



U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

Vermillion Resource Area

1992

Mt Trumbull

Habitat Management Plan

Revision (1992)

A-1 WHA-T-5



ABSTRACT

This revised Mt. Trumbull Habitat Management Plan (HMP) carries forward the goal of the original Mt. Trumbull HMP to improve and protect wildlife habitat, and updates the objectives and planned actions. The intent of this revised plan is to guide all coordinated wildlife work between the Bureau of Land Management (BLM) and the Arizona Game and Fish Department (AGFD) in the Mt. Trumbull area. Compatibility with the Trumbull/Logan Wilderness Management Plan is an important consideration of this revision.

Increased emphasis on non-game species, wilderness designations, apparent decline of estimated mule deer numbers, full establishment of wild turkeys and Kaibab squirrels, previous HMP evaluations, and the new BLM land use plan (Resource Management Plan/RMP) were all factors which indicated a need to update and revise the original Mt. Trumbull HMP, which was finalized in 1977.

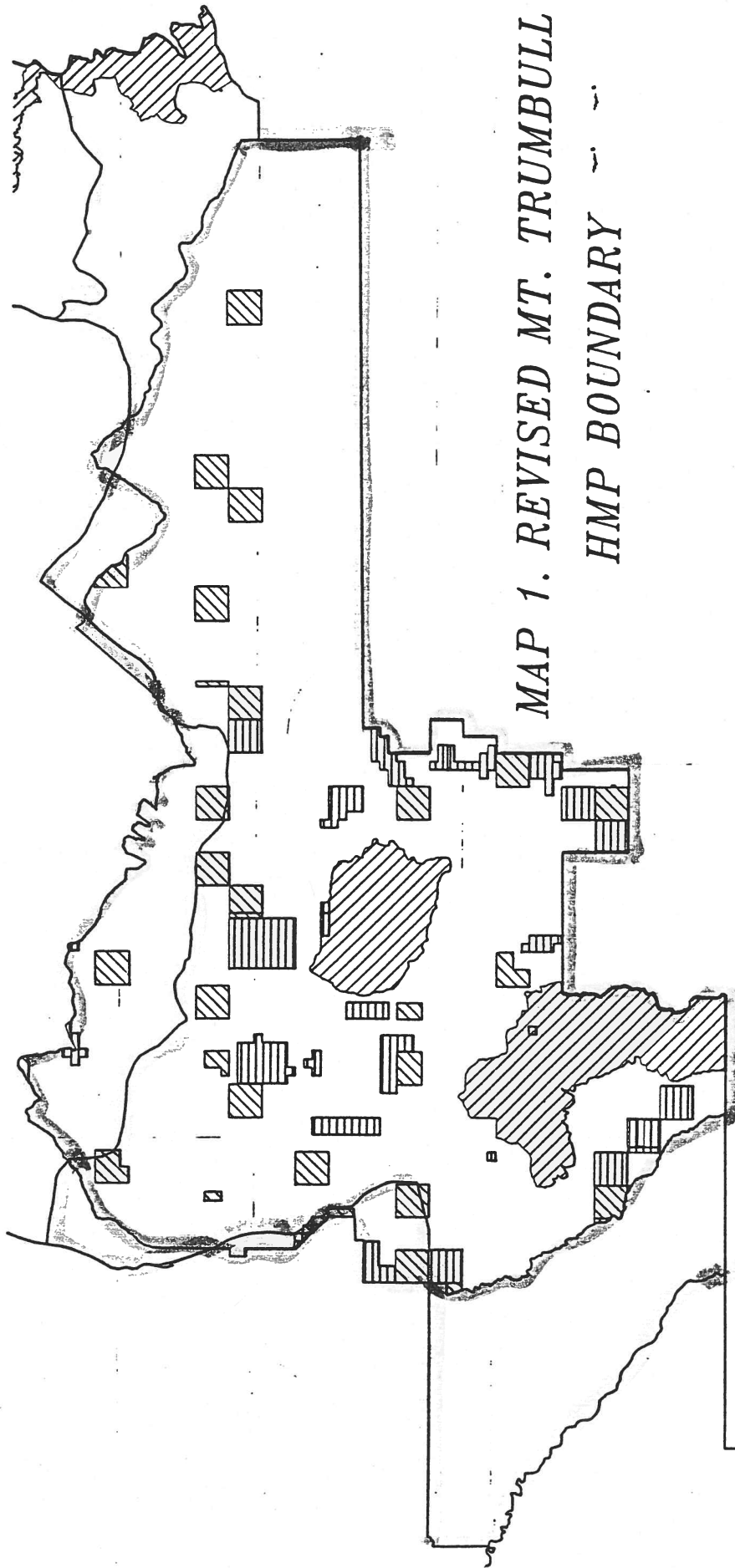
The revised HMP contains new objectives and planned actions. Revised objectives reflect current knowledge, resource conditions, and a conservation biology/ecosystem approach. These objectives and planned actions are grouped in five categories: a) non-game and special status species; b) big game and small game; c) riparian and wildlife water related; d) wilderness considerations and e) other coordination.

