadae*)[2†]		X		X		
Spring Mountains springsnail (*Pyrgulopsis deaconi*)[2†]		X				
Southeast Nevada springsnail (*Pyrgulopsis turbatrix*)[2†]		X				
Carole's silverspot (*Speyeria zerene carolae*)[1†]				X	X	

Species of Greatest Management Concern in the Spring Mountains

Species of greatest management concern include those with the smallest number of populations, or those most vulnerable to threats. Species of greatest management concern at this time include four species of plants (Clokey eggvetch, rough angelica, upswept and dainty moonwort), Palmer's chipmunk, all bats, five butterflies (Spring Mountains acastus checkerspot, Bret's blue, dark blue, Spring Mountains blue, and Morand's checkerspot), and two species of springsnails. Many of the conservation actions included in this CA are geared specifically towards protection of the species of greatest management concern.

Clokey eggvetch: This rare plant species is known from 13 sites in 2 general areas in the Spring Mountains. Much of the habitat and most of the individual plants occur in Lee Canyon, one of the most intensively visited areas in the Spring Mountains. Clokey eggvetch was recently discovered in the Belted Range, Nye County, Nevada (on Nellis Air Force Range), and on Pahute Mesa, Nye County, Nevada (on the Nevada Test Site).

Rough angelica: This species is endemic to the Spring Mountains, where it grows on moist gravelly soils of washes, ephemeral stream courses, and gullies. Rough angelica

occurs in two general areas: Lower elevations within the BLM Red Rock Canyon NCA, and higher elevations on private land and FS lands within the Spring Mountains NRA.

Dainty and upswept moonwort: While both species occur throughout portions of the western United States, documented records are few. In the Spring Mountains, the known habitat of dainty moonwort occurs at only four springs, while the upswept moonwort has been historically documented but not recently found.

Low elevation plants: Several low elevation plants are of concern because information on their overall distribution within the range is limited. These species include halfring milkvetch, Death Valley beardtongue, black woolypod, and Spring Mountains milkvetch.

Palmer's chipmunk: This endemic chipmunk inhabits the cool mesic canyons of the Spring Mountains, typically near water, in mixed conifer and pinyon-juniper woodlands between 7,000 and 12,000 feet. Palmer's chipmunk appears to adapt to some limited land development. However, chipmunks prefer primitive areas with limited access, abundant cover sites, and few hazards. Well developed areas are not preferred as they offer few cover sites and more hazards, such as vehicles and paved roads (Tomlinson 1995).

Bats: Seven bat species of concern occur in the Spring Mountains (Ramsey 1997). Bat abundance and distribution are influenced by availability of water, roost sites, and foraging habitats. In order to access water in riparian areas, they need small pools with slow-moving water (Ramsey 1994). Bats spend at least half of their lives at roost sites, including nursery and hibernation roosts. Documented bat roosts in the Spring Mountains include snags, rock crevices and outcrops, caves, and talus slopes. The species of greatest concern in the Spring Mountains at this time is the Townsend big-eared bat. This species is highly susceptible to disturbance and known to abandon roost sites after only minor disturbance (Ramsey 1997).

Butterflies: The Spring Mountains support eight local endemic and one regional endemic taxa of butterflies. Butterflies have specific larval hostplant requirements, while nectar sources may include a few to many flower species. Sources of standing water and mud are also important components of butterfly habitat (Weiss et al. 1997). The eight endemic butterflies range from being locally common in appropriate habitats throughout the mountain range, to being fairly restricted in distribution. Butterflies of greatest concern in the Spring Mountains NRA are:

> Spring Mountains acastus checkerspot: This taxon is known from 12 locations around the central core of the mountain range, including a large site below Kyle Canyon campground and along the Deer Creek Highway. Its larval host plant is thought to be rabbitbrush (*Chrysothamnus* spp.).

Bret's blue butterfly: This taxon has not been well surveyed, and thus is currently known from a single location in the vicinity of Big Timber Spring on the North end of the range. This spring is located at 6,560 feet in low elevation conifer woodland. Larval host plants and nectar sources are unknown.

Dark blue butterfly: This taxon is known from 11 locations, primarily in association with mud banks near springs in various canyons. Its larval host plant is sulfur buckwheat (*Eriogonum umbellatum*).

Mt. Charleston blue butterfly: This taxon is known from 17 locations, primarily in Lee Canyon and along the Spring Mountains ridge line. Its larval host plant is a species of milkvetch (*Astragalus calycosus* var. *mancus*), which is fairly common on the slopes of the ski area in Lee Canyon.

Morand's checkerspot butterfly: This taxon is known from nine locations, including various canyons and higher elevations in bristlecone pine woodlands. Its larval host plants are species of paintbrush.

Springsnails: These members of the aquatic snail family (Hydrobiidae) are only 1-2 millimeters in size, complete their life cycle in 1 year, and feed on algae. Springsnails inhabit artesian spring ecosystems with permanent flowing, highly oxygenated waters. The waters must be highly mineralized, but relatively unpolluted (Mehlhop 1996). On FS-managed lands, springsnails occur at Kiup Spring, Willow Creek, and the Cold Creek springs (*Castilleja* spp.).

Baseline Information: While some historical information was previously available on the biology and species of the Spring Mountains, much of the baseline information on species occurrence and habitat condition was obtained through field studies and inventories conducted during the period 1993 to 1996. This section briefly summarizes the status of the information being used to determine species management needs.

Rare Plant Inventory: Field inventory and status reports are largely complete for many of the plant species of concern (Knight 1992; Morefield 1993, Nachlinger 1993, Nachlinger and Sheldon 1995, 1997; Smith, 1995a, 1995b, 1995c). Species status reports provide the most current and comprehensive status assessments, including information on species biology, geographic distribution, habitat description, threats to survival, and management recommendations. Plant species which have been the subject of recent status inventories are identified in Table 1.

Plant Monitoring Protocol: Biological monitoring plans were developed for the two highest priority plant species in the Spring Mountains, Clokey eggvetch and rough angelica (Nachlinger and Combs 1996a, 1996b). These plans detail specific

methodologies for assessing species status and detecting biologically significant changes in population density and age structure over time.

Butterfly Inventory: Recent status inventory for eight of the nine butterfly species of concern (with the exception of Bret's blue) have helped to determine known and potential distributions of the taxa and their key hostplant resources (Weiss et al. 1995, 1997). Predictive models are being developed to further assess the distribution of butterflies and their hostplants.

Butterfly Monitoring Protocol: A monitoring plan was developed for the population of Mt. Charleston blue butterfly and its larval hostplant *Astragalus calycosus* var. *mancus* in Lee Canyon. Monitoring densities of the hostplant in transects will provide useful information for management of vegetation resources in the ski area, particularly erosion control plantings of exotic species including grasses and clover (Weiss et al. 1997).

Bat Inventory: Research on local and regional diversity and habitat use of bats in the Spring Mountains included status evaluation of 14 species of bats through inventory of water sources, mines, caves, and cliffs. Information on distribution, life history, and ecology of the bats of concern are summarized and conservation recommendations are provided (Ramsey 1994, 1997).

Spring Vulnerability Assessment: This assessment 1) characterized spring and seep aquatic and riparian communities, 2) determined habitat conditions at representative springs throughout the range, 3) documented the distribution of rare aquatic and riparian species associated with these representative springs, 4) determined the vulnerability of these habitats to loss of native species from current use, and 5) provided a prioritized list of springs where management is required to improve habitats and reestablish biodiversity to natural conditions. Approximately 25 percent of the known springs in the mountain range were sampled and occurrence records of two species of springsnails were documented during this study (Sada and Nachlinger 1996).

Plant Community Classification: This classification provides a framework for ecosystem management planning by: 1) Describing and classifying NRA plant communities at series and association levels, 2) relating plant communities to important environmental variables at regional and local scales, 3) providing a database of vegetation plot locations representing the various plant communities and their associated rare flora, 4) providing a predictive map of plant communities of the NRA to use as a screen for management actions, and 5) making conservation management recommendations based on plant community classification and analysis of biodiversity (Nachlinger and Reese 1996).

VI. PROBLEMS FACING THE SPECIES

Five factors are evaluated in determining whether or not a species requires listing under the ESA. This section addresses the applicability of these threats to species in the Spring Mountains.

(A) The present or threatened destruction, modification, or curtailment of species habitats or ranges

Recreation: The Las Vegas Valley is one of the fastest growing metropolitan areas in the nation. In July 1996, the population of Clark County was estimated to be 1,119,708 (Clark County Department of Comprehensive Planning, Admatch of Assessor Records). The population of Clark County is expected to reach 1,399,206 by the year 2000, 1,885,717 by the year 2010, and 2,165,949 by the year 2020 (University of Nevada, Las Vegas 1996). Population growth in the Valley has significantly increased recreational usage of the Spring Mountains, and continued growth is certain to increase pressure on the area.

Recreation in the Spring Mountains NRA is basically of two types: Activities that are dispersed across the landscape, and activities carried out in or near developed recreation sites. Recreation of the dispersed type includes day hiking, backpacking, mountain biking, rock climbing, caving, off highway vehicle use, and some winter sports. Recreation at developed sites includes camping, picnicking, winter sports, and organized, permitted group uses.

The east side of the Spring Mountains is the most heavily visited portion of the NRA. The proximity to Las Vegas, easy access on improved and paved roads, and the concentration of developed recreation sites and private land development in Kyle Canyon, Lee Canyon, and Deer Creek all contribute to the large numbers of recreationists and developed recreation opportunities currently present in this area. Other areas in the NRA provide opportunities for different types of recreation, offering greater solitude and less developed conditions. These areas include the large expanses of low elevation lands accessible only by high clearance vehicles, areas with no road access, and designated wilderness and wilderness study areas (FS 1996).

The NRA Plan Amendment provides direction for development of additional recreation sites, particularly in areas outside of Kyle and Lee canyons. However, opportunities for recreation development in sensitive areas such as biodiversity hotspots are allowable under the plan. Any development requires avoiding or mitigating impacts to species. This management direction limits certain types of recreation, particularly in upper Kyle and Lee Canyons, and may also place additional demands for recreation in more dispersed, or undeveloped areas, thereby increasing disturbance in previously undisturbed areas. However, many uses of the NRA are unregulated, and this type of use is apparently having an adverse effect on the species of concern, and their habitats.

The threats of regulated and unregulated recreational use of the NRA, specific to the species of concern and their habitats, include the following:

Alpine Zone: The alpine zone is in the Mt. Charleston Wilderness Area, and is thus subject only to dispersed recreational use of the wilderness by hikers and equestrians. Mountain and motor bike use, while not permitted in the Wilderness Area, does occur on a regular basis. The overall condition of the alpine habitat is currently considered excellent, with the majority of disturbance concentrated at campsites, along the maintained trail, and on the summit of Charleston Peak. The major impacts to alpine plant populations and habitats are trampling, crushing, and soil compaction caused by off-trail hikers, mountain and motor bikes, and equestrians. These activities can also create disturbance pathways promoting weed invasion (Nachlinger and Reese 1996).

Under the Plan Amendment, constraints on use of the Mt. Charleston Wilderness include permits for overnight wilderness visitation and groups of more than 15 individuals and prohibition of campfires. Equestrian and pack stock are currently allowed to use areas above treeline, until monitoring determines if they are having an impact on endemic species. These constraints help to minimize adverse effects on the endemic and sensitive species in the alpine zone. However, the Plan Amendment permits eventual construction of a North Loop Trail to Bristlecone Trail link (see below, Infrastructure), which, if constructed, would occur at high elevation and would fragment populations and habitats of several endemic plant species. In addition, commercial outfitters and guides are allowed to lead trips into the wilderness, which will increase the amount of visitation to the alpine zone. The Plan Amendment sets limits on some commercial use of the wilderness.

Riparian and Spring Areas: The effects of recreation on riparian areas and springs include removal or reduction in vegetation through trail proliferation and trampling, and soil compaction from repeated site use for recreational activities. Roads in some cases lead directly to sites, increasing visitation to these areas by ease of access. The condition of spring and riparian areas in the NRA ranges from poor to excellent (Sada and Nachlinger 1996). Springs and riparian areas of particular concern include the following:

Willow Creek Spring, which provides habitat for springsnails, butterflies, and birds, has been impacted by recreational vehicle use and camping. As a result, large areas of bare ground now border the springbrook. This condition could accelerate erosion and alter the physical condition of the spring, including water quality and temperature.

Cold Creek Spring provides habitat for springsnails, butterflies, and birds. This area is also subject to heavy recreational use. While the condition of the main spring system is currently good, several springs upgradient of Cold Creek are in poor condition.

Deer Creek provides habitat for Palmer's chipmunk, bats, birds, and endemic butterflies. Portions of the area are popular for day use and have been subject to concentrated recreation which has disturbed the habitat.

Carpenter Canyon includes a well developed riparian area providing habitat for bats, birds, butterflies, and an introduced population of Lahontan cutthroat trout. Portions of the riparian zone have been disturbed by unregulated campsite placement and trail proliferation.

Three Springs, located in Lee Canyon above the ski area, supports the only floating bog in the Spring Mountains. This unique spring system provides habitat for several endemic species, including Charleston kittentails, Charleston draba, Charleston pussytoes, Clokey thistle, and one or more of the endemic butterflies. It is accessible by roads leading to the top of the ski area, and then by trails into the bog.

Stanley B Spring provides habitat for rough angelica. It currently supports riparian and aquatic habitat in good condition. The site is actively used by hikers. Increased levels of use will likely cause erosion and degrade habitat quality.

Mummy Spring provides habitat for crenulate moonwort, Clokey thistle, and the Mt. Charleston blue butterfly. It is potentially threatened by increased visitor use, which could accelerate erosion and trail proliferation.

Macks Canyon Spring, which provides habitat for crenulate moonwort, Palmer's chipmunk, and bats, is heavily used for recreational camping. At present, this is a high quality site with high biodiversity rankings. Increased levels of use of the area could degrade habitat of the species of concern.

Peak Spring, which provides habitat for crenulate moonwort and Clokey thistle, is a high altitude, comparatively isolated spring used as a water source for hikers. Increased levels of use of the area could also degrade moonwort habitat.

Kiup Spring provides habitat for springsnails. It is currently fenced and regarded as being in good condition, however ungulates are using the area outside the fence, which could result in erosion of the associated meadow.

Fletcher Spring provides habitat for rough angelica and various species of bats. A trail passes along one edge which has resulted in trampling of riparian vegetation.

Cliff Areas, Steep Slopes, and Caves: The primary threat to species inhabiting cliff areas is recreational climbing. This is a well-established form of recreation activity in the Spring Mountain NRA, and the Mt. Charleston area is internationally known as one of the best limestone climbing areas in the United States (Toula 1995, in FS 1996). While the current condition of the cliff habitats is generally good to excellent, in part, because of their general inaccessibility and remoteness, localized impacts to vegetation on and beneath cliffs has occurred as a result of heavy recreational climbing in some areas (Nachlinger and Reese 1996). The NRA Plan Amendment allows technical and sport climbing throughout most of the Spring Mountains NRA, with varying degrees of constraint or restriction based upon general location or intensity of activity. At locations with known sensitive species, technical/sport climbing are limited to existing routes until resource surveys can establish the appropriate management strategy for these areas.

Vegetation disturbance and removal by climbers probably occurs along some climbing routes. Such removal could potentially include removal or damage of some of the endemic plant species of concern, including Jaeger ivesia and the three taxa of greasebush. Bat roost sites in rock crevices, outcrops, and on talus slopes could be disturbed by climbers or off-trail hikers. Nest and roost sites of peregrine falcons and other birds of prey are also potentially subject to disturbance by climbers.

Caving is also a well-established recreational activity in the Spring Mountains NRA. Many of the caves in the NRA provide important habitat for sensitive bat species. Caves that serve as maternity roosts or hibernacula are especially vulnerable to disturbance caused by human visitation. Under the Plan Amendment, most exploration of caves is seasonally restricted to minimize potential disturbance to bats until roosting inventories are completed. However, not all caving activity is controlled, and some unregulated caving does occur. Such activities are likely having an adverse effect on the bat species of concern.

High Elevation Forest and Woodland Zone: A variety of developed sites, including campgrounds, picnic areas, a skiing and snowboarding facility, and other group use areas are situated in the high elevation forests and woodlands. While overall, the forests and woodlands of the NRA are in excellent condition, many of the most easily accessed areas, such as campgrounds, picnic areas, and other recreational developments, have undergone localized impacts (Nachlinger and Reese 1996). Construction and use of the developed sites have directly destroyed and reduced habitat for numerous species of concern. Many of these sites, which

are frequently filled to capacity, are located in biodiversity hotspots, in particular, upper Kyle and Lee canyons. The rare and sensitive species occurring in these areas are thus subject to the adverse effects of large concentrations of recreationists, including trampling of endemic plants and endemic butterfly larval host plants, collection of endemic flowers for bouquets, and wood gathering. Palmer's chipmunk, in particular, is affected by wood cutting and gathering in and near campgrounds (see below: Woodcutting).

There are many hiking and equestrian trails in this zone, which have adversely affected habitat quality by fragmenting the landscape. In addition, mountain bikes are permitted on some forest trails. A popular route for mountain bikes occurs on the Bristlecone Loop, which passes through the largest known population of Clokey eggvetch. There is evidence of off-trail riding in this vicinity which has caused soil erosion and compaction, and vegetation damage.

Low Elevation Forest, Montane Shrubland, and Chaparral Zone: The prevalent recreational disturbances in this zone are from camping, off highway vehicle use, and subsequent invasion by exotic species. The condition of the plant communities in the low elevation forests and shrublands is considered fair and in need of improvement, in part, because of the effects of campers and off-highway vehicles. Species of concern in this zone are subject to the adverse effects of these activities in some areas, particularly in the main canyons.

Desert Shrublands Zone: Many of the plant communities in this zone exhibit degraded and fragmented habitat conditions, such as damaged and removed vegetation, soil compaction and absence of cryptogamic crusts, trampled plants, and resultant replacement of native plants with exotic species. Off-highway vehicle impacts are more prevalent here than in other zones and often include damage at dispersed camping sites and in dry washes.

Spring Diversions and Developments: New water developments are potentially allowed anywhere in the Spring Mountains NRA to improve native wildlife species habitat or improve distribution of non-native species (FS 1996). Diverting water away from the spring source reduces the amount of water available to the springbrook or riparian habitat, and may result in a reduction in extent of habitat or changes in species dominance, from obligate wetland species to facultative or upland species.

Spring diversion, which may include channelization, impoundment, dredging, and removing water through pipes, may directly affect the distribution and abundance of a number of endemic plants occurring in habitats influenced by springs. In a 1995 survey of 50 springs in the NRA, moderate to high levels of disturbance from diversion were documented at 14 springs. Diversion appears to have the greatest detrimental effect on spring biota than any other activity that occurs in these environments (Sada and

Nachlinger 1996). Diversions may adversely affect the various plant species of concern that occur in spring and riparian areas, and may also affect endemic butterflies and their habitats, including larval host plants, nectar sources, and mud resources. Diversions can also affect springsnail habitats, potentially eliminating entire populations of springsnails. Extirpation of springsnail populations due to diversion has occurred in Red Rock Canyon NCA.

Diversion also influences availability of water supplies for bats. Bats require persistent, good quality, and accessible water sources, typically in proximity to hibernacula and maternity roosts (Ramsey 1997). Maintaining water sources for bats, such as stock tanks, is, in some cases, in conflict with maintaining or enhancing habitats for other species of concern. Riparian areas and springs are important water sources for Palmer's chipmunk, and are also extremely important habitats for breeding and migratory birds, reptiles, amphibians, and mammals (Tomlinson 1995).

Special Use Permits: Private development, profit-making businesses, and public services can be developed on national forest system lands through the issuance of a special use permit. Current categories of use under permit in the Spring Mountains NRA include electronic sites, telephone lines, power lines, water transmission lines, organizational camps, recreation residences, and commercial operations including guided trail rides and rock climbing, the ski resort, and music concerts in Lee Canyon.

The FS authorizes special use permits for activities in the habitats of species of concern with specific measures to minimize adverse effects, including clean-up and consolidation of existing sites, rehabilitation of areas after completion of the permitted activities, and public and worker education programs. However, despite avoidance and minimization requirements, some activities will destroy and fragment species habitats, during both construction and operation phases. In particular, permitted activities in Kyle and Lee canyons, both regarded as biodiversity hotspots, can affect endemic and sensitive species, through trampling, vegetation removal, soil compaction, and habitat destruction and fragmentation.