Boundary adjustments are also part of this HMP revision. Approximately twenty-eight percent of the original HMP area was land administered by the National Park Service (NPS). This revision has changed the southern boundary to drop out all NPS land. Boundaries of the Mt. Trumbull HMP area were also changed to more closely match AGFD and BLM administrative boundaries and to recognize Paria-Kanab Creek HMP boundaries which were developed after the Mt. Trumbull HMP was written. The revised Mt. Trumbull HMP covers approximately 232,300 acres, 88% of which is administered by BLM.

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MAP 1. REVISED MT. TRUMBULL
HMP BOUNDARY

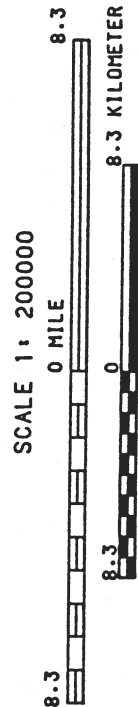
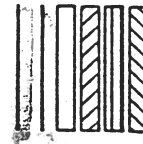
KHMPVRA
VRAHMLP
TSRAHML
AZBOPF
AZWIP
INTMTHMP
INTMTHMP

SUBJECTS
SUBJECTS

•P•

ARIZONA STRIP DISTRICT-VERMILLION RESOURCE AREA

REVISED HMP BOUNDARY
ORIGINAL HMP BOUNDARY
DISTRICT BOUNDARY
WILDERNESS
PRIVATE LAND



F. CHECKLIST FOR PREPARATION AND REVIEW

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CHECKLIST FOR PREPARATION AND REVIEW
OF HABITAT MANAGEMENT PLANS

State	ARIZONA
District	ARIZONA STRIP
Resource Area	VERMILLION
HMP Name and Number	A-1 WHA-T-S MT. TRUMBULL
HMP Prepared by	MIKE SMALL

REVIEW CHECKLIST	SURNAME	DATE
1. Master Memorandum of Understanding, Sikes Act Agreement and/or Supplemental with State Agency.		MOU: FEBRUARY 20, 1987
2. Preliminary meeting(s) with State Agency (or other appropriate cooperators) to jointly discuss HMP objectives.		MAY 3, 1989
3. Endangered Species Act Compliance completed by	Small	9/10/92
4. Review by District/Resource Area Specialists		
Range	R. Sandberg	9/10/92
Wild Horse and Burro	N/A	
Hydrologist		
Forestry		
Fisheries/Botanist/Wildlife Biologist	Small	Sept 3, 1992
Lands	Ford	9/10/92
Minerals	Taylor	09/10/92
Recreation	Folks	9/10/92
Wilderness/ACEC	Folks	9/10/92
Cultural		
Visual	Folks	9/10/92
Environmental Coordinator (reviews EAs)	P. Seguin	9/10/92
Support (Chief of Operations/Fire Management)		
Others		
5. Reviewed by Area Manager	Dennis Potts	9/10/92
6. Reviewed by Chief of Resource Management		
7. Draft HMP and EA reviewed by State Agency authorized officer (or other cooperators).		
8. Final review (if appropriate) by State Director		
Reviewed and approved by District Manager		
10. Approved by State Agency authorized officer		

Remarks

G. INTRODUCTION

1. REASONS FOR PREPARATION - There are several reasons for this revision. The original Mt. Trumbull HMP was finalized in 1977, well before designation of the Mt. Trumbull and Mt. Logan Wilderness Areas in 1984, and did not recognize wilderness considerations and mandates. The original HMP area was primarily based on the mule deer herd area and included 121,938 acres (28%) of National Park Service administered lands. Subsequent HMP evaluations have shown that many of the original HMP objectives have either been met or are no longer applicable. Some wildlife resource conditions have changed significantly; for example, mule deer numbers have decreased. Low deer numbers are probably the biggest issue of local public concern. Finally, some management opportunities not previously identified or emphasized, such as special status species and biological diversity, now require that this HMP be updated to current Bureau standards.