Infrastructure: Nearly 316,000 acres of FS lands and approximately 7,000 acres of private lands are included within the Spring Mountains NRA boundaries (FS 1996). Private lands include subdivisions and small communities, patented lands around abandoned mines, and undeveloped lands. Activities on private lands that involve vegetation removal, soil compaction, and other habitat disturbances, do have an adverse effect on endemic and sensitive species (in particular, rough angelica), endemic butterfly larval host plants, Palmer's chipmunk, and springsnails. Management of private lands is outside the jurisdiction of the FS, the Plan Amendment, and this CA. However, NDF has, and will continue to provide private landowners with scientifically based natural resource management of private land natural resources through technical assistance, environmental education, and cost-share assistance.

Other aspects of infrastructure include administrative facilities and roads. The Kyle Canyon and Lee Administrative Sites are located within biodiversity hotspots, and various roads in the NRA lead to increased visitor use, and fragment the habitat of various endemic or sensitive species. Under the Plan Amendment, new facilities must be more than 100 yards away from sensitive plant species locations and outside biodiversity hotspots. Buffer zones are defined specifically around Clokey eggvetch and rough angelica sites. Under the Plan Amendment, up to five miles of new roads may be built in the Spring Mountains NRA in the future, including a Kyle to Lee Canyon link which would increase visitation to lower Deer Creek. However, 2.25 miles of roads may be closed in the future, which would limit access to the Carpenter Canyon area. This may benefit the endemic and sensitive species that occur there.

The NRA currently has 52 miles of designated trails, which is fewer trail miles per acre than other National Forest districts in California or Nevada. The increasing population base of Clark County is currently placing demands for new trails to accommodate increased visitation to the NRA. The NRA Plan Amendment provides direction for new trails, an expanded crest trail system, and more trailhead facilities at some locations.

Some trail additions may relieve visitor pressure on the biodiversity hotspots, however, others could adversely impact endemic and sensitive species. Further development of a crest trail would result in greater visitation to the high elevations where many of the endemic species occur. All new trail additions will further fragment the landscape.

Wild Horses and Burros: The Spring Mountains NRA encompasses portions of the Spring Mountains, Johnny, and Red Rock Wild Horse and Burro Territories. In some areas of the NRA, overgrazing has occurred and soil compaction from habitual trampling is evident (FS 1996). In particular, many of the low elevation desert communities exhibit degraded conditions, including, soil compaction, absence of cryptogamic crusts, grazed and pulled or trampled plants, and replacement of native plants with exotic species (Nachlinger and Reese 1996).

Past Appropriate Management Levels (AML) for wild horse and burro populations were based on available water, with 25 percent of water resources allocated to wild horses and burros (FS 1996). Current management limits wild horse and burros numbers based on seven percent of available water and forage resources. This change in management reduces, but does not eliminate, the potential for overgrazing and soil compaction in some areas. In 1995, moderate to high levels of disturbance from wild horses and burros were documented at six surveyed springs in the Spring Mountains NRA.

The FS utilizes gathers and adoption to manage populations throughout the NRA. Wild horses and burros may compete with native wildlife for resources (forage and water), and graze or trample native plant and invertebrate species, including the species of concern. Riparian areas are particularly susceptible, as horses and burros drink and forage in these

areas. Populations of horses and burros have impacted riparian areas by overgrazing the vegetation and compacting soils. In areas where springs have become degraded through overuse by horses and burros, water quality may also have declined. Habitat degradation has permitted exotic species introductions resulting in further habitat degradation.

Woodcutting: While timber resources in the Spring Mountains were once harvested for charcoal production, construction materials, and fuelwood, the only currently permitted use is non-commercial fuelwood for household and family use. Green trees may be harvested only in the Wheeler Wash area, and dead trees may be cut for fuelwood anywhere in the NRA except in wilderness or developed recreational areas. Under the current Plan Amendment, collection is to be managed to meet specific ecosystem health goals, such as reduction in fuel build up or restoration of early seral stages of plant communities.

Some endemic or sensitive species could be adversely affected by dead tree fuelwood cutting, if not managed properly. The Palmer's chipmunk is adversely affected by heavy woodcutting activities, particularly in well-groomed and heavily used campgrounds where a large portion of the downed logs, snags, and trees have been removed (Tomlinson 1995). Snags are important habitat components for the Northern goshawk and other bird species. In addition, certain bat species are known to use snags for roosting. The NRA Plan Amendment attempts to minimize impacts on Palmer's chipmunk, Northern goshawk, and other species during woodcutting activities.

Fire: Management policy in the Spring Mountain NRA has been to suppress all fires to reduce risks to public safety and private property. The exception to the suppression policy is remote areas of the Mt. Charleston Wilderness, where some fires were closely monitored (USFS 1996). While fire frequency in some plant communities is naturally low (e.g., desert shrub communities), for others, fire is important in maintaining plant associations. High elevation forests and woodlands exhibit high fuel loads, and few areas have experienced a burning regime that maintains an open canopy sufficient for healthy levels of conifer regeneration (Nachlinger and Reese 1996).

Ponderosa pine forests have naturally high fire frequencies. Accordingly, fire suppression in Spring Mountains ponderosa-dominated conifer forests, which provide habitat for numerous species of concern, may be a limiting factor in maintaining healthy habitats for these species. Of particular concern is the potential effect of fire suppression on Clokey eggvetch, which is present in common plant associations, but is not common itself. Other plant species occurring in the high elevation forests could also be declining as a result of fire suppression efforts which have influenced forest structure and canopy closure characteristics, in addition to altering fire intensity, frequency, and overall regimes.

Other uses of the NRA: None of the eight livestock grazing allotments are currently active, although livestock occasionally stray onto FS portions of the Mt. Stirling

Allotment. The Mt. Charleston Wilderness was withdrawn from minerals entry by the Nevada Wilderness Act of 1989, and the Spring Mountains NRA Act further closed all new locatable and leasable mining claims with the exception of a single area. Any valid claims prior to August 1993 may be explored and developed.

(B) Overutilization of species for commercial, recreational, scientific, or educational purposes

Species collection for commercial, recreational, scientific, or educational purposes may occur, although no specific incidences resulting in overutilization have been documented. Some species of plants and butterflies may be taken from the wild for private collections, on occasion. Such use is not currently believed to constitute a major threat to any of the species of concern in the Spring Mountains NRA.

(C) Disease or predation

Disease has not been determined to constitute a major threat to the species of concern in the Spring Mountains NRA. Predation may adversely affect the Palmer's chipmunk and other small species. Feral cats and dogs are a threat to wildlife, particularly on the east side of the NRA, which has the most visitation and land development. County animal control officers do not regularly visit residential areas in the Spring Mountains NRA, thus feral animal populations are largely uncontrolled. Feral animal populations threaten Palmer's chipmunk populations in Kyle and Lee Canyons, and on the North Fork of Deer Creek (Tomlinson 1995).

(D) Inadequacy of existing regulatory mechanisms

Existing regulations include both FS policies to protect sensitive species and State of Nevada statutes that protect certain plants, mammals, birds, fish, amphibians, and reptiles. Inadequacy of existing regulatory mechanisms constitutes a threat in areas where enforcement is absent or reduced due to staff or funding shortages.

(E) Other natural or manmade factors affecting species continued existence

Rare and endemic species are subject to random, naturally occurring (stochastic) events. Natural chance events include events such as extended drought or prolonged temperature changes, insect infestations, disease outbreaks, or catastrophic wild fire. Variation in the natural environment may influence naturally or non-naturally occurring predators, parasites, disease, and competitors, any of which may negatively affect the survival of rare species populations. Coupled with other non-natural threats, species with small population sizes or limited distributions may be unable to recover from such events over time.

VII. CONSERVATION ACTIONS THAT WILL BE CARRIED OUT

This section includes the list of conservation actions to be carried out during the 5-year period for Federal fiscal years 1998 through 2002. These conservation actions were developed after careful consideration of information gathered during the primary period of baseline data collection of 1993 through 1996. At this time, numerous species protection recommendations were made in interim and final reports. Only recommendations that meet the goals, objectives, standards, and guidelines of the NRA Plan Amendment (USFS 1996) are included below. The applicable objectives, standards, and guidelines of the Plan Amendment that facilitate conservation management in the NRA are compiled in Appendix E of this CA.

The conservation actions listed below are arranged in seven action type categories, and each category is accompanied by one or more "general commitments", providing the philosophical criteria that guide implementation of the actions. Of the action type categories, the first category, Project Planning, include actions that entail early recognition and consideration of species protection needs during the course of project planning. The remaining six categories involve on-the-ground conservation actions. These categories are inventory, monitoring, research, protection, restoration, and education.

A 5-year conservation action plan for this CA is provided in Appendix F. In the 5-year plan, conservation actions are ranked by priority, and one or more years are specified for accomplishment. The plan also indicates the agency or agencies responsible for completing each action. The conservation actions specified in the table are linked by number to the more detailed descriptions in this section.

The parties to this agreement recognize that priorities may change over time, therefore the conservation action plan is intended to be flexible and adaptive, inasmuch as needed to ensure the most effective conservation for species of concern included in this CA. This flexible and adaptive approach should also provide an effective basis for management of species of concern habitats, other sensitive ecological resources, and overall ecosystem health.

Beginning in 1999, the FS will conduct an Area Analysis planning implementation process by management area (Developed Canyons, Mt. Charleston Wilderness, West Side, and Mt. Stirling). An Area Analysis is a site-specific environmental analysis process that analyzes the individual and cumulative effects of implementing a series of actions over time within an identified area. This analysis process is driven by direction provided in the NRA Plan Amendment. The process takes 2 years to complete, from the beginning of scoping to the signing of the decision document. The projects and actions that are identified for implementation are then submitted through the agency for funding during the year identified in the decision document.

The projects needing National Environmental Policy Act (NEPA) analyses that are identified in this CA will be included in the appropriate area analysis. As such, the actual year that the analysis

step takes place and the implementation steps begin may change from those identified in this CA. As this situation becomes evident, needed dialog and discussion will take place and the appropriate changes will be made.

1.0 Project Planning -- General Commitments

- Maintain a philosophy of adaptive management in implementing this CA which provides the basis for changes and mid-course corrections as determined to ensure species viability and habitat protection. (CA-GC-1.1)

- Develop new trails and encourage trail use outside of biodiversity hotspots to avoid further adverse effects on rare and sensitive species. (CA-GC-1.2)

- Implement the principles of ecosystem management in the Spring Mountains NRA (page 6 of this CA). (CA-GC-1.3)

- Conduct pre-activity surveys for the species of concern prior to any actions that may affect them, and design projects to minimize or avoid adverse effects. Ensure that surveys consider unique habitat components of the species of concern (e.g., mud and puddles for butterflies). (CA-GC-1.4)

- Secure funding for projects involving inventory, monitoring, research, protection, restoration, and education in the Spring Mountains NRA. (CA-GC-1.5)

- Secure funding for additional staff positions including a field ecologist, biologist, botanist, interpreters, visitor center personnel, wilderness manager and rangers, dispersed recreation rangers, and law enforcement officers. (CA-GC-1.6)

1.0 Project Planning -- Conservation Actions

1.1 Ensure that all NRA staff annually review a copy of this CA and are familiar with its intent and terms. This will provide the basis for informed decision making in providing for species and ecological resource protection during planning and implementation of new and ongoing projects.

1.2 Ensure that all NRA staff annually review species and ecosystem protection recommendations made by field researchers. This information is summarized in the document "Management Recommendations for Species and Ecosystem Management in the Spring Mountains National Recreation Area", on file in the Spring Mountains NRA office.

1.3 Conduct annual briefings with FS, FWS, and State line officers (management) to update them on the status of CA implementation and to provide an assessment of future funding needs.

1.4 Provide NRA staff and key permitees and partners with annual information on biodiversity hotspots, the species that occur in these areas, and the importance of avoiding adverse impacts to the species of concern and their habitats.

1.5 (a) Provide copies of this CA to, and (b) hold annual meetings with partners and other interested parties to increase awareness of conservation priorities and encourage partnerships in accomplishment of conservation actions.

1.6 Establish a technical advisory group comprised of individuals with knowledge and expertise on conservation of the species of concern, and convene annual meetings to discuss conservation actions.

1.7 Integrate efforts in this CA with the Clark County Multispecies Planning effort to ensure that mutual goals to achieve species conservation are accomplished.

1.8 (a) Coordinate with BLM in project planning and implementation in conservation of the species of concern and other sensitive ecological resources within their purview, and (b) work towards inclusion of BLM lands within the Spring Mountains ecosystem into this CA.

1.9 Develop and distribute a field guide for use by Spring Mountains NRA and Red Rock Canyon NCA staff and others in identifying species of concern and their habitats in the Spring Mountains.

1.10 Maintain, periodically update, and make accessible to NRA staff and other involved agencies and partners, a Geographic Information System (GIS), with locations of the species of concern and other sensitive ecological resources. This will provide baseline information useful for avoiding where feasible, or minimizing when necessary, adverse impacts on the species of concern and their habitats.

1.11 (a) Develop and (b) implement a prescribed burn plan for the NRA, with emphasis on ecosystem health and enhancement of habitat for sensitive bats, endemic plants and butterflies, and other ecological resources. This plan will, at a minimum, determine the location, species, and habitats for enhancement, identify studies needed prior to implementation, outline a public information campaign, and identify the time frame in which the plan will be implemented. The prescribed burn plan will address concerns, and where feasible implement recommendations for protection of rare and sensitive flora and plant communities (Nachlinger and Reese 1996), overwintering pollinators, endemic butterflies and their host plants (Weiss et al. 1997), Palmer's chipmunk (Tomlinson 1995),

bats (Ramsey 1994, 1997), and other species of concern. This plan will specifically address the issue of whether or not Clokey eggvetch may benefit from prescribed burns.

1.12 (a) Develop and (b) implement a fuelwood plan for the NRA which addresses and ameliorates potential impacts to the species of concern, in particular, Palmer's chipmunk, bats, and other species that may be affected by fuelwood cutting. The fuelwood plan will address concerns, and where feasible, implement recommendations for protection of Palmer's chipmunk (Tomlinson 1995), bats (Ramsey 1994, 1997), butterflies (Weiss et al. 1997), reptiles, overwintering pollinators, and other species.

1.13 Identify and pursue purchases or exchanges of National Forest inholdings that will benefit the species of concern and other sensitive ecological resources.

1.14 (a) Develop and implement memoranda of understanding with climbing and caving groups, and hold annual meetings emphasizing species conservation, identifying protective measures, and specifying surveys for the species of concern prior to establishment of new climbing or caving opportunities. The information derived from these programs will assist the FS in determining future management actions for species protection. (b) Identify additional special interest groups and develop memoranda of understanding.

2.0 Inventory -- General Commitment

- Evaluate inventory priorities on an annual basis and coordinate in development of inventory strategies. (CA-GC-2.1)

2.0 Inventory -- Conservation Actions

2.1 Inventory for populations of rare flora and fauna on an annual basis. A Native Species Site Survey Report (Appendix G) will be used to record new records of species occurrence, and copies of this form will be provided to the Nevada Natural Heritage Program. Species and area priorities identified to date are as follows:

Very High Priority Species

(a) Mojave bajada and wash plants - halfring milkvetch, Death Valley beardtongue, black woolypod, Spring Mountains milkvetch

(b) Spring plants - upswept and dainty moonwort

(c) Bret's blue butterfly - focus inventory at Big Timber Spring

(d) Townsend big-eared bat

Very High Priority Areas

(e) Butterfly habitats - Foxtail Canyon, Mt. Potosi

(f) Bat roosts - Column Cave (summer, winter), Pinnacle Cave (spring, fall, winter)

High Priority Species

(g) Cliff plants - smooth pungent greasebush and pungent dwarf greasebush

(h) Butterflies - Spring Mountains acastus checkerspot, dark blue butterfly, Morand checkerspot, Mt. Charleston blue

(i) Bats - Allen's lappet-browed bat

High Priority Areas

(j) Butterfly habitats - Mummy Mountain, Harris Mountain, Fletcher Peak, West side of Mt. Stirling, Trail Canyon/North Loop intersection, Mud Springs, Wallace Canyon

(k) Bat roosts (cliff climbing areas) - Imagination Wall, Cathedral Rock, Echo Cliff, unnamed wall east of South Loop Trail, The Hood

(l) Bat water sources - unsurveyed springs

(m) Neotropical migratory bird habitat - riparian areas (will also include inventory of brown-headed cowbird nest parasitism)

(n) Raptor inventory

Medium or Low Priority Species

(o) Forest plants - Nevada willowherb and Charleston grounddaisy

(p) Fringed myotis

Medium or Low Priority Areas

(q) Butterfly habitat - Wood Spring

3.0 Monitoring -- General Commitments

- Evaluate monitoring priorities on an annual basis and coordinate in development of additional monitoring protocols for species and habitats, as needed. (CA-GC-3.1)

- Use the results of monitoring activities to, where feasible and necessary, refine management strategies for protection of the species of concern. Where monitoring has indicated status decline or habitat degradation for the species of concern, develop and implement strategies to avert further decline or degradation, and improve species status and habitat quality. (CA-GC-3.2)

3.0 Monitoring -- Conservation Actions

3.1 Conduct annual monitoring of (a) Clokey eggvetch and (b) rough angelica. Monitoring efforts will be in accordance with the protocol developed by TNC in cooperation with FWS and FS (Nachlinger and Combs 1996a, 1996b).

3.2 (a) Develop a butterfly monitoring plan, emphasizing population, host plant and habitat monitoring. Frequency and intensity of monitoring identified in the plan will be based on population status, abundance, and threats. (b) Conduct annual monitoring for high priority butterfly species, using methods described in the butterfly monitoring plan. At present, Bret's blue, Morand's checkerspot, Mt. Charleston blue butterfly, Spring Mountains acastus checkerspot, and the dark blue are the highest priority species. (c) Conduct periodic monitoring for medium priority butterfly species, using methods described in the butterfly monitoring plan. At present, Spring Mountains comma skipper, Nevada admiral, Spring Mountains icarioides blue, and Carole's silverspot are medium priority species.

3.3 (a) Develop a Palmer's chipmunk monitoring plan, emphasizing population and habitat monitoring. Frequency and intensity of monitoring identified in the plan will be based on population status, abundance, and threats. (b) Conduct periodic monitoring for the Palmer's chipmunk, using methods described in the Palmer's chipmunk monitoring plan.

3.4 (a) Develop a bat monitoring plan, emphasizing roost site and water source monitoring for known occurrences of bats. Frequency and intensity of monitoring identified in the plan will be based on species occurrence, habitat suitability, and threats. (b) Conduct periodic monitoring for bats, using methods described in the bat monitoring plan.

3.5 Develop and implement a plan to monitor springsnail populations and habitats at Kiup Spring, Willow Creek, and Cold Creek.

3.6 (a) Develop a plan to monitor riparian function and habitat condition. The plan will focus primarily on Deer Creek, Cold Creek, Willow Creek, and Carpenter Canyon, but may

include others areas as appropriate. Monitoring protocol will be specific to each area, emphasizing evaluation of habitat requirements of the species particularly dependent on these areas. (b) Conduct periodic monitoring of riparian areas, using methods described in the riparian monitoring plan.

3.7 (a) Develop and (b) implement a monitoring program for assessing effects of recreational use on high elevation communities and the species that occur in these communities.

3.8 Develop and implement a program to monitor selected biodiversity hotspots and species of concern habitats not covered in 3.1 through 3.7, based on periodic biologist site visits and/or photo points to document habitat conditions. This program will provide information needed to assess management suitability and the need to modify management practices in these areas. Determination of features that should be managed in these areas will be based, in part, on information provided in the report "Spring Mountains National Recreation Area Biodiversity Hotspots and Management Recommendations" (TNC 1996). A form for recording basic monitoring information will be developed with the technical assistance of TNC. Because it will not be logistically feasible to annually visit all known areas for these species, site visits will be most frequent in the most vulnerable or sensitive areas (typically, areas most accessible by people). Where appropriate, photo points will also be established. Priority species and habitats include the following (* indicates photo point will be established):

Frequent (annual) Site Visits

(a) Carpenter Canyon (Palmer's chipmunk, bats, Lahontan cutthroat trout, butterflies, plants, riparian stream corridor)

(b) Deer Creek (Palmer's chipmunk, bats, butterflies, plants, riparian stream corridor); Upper Kyle Canyon, including Mary Jane Falls (Palmer's chipmunk, butterflies, plants, riparian areas and spring sources); Upper Lee Canyon, including Three Springs* (Palmer's chipmunk, butterflies, plants); and Macks Canyon, Macks Canyon Spring*, and Macks Road (Palmers chipmunk, bats, plants)

(c) Willow Creek (butterflies, springsnails, plants, riparian stream corridor); Camp Bonanza and North Divide Trail, including McFarland and Whiskey Springs (bats, plants); and, Cold Creek (butterflies, springsnails, riparian stream corridor)

(d) Wheeler Well (bats, plants), and Trough Spring* (to monitor habitat following restoration)

(e) Stanley B Spring (plants, riparian area)

Periodic (every 2 to 3 years) Site Visits

(f) Fletcher Canyon and Spring (bats and plants), Mummy Spring*, and lower North Loop Trail (plants)

(g) Lee and Kyle canyons summer home sites (plants, Palmer's chipmunk), Mahogany Grove (plants), Robber's Roost (plants)

(h) Lost Cabin Spring*, CC Spring*, and Cave Spring (to monitor habitat condition following restoration)

(i) Peak Spring (plants)

Occasional Site Visits

(j) Harris Mountain and Saddle (plants)

(k) Mud Springs area (plants)

(l) Big Timber and Rock Spring (to monitor habitat condition following restoration)

(m) Roses Spring (to monitor habitat condition following restoration)

3.9 (a) Develop and (b) implement a recreation monitoring strategy involving trail counters and wilderness rangers. This strategy will include development of methods resulting in collection of data to assess recreation trends and effects on the species of concern and ecological resources.

3.10 (a) Develop and (b) implement a cumulative impact tally to monitor effects of NRA activities on the species of concern and their habitats. This program will provide sufficient information to trigger the need for quantitative monitoring or remedial actions to halt species declines.

3.11 (a) Develop and (b) implement a plan to inventory and map problem areas of non-native plants, and monitor encroachment over time.

4.0 <u>Protection -- General Commitments</u>

- Focus new recreation development (campgrounds, picnic areas, and other facilities) in the least sensitive areas at lower elevations, to lessen visitor impacts on the species of concern and other sensitive ecological resources. (CA-GC-4.1)

- Encourage partnerships with volunteers to maintain and enhance natural resources in the NRA. (CA-GC-4.2)

- Adhere to goals, objectives, standards and guidelines detailed in the Plan Amendment which promote protective management of the species of concern and other ecological resources. (CA-GC-4.3)

- Identify specific areas of exceptional sensitivity where conservation management will be emphasized over recreation. (CA-GC-4.4)

- Minimize clearing of undergrowth during construction of new facilities. (CA-GC-4.5)

- Prior to use of pesticides and other chemicals, determine potential impacts to the species of concern (e.g., butterflies, bats), and implement strategies to avoid impacts to those species. (CA-GC-4.6)

- Protect habitat of the species of concern from dispersed recreation (e.g., heavy foot traffic, off-road vehicles, mountain bikes), and the adverse effects of wild horses and burros. (CA-GC-4.7)

4.0 <u>Protection -- Conservation Actions</u>

4.1 (a) Develop and (b) implement an overnight wilderness permitting process that provides visitor education on sensitive resource issues.

4.2 (a) Develop and (b) implement a climbing "self registration" process that encourages development of new routes away from ecologically sensitive areas.

4.3 (a) Develop and (b) implement a plan to protect bat roosts in mines and caves. The plan will address the following protective measures: Gating or closing mines and caves to protect bat roost sites, removing important bat roost mines and caves from future editions of NRA maps, avoiding identification of exact locations of maternity roosts, caves, and occupied mines to the general public, determining the need to close roads to mines and caves, and avoiding use of heavy equipment near mine and cave roosts.

4.4 Facilitate, with Clark County, enforcement of leash laws, and control of feral cats and dogs in areas where adverse effects on Palmer's chipmunk and other wildlife have occurred, particularly areas adjacent to the private developments of Mt. Charleston, Deer Creek, and Lee Canyon.

4.5 Coordinate with county health department in management of disease transmittal by animals to humans (e.g., hanta virus, plague) to ensure that control methods do not have adverse effects on populations of Palmer's chipmunk or other species of concern.

4.6 Manage wild horses and burros in the NRA to avoid damage to species of concern habitats, particularly in lower Lee Canyon, northwest Mt. Stirling, Wheeler Pass, Wheeler

Wash, Wood Canyon, Carpenter Canyon, and lower Deer Creek, and continue to quickly remove any stray horses at upper elevations, particularly in upper Lee Canyon, Deer Creek, and Kyle Canyon.

4.7 (a) Develop and distribute information to equestrians on the importance of using pelletized feed within the NRA, and (b) develop and distribute a weed-free feed policy for equestrians on Federal lands.

4.8 (a) Sign closure order allowing FS to prohibit camping within specific distance of water sources, based on species and habitat protection needs, and b) control dispersed, primitive camping in the NRA by enforcing the closure order.

4.9 (a) Develop and (b) implement plan to collect seed for endowment and cultivation of sensitive and rare plants.

4.10 Expand Carpenter Canyon Research Natural Area (RNA) to help protect unique alpine biodiversity.

4.11 Consider, and as appropriate, develop additional protective designations in the NRA to protect the species of concern and other ecological resources.

4.12 Coordinate with owners of golf course in lower Kyle Canyon on procedures for use of pesticides, fertilizers, and other chemicals, to eliminate deleterious effects on endemic butterflies, rare plant pollinators, and other species of concern.

4.13 Ensure consistent law enforcement and ranger presence on the east side of the NRA, west side of the NRA, and in the Wilderness Area, a minimum of 4 days per week per area (including weekends and holidays) during the period April 15 - October 15, and a minimum of 3 days per week (including weekends and holidays) during the period October 15 - April 15. Enforcement will emphasize protection of the species of concern and their habitats (e.g., peregrine falcon eyries, bat roosts, and alpine species). Increased wilderness ranger presence in high elevation forests and alpine areas will provide a means to distribute information on species conservation needs, ecological resource sensitivity, and low impact recreation use practices.

4.14 Remove brown-headed cowbirds where nest parasitism occurs during neotropical migratory bird inventories or other activities.

4.15 Work with utility companies to ensure poles are raptor-safe.

4.16 Coordinate with Nevada Department of Transportation and FS road crews to ensure that road maintenance activities (e.g., shoulder work, road salting) do not adversely affect the

species of concern (in particular, Morand's checkerspot, acastus checkerspot, and rough angelica in Kyle Canyon, and acastus checkerspot along Deer Creek Highway).

5.0 Restoration -- General Commitments

- Secure funding for restoration programs beyond those under the scope of Interagency Agreement # 14-48-0001-94605. (CA-GC-5.1)

- Wherever possible, select only locally native species for restoration, and where appropriate, use seed from the plant species of concern and endemic butterfly host plants. (CA-GC-5.2)

- Ensure that restoration projects focus on protection and enhancement of the species of concern and do not inadvertently cause irretrievable damage to the habitats of the species of concern (e.g., open water for bats, mud puddles for butterflies). (CA-GC-5.3)

5.0 Restoration -- Conservation Actions

5.1 (a) Develop native plant material and seed list for restoration projects by plant community. The list will specifically identify larval and nectar host plants for the endemic butterflies. (b) Develop plan to collect local seed for restoration efforts, and (c) establish and maintain a native seed supply.

5.2 Restore habitat in accordance with Interagency Agreement # 14-48-0001- 94605 between the FS and FWS for the Spring Mountains NRA (Appendix H). All restoration activities will be designed and implemented in coordination with the Technical Working Group (1.6) to avoid inadvertent adverse effects on the species of concern. Priorities identified to date are as follows:

Very High Priorities

(a) McFarland Spring - Improve fence, treat headcut, construct drywell
(b) Mummy Spring - Remove informal trails
(c) Carpenter Canyon - Close last 0.25 mile of road, create parking area

High Priorities

(d) Trough Spring - Close road, treat road bed, seed area
(e) Lost Cabin Spring - Close road, eliminate diversion, restore springbrook
(f) Big Timber Spring - Remove stocktank and stockpond
(g) Little Falls Spring - Remove headbox and pipeline
(h) Gold Spring - Remove stocktank, headbox, and pipeline

Medium Priorities

(i) Middle Mud Spring and East Mud Spring - Repair fence, remove headbox and pipeline
(j) Buck Spring - Remove headbox, pipeline, and trough
(k) Macks Canyon Spring - Extend exclosure
(l) Younts Spring - Eliminate salt cedar, remove impoundment
(m) Santa Cruz Spring - eliminate salt cedar, construct exclosure, drywell, and pipeline
(n) Ninetynine Spring - Discontinue dredging, construct exclosure, drywell, and pipeline
(o) Mexican Spring - Discontinue dredging, construct exclosure, drywell, and pipeline
(p) Cougar Spring - Construct exclosure, drywell, and pipeline

5.3 Work with private property owners to restore and enhance the Cold Creek area. This effort will include plans to relocate facilities (e.g., fences, patios, and sheds) outside the riparian zone, and to control camping and fires (to protect butterflies), and maintain habitats for the species of concern (e.g., mud and seeps).

5.4 Develop and begin implementing a comprehensive restoration plan for the Willow Creek area. This plan will include relocation of roads and campgrounds out of the riparian area, removal of unneeded spur roads, a walk-in day-use plan, protection and habitat enhancement for springsnails, butterflies (including mud), and phainopepla (*Phainopepla nitens*). The plan will emphasize opportunities for public participation.

5.5 Work with summer home residents on the NRA to ensure that all future improvements avoid adverse effects to the species of concern, and where possible, enhance their habitats and populations.

5.6 Work with Las Vegas Ski and Snowboard Resort to develop protective strategies for sensitive ecological resources. This will include investigating options for erosion control of the Lee Canyon ski slopes with native seed mixes, including *Astragalus calycosus* var. *mancus*, to enhance butterfly habitat, management of herbicides and pesticides, and a plan for eventual elimination of non-native seeding, and management of the Three Springs area.

5.7 Remove selected informal high-elevation and alpine campsites (particularly those within or near the habitats of the plant species of concern and butterfly host plants), encourage use of specific strategically placed campsites, and remove all high elevation fire rings.

5.8 Remove roads causing environmental damage: (a) Road to Cave Spring, (b) road to CC Spring, (c) road to Lost Cabin Spring, and (d) identify additional roads for closure, particularly in biodiversity hotspots, and work with community groups to close them.

5.9 Organize volunteer work parties to manually remove exotic plants and noxious weeds along the ridgeline trail and other high elevation routes.

5.10 Develop and implement vegetation management and restoration plans for campgrounds and day use areas that enhance resources for Palmer's chipmunk, endemic butterflies, and rare plants. Priority areas include:

(a) Deer Creek Picnic Area - Move picnic tables out of the riparian zone, and revegetate the area to enhance habitat for Palmer's chipmunk, neotropical migratory birds, and bats.

(b) Lee Canyon campgrounds and picnic areas - Create cover sites for Palmer's chipmunk, and revegetate areas to enhance chipmunk and butterfly habitat.

(c) Kyle Canyon campgrounds and picnic areas - Create cover sites for Palmer's chipmunk, and revegetate areas to enhance chipmunk and butterfly habitat.

(d) Gary Abbot Campground - Close campsite and restore area to enhance habitat of Clokey eggvetch and butterflies.

5.11 Work with volunteers to provide nest boxes for cavity nesting western bluebirds (*Sialia mexicana*) and mountain bluebirds (*S. currucoides*), and roosting bats, to replace lost habitat.

6.0 Research -- General Commitments

- Secure funding for research based on priorities identified below. (CA-GC-6.1)

- Encourage and support research in the Spring Mountains NRA, particularly in the Carpenter Canyon Research Natural Area, to assist with management concerns as well as to focus on basic research interests. (CA-GC-6.2)

6.0 Research -- Conservation Actions

6.1 Develop an information package identifying and promoting research opportunities in the Spring Mountains NRA and Carpenter Canyon RNA. Update and distribute to local researchers, universities, and other research entities.

6.2 Conduct research on the species of concern and ecological communities of the Spring Mountains NRA by prioritizing research needs and identifying funding sources. Priority research needs include the following:

(a) Seed germination and other habitat requirements of Clokey eggvetch, including analysis of factors such as seed caching and predation by rodents and insects, fire, and other perturbations.

(b) Autecology, spatial extent of population (particularly Kyle Canyon Wash), and larval host plant relations of the Spring Mountains acastus checkerspot.

(c) Fire ecology and disturbance regimes of plant communities, particularly as pertaining to maintenance of populations and habitat for rare plants, butterflies and their host plants, Palmer's chipmunk, bats, and other species.

(d) Fire management for ecosystem health within the urban interface.

(e) Metapopulation dynamics of Mt. Charleston blue and Morand's checkerspot (including spatial limits of Wallace Canyon population), and genetic distinctiveness of three phenotypes of Morand's checkerspot.

(f) Relationships of ants and the larval stages of Bret's blue, Mount Charleston blue, dark blue, and Spring Mountains icarioides blue.

(g) Habitat requirements of Morand's checkerspot, Mt. Charleston blue, Spring Mountains acastus checkerspot, and dark blue, to determine why the taxa are not distributed across the range of their host plants.

(h) Effects of human disturbance, including caving, climbing, and other forms of recreation on bats.

(i) Winter habits of bats: Migration patterns and destinations, habits of bats that overwinter and hibernate in the NRA.

(j) Palmer's chipmunk: Features of movements and home ranges, dispersal patterns, and behavioral interactions between Palmer's chipmunk and golden mantled ground squirrel as related to habitat condition.

(k) Survey and study of NRA customer needs to determine who is visiting, what is expected from their visits, and how to communicate with non-English speaking visitors. This survey would assess visitor awareness of, and interest in species and ecological resource conservation issues.

(l) Development of a recreation use monitoring strategy to determine amount, type, and timing of recreation trail use.

(m) Waste management in the Wilderness Area: Effects of waste on resources and methods for control or removal.

7.0 Education -- General Commitments

- Ensure NRA staff are familiar with the basic habitat elements of the species of concern, including requirements of endemic butterflies (larval host plants, nectar sources, puddles and mud), bats (open water, caves, mines, cliffs, crevices, and other roost sites), Palmers chipmunk (shelter requirements), and rare plants (edaphic and other requirements). (CA-GC-7.1)

- Use all opportunities where the public is contacted (e.g., ranger stations, future visitor center and entrance stations, public meetings) to distribute materials emphasizing biodiversity protection and ecosystem management. Ensure that educational materials are focused on critical issues such as staying on trails, controlling pets, and avoidance of vegetation trampling and wildlife harassment. (CA-GC-7.2)

- Secure funding for educational materials, including brochures, displays, driving programs, and school materials. (CA-GC-7.3)

7.0 Education -- Conservation Actions

7.1 Develop a series of environmental education programs (slide presentations, display boards, etc.), for presentation to schools, user groups, town board meetings, and other community events. Individual programs will highlight biodiversity, sensitive ecological resources, endemic butterflies and plants, and sensitive bats. Ensure that materials are available for use by other agencies, NRA partners, and teachers.

7.2 Develop and distribute information and education materials, directed at specific user groups (climbers, cavers, mountain bikers, equestrians, off-highway vehicle users, etc.) and the public at large; emphasizing protection of riparian habitats, alpine areas, and other sensitive areas.

7.3 Provide information to summer home residents on Palmer's chipmunk and rough angelica conservation.

7.4 Develop display materials highlighting the unique resources and biological diversity of the Spring Mountains NRA for the NRA office, Kyle Canyon Guard Station, and for community events.

7.5 Develop brochures for ten trailheads (North Loop, South Loop, Bonanza, Mary Jane Falls, Trail Canyon, Bristlecone, Big Falls, Little Falls, Robbers Roost, and Fletcher Canyon), highlighting the unique resources and biological diversity of the Spring Mountains NRA.

7.6 Develop driving tour programs using tapes or low frequency radio transmitters at selected locations to provide NRA information and highlight the unique resources and biological diversity of the Spring Mountains NRA.

7.7 Design and install information and educational signs in accordance with Interagency Agreement # 14-48-0001-94605 between the FS and FWS for the Spring Mountains NRA (Appendix H). Signs will be located outside the Wilderness Area, at trailheads or near sensitive habitats, and will provide information on low impact recreation and ecological resource protection. Priorities include the following:

Fused PVC color signs

(a) Cathedral Rock
(b) Mary Jane Falls Trailhead
(c) Deer Creek Picnic Area
(d) Bristlecone Trailhead
(e) Robbers Roost Trailhead
(f) Fletcher Canyon Trailhead
(g) Trail Canyon Trailhead
(h) North Loop Trailhead
(i) Bonanza Trailhead
(j) Harris Spring Trailhead
(k) Carpenter Canyon

Smaller signs

(l) Mummy Springs
(m) Stanley B Spring
(n) CC Spring
(o) Trough Spring
(p) Cave Spring
(q) Macks Canyon Spring

7.8 Design and install signs specifically addressing Palmer's chipmunk conservation at all developed recreation sites located within its habitat.

VIII. DURATION OF AGREEMENT

The duration of this CA is for 10 years following the date of the final signature. The parties involved will review the CA and its effectiveness at least annually to determine whether it should be revised. Following the fifth year, an accomplishments report will be produced, and the parties will develop a 5-year conservation action plan for the next 5 years of the CA. During the last month in which it is valid, this CA must be reviewed and either modified, renewed, or terminated. If some portion of this CA cannot be carried out or if cancellation is desired, the party requesting such action must notify the other party, within 30 days, of the changed circumstances. When and if it becomes known that there are threats to the survival of the subject species that are not or cannot be resolved through this or any CA, the FWS may choose to assign candidate status and an appropriate listing priority to the species.

Nothing in this agreement shall be construed as obligating any party hereto in the expenditure of funds, or for the future payment of money, in excess of appropriations authorized by law.

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Ramsey, M.A. 1994. Final report for candidate bat species of Southern Nevada. Unpublished report on file with the U.S. Fish and Wildlife Service, Reno, Nevada. 62 pp. plus appendix.

Ramsey, M.A. 1997. Final report on the maternity roost study and status of bat species of concern of the Spring Mountains, Nevada. Unpublished report on file with the U.S. Fish and Wildlife Service, Reno, Nevada. 49 pp. plus appendices.

Sada, D.W. and J.L. Nachlinger. 1996. Spring Mountains Ecosystem: Vulnerability of spring-fed aquatic and riparian systems to biodiversity loss. Unpublished report on file with the U.S. Fish and Wildlife Service, Reno, Nevada. 46 pp. plus appendices.

Smith, F. 1995a. Status report *Ivesia cryptocaulis* (Clokey) Keck. Hidden ivesia. Unpublished report on file with the U.S. Fish and Wildlife Service, Reno, Nevada. 11 pp. plus appendices.

Smith, F. 1995b. Status report *Sphaeromeria compacta* (H.M. Hall) Holmgren, Shultz & Lowrey. Charleston tansy. Unpublished report on file with the U.S. Fish and Wildlife Service, Reno, Nevada. 10 pp. plus appendices..

Smith, F. 1995c. Status report *Antennaria soliceps* Blake. Unpublished report on file with the U.S. Fish and Wildlife Service, Reno, Nevada. 11 pp. plus appendices.

Tomlinson, C.R. 1995. Distribution, abundance, and habitat components of the Palmers chipmunk (*Tamias palmeri*) in the Spring Mountains of Southern Nevada. Endangered Species Act - Section 6 Project EW-2-5. Unpublished report on file with Nevada Division of Wildlife, Las Vegas, Nevada. 19 pp.

The Nature Conservancy. 1994. Spring Mountains National Recreation Area biodiversity hotspots and management recommendations. Unpublished report on file with the Toiyabe National Forest, Spring Mountains National Recreation Area, Las Vegas, Nevada. 52 pp. plus appendix.

University of Nevada Las Vegas. 1996. Clark County population forecast. Prepared for Southern Nevada Water Authority by the UNLV Center for Business and Economic Research.

U.S. Forest Service. 1996. Final Environmental Impact Statement - Amendment to the Land and Resource Management Plan, Toiyabe National Forest for the Spring Mountains National Recreation Area. Las Vegas, Nevada.

Weiss, S.B., A.D. Weiss, D.D. Murphy, and G.T. Austin. 1995. Final report on candidate butterfly taxa of the Spring Mountains. Unpublished report on file with the U.S. Fish and Wildlife Service, Reno, Nevada. 8 pp. plus appendix.

Weiss, S.B., A.D. Weiss, D.D. Murphy, and G.T. Austin. 1997. Final report on endemic butterflies of the Spring Mountains. Unpublished report on file with the U.S. Fish and Wildlife Service, Reno, Nevada. 35 pp. plus maps and appendix.