Since the Arizona Strip District Resource Management Plan (RMP) was recently finalized on January 31, 1992, and since the Mt. Trumbull/Logan Wilderness Management Plan was finalized on August 6, 1990, now is the proper time to revise the Mt. Trumbull HMP to achieve conformance with these two controlling planning documents for public lands in the subject area.

2. ECOSYSTEM DESCRIPTION - The revised Mt. Trumbull HMP area, except for its southwestern corner, lies between the Hurricane Fault and Kanab Creek, north of the northern boundary of the Grand Canyon National Park and south of the Clayhole region of the Arizona Strip in northwestern Arizona. Thus, the HMP area, which is entirely within Mohave County, Arizona, covers the southern end of the Unikaret Plateau, including most of the Unikaret Mountains, much of the Kanab Plateau, and is classified as part of the Colorado Plateau Physiographic Province of the United States.

The top of Mt. Trumbull is the highest point in the Mt. Trumbull HMP area. Elevations in the HMP area range from the 8029 foot summit of Mt. Trumbull to 3920 feet above sea level in Whitmore Canyon where the drainage crosses the Lake Mead National Recreation Area Boundary.

Despite the HMP's remote setting, human presence is part of the ecosystem today and is clearly evident from roads, fences, water developments, communications equipment, chainings, buildings, etc. Major activities include ranching, mineral development, hunting, sightseeing, and government work. Aircraft, ranging from Grand Canyon sightseeing planes to high performance military jets, commonly are seen flying above the area.

Native mammalian and avian wildlife species that are of

hunting or trapping interest in the HMP area include mule deer, coyote, mountain lion, bobcat, gray fox, badger, ringtail cat, cottontail rabbit, blacktailed jackrabbit, Gambel's quail, mourning dove, mallard, teal, and bandtail pigeon. Three others, Merriam's wild turkey, chukar, and the Kaibab squirrel, have been introduced to the area. Pronghorn antelope and desert bighorn sheep may also occur in the area, but their specific habitat management objectives will be addressed in the revision of other HMP's ;specifically the Clayhole HMP will address pronghorn management and the Paria/Kanab, bighorn.

Over 140 species of non-game birds have been verified in the Mt. Trumbull habitat area, and as least sixty additional species are suspected. According to O'Brien (1990), the Trumbull area supports three times the bird numbers as does the Kaibab Plateau because of greater habitat diversity, patchiness, and vegetative layering. Also, Mt. Trumbull itself, on the northern edge of the Grand Canyon, rises above the surrounding topography and is visible for over 100 miles; thus, in an ecological sense, it forms a "sky island" which would naturally attract birds.

Information is generally lacking about the species of small mammals, reptiles, and amphibians which inhabit the HMP area. No native or sport fish live in the HMP area.

Vegetation of the highest elevation areas (around Mt. Trumbull and Mt. Logan) is classified as Montane Conifer Forest. Ponderosa pine (Pinus ponderosa) stands cover approximately 16,000 acres. Within ponderosa stands, mottes of Gambel oak (Quercus gambelii) and New Mexican locust (Robinia neomexicana) commonly occur. An understory of big sagebrush (Artemisia tridentata) is found in much of the area. As elevation declines, sagebrush becomes more dominant and is found in larger expanses. A distinct transition from ponderosa pine to pinyon pine (Pinus edulis) and Utah juniper (Juniperus osteosperma) also occurs as elevation becomes less. The northern boundary of the HMP area roughly corresponds to the northern extent of pinyon-juniper from the Unikarets.

Livestock grazing has occurred in the area since the 1870's. Livestock today are limited to cattle and a few horses, and their number and time of grazing is closely controlled by allotment management plans. A number of non-native plant species, many being annuals from Eurasia, such as Russian thistle (Salsoli kali), are now found in the area. Since the Second World War, thousands of acres of pinyon-juniper and sagebrush have been treated...i.e. chained and reseeded to a variety of forage species. Cliffrose (Cowania spp.), an important early winter browse species, has increased in some treatment areas. Vegetation treatments, possibly using mechanical or chemical methods, or fire, can be expected to continue.