REVIEWED:

Date: 4/13/98

Mr. Alan S. Pinkerton, Assistant Forest Supervisor
Spring Mountains National Recreation Area
U.S. Forest Service
Las Vegas, Nevada

Date: 4/13/98

Mr. Robert D. Williams, Field Supervisor
Reno Fish and Wildlife Office
U.S. Fish and Wildlife Service
Reno, Nevada

Date: 4/13/98

Mr. William A. Molini, Administrator
Nevada Division of Wildlife
Nevada Department of Conservation and Natural Resources
Reno, Nevada

Date: 4/13/98

Mr. Roy W. Trenoweth, State Forester/Firewarden
Nevada Division of Forestry
Nevada Department of Conservation and Natural Resources
Carson City, Nevada

Date: 13 Apr. 98

Dr. Glenn Clemmer, Administrator
Nevada Natural Heritage Program
Nevada Department of Conservation and Natural Resources
Carson City, Nevada

X. SPRING MOUNTAINS CONSERVATION AGREEMENT SIGNATURES

In Witness Whereof, the parties have caused this Spring Mountains Conservation Agreement to be executed as of the date of last signature below:

Jack A. Blackwell

Date: 4-13-98

Mr. Jack Blackwell, Regional Forester
USDA Forest Service, Intermountain Region
Ogden, Utah

Michael J. Spear

Date: 4/13/98

Mr. Michael J. Spear, Regional Director
USDI Fish and Wildlife Service, Pacific Region
Portland, Oregon

Freeman Holmes Por

Date: 4/13/98

Mr. Peter G. Morros, Director
Nevada Department of Conservation and Natural Resources
Carson City, Nevada

XI. APPENDICES

A. Memorandum of Understanding Establishing a General Framework for Conservation of Species Tending Towards Federal Listing Under The Endangered Species Act

B. Interagency Agreement Between USDI Fish and Wildlife Service and USDA Forest Service for Spring Mountains Ecosystem Conservation Project

C. Biodiversity Hotspots in the Spring Mountains National Recreation Area

D. List of Species Included in the Conservation Agreement for the Spring Mountains National Recreation Area, Clark and Nye Counties, Nevada

E. Toiyabe National Forest Spring Mountains National Recreation Area Amendment to the Land and Resource Management Plan - Applicable Objectives, Standards, and Guidelines for Conservation Management in the Spring Mountains

F. Spring Mountains National Recreation Area Conservation Agreement 5-Five Year Conservation Action Plan

G. Nevada Native Species Site Survey Report Form

H. Interagency Agreement between Fish and Wildlife Service and U.S. Forest Service for Education/Information Signage and a Habitat Restoration Program

APPENDIX A

MEMORANDUM OF UNDERSTANDING
between
UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
and the
UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF LAND MANAGEMENT
NATIONAL PARK SERVICE
and
UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL MARINE FISHERIES SERVICE

94-SMU-058

This Memorandum of Understanding (MOU), is made and entered into by and between the U.S. Department of Agriculture Forest Service, hereinafter referred to as FS; the U.S. Department of the Interior Fish and Wildlife Service, hereinafter referred to as FWS; The U.S. Department of the Interior Bureau of Land Management, hereinafter referred to as BLM; the U.S. Department of the Interior National Park Service, hereinafter referred to as NPS; and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, hereinafter referred to as NMFS. Collectively, the parties to this MOU will be referred to as the cooperators.

I. PURPOSE

The purpose of this MOU is to establish a general framework for cooperation and participation among the cooperators in the conservation of species that are tending toward federal listing as threatened or endangered under the Endangered Species Act (ESA), 16 U.S.C.

The cooperators propose to work together to achieve a common goal of conservation of selected species, agreed upon by the cooperators, that are tending toward federal listing, ((e.g., sensitive, candidate or proposed species)(see Attachment A for definition of terms)) through protection and management of their habitats and ecosystems upon which they depend. Conservation Agreements (See Attachment A for definition of terms) will be developed for species and/or habitats selected by the cooperators using an agreed upon method of priority setting and in full consideration of budgetary feasibility and respective Agency missions. Attachment A is incorporated by reference into this MOU.

II. STATEMENT OF MUTUAL INTEREST AND MUTUAL BENEFITS

The FS is a land management agency responsible for the management of the national forests and grasslands. The FS manages 191 million acres in 43 states that serve as habitat for many plant and animal species. The FS also has a national policy (Forest Service Manual 2670) to manage habitats for plant and animal species to prevent the need for their federal listing under the Endangered Species Act.

The FWS is a Federal land management and regulatory agency responsible for the implementation of the Endangered Species Act and coordinating with other Federal and State agencies in the national effort to prevent the extinction of species. The FWS is responsible for the publication of the plant and animal candidate lists and has a national candidate conservation program.

The BLM is a land management agency responsible for the management of public lands. The BLM manages 270 million surface acres in 29 states that serve as habitat for many plant and animal species. The BLM also has a national policy (BLM Manual 6840) and strategic plans for implementing BLM's Fish and Wildlife 2000, an initiative to manage habitats for plant and animal species to prevent the need for their federal listing under the Endangered Species Act.

The NPS preserves and manages more than 80 million acres in 367 units of the National Park System for the enjoyment of present and future generations and is responsible for increasing the public knowledge, awareness, and appreciation of natural resources. NPS policies promote the conservation of all federally listed threatened, endangered, or candidate species within park boundaries and their critical habitats.

NMFS is a regulatory agency responsible for stewardship of the Nation's living marine resources. As part of this stewardship role, NMFS implements the Endangered Species Act for most anadromous and marine species.

In 1973, the Endangered Species Act (ESA) was enacted to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" and made it "the policy of Congress that all Federal departments and agencies shall seek to conserve endangered and threatened species and shall use their authorities in furtherance of the purposes of this Act." Data collected by state Natural Heritage Programs across the United States show that some 9,000 U.S. plant and animal species are rare, seriously declining in numbers and/or are likely to to be at risk of extinction within the foreseeable future. Addressing the threats to these species, thereby reducing or possibly eliminating the need for their listing as endangered or threatened, is of benefit to the cooperators and the nation.

This agreement will be of particular value for those species that require an inter-forest, inter-regional, and/or ecosystem approach to effectively conserve their habitats.

Habitat conservation assessments (see Attachment A for definition of terms) will provide the technical information and interpretation to develop Conservation Agreements outlining the procedural assurance necessary to reduce, eliminate, or mitigate specific threats to some species. These habitat assessments will also represent an important component for development of an ecosystem management approach on national forests, national parks, national wildlife refuges, public rangelands, and other land managed by the cooperators. Such information will also be useful to private landowners and state and other Federal land managers who may choose to coordinate their land management activities with those of the cooperators.

The cooperators seek to improve efficiency by combining their efforts, to foster better working relationships and promote the conservation of species, and thereby encourage conservation of national biological diversity.

In consideration of the above premises, the parties agree as follow:

III. THE COOPERATORS SHALL:

1. Work together and participate in the conservation of selected plant and animal species and their habitats to reduce, mitigate, and possibly eliminate the need for their listing under ESA by developing habitat conservation assessments leading to Conservation Agreements, where appropriate, for selected species, groups of species, or specific ecosystems.

2. Assemble interagency interdisciplinary teams of specialists and land managers to develop habitat conservation assessments for selected species.

a. These assessments will include the best available, comprehensive, state-of-the-art technical information and describe the habitat requirements for a species (or group of species) throughout its occupied range on federal lands.

b. Teams will be established for selected species, agreed upon by all cooperators, in Fiscal Year 1994. Timetables and responsible parties to complete these assignments will be identified. Line officers in each agency will be given responsibility to complete assessments, provide interagency cooperation, and accountability in a timely manner. Assessment teams will be established for subsequent fiscal year activities.

c. As part of the habitat conservation assessment, the respective line officers from the cooperators will identify, where appropriate, shortcomings of existing agency management direction and propose specific options for further consideration.

3. Use appropriate procedures to ensure adherence to all legal requirements in analyzing changes and establishing new management direction for habitat conservation. When appropriate, this will include amendment or revision of land and resource management plans or changes to the cooperators directive systems. These amendments and/or changes, in addition to a signed conservation agreement, will provide a basis for and commitment to the new direction.

4. Develop conservation agreements, as appropriate, to remove, reduce, or mitigate threats to candidate or sensitive species. These agreements will be based on the habitat conservation assessments as described in Section III, 2.

5. Further the purpose of this MOU. Examples may include cooperation in:

a. Preparation and dissemination of public information materials for selected species or species groups and their habitat,

b. Special technical and policy sessions for agency personnel, and

c. Meetings and special sessions to facilitate information exchange regarding the selected species conservation principles.

6. Meet annually at a national level to review the status of the previous years' work, prepare a joint acomplishment report, and establish a program of work for the Fiscal Year.

7. In all agencies, consider successful implementation of the program in evaluating line officer performance. Key leaders who contribute to notable successes will be recognized on a continuing basis.

IV. IT IS MUTALLY AGREED AND UNDERSTOOD BY AND BETWEEN THE PARTIES THAT:

1. Specific work projects or activities that involve the transfer of funds, services, or property among the cooperators to this MOU will require the execution of separate agreements or contracts, contingent upon the availability of funds as appropriated by Congress. Each subsequent agreement or arrangement involving the transfer of funds, services or property among the parties to this MOU must comply with all applicable statutes and regulations, including those statutes and regulations applicable to procurement activities, and must be independently authorized by appropriate statutory authority.

2. This MOU in no way restricts the cooperators from participating in similar activities or arrangements with other public or private agencies, organizations, or individuals.

3. Nothing in this MOU shall obligate the cooperators to expend appropriations or to enter into any contract or other obligations.

4. This MOU may be modified or amended upon written request of any party hereto and the subsequent written concurrence of all the parties. Cooperator participation in this MOU may be terminated with a 60-day written notice of any party to the other cooperators. Unless terminated under the terms of this paragraph, this MOU will remain in full force and in effect until September 30, 1999.

V. PRINCIPAL CONTACTS

The following persons will be the principal contacts for their respective agencies at the time of execution of this MOU. These contacts may be changed at the agencies' discretion upon notice to the other cooperating agencies.

Robert D.Nelson - WLF
USDA Forest Service
14th & Independence, SW
P.O. Box 96090
Washington, DC 20090-6090
(202) 205-1206

Jamie Rappaport Clark
USDI Fish and Wildlife Service
18th & C St. NW
(ARLSQ 452)
Washington, DC 20240
(703) 358-2171

Joe Kraayenbrink
USDI Bureau of Land Management
1849 C Street NW WO-240
Washington, DC 20240
(202) 452-7770

Gary Johnston
USDI National Park Service
Wildife and Vegetation Div.
P.O. Box 37127 MS-490
Washington, DC 20013
(202) 343-8115

Phil Williams
Office of Protected Resources
USDC National Marine Fisheries Service
Silver Spring Metro Center 1
1335 East-West Highway
Silver Spring, MD 20910
(301) 427-2322

IN WITNESS WHEREOF, the parties hereto have executed this MOU as of the last written date below.

JACK WARD THOMAS, Chief
USDA Forest Service

25 Jan 94
Date

MOLLIE H. BEATTIE, Director
USDI Fish and Wildlife Service

25 Jan 94
Date

JIM BACA, Director
USDI Bureau of Land Management

25 Jan 94
Date

ROLLAND SCHMITTEN, Assistant Administrator
USDC National Marine Fisheries Service

11/25/94
Date

for ROGER G. KENNEDY, Director
USDI National Park Service

25 Jan 94
Date

ATTACHMENT A
DEFINITION OF TERMS

Candidate Species: Those plant and animal species that, in the opinion of the Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NFMS), may qualify for listing as endangered or threatened. The FWS recognizes two categories of candidates. Category 1 candidates are taxa for which the FWS has on file sufficient information to support proposals for listing. Category 2 candidates are taxa for which information available to the FWS indicates that proposing to list is possibly appropriate, but for which sufficient data are not currently available to support proposed rules. The NMFS most recent candidate species list is published in 56 FR 28797. Because of the smaller numbers of species on NMFS candidate species list, NMFS does not apply categories to its candidate species list.

Proposed Species: Any plant or animal species that is proposed by the FWS or NMFS in a Federal Register notice to be listed as threatened or endangered.

Sensitive Species: Those plant and animal species identified by a Regional Forester or a BLM State Director for which population viability is a concern, as evidenced by:

a. Significant current or predicted downward trends in population numbers or density.

b. Significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution.

Habitat Conservation Assessment: A comprehensive, state-of-knowledge technical document that describes life history, habitat requirements and management considerations for a species or group of species throughout its/their occupied range on the lands managed by the cooperating agencies.

Conservation Agreement: A formal written document agreed to by FWS and/or NMFS and another Federal agency, Tribe, State agency, local government, or the private sector to achieve the conservation of candidate species through voluntary cooperation. It documents the specific actions and responsibilities for which each party agrees to be accountable. The objective of a Conservation Agreement is to reduce threats to a candidate species and/or its habitat. An effective Conservation Agreement may lower listing priority or eliminate the need to list a species.

International Association of Fish and Wildlife Agencies

(Organized July 20, 1902)

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Santa Fe, NM
Duane Shroufe
Phoenix, AZ
Steve N. Wilson
Little Rock, AR

March 25, 1994

Ms. Mollie H. Beattie, Director
U.S. Fish and Wildlife Service
1849 C Street, NW, Room 3256
Washington DC. 20240

Dear Ms. Beattie:

As we have previously discussed, the Memorandum of Understanding on species tending toward Federal listing under the Endangered Species Act (94-SMU-058) between the USDA - Forest Service; USDI - Fish and Wildlife Service, Bureau of Land Management, and National Park Service; and US Department of Commerce - National Marine Fisheries Service, left out a very vital cooperator - the states. As you are also aware, the states have primary statutory responsibility over the vast majority of species which might be tending toward Federal listing.

In recognition of that, and to remedy the omission of the state fish and wildlife agencies, the USDA - Forest Service prepared Addendum 1 to the MOU, identifying the state fish and wildlife agencies as cooperators in the MOU. Following approval of the Association's Executive Committee, I signed for the Association, representing the states on March 20, 1994.

I enclose a copy of the MOU, including a signed copy of Addendum 1, for your information and use. I would ask that you please provide your appropriate line and field staff with copies of the addendum recognizing the state fish and wildlife agencies as cooperators in this MOU.

Thank you for your attention to this matter.

Sincerely,

R. Max Peterson
Executive Vice President

Enclosure
cc: Executive Committee

RMP\bret\C:\-MAX-\ESADNDUM.LTR

ADDENDUM 1

94-SMU-058

Addendum 1 of this Memorandum of Understanding (MOU) is made and entered into by and between the U.S. Department of Agriculture Forest Service, the U.S Department of Interior Fish and Wildlife Service, the U.S. Department of Interior Bureau of Land Management, the U.S. Department of Commerce National Marine Fisheries Service, the U.S. Department of Interior National Park Service, and the International Association of Fish and Wildlife Agencies (IAFWA) on behalf of the 50 State fish and wildlife organizations. This addendum adds State fish and wildlife agency leaders as cooperators in this MOU as represented by the IAFWA.

The IAFWA, founded in 1902, is a quasi-governmental organization of public agencies charged with the protection and management of North America's fish and wildlife resources. The IAFWA's governmental members include the fish and wildlife agencies of States, provinces, and federal governments of the United States, Canada, and Mexico. All 50 States are members. The IAFWA is a key organization in promoting sound resource management and strengthening Federal, State, and private cooperation in protecting and managing fish, wildlife, and their habitats in the public interest.

IN WITNESS WHEREOF, the party hereto has executed this addendum to the MOU as of the written date below.

R. MAX PETERSON, Executive V.P.
International Association of
Fish and Wildlife Agencies

3/20/94
Date

APPENDIX B

INTERAGENCY AGREEMENT
between
USDI FISH AND WILDLIFE SERVICE
and
USDA FOREST SERVICE

for

SPRING MOUNTAINS ECOSYSTEM
CONSERVATION PROJECT

I. PURPOSE

The purpose of this Interagency Agreement (IA) between the Toiyabe National Forest, USDA Forest Service, hereinafter referred to as the FS, and the Nevada Ecological Services State Office, USDI Fish and Wildlife Service, hereinafter referred to as the FWS, is to work cooperatively to develop ecosystem-level management strategies for the Spring Mountains National Recreation Area (NRA) in southern Nevada. The goal of this effort is to develop conservation strategies and a conservation agreement that will manage and preserve the threatened, endangered, candidate and sensitive species within the Spring Mountains National Recreation Area.

II. AUTHORITY

The authority for the FS to enter into this agreement with the FWS is the Economy Act, 31 U.S.C. 1535, the U.S. Fish and Wildlife Coordination Act (48 Stat/401 as amended; 16 U.S.C. 661 et seq); Section 7 of the U.S. Fish and Wildlife Act of 1956 (16 U.S.C. 742 (a) (4)); and Section 5 of the Endangered Species Act (16 U.S.C. 1531(5)(a)) hereinafter, referred to as the Act. Additional authority is found in the 1994 Memorandum of Understanding (MOU) among the Departments of Agriculture, Interior, and Commerce, which establishes a general framework for cooperation and participation among the cooperators in the conservation of species that are tending towards Federal listing as threatened or endangered under the Act.

III. SCOPE

The goal of the FS is to develop an ecosystem oriented management plan for the newly created Spring Mountains NRA. More information is needed to enhance the general understanding of the Spring Mountains ecosystem. Acquisition of new information, including ecological communities, their spatial distribution and sensitive species occurrences, is required in order to best contribute to the development of effective ecosystem-level management strategies.

The goal of the FWS is to contribute information to the FS to develop an ecosystem-level management plan and conservation agreement for species which are candidates for listing under the Act, and other sensitive species. The intents of the management plan and conservation agreement

are to ensure management actions will contribute towards the conservation of sensitive species and the ecosystem in which they occur.

NOW, THEREFORE, in consideration of the above premises, the parties agree as follows:

IV. FS Shall

1. Cooperate with the FWS to set priorities for collection and analysis of field data.

2. Participate in annual workshops on the Spring Mountains Ecosystem Conservation Project.

3. Provide logistical information and support, when feasible, to field crews working on the Spring Mountains Ecosystem Project.

4. Incorporate strategies for ecosystem conservation and biodiversity protection into the management plan for the Spring Mountains National Recreation Area.

V. FWS Shall

1. Cooperate with the FS to set priorities for collection and analysis of field data and provide coordination among participating entities in the collection and analysis of field data.

2. Organize, coordinate and participate in annual workshops on the Spring Mountains Ecosystem Project.

3. Cooperate with the FS to develop strategies for ecosystem conservation and biodiversity protection in the Spring Mountains NRA.

VI. It is Mutually Agreed and Understood By and Between the FS and FWS That:

1. Both parties will work cooperatively to develop and implement ecosystem management strategies for conservation of plant and animal species which are candidates or already listed under the Endangered Species Act as well as other sensitive species.

2. Both parties will work cooperatively to develop a Conservation Agreement for the Spring Mountains Ecosystem which will provide for conservation of listed and candidate plants and animals and other sensitive species.

VII. Termination

The agreement shall be considered effective upon signatures of both agencies. It may be modified as necessary upon full agreement by both parties.

This agreement may be terminated with the consent of both organizations with a written 60-day advance notice.

VIII. Project Coordinators: Administration of this agreement shall be accomplished by:

Sara Mayben
U.S. Forest Service
Toiyabe National Forest
2881 S. Valley View, Suite 16
Las Vegas, Nevada 89102

Janet Bair
U.S. Fish and Wildlife Service
Nevada Ecological Services State Office
4600 Kietzke Lane, C-125
Reno, Nevada 89502

IX. Deliverables and Milestones

FWS and FS will jointly develop a Conservation Agreement through the planning and environmental analysis process. Development of the Conservation Agreement will include analysis of a wide range of alternatives, and evaluation of environmental effects, as required by NEPA.

The FS will adopt the provisions determined through the above process in an amendment to the Land and Resource Management Plan for the Toiyabe National Forest.

IN WITNESSTH WHEREOF, each party hereto has caused this Interagency Agreement to be executed by the authorized official as of the last date written below.

U.S. Fish and Wildlife Service

By: David 2. Harlow Date: 6/30/94

Title: State Supervisor

U.S Forest Service

By: Gary E Luyn Date: 5/26/94

for SUPERVISOR

Title: FOREST ~~SERVICE~~

APPENDIX C

BIODIVERSITY HOTSPOTS IN THE SPRING MOUNTAINS NATIONAL RECREATION AREA

(Source: The Nature Conservancy 1994)

Very High Priority Sites: Areas with the greatest number of elements of concern (5-29), highest degree of vulnerability to impacts, and a high level of existing and potential conflicts with recreation.

- Carpenter Canyon
- Deer Creek
- Middle Kyle Canyon
- Upper Lee Canyon
- Mt. Potosi, Potosi Spring and Mine
- Charleston Ridgeline
- North Fork Deer Creek
- Upper Kyle Canyon
- Mummy Mountain
- Willow Creek

High Priority Sites: Areas with relatively fewer elements of concern (3-9), a high degree of vulnerability to impacts, and a moderate level of existing and potential conflicts with recreation.

- Camp Bonanza and North Divide Trail
- Upper Clark Canyon
- Deer Creek Highway
- Harris Road
- Lower Kyle Canyon
- Macks Canyon
- Wallace Canyon
- Cold Creek
- Fletcher Canyon
- Harris Road end
- Lee Canyon Gaging Station
- Mummy Springs
- Wheeler Well

Moderate Priority Sites: Smaller concentrations of elements of concern (2-5), some vulnerability to impacts, and fewer existing and potential conflicts with recreation.

- Archery Range Road
- Deer Creek Highway Cliffs
- Griffith Trail
- Lee Canyon Ridgeline above Gage
- Lovell Summit
- Mahogany Knoll
- Lower North Loop Trail
- Robber's Roost
- Lower Clark Canyon
- Divide Trail
- Harris Mountain and Saddle
- Lee Canyon Summer Homes
- Macks Road
- Lower Mud Springs Road
- Potosi Pass Road
- Stirling Mine

APPENDIX D

LIST OF SPECIES INCLUDED IN THE
CONSERVATION AGREEMENT FOR THE

SPRING MOUNTAINS NATIONAL RECREATION AREA,
CLARK AND NYE COUNTIES, NEVADA

SPECIES	**DISTRIBUTION**	**HABITAT**	**MGT. IN SPRING MTNS**	**CONSERVATION STATUS***			
				FWS	**USFS**	**NV**	**HERIT-AGE RANK**
PLANTS							
Angelica scabrida Rough angelica	● Spring Mountains endemic: Kyle Canyon and Red Rock NCA, 4,000 - 9,000 ft, 18 documented occurrences	Washes, riparian areas, and avalanche paths in mixed conifer forests and quaking aspen-white fir associations	FS BLM	SOC	S	--	G2 S2
Antennaria soliceps Charleston pussytoes	● Spring Mountains endemic: Charleston Peak, Mummy Mountain, Kyle and Lee Canyons, 8,700 - 11,700 ft, 22 documented occurrences	Talus and rocky slopes and rock outcrops in alpine zone and bristlecone woodland associations, spring areas	FS Private	SOC	S	--	G1 S1

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Arenaria kingii ssp. *rosea* Rosy King sandwort	● Spring Mountains endemic: Kyle and Lee Canyons, Deer Creek area, 5,900-9,500 ft, 17 documented occurrences	Dry rocky hillsides in bristlecone woodland associations and mixed conifer forests	FS Private	SOC	S	--	G4 T2 S2
Astragalus aequalis Clokey milkvetch	● Spring Mountains endemic: Scattered around main core of the range, 6,040-8,350 ft, 23 documented occurrences	Dry, gravelly soils of alluvial fans in pinyon-juniper woodland associations, mixed conifer forests, and scrub oak communities	FS Private	SOC	S	--	G2 S2
Astragalus funereus Black woolypod	● Spring Mountains: Lower Kyle Canyon, 7,700 ft, a single occurrence ● Nevada: Clark and Nye Counties (distribution centered around the town of Beatty) ● California: Inyo County	Steep hillsides of ash-flow volcanic tuff in shrub communities (in mixed conifer forest in Kyle Canyon)	FS	SOC	S	--	G2 S2
Astragalus mohavensis var. *hemigyrus* Halfring milkvetch	● Spring Mountains: Eastside foothills, 3,400-5,600 ft, 15 documented occurrences ● Nevada: Clark and Lincoln Counties ● California: Inyo County (presumed extirpated)	Washes, toe slopes and alluvial fans in creosote bush and blackbrush associations	FS BLM Private	SOC	S	CE	G2 T2 S2

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Astragalus oophorus var. *clokeyanus* Clokey eggvetch	● Southern NV endemic ● Spring Mountains: Lee and Clark Canyons, Wheeler Pass, 6,300-9,000 ft, 13 documented occurrences ● Nye County: Belted Range, (Nellis AFR), Pahute Mesa (Nevada Test Site)	Ridges and gravelly slopes in mixed conifer forests and pinyon woodland associations	FS Private	FFA SOC	S	--	G4 S2 S2
Astragalus remotus Spring Mountains milkvetch	● Spring Mountains endemic: Southeast slopes (Red Rock Canyon to Goodsprings), 3,600-5,500 ft, 11 documented occurrences	Gravelly soils, rocky hillsides, and washes in creosote bush and mixed shrub associations	FS BLM	SOC	SOC	--	G1 S1
Botrychium ascendens Upswept moonwort	● Spring Mountains: Single record (exact location unknown) ● Western North America: British Columbia to California, Montana	Meadows and conifer forests - specific habitat requirements unknown	FS	SOC	SOC	--	G3? S1

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Botrychium crenulatum Dainty moonwort	● Spring Mountains: Peak, Mummy, Three, and Macks Canyon Springs, possibly elsewhere, 4 documented occurrences ● California, Arizona, Montana, possibly elsewhere in Nevada	Spring habitats, in association with shooting star, columbine, and Clokey thistle	FS	SOC	SOC	--	G3? S1?
Cirsium clokeyi Clokey thistle	● Spring Mountains endemic: Fairly common in many eastside canyons and slopes, 6700-11900 ft, total # occurrences unknown	Alpine areas, bristlecone woodland associations, mixed conifer forests, high elevation grassland associations, spring and riparian areas	FS Private	SOC	?	--	GX SX
Draba jaegeri Jaeger draba	● Spring Mountains endemic: Charleston Peak, Mummy Mountain, Lee Canyon, 9,600-11,200 ft, 6 documented occurrences	Fellfields and talus rubble in alpine and bristlecone woodland associations, and near moderate to high elevation seeps and springs	FS Private	SOC	S	--	G2 S2
Draba paucifructa Charleston draba	● Spring Mountains endemic: Charleston Peak and ridgeline, Kyle and Lee Canyons, 8,200 - 11,400 ft, 12 documented occurrences	Around seeps and snowdrifts in bristlecone woodland associations	FS Private	SOC	S	--	G1G2 S1S2

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Epilobium nevadense Nevada willowherb	● Spring Mountains: Kyle and Lee Canyons, 6,000 - 9,000 ft, 6 documented occurrences ● Nevada: Clark, Eureka, Lincoln and Lander counties ● Southern Utah	On bedrock, talus, or gravel in mixed conifer forests and pinyon woodland associations	FS	SOC	SOC	--	G2 S2
Glossopetalon clokeyi Clokey greasebush	● Spring Mountains endemic: Primarily Kyle Canyon, also Carpenter Canyon and Robbers Roost, 7,100 - 9,200 ft, 13 documented occurrences	Cracks of vertical and near-vertical limestone and dolomite cliff faces	FS	SOC	SOC	--	G2 S2
Glossopetalon pungens var. *glabra* Smooth pungent greasebush	● Spring Mountains: Mt. Potosi, 6,000 -7,800 ft, 2 documented occurrences ● Nevada: Sheep Range, Clark Co. ● California: Clark Mountains, San Bernardino Co.	Crevices of limestone cliffs	FS	SOC	SOC	--	G2 T1Q S1

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Glossopetalon pungens var. *pungens* Pungent dwarf greasebush	● Southern Nevada endemic ● Spring Mountains: Mt. Stirling, 4,000 - 6,500 ft, 1 documented occurrence ● Sheep Range, Clark Co., NV	Limestone cliffs and rocky slopes	FS	SOC	--	--	
Ivesia cryptocaulis Hidden ivesia	● Spring Mountains endemic: Charleston Peak ridgeline, Mummy Mountain, 11,000 - 11,900 ft, 7 documented occurrences	Talus and scree slopes, rocky ridgelines and slopes in the alpine zone	FS Private	SOC	S	--	G1 S1
Ivesia jaegeri Jaeger ivesia	● Spring Mountains: Kyle, Lee, and Carpenter Canyons, Deer Creek, La Madre Mountain, Mt Potosi, 5,200 - 11,200 ft, 35 documented occurrences ● California: Clark Mountains, San Bernardino Co.	On limestone bedrock and crevices of vertical and near-vertical cliff faces	FS BLM	SOC	S	--	G2 S2

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Penstemon fruticiformis var. *amargosae* Death Valley beardtongue	● Spring Mountains: Mt Stirling, Crystal Spring, 5,000 - 6,700 ft, 2 documented occurrences ● Nevada: Nye Co. - Specter Range, Striped Hills (NTS) ● California: In and near Death Valley, Inyo Co.	Sandy or gravelly washes of desert canyons, montane mass wasted slopes	FS BLM	SOC	S	--	G3 T2T3 S2
Penstemon leiophyllus var. *keckii* Charleston beardtongue	● Spring Mountains endemic: Documented in Deer Creek area, Lee Canyon, N of Mummy Mountain, ~ 7,000 - 11,000 ft, total # occurrences unknown	Bristlecone woodland associations, mixed conifer forests, high elevation forb and grass land associations, spring areas	FS	SOC	--	--	G3 T3 S2
Potentilla beanii Bean cinquefoil	● Spring Mountains endemic: W Harris Mountain and other high elevation locations, 9,600-11,900 ft, total # occurrences unknown	Alpine zone, bristlecone woodlands, high elevation forb and grass land associations, spring areas	FS	SOC	--	--	--

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Salvia dorrii var. *clokeyi* Clokey mountain sage	● Southern NV endemic ● Spring Mountains: Kyle and Lee Canyons, Deer Creek, north of Bonanza Peak, 7,000 - 9,000 ft, 23 documented occurrences ● Sheep Range, Clark Co.	Shallow gravelly soils, ridges and rocky slope drainages in bristlecone woodland associations, mixed conifer forests, and pinyon woodland associations	FS BLM	SOC	S	--	G5 T3 S3
Silene clokeyi Clokey catchfly	● Spring Mountains endemic: Charleston Peak ridgeline and Mummy Mountain, 11,500 ft, 7 documented occurrences	Fellfields, steep eastern dropoffs of high ridgelines, gently sloping plateaus, in alpine zone and bristlecone woodland associations	FS Private	SOC	S	--	G1 S1
Sphaeromeria compacta Charleston tansy	● Spring Mountains endemic: Charleston Peak ridgeline and Mummy Mountain, 10,800 - 11,000 ft, 12 documented occurrences	Talus and scree slopes, rocky ridgelines, and rock outcrops in alpine zone, and bristlecone woodland associations	FS Private	SOC FFA	S	--	G2 S2
Synthyris ranunculina Charleston kittentails	● Spring Mountains endemic: High east side canyons, Charleston Peak ridgeline, Mummy Mountain, 8,900 - 11,800 ft, 33 documented occurrences	High elevation seeps and permanently damp areas in alpine zone, bristlecone woodland associations, and mixed conifer forests	FS Private	SOC FFA	S	--	G1G2 S1S2

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Townsendia jonesii var. *tumulosa* Charleston grounddaisy	Southern NV endemic: ● Spring Mountains - Bonanza Peak area, Lee Canyon, Deer Creek, 6,600 - 9,800 ft, 24 documented occurrences ● Nevada: Sheep Mountains, Clark Co.; Sunnyside, Nye Co. (outlier)	Shallow, gravelly soils along ridges, rocky outcrops, and slopes in bristlecone woodland associations, mixed conifer forests, and pinyon woodland associations	FS BLM Private	SOC	SOC	--	G3 T2T3 S2S3
MAMMALS							
Corynorhinus (=Plecotus) townsendii pallescens Pale Townsend big-eared bat	● Spring Mountains: Mt. Potosi, Kyle Canyon, Deer Creek, Red Rock Canyon NCA ● Nevada: 2 subspecies, occurring throughout state ● Western North America, British Columbia to northeastern Mexico, isolated populations in eastern U.S. (4 subspecies)	Desert shrubland associations, pinyon woodland associations, mixed conifer forest, around water sources Roosts: Mines and caves	FS BLM Private	SOC	SOC	--	G4 T4 S?

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Euderma maculatum Spotted bat	● Spring Mountains: Not documented, but believed to occur. ● Nevada: Scattered records throughout state ● Western North America: British Columbia to Mexico	Associated with high cliffs, canyons, and riparian areas in desert shrubland associations and mixed conifer forests Roosts: Cracks and crevices in cliff faces, buildings, bridges	FS? BLM?	SOC	SOC	T	G4 S1?
Idionycteris phyllotis Allen's lappet-browed bat	● Spring Mountains: Potosi Spring, Red Rock Canyon NCA, Kyle Canyon ● Nevada: Southern counties ● Southwestern U.S. and Mexico	Near water and high cliffs in blackbrush associations, pinyon-juniper woodlands, and mixed conifer forests Roosts: Cliff crevices, caves or mine tunnels, at low elevations	FS BLM	SOC	SOC	--	G5 S1
Myotis ciliolabrum Western small-footed myotis	● Spring Mountains: White Rock Spring, Mt. Potosi, Deer Creek, Wheeler Well, other canyons ● Nevada: Occurring throughout state ● Western N. America: Canada to Mexico	Pinyon woodland associations, around water sources Roosts: Cliff crevices, rock outcrops, mines, caves, buildings, behind loose bark	FS BLM	SOC	SOC	--	G5 S3

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Myotis evotis Long-eared myotis	● Spring Mountains: Various east and west slope canyons, particularly abundant at Wheeler Well, often the only species in Macks Canyon ● Nevada: Occurring throughout state ● Western N. America: Canada to Mexico	Associated with springs in mixed conifer forests and pinyon-juniper woodlands Roosts: Buildings, beneath bark, in snags, mines, caves, crevices	FS BLM	SOC	SOC	--	G5 S3?
Myotis thysanodes Fringed myotis	● Spring Mountains: Various east and west slope canyons, particularly, Potosi Spring and Red Rock Canyon NCA ● Nevada: Occurring throughout state ● Western N. America: British Columbia to Mexico	Desert shrublands, oak and pinyon-juniper woodlands, mixed conifer forests, near water sources Roosts: Caves, mines, rock crevices, old buildings	FS BLM	SOC	SOC	--	G5 S3?

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Myotis volans Long-legged myotis	● Spring Mountains: Various east and west slope canyons, particularly abundant at Wheeler Well, Potosi Spring, and Deer Creek ● Nevada: Occurring throughout state ● Western N. America: Alaska to Mexico	Conifer forests, pinyon-juniper and oak woodlands, desert flats, around water Roosts: Buildings, cliff crevices, hollow trees	FS BLM Private	SOC	SOC	--	G5 S3?
Myotis yumanensis Yuma myotis	● Spring Mountains: A single record of occurrence at Potosi Spring ● Nevada: Clark County, along western edge of state to Washoe County ● Western North America: British Columbia to Mexico	Desert shrublands, particularly in association with permanent open water Roosts: Crevices, mines, caves, buildings	FS Private	SOC	SOC	--	G5 S1?
Tamias [=Eutamias] palmeri Palmer's chipmunk	● Spring Mountains endemic: Deer Creek, Kyle and Lee Canyons, other canyons around the central core of the mountain range, 7,000 -11,900 ft	Cool mesic canyons, typically near water, in bristlecone woodlands, mixed conifer forests, pinyon woodland associations	FS Private	SOC	SOC	--	G2 S2

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
BIRDS							
Accipiter gentilis Northern goshawk	● Spring Mountains: A single nesting record on North Fork of Deer Creek, scattered records of occurrence, primarily in Eastside canyons ● Nevada: High elevation mountain ranges throughout state ● Western N. America	Mixed conifer forest in warmer months, may occur in lower foothills and valleys during winter	FS BLM ? Private ?	SOC	SOC	P	G4 S3
Empidonax traillii extimus Southwestern willow flycatcher	● Spring Mountains: Willow flycatchers have been documented in Eastside canyons, subspecies unknown (potentially, Great Basin subspecies *acastus*) ● Nevada: Virgin River, possibly other Colorado River drainages ● Southwestern U.S. and Central America	Riparian habitats, typically associated with willow and salt cedar	FS?	E	--	P	G5 T2 S1

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Falco peregrinus anatum American peregrine falcon	● Spring Mountains: Observations recorded near La Madre Mountain (Red Rock Canyon NCA), probable sightings near McFarland Peak ● Nevada: Scattered records throughout state ● North America: Alaska to Baja California and northern Mexico, eastern U.S.	Rock ledges, small caves on high cliffs, often near water	FS ? BLM	E	--	P E	G3 S1
Otus flammeolus Flammulated owl	● Spring Mountains: Known from Upper Kyle, Lee, and Macks Canyons ● Nevada: In mountain ranges with mixed conifer forest ● Western North America: British Columbia to Central America	Among snags and dying trees with woodpecker cavities in mixed conifer forests	FS	--	SOC	P	--

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Speotyto cunicularia hypogea Western burrowing owl	● Spring Mountains: Presumed scattered at low elevations ● Nevada: Occurring throughout state ● Western and mid-western U.S., Central and South America	Desert shrublands, intermontane valleys	FS BLM private	SOC	SOC	P	--
FISH							
Oncorhynchus clarki henshawi Lahontan cutthroat trout	● Spring Mountains: Introduced in Carpenter Canyon ● Lahontan and associated basins of Nevada, California, and Oregon	Small streams with cool water, in rocky areas, riffles, deep pools, and habitats near overhanging logs, shrubs, or banks	FS	T	--	--	G4 T2 S2
REPTILES							
Gopherus agassizii Desert tortoise (Mojave population)	● Spring Mountains: Presumed scattered at elevations below 5,000 ft ● Mojave Desert, in southern Nevada, southern California, southern Utah, and northern Arizona	Flats, bajadas, with sand, and sandy gravels in desert shrubland associations	FS BLM	T	--	T	G3 S3

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Heloderma suspectum cinctum Banded Gila monster	● Spring Mountains: Presumed scattered at elevations below 5,000 ft ● Nevada: Clark and Lincoln counties ● Southwestern U.S.: Southwest Utah, Western Arizona, northeastern San Bernardino Co., California	In Washes, around boulders and rocky terrain, near water sources	FS ? BLM	SOC	SOC	P	G4 T3 S2
Sauromalus obesus Chuckwalla	● Spring Mountains: Presumed scattered at lower elevations ● Nevada: Southern portions ● Southwestern U.S.: Southern California, southwest Utah, western Arizona (also northern Baja California)	Rocky hillsides and outcrops, talus slopes, washes, and gravelly alluvial flats in desert shrubland associations	FS BLM	SOC	SOC		G5 SU

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
INVERTEBRATES							
Chlosyne acastus ssp. Spring Mountains acastus checkerspot	● Spring Mountains endemic: 5,600 - 8,500 ft, 12 documented occurrences	Riparian areas, mixed conifer forests, pinyon woodland associations Larval host plant: Rabbitbrush (*Chrysothamnus nauseosus* and *C. viscidiflorus* spp.)	FS	SOC	SOC	--	G1 S1
Euphilotes battoides ssp. Bret's blue butterfly	● Spring Mountains endemic: 6,600 ft, 1 documented occurrence at Big Timber Spring	Habitat requirements unknown	FS	SOC	--	--	--
Euphilotes enoptes ssp. Dark blue butterfly	● Spring Mountains endemic: 5,900 - 8,200 ft, 11 documented occurrences	Associated with mud banks in mixed conifer forests, pinyon woodland associations, and riparian areas Larval host plant: Sulfur buckwheat (*Eriogonum umbellatum*)	FS	SOC	SOC	--	G5 T3 S3

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Euphydryas anicia morandi Morand's checkerspot	● Spring Mountains endemic: 6,900 -10,500 ft, 9 documented occurrences	Ridgelines and avalanche shoots in the alpine zone, bristlecone woodland associations, mixed conifer forests, pinyon woodland associations Larval host plants: Paintbrush (*Castilleja linariifolia, C. martinii*)	FS	SOC	SOC	--	G5 T1 S1
Hesperia comma ssp. Spring Mountains comma skipper	● Spring Mountains endemic: Widely distributed, 4,900 - 9,900 ft, 45 documented occurrences	Bristlecone woodland associations, mixed conifer forests, pinyon woodland associations Larval host plants: Perennial grasses	FS BLM	SOC	SOC	--	G5 T2 S2
Icaricia (=Plebejus) icarioides ssp. Spring Mountains (Boisduval's) blue butterfly	● Spring Mountains endemic: Around the central masiff of the range, particularly common in Kyle Canyon, 5,900 - 9,900 ft, 23 documented occurrences	Bristlecone woodland associations, mixed conifer forests, meadows, quaking aspen associations Larval host plant: Silvery lupine (*Lupinus argenteus*)	FS	SOC	SOC	--	G5 T2 S2