The ponderosa pine type is of key importance in the HMP area. Ponderosa pine stands serve as island refuges for ponderosa dependent wildlife species and for those species which depend on large, old trees. Wild turkey and Kaibab squirrel habitat is tied directly to ponderosa pine. Goshawk nesting habitat, and potential spotted owl habitat are delineated by the ponderosa type. Ponderosa pine is found intermingled with Gambel oak, locust, and pinyon/juniper, but no mixed conifer species such as spruce and fir are believed to be in the area.

Ponderosa pine/gambel oak habitat may be especially important for owls and other birds because the oak, especially large oak, provides nesting cavities. Most spotted owl nests in New Mexico are in oak cavities (pers. comm., Keith Fletcher, USFS). There are 53 known species of cavity nesting birds in the southwestern United States and most potentially occur in the Trumbull HMP area. Cavity-nesting birds depend on dead and unmerchantable trees for their roosting and nesting cover. These trees are generally considered a fire hazard and in the past have been routinely removed without consideration as to the effects removal has upon suitable nesting sites, bird population densities, and the harmful increases in insect populations which in turn may result (Scott and Patton, 1989).

Spotted bats have not been documented in the HMP area but are likely to occur. Three spotted bats were captured on the Kaibab Plateau in 1990 and it was suggested that these bats occur as summer residents in Ponderosa pine forests in June and July (Berna, 1990). The Kaibab Plateau is located only about 25 miles east of the Trumbull area. In New Mexico spotted bats have also been found in Ponderosa pine. However, a Washington County, Utah, study suggests these bats prefer a more xeric habitat with the presence of cracks and crevices in limestone and sandstone being a critical factor. That study (Poche, 1981) reported spotted bats are only regularly captured in three locations in the United States. The Fort Pearce Wash site which is about 30 miles down-drainage from the HMP area on the Utah/Arizona border apparently supports the largest population.

Timber cutting in the area dates back to the early 1870's when trees from the Trumbull area were used to build the LDS Temple in St. George. Commercial timber cutting on a relatively small scale continued until the 1960's. All accessible ponderosa stands have experienced harvesting. As many as eight old sawmill sites are known. However, stands of ponderosa which were not readily accessed and generally are located at high elevations, such as on top of Mt. Trumbull, have not been cut over. Some impressively large and old yellow ponderosa pine trees are found in the area. Approximately 8,000 acres, including almost all the uncut timber areas, were designated by Congress in 1984 to be managed in perpetuity as wilderness.

Timber stand improvement work, i.e. thinning, was done in 1976 on several thousand acres including Mt. Logan, and, in most cases, the slash was left upon the ground. This slash remains and presents a fire fuel loading problem, which in turn could result in a catastrophic forest fire under extreme weather conditions. Such a fire could alter a large amount of existing wildlife habitat. However, the same slash also provides important cover, nesting habitat, and food for turkeys, squirrels, and other wildlife. For example, the most important food item for Abert's squirrel (Kaibab squirrels are a unique color phase of this species) by volume and by frequency of occurrence is fungi which grows in the duff and ground litter. Fungi make up over 90% of their diet in the summer months (Stephenson, 1975). Certain fungi are sought by squirrels for food throughout the year (Patton, 1975).

Pine needles are acidic and their accumulation may prevent growth of grasses and other understory vegetation. Periodic fires remove some needles, thus promoting growth of understory vegetation.

Barring future cataclysmic events as evidenced by past lava flows, lightning caused wildfire is the force of nature which plays the major role of change in the HMP area and especially in the ponderosa zone. Almost all wildfires in the HMP area have been lightning caused. Prescribed fire has not been applied much in the past in the HMP area, except for some burning of slash and post-chaining seedbed preparation.

Fire is a natural component of the ecosystem. In recent years, BLM fire control efforts have restricted the number and extent of fires. So in effect fire has not recently operated in a natural manner; vegetation in the ponderosa pine type near Mt. Trumbull clearly exhibits unnatural characteristics because it has been protected from fire.