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Icaricia (=Plebejus) shasta charlestonensis Mt. Charleston blue butterfly	● Spring Mountains endemic: Lee Canyon and Spring Mountains ridgeline, 6,600 feet and above, 17 documented occurrences	Open habitats (e.g., ridgelines, ski runs, avalanche paths), in bristlecone woodland associations and mixed conifer forests Larval host plant: Torrey milkvetch (*Astragalus calycosus* var. *mancus*)	FS	SOC	SOC	--	G5 T1 S1
Lasius nevadensis Charleston ant	● Spring Mountains endemic: 1 report of 6 populous colonies at 7700 ft in Kyle Canyon	Open conifer forest, nests beneath large stones	FS	SOC	SOC	--	???
Limenitus weidemeyerii nevadae Nevada admiral	Southern NV endemic: ● Spring Mountains: Widely distributed, 4,900 - 9,200 ft, 46 documented occurrences ● Sheep Range	Bristlecone woodland associations, mixed conifer forests, quaking aspen-white fir associations, riparian areas Larval host plants: Aspen (*Populus tremuloides)*, Utah serviceberry (*Amelanchier utahensis*), willow (*Salix* sp.)	FS BLM	SOC	SOC	--	G5 T2 S2
Pyrgulopsis deaconi (= sp. nov. 1a) Spring Mountains springsnail	● Southern NV endemic: Extant at 2 sites: Kiup Spring (FS) and Red Spring (BLM), extirpated from Willow Spring (BLM) and Pahrump Spring (private)	Spring brooks	FS BLM	SOC	SOC	--	--

SPECIES	DISTRIBUTION	HABITAT	MGT. IN SPRING MTNS	CONSERVATION STATUS*			
				FWS	USFS	NV	HERIT-AGE RANK
Pyrgulopsis turbatrix (= sp. nov. 58) Southeast Nevada springsnail	● Southern NV endemic: Extant at 7 sites: Willow Creek and Cold Creek Springs (FS), La Madre, Lost Creek, and Grapevine Springs (BLM), Horseshutem Spring (private), extirpated from Willow Spring (BLM)	Spring brooks	FS BLM Private	SOC	SOC		--
Speyeria zerene carolae Carole's silverspot	● Spring Mountains endemic: Distributed around the central core of the range, 6,600 - 8,900 ft, 37 documented occurrences	Open bristlecone woodland associations, mixed conifer forests, quaking aspen-white fir association, pinyon woodland associations Larval host plant: Charleston violet (*Viola purpurea* var. *charlestonensis)*	FS	SOC	SOC		G5 T2 S2

***KEY**:

FEDERAL CATEGORIES

T	Listed Threatened under the Endangered Species Act of 1973, as amended
E	Listed Endangered under the Endangered Species Act of 1973, as amended
C	Candidate for listing under the Endangered Species Act of 1973, as amended
FFA	Species named in the 1992 Nationwide settlement agreement between Fund For Animals, et al., and U.S. Fish and Wildlife Service
S	Category used by U.S. Forest Service to designate species for which long-term survival may be of concern due to Forest Service management, because of current or predicted downward trends in population numbers, density, or habitat capability.
SOC	Species of Concern: Non-regulatory designation used by U.S. Fish and Wildlife Service and U.S. Forest Service, Spring Mountains National Recreation Area to indicate species that are rare, believed sensitive to human disturbance, or subject to threat

NEVADA ADMINISTRATIVE CODE (NAC) CLASSIFICATION

T	Listed Threatened by the State of Nevada (NAC 503.030)
E	Listed Endangered by the State of Nevada (NAC 503.050, 503.065)
P	Protected by the State of Nevada (NAC 503.030, NRS 503.080)
CE	Listed Critically Endangered by the State of Nevada (NRS 527.270)

HERITAGE PROGRAM RANKS

G	Global rank indicator, based on worldwide distribution at the species level
S	State rank indicator, based on distribution within Nevada at the lowest taxonomic level
T	Trinomial rank indicator, based on worldwide distribution at the infra specific level
1	Critically imperiled due to extreme rarity, imminent threats, or biological factors
2	Imperiled due to rarity or other demonstrable factors
3	Rare and local throughout its range, or with very restricted range, or otherwise vulnerable to extinction
4	Apparently secure, though frequently quite rare in parts of its range, especially at its periphery
5	Demonstrably secure, though frequently quite rare in parts of its range, especially at its periphery
U	Unknown
?	Assigned rank uncertain
--	Not ranked

Southern Nevada Endemic and Regional Endemic Species that may Benefit from this Conservation Agreement

Southern Nevada endemics:

Inch high fleabane	*Erigeron uncialis* ssp. *conjugans*
Clokey buckwheat	*Eriogonum heermannii* var. *clokeyi*
Spring Mountain goldenweed	*Haplopappus compactus*
Hitchcock bladderpod	*Lesquerella hitchcockii*[1]
Charleston pinewood lousewort	*Pedicularis semibarbata* var. *charlestonensis*
Jaeger beardtongue	*Penstemon thompsoniae* ssp. *jaegeri*
Charleston phacelia	*Phacelia hastata* var. *charlestonensis*

Mojave Desert or Colorado Plateau Endemics:

New York Mountains catseye	*Cryptantha tumulosa*
Utah spikemoss	*Selaginella utahensis*
Charleston violet	*Viola purpurea* var. *charlestonensis*
Clokey paintbrush	*Castilleja martinii* var. *clokeyi*

[1] Extends north to central-eastern Nevada in White Pine County

APPENDIX E

TOIYABE NATIONAL FOREST
SPRING MOUNTAINS NATIONAL RECREATION AREA
AMENDMENT TO THE
LAND AND RESOURCE MANAGEMENT PLAN

APPLICABLE OBJECTIVES, STANDARDS, AND GUIDELINES FOR CONSERVATION MANAGEMENT IN THE SPRING MOUNTAINS

OBJECTIVES APPLICABLE TO THE ENTIRE NRA

(0.1) Maintain or enhance ecosystem health, function, sustainability, and diversity (plant, animal, and community).

(0.2) Maintain or restore the health and size of riparian areas at natural water sources, and at human-made water sources where native and desired non-native species have become accustomed to using them (e.g., broken pipelines).

(0.3) Return fire, as a historic ecological process, to the SMNRA. Maintain and improve ecosystem function and health through the management of prescribed fire and prescribed natural fire.

(0.4) Continue to provide firewood and meet ecosystem health goals and objectives by allowing dead and down, and green fuelwood collection.

(0.5) Maintain air quality at a level that is adequate for the protection and use of resources (Air Quality Related Values) and that meets or exceeds air quality standards as set by Clark County Health District.

(0.6) Maintain historic/natural operation of floodplains, where possible.

(0.7) Maintain historic conditions of water chemistry, temperature, clarity, and surface flow.

(0.8) Manage for endemic levels of native insects and diseases within the ecosystem.

(0.9) Prevent the destruction or adverse modification of critical TES species habitat, recover populations of TES species, and avoid the listing of additional species as threatened or endangered by maintaining populations and ecological processes necessary to their sustainability.

(0.10) Increase populations of threatened, endangered, and sensitive species, and species of concern, and their suitable habitat over the long term.

(0.11) Provide sufficient habitat to support the continued existence of all native resident and migratory species throughout the planning area. Restore desert bighorn sheep to their historic range.

(0.12) Provide sufficient habitat to support the continued existence of desired non-native species so long as their presence does not limit the viability of native species.

(0.13) Forage utilization will be 30% or less on any area in the Spring Mountains NRA.

(0.14) The habitat capability (population size in relation to available resources) to support elk will be based upon 15% of available resources available water and forage; and animal condition. Elk populations will be maintained at current 1996 populations levels until additional habitat is provided through ecosystem and vegetation management.

(0.15) Manage wild horses and burros in a thriving ecological balance with long-term ecosystem health.

(0.16) Appropriate management levels (population size) for wild horses and burros will be based upon limiting factor: available water and forage; area sensitivity; and animal condition. Initial levels will be based upon 7% of available water.

(0.18) Manage cave resources within the SMNRA to protect resources, provide for public safety, and provide recreational opportunities as set forth in the Federal Cave Resources Protection Act of 1988.

(0.19) Limit impacts of new administrative facilities on natural and heritage resources, and visual quality.

(0.29) Develop new relationships/partnerships and strengthen existing efforts with user groups, including hunters, trappers, rock climbers, cavers, trail users, summer home and special use permittees, and American Indians, to help manage the SMNRA and protect resources.

(0.30) Work cooperatively with federal, state, local agencies, tribal governments, and others to increase public education and awareness of resource values and interpretation opportunities throughout the SMNRA.

(0.34) Manage all active claims and abandoned mines to minimize effects on natural, visual, and heritage resources and provide protection for the public.

(0.37) Maintain roads to a standard necessary for public safety and as needed to respond to resource management objectives, including resource protection and recreation, through maintenance of road surfaces and minimizing erosion.

(0.44) New recreational facilities will be located and designed to ensure public safety, ecosystem health, and customer satisfaction.

(0.45) Continue to provide rock climbing opportunities while protecting resource values.

(0.52) Acquire available land within the Spring Mountains National Recreation Area to protect natural resources, provide public recreation opportunities, and increase efficiency of land management.

STANDARDS AND GUIDELINES APPLICABLE TO THE ENTIRE NRA

(0.1) Use native species when restoring riparian areas. (Standard)

(0.3) Prohibit parking and camping within riparian areas. (Standard)

(0.5) Where possible, maintain historic floodplain and channel width, slope, and gradient. (Guideline)

(0.6) Maintain/restore open pools of slow moving water (0.5 meter in diameter) at some historic water sources, well distributed throughout the range. Develop open pools of water at least 0.5 meter in diameter at newly developed/diverted water sources. (Guideline)

(0.7) Develop new perennial water sources, including guzzlers, only to benefit native species, to improve distribution of non-native species, where historic water sources have disappeared, or where access is limited. only develop water sources in the Wilderness or WSA's to improve desert bighorn sheep habitat. These developments must protect wilderness character. (Standard)

(0.8) When developing water sources, pipe water from a point downstream of the source if snails or other sensitive species are present, or if the spring source has not been previously developed. (Standard)

(0.9) Assert claims to water that benefit recreation development, instream flow, wildlife, threatened, endangered, and sensitive species, species of concern, and wild horse and burro populations. (Standard)

(0.11) Divert 25% or *less* of the surface flow from new developments at springs, seeps, and streams. (Standard)

(0.13) Remove existing water developments and debris from springs, providing they no longer serve their original purpose, are not critical to wildlife, and the items are not of historical significance. (Standard)

(0.17) Develop a seed bank of native species produced from seed sources on the SMNRA. (Guideline)

(0.18) Chaining will not be allowed. (Standard)

(0.20) Use prescribed natural fire throughout the SMNRA, where lives and property can be protected and outside the Creosote and Blackbrush Land Type Associations, to achieve ecosystem health goals and reduce fuels when conditions, fuel, weather, and national/local fire seasons allow. (Guideline)

(0.21) Planning for prescribed fires will include community involvement in determining the strategy, timing, and any coordination for fuelwood removal prior to and after the burn. (Standard)

(0.22) Use prescribed fire, silvicultural and mechanical treatments, and shaded fuelbreaks throughout the SMNRA to achieve ecosystem health goals, reduce fuel loads, and protect public safety, developed areas, and private property. (Guideline)

(0.23) Use prescribed fire within known and potential habitat of Clokeys eggvetch to improve habitat suitability when fuel, weather, and local/national fire season allows. (Guideline)

(0.27) All species listed as candidates for the federal threatened or endangered species list, all species listed as protected rare, endangered, and critically endangered by the State of Nevada, and all Forest Service sensitive species will be considered "species of concern," and treated as if they were on the Forest Service sensitive species list. (Standard)

(0.28) Collection of threatened, endangered, and sensitive species requires a permit from the Regional Forester, except for traditional use by American Indians. (Standard)

(0.29) Limit negative impacts to all species of concern due to management activities. Enclosed species list is the current (9/96) list of species of concern. (Guideline)

(0.30) Work with Nevada Division of Wildlife, US Fish and Wildlife Service, the Audubon Society, and other interested agencies and organizations to control cowbird populations as monitoring identifies negative impacts to species of concern from this parasitic, non-native species. (Guideline)

(0.31) New roads, administrative facilities, and developed recreation sites other than low-impact facilities (trails, trailhead parking, signs, restrooms, etc.) will be outside a 100 yard buffer zone around known Clokey

eggvetch and rough angelica populations or potential habitat, and outside biodiversity hotspots (defined as areas of particular diversity or sensitivity) (see Map 4 and Map 5). (Standard)

(0.32) Design new roads and motorized trails to maintain a minimum 0.5 mile distance from active or recently active desert tortoise burrows. (Guideline)

(0.33) For organized, motorized events on unpaved roads or trails within 0.5 mile of active desert tortoise burrows, require special permit provisions for desert tortoise protection. (Guideline)

(0.34) Use temporary closures (roads, trails, dispersed areas) to protect important seasonal habitat for species of concern (animals, plants, insects), in coordination with appropriate state and local agencies. (Guideline)

(0.35) New facilities and roads will be sited so as to avoid vital populations or habitats of species of concern. (Standard)

(0.36) Retain all snags that do not pose a threat to public safety or extreme fire danger. Snags are retained to provide habitat for cavity nesting animals and animals that feed upon the insects living within dead trees. Retain a minimum of 5 snags per acre in late seral stages of the Pinyon/juniper, Mixed Conifer, and Bristlecone Pine Land Type Associations in all cases. (Standard)

(0.37) Retain a minimum of 50 linear feet/acre of downed trees with a minimum 12 inch diameter on sites being managed for late seral stage of the Pinyon/Juniper and Mixed conifer Land Type Associations, to provide ground cover for small mammals, amphibians, reptiles, and invertebrates. Trim branches and limbs as necessary. Place downed trees in such as way as to not affect drainage patterns; impede traffic or use of recreation facilities; create a public safety problem; and where consistent with "defensible space. " (Standard)

(0.38) Provide a minimum of 5 wildlife cover sites per acre within developed or primitive recreation sites by maintaining or adding dead and down wood material or rocks at appropriate locations. (Standard)

(0.39) Permit application of herbicides and insecticides only to avoid or control epidemic outbreaks of insect and plant diseases where there is a threat to public safety, private property, or extreme fire danger. When applied, use only formulations registered by the EPA for the intended use, at minimum effective rates, and using selective methods. Avoid use in habitat for threatened, endangered, or sensitive species, or species of concern whenever possible. Single tree treatment will be used. (Standard)

(0.40) Do not permit introduction of new non-native species of fish or wildlife. (Standard)

(0.42) Initial elk populations will be maintained at current 1996 population levels until such time as additional elk habitat is provided through ecosystem and vegetation management. Work with NDOW to reduce the initial elk populations, should the elk herds not move into newly created habitats. (Standard)

(0.43) Work with NDOW to identify current elk population's utilization levels of key forage species, home ranges of elk herds, and resource overlap with other grazing animals. (Standard)

(0.44) Cooperate with NDOW to reduce elk population when habitat capability is exceeded by 15%. if possible, reduce population size to 20% below. (Guideline)

(0.46) Develop and maintain cooperative partnerships with hunters and trappers to benefit ecosystem health. (Guideline)

(0.48) Close all livestock allotment on the Spring Mountains NRA to grazing under term or temporary grazing permits. Livestock will only be permitted to graze to achieve specific desired ecological conditions. Domestic sheep and goats are prohibited throughout the Spring Mountains NRA. (Standard)

(0.49) Remove all structures related to grazing activities that are not necessary for current management, or of historic value. (Standard)

(0.50) Work cooperatively with interested groups to evaluate caves. The inventory process should document all unique biological, hydrological, geological, mineralogical, paleontological, educational, scientific, cultural, and/or recreational values. (Standard)

(0.51) Allow access to all caves only from the beginning of March through the end of May; and from the beginning of September through the end of October. Seasonal restrictions will remain in place until bat roosting/hibernating inventories have been completed. Long-term seasonal restrictions will be determined based on survey results. Allow year-round access to Robbers' Roost Cave. (Standard)

(0.52) Construction above or in the vicinity of a cave will be designed in a way to insure protection of the cave resources. Diversion of surface drainage into caves is prohibited. (Standard)

(0.53) Where possible, maintain native vegetation around cave openings for a minimum distance of 100 yards. (Guideline)

(0.54) Gate cave or mine openings where needed for public safety and resource protection. (Guideline)

(0.55) All gates on caves and mines will be designed to provide for unrestricted access for bats. Temporary (test) gates of PVC or other light, impermanent material will be constructed first to determine bats' reaction to gate design, prior to final design and construction of permanent gates. (Standard)

(0.56) Prohibit alteration of cave and mine entrance (except for gating to protect cave resources) or their use as disposal sites for slash, spoils, or other refuse. (Standard)

(0.57) Rock climbing within 100 yards of known active or recently active peregrine falcon nests will be allowed only from the beginning of July through the end of January. Specific routes may be signed as necessary to inform of seasonal closures if nests are identified. Monitor peregrine nesting success to determine if the 100 yard closure is effective. (Standard)

(0.59) Dead and down fuelwood collection areas may be designated in the Mixed Conifer Land Type Association (outside the Wilderness) when necessary to meet specific ecosystem health goals and objectives. As necessary, minimize impacts to Palmers chipmunk. (Guideline)

(0.60) Avoid cutting fuelwood, or cutting trees for salvage or sanitation within 0.5 mile of active or recently active flammulated owl or goshawk nest. Trees hazardous to public safety or extreme fire danger may be removed. Insect and disease treatments may occur within this area to control epidemic outbreaks. (Guideline)

(0.61) Allow collection of snags only between the months of October and the end of February. (Standard)

(0.62) Minimize paving of existing unpaved forest system roads within the SMNRA, provided public safety and resource management objectives are met. (Guideline)

(0.63) Close all undesignated spur roads in riparian areas; close other spur roads on a case by case basis, after Bite specific analysis. (Guideline)

(0.64) Relocate existing roads outside of washes, riparian areas, and 50-year floodplains if relocation will result in better resource conditions. Priority should be given to relocating roads when major maintenance is required and to roads that: (Guideline)

1. Are located in vital habitat for plant or animal species of concern.
2. Receive higher levels of use.

(0.65) Allow motorized vehicle use only on designated roads and trails, except for snowmobile use in approved areas. Close washes to motorized use. (Standard)

(0.66) Allow bicycle use only on established and/or designated roads and trails. (Standard)

(0.67) No sale of National Forest System land within the SMNRA. (Standard)

(0.68) Educate the public to the sensitivity of endemic species of the Spring Mountains, the importance of diversity, the significance of the Spring Mountains' biodiversity, and how to recreate without impacting these resources. (Guideline)

(0.89) Use bulldozers in fire suppression only as a last resort (lives or private property threatened). (Guideline)

(0.91) Develop and maintain a network of shaded fuelbreaks to interrupt continuous stands of fuel. Maintain 50 linear feet/acre of downed trees with a 12 inch dbh within the shaded fuelbreak (if fuelbreak is being managed ecologically for the late seral stage of Pinyon/juniper and Mixed Conifer Land Type Associations, or if managed for other seral stage within Palmers chipmunk habitat). Use existing road corridors and natural barriers. (Guideline)

(0.92) When possible, use existing human-made and natural barriers as control lines in preference to building new lines when suppressing wildfires and prescribing fires. (Guideline)

(0.93) Do not use bulldozers to create control lines for prescribed burns. (Standard)

(0.103) Work cooperatively with interested groups to establish seasonal use periods for caves and to educate cave users. (Guideline)

(0.106) Allow development of new bolted climbing routes under a voluntary route registration system. After development of more than 5 routes, new climbing areas in Wilderness and WSA's will require site survey before additional routes are developed. (Standard)

(0.108) Develop or realign trails into climbing areas as appropriate to provide for public safety and resource protection. (Guideline)

(0.114) Abandoned mine entrances may be closed for public safety after surveys to determine the locations of biological and heritage resources have been conducted. (Guideline)

(0.123) Manage designated and informal use (unnumbered) trails that are causing resource damage to reduce damage and restrict use to a single trail. (Guideline)

(0.125) As existing appropriate permits expire, require permittee to provide for education and interpretation of natural resources. (Guideline)

(0.126) Require site/area rehabilitation upon completion/termination as part of all new permits. (Standard)

(0.130) Require permits for publicized and/or organized events with 25 or more participants. (Standard)

(0.131) Require permits for groups with 15 or more pack or saddle stock. Require as part of the permit, all participants must stay on approved trails. Require removal of all hay and fecal material as part of site rehabilitation. (Standard)

(0.134) New facilities, special uses, or private developments on National Forest System lands will be constructed or carried out using "defensible space", guidelines to limit the incidence, speed, and damage from wildfire, where consistent with maintaining habitat for species of concern. (Standard)

(0.135) Provide additional developed recreation facilities in appropriate locations to encourage use away from upper Kyle and Lee Canyons. Emphasize new facilities in lower Kyle and Lee Canyons (east Of Highway 158), at Cold Creek, and on the west side of the Spring Mountains. (Guideline)

(0.137) New campgrounds and picnic areas will be located outside the 50-year floodplain, riparian areas, and avalanche hazard zones. (Standard)

(0.138) Allow development of low standard facilities (signs, trails, restrooms) and parking areas within the 50-year floodplain if no other alternative is available. Design these facilities to provide for public safety and to maintain floodplain function. (Guideline)

(0.140) Provide alternative parking sites, road alignments, and fencing where feasible to allow for continued recreational use outside of riparian areas. (Guideline)

(0.141) Construct any new roads outside riparian areas, washes, and the 50-year floodplain; and at least 100 yards away from existing water sources, except at crossings perpendicular to the water course. (Standard)

(0.144) New commercial developments will be approved only if they meet all the following requirements: (Standard)

1. Do not negatively impact threatened, endangered, or sensitive species, or species of concern;
2. Incorporate "defensible space" design (landscape design to prevent loss of property or life in case of wildfire), and fire safe facilities;
3. Provide for education and interpretation of natural resources;
4. Fit within a mountain setting;
5. Offer activities not generally provided on private land;
6. Minimize visual impacts;
7. Traditional or historic public use(s) is not limited;
8. Private land is not available;
9. Provide additional public restrooms (as appropriate);
10. Gambling is not part of Forest Service authorization.

(0.145) New administrative facilities will be located outside the 50-year floodplain, riparian areas, and avalanche hazard zones. (Standard)

(0.146) All new administrative facilities will use drought tolerant landscaping with an emphasis on native species. (Guideline)

(0.147) All private lands within the SMNRA outside of developed subdivisions are suitable for acquisition, through purchase, exchange, or donation. (Guideline)

(0.148) Land purchase and exchange will be carried out only with willing sellers, on an equal value basis. (Standard)

(0.150) Consider disposal through exchange of land occupied by Special use permits or summer homes if it would result in ecosystem administrative, and recreational benefits and where exchange will further the purposes of the Spring Mountains National Recreation Area Act. (Guideline)

MANAGEMENT AREA 11 - DEVELOPED CANYONS

OBJECTIVES

(11.1) Achieve the following mixture of plant communities (seral stages) within each Land Type Association:

Seral Stage (Vegetation Mosaic) **Land Type Association**	**Early**	**Kid**	**Late**
Creosote	0%	0%	90-100%
Blackbrush	0%	0%	90-100%
Pinyon/juniper	3-10%	50-67%	30-40%
Mixed Conifer	1-3%	25-50%	50-70%
Bristlecone Pine	0%	0%	90-100%
Lower Wash	0%	0%	90-100%
Upper Wash	0%	0%	90-100%

(11.4) Allow surface flows to return to ecosystem use.

(11.5) Enhance developed sites where feasible to restore resource or wildlife values where recreation use has adversely affected resources.

(11.11) Keep wild horses from Kyle and Lee Canyon.

(11.12) Lower Deer Creek is removed from the Spring Mountains Wild Horse and Burro Territory due to danger posed by this herd to traffic on Kyle and Lee Canyon highways.

Appropriate Management Level for wild horses and burros in Cold Creek is: horses, 26; burros, 0 (based upon 1992 range analysis and estimated population).

The analysis showed a downward trend in the vegetation community composition, and soil condition (erosion and compaction) within a one mile radius of the ponds. Utilization on willow exceeded 40%. This is excessive utilization for a community in a downward trend. This Appropriate Management Level is therefore based upon 30% of 1993 population which was 92 wild horses. No burros use this area, therefore, Appropriate Management Level for burros is 0.

(11.15) Develop cooperative management relationships with recreational residence associations.

(11.17) Future trail alignments will emphasize public safety, resource protection, and customer satisfaction.

STANDARDS AND GUIDELINES

(11.1) Provide protection of the riparian areas (in accordance with NV Revised Statute 503.660) at Cold and Willow Creeks through the use of new road alignments, vehicle barriers, and/or signage. Redirect

parking and camping away from riparian corridors. Allow only day-use, walk-in activities to occur within the riparian corridor. (Standard)

(11.2) Relocate the road through Cold Creek and Willow Creek out of riparian areas, in cooperation with Clark County, to provide an alignment that improves road safety, maintenance, and management. (Guideline)

(11.3) When practical, use current technologies (such as vault mini-flush, on-site treatment) to minimize the amount of organic waste entering the ground water supply from recreation developments in Kyle and Lee canyons, and along Deer Creek Highway. (Guideline)

(11.4) Allow day-use only in the meadow area in Lee Canyon. Use temporary closures to allow for resource restoration/rehabilitation. (Standard)

(11.5) Provide trail markers and post restrictions to bouldering in the vicinity of Robbers' Roost Cave to protect Jaeger ivesia and Clokey greasebush. Interpretive signage may be used as appropriate. (Guideline)

(11.6) Allow collection of butterflies in Lee Canyon, Cold Creek, Willow Creek, and upper Kyle Canyon only through permits. (Standard)

(11.7) Where possible, control access to, and revegetate areas that are adjacent to recreation developments and have slopes greater than 25 percent. (Guideline)

(11.8) Close and rehabilitate trail to and "Gary Abbot Campground" site. Close area to overnight use. (Standard)

(11.9) Revegetate and restore understory at appropriate locations within developed recreation areas and new administrative sites consistent with defensible space (i.e., fire safety) guidelines. Where possible, control access using temporary barriers at locations where revegetation efforts are occurring. (Guideline)

(11.10) To maintain wildlife cover in developed sites, encourage campground hosts/concessionaire to provide wood for purchase by campers/picnickers. (Guideline)

(11.11) Provide water sources for wildlife adjacent to or within developed facilities. Maintain public restrooms to prevent access by wildlife (Palmers chipmunk). (Guideline)

(11.20) Construct fences in strategic locations to keep wild horses out of Kyle and Lee Canyons. (Guideline)

(11.24) Designate specific primitive camp and picnic sites in upper Macks Canyon and at the Archery Range (at Deer Creek) by using parking barriers, fencing, signing, and education. (Guideline)

11.25) Prohibit snowmobile use in upper Lee Canyon (west of Deer Creek Highway) except for administrative use, search and rescue, and operational use within or for the Las Vegas Ski and Snowboard Resort. (Standard)

(11.33) Close the Bristlecone Trail to motorized vehicles. Place barriers to prohibit off-trail travel into populations of species of concern. Use signs to educate users to the importance of species of concern, and the threats to their existence. (Standard)

(11.35) Address user conflicts on Bristlecone Trail through a site-specific planning involving US Fish and Wildlife Service, trail users, and interested groups. (Guideline)

(11.44) Work with recreation residence associations to maintain the character and quality of recreational residence areas (summer homes under permit on National Forest System lands) while protecting natural resource values. (Guideline)

(11.52) Provide entrance stations on State Highways 157 and 158 at the entrances to upper Kyle and Lee canyons, in cooperation with federal, state, and local agencies, and local residents and business interests. The stations will include gates or other methods to manage traffic flow. (Guideline)

(11.53) Provide additional multi-use recreation facilities in lower Kyle or Lee canyons. (Guideline)

(11.54) Only allow low standard recreation facilities, including small camping areas or restrooms to be developed in upper Kyle and Lee canyons west of State Highway 158 as a resource protection measure. Allow new campgrounds and picnic areas to be developed in lower Kyle and Lee canyons, east of State Highway 158. (Standard)

(11.57) Allow limited expansion of ski area in Lee Canyon and enhancement of skiing opportunities and facilities within the scope of an approved master development plan and under the following constraints: Standard)

1. Expansion occurs within the existing sub-basin.
2. Does not impact any threatened, endangered, or sensitive species or species of concern, or its habitat.
3. Expansion is commensurate with development of additional parking in the lower Lee Canyon area, and shuttle services.
4. Expansion incorporates defensible space design and fire safe facilities.
5. Where consistent with other standards and guidelines.

(11.63) As possible, develop additional snow play area in Kyle Canyon, within the area road and parking capacity, or if needed parking/transportation capacity is provided. Avoid species of concern. If avalanche hazard zones cannot be avoided, provide for adequate forecasting, warning, and closure. (Guideline)

MANAGEMENT AREA 12 - MT. CHARLESTON WILDERNESS

OBJECTIVES

(12.1) Restore and maintain the natural, ecological, and visual character of the Wilderness.

(12.2) Protect natural and heritage resources and natural processes that enhance backcountry/wilderness recreational opportunities, including prohibiting consumptive uses of wilderness resources except where authorized by law or regulation.

(12.3) Manage the Research Natural Area to retain its natural and scientific values.

(12.4) Reduce impacts of non-native plants.

(12.5) Allow fires to play their historic role, where consistent with the protection of wilderness resources, public safety, and private property and developed facilities in surrounding areas.

(12.6) Protect wilderness resources, including live and dead bristlecone pines, from removal/cutting for fuel.

(12.7) Restore water sources to historic flows.

(12.8) Keep wild horses and burros out of the Wilderness.

(12.13) Educate the public to the value of wilderness, not just as a non-motorized recreation area, but as a place of natural processes and of personal risks.

STANDARDS AND GUIDELINES

(12.1) Allow natural disturbances (fire, flood, avalanche) to achieve desired condition of vegetation mosaic. Use management tools to achieve desired condition only if other alternatives are not available. (Guideline)

(12.2) Where possible, remove obvious exotic plants (dandelions, cheatgrass) manually. (Guideline)

(12.3) Allow for treatment of exotic pests within the Wilderness when scientific evaluations indicate a need. only use pesticides when no other options are available and then use the least persistent chemical or biological pesticide. Avoid use in habitat for species of concern whenever possible. (Guideline)

(12.4) Remove fire rings from the Wilderness. Emphasis should be placed on removing features which encourage use on degraded or sensitive sites. (Guideline)

(12.5) Allow fences and other barriers to be constructed in the Wilderness to prohibit wild horses and burros access into the Wilderness and Kyle and Lee canyons. (Guideline)

(12.6) Discourage foot-traffic and camping at Mummy Spring by removing visitor-made trails, trail signage, and restoring native vegetation in riparian areas. (Guideline)

(12.8) When maintaining upper North Divide Trail switch-backs, minimize ground disturbance to protect rare plants. (Guideline)

(12.9) Relocate South Loop Trail away from meadow if practical, and if other resources will not be affected. (Guideline)

(12.10) Trail construction and commercial uses within the Research Natural Area are prohibited, except for outfitters/guides passing through the RNA on the Mt. Charleston Loop Trail. (Standard)

(12.12) Rock climbing in the Fletcher Canyon and Robbers' Roost areas (both within and outside the Wilderness boundary) will continue only on existing routes until surveys for species of concern are complete. After surveys have been completed, local restrictions or seasonal closures may be used to protect species of concern. (Guideline)

(12.13) Wilderness permits are required for all overnight use within the Wilderness. Prohibit camping in sensitive areas, as determined through monitoring. (Standard)

(12.14) Campstoves are not restricted within the Wilderness. Campfires of any kind are prohibited. (Standard)

(12.16) Monitor increase of exotic non-native plant populations in the alpine to identify the need for any trail closures and restrictions for equestrian use. (Guideline)

(12.17) Discontinue equestrian use in the alpine if monitoring determines that equestrian use is having a negative impact on vegetation within the biodiversity hotspots. (Standard)

(12.18) Pack and saddle stock are limited to day use on all of South Loop Trail and on North Loop Trail from Trail Canyon trail junction to Charleston Peak (see Map 6). (Standard)

(12.19) Encourage the use of weed-free feed. (Guideline)

(12.24) A maximum of 15 pack or saddle stock will be permitted to use the trails in the Wilderness for organized trail rides. (Standard)

MANAGEMENT AREA 13 - WEST SIDE

OBJECTIVES

(13.1) Achieve the following mixture of plant communities (seral stages within each Land Type Association):

Stage (Vegetation Mosaic) Land Type Association	**Early**	**Mid**	**Late**
Creosote	0%	0%	90-100%
Blackbrush	0%	0%	90-100%
Pinyon/juniper	5-10%	60-75% 20-30%	
Mixed Conifer	2-5%	25-50% 50-70%	
Bristlecone Pine	0%	0%	90-100%
Lower Washes	0%	0%	90-100%
Upper Washes	0%	0%	90-100%

(13.2) Maintain unfragmented blocks of land.

(13.8) Habitat Capability for elk: Wheeler Pass, 87; Lovell Summit, 65.

(13.10) Appropriate Management Level for wild horses and burros in WheelerPass:horses, 11; burros, 0 (based upon 7% of available water). Lowest recorded water flow rate is used; assuming wild horses require 10 gallons of water per day. Those gpm rates (gallons per minute): Wheeler Well, 0.0 gpm; Buck Spring, 0.75 gpm; Rosebud Spring, 0.34 gpm.

Appropriate Management Level for wild horses and burros in Wheeler/Wallace: horses, 10; burros, 21 (based upon 7% of available water).

Lowest recorded water flow rate is used; assuming wild horses require 10 gallons of water per day; burros require 5 gallons of water per day. Those gpm rates (gallons per minute): Kiup Spring, 1.7 gpm; Ford Spring, 0.25 gpm; Carpenter Tank, 0.0 gpm; Lee Spring, unknown; Trout Spring, 0.0*; Horse Spring, 0.0* Dedicated to community/private use).

Appropriate Management Level for wild horses and burros in Red Rock Territory: horses, 50; burros, 50 (based upon Bureau of Land Management recommendations and the best available information).

STANDARDS AND GUIDELINES

(13.2) Maintain large undisturbed blocks of vegetation in an unfragmented condition without new roads or motorized trails including: Lovell Wash/Yount/Rose Springs area (T. 21S, R. 57E, Sections 4, 5, 6, 7, 8, 17, 1B, 19, 30; T. 21S, R. 56E, Sections 1, 2, 10-17, 20-27) (see Map 7). (Standard)

MANAGEMENT AREA 14 - MT. STIRLING

OBJECTIVES

(14.1) Achieve the following mixture of plant communities (seral stages within each Land Type Association):

Seral Stage (Vegetation Mosaic)

Land Type Association	**Early**	**Mid**	**Late**
Creosote	0%	0%	90-100%
Blackbrush	0%	0%	90-100%
Pinyon/juniper	5-15%	45-75%	20-40%
Mixed Conifer	2-5%	25-50%	50-70%
Lower Wash	5-15%	45-75%	20-40%
Upper Wash	5-15%	45-75%	20-40%

(14.2) Take advantage of the remote setting of this management area to actively restore historic disturbance regimes and improve wildlife habitat.

(14.6) Maintain existing roadless character of the Wilderness Study Area.

(14.7) Habitat capability for elk for Mt. Stirling is 97.

(14.8) Initial Appropriate Management Level for Johnnie Territory: horses, 50; burros, 75 (based upon Bureau of Land Management recommendations and the best available information).

STANDARDS AND GUIDELINES

(14.2) Prohibit construction of developed recreation sites or additional roads in the Mt. Stirling WSA until such time as Congress makes the decision regarding inclusion in the National Wilderness Preservation System. (Standard)

APPENDIX F
Spring Mountains National Recreation Area Conservation Agreement
5-Year Conservation Action Plan

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
1.0 PROJECT PLANNING AND IMPLEMENTATION								
1	1.1 Annual CA review by NRA staff	FS	5pd	X	X	X	X	X
1	1.2 Annual review of species protection recommendations by NRA staff	FS	5pd	X	X	X	X	X
1	1.3 Annual manager briefing on progress and future funding needs	FS, FWS, NDOW, NDF	5pd	X	X	X	X	X
1	1.4 Annual review of biodiversity hotspots by NRA staff and partners	FS, FWS, NDOW, NDF, Heritage	5pd	X	X	X	X	X
1	1.5 (a) Provide CA to partners	FS, FWS	5pd	X	X	X	X	X
1	1.5 (b) Hold annual meetings with partners	FS, FWS, NDOW, NDF, Heritage	5pd	X	X	X	X	X
1	1.6 Establish technical advisory committee and convene annual meetings	FS, FWS, NDOW, NDF, Heritage	5pd	X	X	X	X	X
1	1.7 Integrate CA with Clark County MSHCP	FS, FWS	10pd	X	X	X	X	X
1	1.8 (a) Coordinate with BLM on species issues	FS, FWS, NDOW	25pd	X	X	X	X	X
1	1.8 (b) Work towards inclusion of BLM in CA	FS, FWS	50pd	X	X			

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
1	1.9 Develop and distribute species of concern field guide for Spring Mountains NRA and Red Rock Canyon NCA	FS	10pd, 10K	X	X	X	X	X
1	1.10 Maintain GIS of species of concern occurrence	FS, Heritage	25pd	X	X	X	X	X
2	1.11 (a) Develop prescribed burn plan	FS, NDF	50pd, 20K			X		
2	1.11 (b) Implement prescribed burn plan	FS, NDF	20pd, 50K				X	X
1	1.12 (a) Develop fuelwood plan	FS, NDF	25pd, 10K	X	X			
2	1.12 (b) Implement fuelwood plan	FS, NDF	20pd, 50K			X	X	X
1	1.13 Identify and pursue land purchase and exchange	FS	50pd+ tbd	X	X	X	X	X
1	1.14 (a) Develop MOUs and hold annual meetings w/ climbing and caving groups	FS	10pd	X	X	X	X	X
2	1.14 (b) Identify additional special interest groups and develop MOUs	FS	10pd		X	X	X	

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
2.0 INVENTORY								
----------	2.1 Inventory species of concern and habitats	----------	---------	----- --	----- --	----- --	----- --	----- --
1	2.1 (a) Mojave bajada and wash plants (halfring and Spring Mountains milkvetch, black woolypod, Death Valley beardtongue)	FS, FWS	20pd		X			
1	2.1 (b) Spring plants (Upswept and dainty moonwort)	FS, FWS	20pd	X				
1	2.1 (c) Bret's blue butterfly (Big Timber Spring and elsewhere)	FS, FWS	3K	X				
1	2.1 (d) Townsend big-eared bat	FS, FWS, NDOW	20pd or 8K	X				
1	2.1 (e) Butterfly habitats (Foxtail Canyon, Potosi Mountain)	FS, FWS	7K	X				
1	2.1 (f) Bat roosts (Column and Pinnacle Cave)	FS, FWS, NDOW	10K		X			
2	2.1 (g) Cliff plants (smooth pungent and pungent dwarf greasebush)	FS, FWS	20pd, 5K		X			
2	2.1 (h) Butterflies (checkerspots and blues)	FS, FWS	7K		X			
2	2.1 (i) Allen's lappet-browed bat	FS, FWS, NDOW	20pd or 8K		X			
2	2.1 (j) Butterfly habitats (Mummy, Harris, Fletcher, Sterling, Trail and Wallace canyons, Mud Spring)	FS, FWS	7K		X	X		

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
2	2.1 (k) Bat roosts (cliff climbing areas)	FS, FWS, NDOW	20pd or 10K			X		
2	2.1 (l) Bat water sources (unsurveyed springs)	FS, FWS, NDOW	20pd or 10K			X		
2	2.1 (m) Neotropical migratory bird habitat (riparian areas)	FS, FWS, NDOW	40pd 20K			X		
2	2.1 (n) Raptor inventory	FS, FWS, NDOW	20pd 10K		X	X		
3	2.1 (o) Forest plants (Nevada willowherb, Charleston grounddaisy)	FS, FWS	20pd		X	X		
3	2.1 (p) Fringed myotis	FS, FWS, NDOW	20pd or 8K		X		X	
3	2.1 (q) Butterfly habitat (Wood Spring)	FS, FWS	7K	X			X	
3.0 MONITORING								
1	3.1 (a) Conduct Clokey eggvetch monitoring	FS, FWS	50pd	X	X	X	X	X
1	3.1 (b) Conduct rough angelica monitoring	FS, FWS	50pd	X	X	X	X	X
1	3.2 (a) Develop butterfly monitoring plan	FS, FWS	20pd	X				
1	3.2 (b) Conduct periodic butterfly monitoring for high priority species	FS, FWS	tbd		X	X	X	X
2	3.2 (c) Conduct periodic butterfly monitoring for medium priority species	FS, FWS	tbd			X		X

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
1	3.3 (a) Develop Palmer's chipmunk monitoring plan	FS, FWS, NDOW	20K	X				
1	3.3 (b) Conduct periodic Palmer's chipmunk monitoring	FS, FWS, NDOW	tbd		X		X	
1	3.4 (a) Develop bat monitoring plan	FS, FWS, NDOW	20pd		X			
1	3.4 (b) Conduct periodic bat monitoring	FS, FWS, NDOW	tbd			X		X
1	3.5 Develop and implement a plan to monitor springsnail populations and habitats (Willow and Cold Creek, Kiup Spring)	FS, FWS	10pd, 10K	X	X	X	X	X
2	3.6 (a) Develop riparian habitat monitoring plan	FS, FWS, NDOW	10pd, 50K		X			
2	3.6 (b) Conduct periodic riparian habitat monitoring	FS, FWS, NDOW	tbd		X	X		X
1	3.7 (a) Develop high elevation community monitoring program	FS, FWS	10pd, 30K	X				
1	3.7 (b) Implement high elevation community monitoring program	FS, FWS	tbd		X		X	
----------	3.8 Periodic biologist site visits to monitor species status and site condition (* indicates photo point)	----------	---------	----- --	----- --	----- --	----- --	----- --
1	3.8 (a) Carpenter Canyon	FS, FWS	2pd		X		X	
1	3.8 (b) Deer Creek Upper Kyle Canyon, including Mary Jane Falls Upper Lee Canyon, including Three Springs Macks Canyon, Macks Canyon Spring*, Macks Road	FS, FWS	10pd	X	X	X	X	X

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
1	3.8 (c) Willow Creek Camp Bonanza and North Divide Trail (including McFarland and Whiskey Spring) Cold Creek Spring	FS, FWS	10pd	X	X	X	X	X
1	3.8 (d) Wheeler Well, Trough Spring*	FS, FWS	3pd	X		X		X
1	3.8 (e) Stanley B Spring	FS, FWS	3pd	X	X	X	X	X
1	3.8 (f) Fletcher Canyon and Spring Mummy Spring*, lower North Loop Trail	FS, FWS	6pd	X		X		X
2	3.8 (g) Lee and Kyle canyons summer home sites Mahogany Grove, Robbers Roost	FS, FWS	3pd		X		X	
2	3.8 (h) Lost Cabin Spring*, CC Spring*, Cave Spring	FS, FWS	6pd		X		X	
1	3.8 (i) Peak Spring	FS, FWS	4pd		X			X
3	3.8 (j) Harris Mountain and Saddle	FS, FWS	2pd		X			X
3	3.8 (k) Mud Springs area	FS, FWS	4pd	X			X	
3	3.8 (l) Big Timber and Rock Spring	FS, FWS	4pd		X			X
3	3.8 (m) Roses Spring	FS, FWS	2pd			X		
2	3.9 (a) Develop recreation monitoring strategy	FS	10pd		X			
2	3.9 (b) Implement recreation monitoring strategy	FS	40pd		X	X	X	X
2	3.10 (a) Develop cumulative impact tally program	FS, FWS	10pd			X		
2	3.10 (b) Conduct cumulative impact tally program	FS, FWS	6pd			X	X	X

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
2	3.11 (a) Develop plan to inventory and map non-native plants	FS, FWS, Heritage	20pd 25K?		X			
2	3.11 (b) Implement plan to inventory and map non-native plants	FS, FWS	20pd, 50K			X	X	X
4.0 PROTECTION								
1	4.1 (a) Develop overnight wilderness permitting system	FS	10pd	X				
1	4.1 (b) Implement overnight wilderness permitting system	FS	80pd		X	X	X	X
1	4.2 (a) Develop climbing self registration process	FS	10pd	X				
1	4.2 (b) Implement climbing self registration process	FS	40pd		X	X	X	X
1	4.3 (a) Develop plan to protect bat roosts in mines and caves	FS, FWS, NDOW	5pd	X				
1	4.3 (b) Implement plan to protect bat roosts in mines and caves	FS, FWS, NDOW	tbd		X	X	X	X
1	4.4 Facilitate enforcement of leash laws and feral animal control	FS, NDOW	5pd	X	X	X	X	X
1	4.5 Coordinate with county health department in management of diseases (hanta virus, plague)	FS, NDOW	5pd	X	X	X	X	X
1	4.6 Manage wild horses and burros	FS	50pd	X	X	X	X	X
1	4.7 (a) Develop and distribute pelletized feed information to equestrians	FS	4pd		X	X	X	X

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
2	4.7 (b) Develop and distribute weed free policy for equestrians	FS, NDOW	6pd			X	X	X
1	4.8 (a) Sign closure order allowing FS to prohibiting camping within specified distances of water sources	FS, NDOW	2pd	X	X			
1	4.8 (b) Control dispersed primitive camping in the NRA by enforcing closure orders	FS, NDOW	100pd	X	X	X	X	X
1	4.9 (a) Develop native seed collection plan for endowment and cultivation of sensitive and rare plants	FS, NDF, Heritage	8pd	X				
2	4.9 (b) Collect seed for endowment and cultivation of sensitive and rare plants	FS, NDF	25pd 16K		X	X	X	X
1	4.10 Expand Carpenter Canyon RNA	FS	5pd	X				
2	4.11 Consider and develop additional protective designations	FS	4pd		X	X	X	X
1	4.12 Coordinate with golf course on pesticide and fertilizer use procedures	FS, FWS, NDOW	10pd	X	X	X	X	X
1	4.13 Ensure law enforcement and ranger presence throughout the NRA on a consistent basis	FS	1200 pd		X	X	X	X
1	4.14 Remove brown-headed cowbirds when found	FS, NDOW	tbd	X	X	X	X	X
2	4.15 Work with utility companies to ensure poles are raptor safe	FS, FWS, NDOW	2pd		X	X		
1	4.16 Coordinate with NDOT and FS road crews on road maintenance activities and species of concern	FS, FWS	10pd	X	X	X	X	X

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
5.0 RESTORATION								
1	5.1 (a) Develop native seed list for restoration and rehabilitation	FS, FWS, NDF, Heritage	5pd	X				
1	5.1 (b) Develop plan to collect seed for restoration efforts	FS, FWS, NDF, Heritage	5pd		X			
1	5.1 (c) Establish and maintain seed supply	FS, NDF	20pd 24K			X	X	X
----------	5.2 Restore habitats:	----------	---------	----------	----------	----------	----------	----------
1	5.2 (a) McFarland Spring	FS, FWS	20pd 15K	X				
1	5.2 (b) Mummy Springs	FS, FWS	20pd	X				
1	5.2 (c) Carpenter Canyon	FS, FWS	40pd 100K					X
2	5.2 (d) Trough Spring	FS, FWS	10pd		X			
2	5.2 (e) Lost Cabin Spring	FS, FWS	15pd 10K			X		
2	5.2 (f) Big Timber Spring	FS, FWS	15pd 10K			X		
2	5.2 (g) Little Falls Spring	FS, FWS	15pd			X		
2	5.2 (h) Gold Spring	FS, FWS	tbd				X	

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
3	5.2 (i) Middle Mud / East Mud Spring	FS, FWS	5pd	X				
3	5.2 (j) Buck Spring	FS, FWS	5pd			X		
1	5.2 (k) Macks Canyon Spring	FS, FWS	15pd 5K		X			
3	5.2 (l) Younts Spring	FS, FWS	15pd 5K			X		
3	5.2 (m) Santa Cruz Spring	FS, FWS	15pd 10K			X		
3	5.2 (n) Ninetynine Spring	FS, FWS	15pd				X	
3	5.2 (o) Mexican Spring	FS, FWS	10pd				X	
3	5.2 (p) Cougar Spring	FS, FWS	10pd				X	
2	5.3 Work with property owners to restore and enhance Cold Creek area	FS, FWS	50pd		X	X	X	X
1	5.4 (a) Willow Creek: Develop comprehensive restoration plan	FS, FWS, NDOW	200pd		X	X		
1	5.4 (b) Willow Creek: Implement comprehensive restoration plan	FS, FWS, NDOW	tbd				X	X
3	5.5 Work with summer home residents to restore and enhance habitats	FS, FWS, NDOW	8pd				X	X
1	5.6 Work with ski resort to incorporate habitat enhancement measures into new permit	FS, FWS	10pd	X	X			

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
1	5.7 Remove selected high-elevation campsites and fire rings	FS	25pd	X	X			
----------	5.8 Remove roads causing environmental damage:	----------	---------	----- --	----- --	----- --	----- --	----- --
2	5.8 (a) Remove road to Cave Spring	FS	15pd 5K		X			
2	5.8 (b) Remove road to CC Spring	FS	15pd 5K		X			
3	5.8 (c) Remove road to Lost Cabin Spring	FS	15pd 5K		X			
3	5.8 (d) Identify additional roads causing environmental damage and work with community groups to close them	FS	5pd + tbd			X	X	X
2	5.9 Organize volunteer work parties to remove weeds in high elevation communities	FS	5pd		X		X	
----------	5.10 Develop and implement vegetation management and restoration plans for campgrounds and day use areas:	----------	---------	----- --	----- --	----- --	----- --	----- --
2	5.10 (a) Deer Creek Picnic Area	FS, FWS	10pd 25K			X		
2	5.10 (b) Lee Canyon campgrounds and picnic areas	FS, FWS	30pd tbd			X		
2	5.10 (c) Kyle Canyon campgrounds and picnic areas	FS, FWS	30pd tbd			X		

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
2	5.10 (d) Gary Abbot Campground	FS, FWS	10pd		X			
3	5.11 Work with volunteers to provide nest boxes for cavity nesters	FS, NDOW	5pd		X		X	
6.0 RESEARCH								
1	6.1 Develop information package identifying research opportunities in the Spring Mountains NRA	FS, FWS, NDOW, Heritage	10pd		X			X
----------	6.2 Conduct research on species and communities:	----------	--------	----- --	----- --	----- --	----- --	----- --
1	6.2 (a) Clokey eggvetch seed biology and habitat requirements	FS, FWS	tbd					
2	6.2 (b) Spring Mountains acastus checkerspot autecology	FS, FWS	tbd					
1	6.2 (c) Fire ecology and disturbance regimes of plant communities	FS, FWS	tbd					
1	6.2 (d) Fire management for ecosystem health within the urban interface	FS	tbd					
1	6.2 (e) Checkerspot and blue butterfly metapopulation dynamics and genetics	FS, FWS	tbd					
2	6.2 (f) Blue butterfly / ant relationships	FS, FWS	tbd					
1	6.2 (g) Checkerspot and blue butterfly habitat requirements	FS, FWS	tbd					
1	6.2 (h) Effects of human disturbance on bats	FS, FWS	tbd					

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
3	6.2 (i) Winter habits of bats	FS, FWS	tbd					
1	6.2 (j) Palmer's chipmunk movement and dispersal	FS, FWS	tbd					
1	6.2 (k) Study of NRA customer needs/visitor communications	FS	tbd					
1	6.2 (l) Development of a recreation use monitoring strategy	FS	tbd					
3	6.2 (m) Waste management in the Wilderness Area	FS	tbd					
7.0 EDUCATION								
2	7.2 Develop environmental education programs for schools and community groups	FS	30pd 25K		X	X		
2	7.3 Distribute educational materials directed at specific user groups	FS	5pd 5K			X		
3	7.4 Provide information to summer home residents on species of concern conservation	FS	5pd				X	
3	7.5 Develop display materials for NRA office and guard station	FS	20pd 20K				X	
2	7.6 Develop brochures for trailheads	FS	20pd 20K		X	X		
3	7.7 Develop driving tour programs	FS	20pd 50K					X
----------	7.8 Design and install information and education signs	----------	--------	----- --	----- --	----- --	----- --	----- --

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
1	7.8 (a) Cathedral Rock sign	FS, FWS	5K	X				
1	7.8 (b) Mary Jane Falls Trailhead sign	FS, FWS	5K	X				
1	7.8 (c) Deer Creek Picnic Area sign	FS, FWS	5K	X				
1	7.8 (d) Bristlecone Trailhead sign	FS, FWS	5K	X				
1	7.8 (e) Robber's Roost Trailhead sign	FS, FWS	10pd 8K		X			
2	7.8 (f) Fletcher Canyon Trailhead sign	FS, FWS	10pd 8K		X			
1	7.8 (g) Trail Canyon Trailhead sign	FS, FWS	10pd 8K	X				
2	7.8 (h) North Loop Trailhead sign	FS, FWS	10pd 8K		X			
2	7.8 (i) Bonanza Trailhead sign	FS, FWS	10pd 8K		X			
2	7.8 (j) Harris Springs Trailhead sign	FS, FWS	10pd 8K		X			
2	7.8 (k) Carpenter Canyon sign	FS, FWS	10pd 8K					X
1	7.8 (l) Mummy Springs sign	FS, FWS	1pd 0.5K	X				

PRIORITY[1]	CONSERVATION ACTION	ACTION AGENCY	Est. staff time and cost [2]	ACCOMPLISHMENT YEARS				
				FY98	FY99	FY00	FY01	FY02
1	7.8 (m) Stanley B Spring sign	FS, FWS	1pd 0.5K	X				
2	7.8 (n) CC Spring sign	FS, FWS	1pd 0.5K		X			
2	7.8 (o) Trough Spring sign	FS, FWS	1pd 0.5K			X		
2	7.8 (p) Cave Spring sign	FS, FWS	1pd 0.5K		X			
2	7.8 (q) Macks Canyon Spring sign	FS, FWS	1pd, 0.5K			X		
2	7.9 Design and install Palmer's chipmunk signs at developed recreation sites	FS, NDOW	5pd 5K			X	X	

[1] Priority:

1 High priority - Conservation actions necessary to avoid large magnitude and/or imminent threats that may cause species declines or habitat degradation

2 Medium priority - Conservation actions necessary to avoid moderate magnitude and/or non-imminent threats that may cause species declines or habitat degradation.

3 Low priority - Other conservation actions that would enhance conservation management in the NRA.

[2] Estimated cost and staff time:

$K Actual cost outlays are indicated in thousands of dollars for conservation actions requiring supplies, equipment, or outside assistance.

pd Staff time indicated as person days

tbd To be determined

APPENDIX G

>>> NEVADA NATIVE SPECIES SITE SURVEY REPORT <<<

rev. 5.0-12/1994

MAIL TO: NEVADA NATURAL HERITAGE PROGRAM, 1550 East College Parkway, Carson City, NV 89710 (702) 687-4245

PLEASE ENTER ALL INFORMATION AVAILABLE TO YOU. USE THE BACK FOR COMMENTS IF NECESSARY. PLEASE ATTACH OR DRAW A MAP ON BACK.

OFFICE USE ONLY

Source Code_____ Map Code_____
Element Code_____ Occurrence #_____
Copy Sent to_____

Scientific name (no codes): _____

Surveyor/Reporter: _____ Phone: ( ) _____

Address: _____

Date of Survey: ____ ____ ____ (day month year) County: _____ Collection #_____ Museum/Herb. _____

LOCATION (please attach map showing population boundaries and routes/areas searched):

Map Name: _____ Field # _____ | T _____ R _____ ____¼ of ____¼ Sec ____

scale=1:_____ Elevation: _____ to _____ ft/m | T _____ R _____ ____¼ of ____¼ Sec ____

Landowner/Manager: _____

# of individuals/ramets: _____ if zero, reason: _____

# of colonies/genets: _____ if different, explain: _____

Is this a new location record (Yes/No/?)_____ a subsequent visit?_____ Compared to last visit: __more __same __fewer

Phenology (plants): ____% dormant ____% vegetative ____% budding ____% flowering ____% fruiting ____% seeding

Age Structure: ____% senescent ____% adult/mature ____% juvenile ____% 1st-year ____% newborn/seedling

Site Function (animals): ____breeding ____foraging ____wintering ____roosting ____denning _____other

INTERACTIONS (disease, predation, competition, parasitism, symbiosis, pollination, hybridization, dispersal, etc.):

HABITAT DESCRIPTION (community dominants, associates, other rare spp., moisture, substrate/soils, aspect/slope, light, air/H_2O temp., time, weather, etc.):

CURRENT SITE USE/Visible Disturbances and Impacts/Possible Threats:

Overall Relative Site Quality: _____Excellent _____Good _____Fair _____Poor COMMENTS:

SHOULD/COULD THIS SITE BE PROTECTED? How?

OTHER COMMENTS:

IDENTIFICATION OF SPECIES (Check one or more, fill in blanks):

____ Keyed in reference: _____
____ Compared w/specimen at: _____
____ Compared w/photo/drawing in: _____
____ By another person (name): _____
____ Other: _____

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone):

PHOTOGRAPHS (Check one or more):

Subject	Type
____Plant/Animal	____Slide
____Habitat	____Print
____Diagnostic Feature	
____Other	

May we obtain duplicates at our cost?

_____yes _____no

APPENDIX H

SCOPE OF WORK
for the
INTERAGENCY AGREEMENT
between
FISH AND WILDLIFE SERVICE
and
U.S. FOREST SERVICE
for
SPRING MOUNTAINS NATIONAL CONSERVATION AREA

The Spring Mountains ecosystem is a physiographically isolated mountain range in southern Nevada ranking high among western United States mountain ranges in terms of biological diversity and endemism. The Spring Mountains provides habitat for more than 60 rare and sensitive plants and animal taxa, including 18 plants, 8 butterflies, and 1 mammal found nowhere else in the world. The Las Vegas metropolitan area, located adjacent to Spring Mountains, is one of the fastest growing cities in the western U.S., with a population of more than 1 million people and influx of new residents at a rate of several thousand per month. Increasing demand for recreational opportunities in the Spring Mountains by residents of the Las Vegas Valley is steadily increasing pressure on ecological resources.

The U.S. Forest Service Humboldt-Toiyabe National Forests (FS) have been cooperating with the U.S. Fish and Wildlife Service (FWS) in development of an ecosystem-level conservation agreement addressing conservation and management of rare, endemic, and other sensitive taxa in the Spring Mountains National Recreation Area (NRA). If successfully implemented, this agreement should provide long-term protection for all rare and sensitive species in the Spring Mountains, such that future listings under the Endangered Species Act of 1973, as amended (ESA) are unnecessary.

Central to the goal of long-term protection for sensitive species is a coordinated program of inventory, monitoring, research, protection, restoration, and education. To this end, recent inventories of the plant and animal fauna of the Spring Mountains have resulted in identification of sensitive habitats and biodiversity hotspots (i.e., those areas harboring the greatest number of species and highest rates of endemism). In addition, monitoring protocol have been developed for several species, and various field-based research efforts have been completed. Information derived from these efforts is being incorporated into the Spring Mountains NRA management plan which is expected to be finalized by September 1996.

The purpose of this interagency agreement is to enhance current management efforts focused on biodiversity and species protection through a program of public education and habitat restoration. This agreement will facilitate the following programs:

1 Education/Information signage:

Eight signs (two per location, four locations) will be designed, constructed, and installed in the following areas: Deer Creek Picnic Area, Cathedral Falls trail head, Mary Jane Falls, and one other area, to be determined. One sign per location would discuss rare and sensitive species. The other sign would provide a map and information on permissible/non-permissible activities.

Sign designs, narratives, and construction details will be developed by the FS. Design and text will be submitted to FWS for comments and final approval.

II. Habitat Restoration Program

This program will provide a funding source for restoration projects in the Spring Mountains NRA. The FS and FWS will jointly develop and finalize a list of project priorities by no later than February 1, 1997. Actual on-the-ground work will be conducted during 1997. Additional projects will be conducted in 1998, if funding has not been exhausted. Priorities for funding of restoration projects will be based on the following criteria:

+ Projects should benefit one or more of the rare, endemic, sensitive, candidate, and listed species, or other critical components of biodiversity occurring in the Spring Mountains NRA.

+ Highest priorities will be assigned to projects 1) most likely to avert declining status trends that could result in a need to list new species under the ESA, or hinder recovery of currently listed species; and 2) improving ecosystem health, lands in poor condition, and areas where threats to biodiversity are greatest.

+ Consideration will be given to management recommendations provided by Nevada Division of Wildlife, The Nature Conservancy, University of Nevada, Las Vegas, Stanford University, and others, within the framework of various inventory, monitoring, and research studies accomplished in the Spring Mountains NRA during the period 1993 to 1996.

+ Projects should facilitate future implementation of the Spring Mountains Conservation Agreement between the FS and FWS.

+ Projects should increase public awareness and education on protection needs of sensitive ecological resources.

+ Projects should provide ample opportunities for involvement, participation and/or cost sharing by partners. Partners could potentially include (but would not be limited to) Federal, State, local and governments, universities, non-profit and public service organizations, schools, interested citizens, and other interest groups.

+ Projects might include, but will not be limited to, the following types of restoration activities:

Relocation of facilities away from biodiversity hotspots and other sensitive areas
Riparian and spring rehabilitation
Revegetation in and near campgrounds
Rehabilitation of unneeded trails and roads
Erosion control
Cave protection and restoration