An average of approximately 40 acres of ponderosa pine habitat burn in the Trumbull area every year. The average annual number of reported fires is six or seven, and half the fires reported burn only 0.1 acre or less. Data from the past five years (1986 to 1990) indicates individual fire size has ranged from one tree to 78 acres. Interestingly, all the larger wildfires since 1986 have been in designated wilderness. Estimated tree mortality caused by the fire effects in the larger fires is between 10 and 20 percent. An unknown amount of additional tree mortality results from trees being cut down by fire fighters in the course of fire suppression actions.

Pinyon-juniper habitat in the HMP area sustains close to the same number of reported fires each year, but average annual total acreage burned is much smaller, with only slightly more than 2 acres burned annually. The largest pinyon-juniper fire reported for the area between 1986 and 1990 burned 5.0 acres

(BLM Fire Records). It is believed that before most fires were suppressed, periodic fires kept pinyon and juniper trees confined mostly to rocky hills and ridges. Lack of recent fires has allowed these tree species to encroach into the valleys and flats between the hills.

The Mt. Trumbull HMP area is large and diverse. Overall, the climate of the Mt. Trumbull HMP area is typical of the southwestern United States, somewhat dry and generally pleasant. Skies are often either clear or contain only a few clouds. Visibility is good. Air quality is also considered good, but there are concerns that the quality is declining and major studies are being conducted to determine the trend of air quality in the region. Precipitation widely varies from year to year. Low humidities and high summer temperatures cause high evapo-transpiration rates. Summer thunderstorms usually occur from July through October. These thunderstorms often contain lightning. Snow is possible from late October through March, but deep and persistent accumulations of snow are rare. The spring and early summer months usually are the driest. Total annual precipitation in the HMP area can vary from less than 6" at Whitmore Canyon to over 20" on top of Mount Trumbull. Summer temperatures can exceed 100 degrees (F), winter temperatures can drop to zero (F). Higher elevations are usually cooler. For most of the year, the prevailing wind is from the southwest.

3. **RELEVANT CONSTRAINTS** - Any work to improve wildlife resources in the HMP area would be constrained by several laws, policies, and relevant BLM decisions. Federal laws potentially constraining HMP related efforts include the Endangered Species Act of 1973, as amended, the Wilderness Act of 1964, the Arizona Wilderness Act of 1984, the Clean Air Act, and the National Historic Preservation Act of 1966. No work will be authorized or funded which would be in conflict with these laws. Inventories and/or formal consultations to protect cultural resources and listed threatened or endangered species may be required before work can be accomplished on the ground.

As of September 15, 1991, no species formally listed as threatened or endangered under the Endangered Species Act is known either to occur yearlong or to breed in the Mt. Trumbull HMP area. It is probable that on occasion, especially in winter, avian federally endangered species, such as the bald eagle (Haliaeetus leucocephalus), migrate through the area.

There is also a fairly good likelihood that three federal proposed or Candidate Category 2 animal species; the Mexican spotted owl (Strix occidentalis lucida), the northern goshawk (Accipiter gentilis), and the spotted bat (Euderma maculatum) may be found in the Ponderosa Pine zone of the HMP area.

One active goshawk nest/territory was confirmed in the area in 1986 near the Nixon Administrative Site. This territory was also active in 1987 and 1988, with young believed to have fledged in each of the three years. No data is available for 1989 and 1990. In 1991, a reconnaissance of the Trumbull area failed to locate any goshawks. In 1992, several reports of individual goshawk sightings have been received by BLM.

The presence of spotted owls and spotted bats has not been documented in the HMP area, but the habitat appears adequate. In 1991, the first year of a two year inventory effort did not locate any spotted owls in the HMP area. No recent efforts to look for spotted bats in the area have been conducted. Appendix 2 lists 14 state and federal special status species, including two plants, which may be found in the area.

The legal status of both the spotted owl and the goshawk is in a state of change. In 1990, the Secretary of Interior received a petition to list the Mexican spotted owl and conducted a status review of the owl. The status review was used to assist in making a final petition finding in early 1991 which, indeed, found federal listing to be warranted. The owl is currently a "proposed" species, and is expected to be federally listed as "threatened" in about one year.

Similar action is also expected for the goshawk in Arizona and New Mexico. A petition to add the Southwest population of the goshawk to the list of threatened or endangered (T/E) species was submitted to the FWS in July of 1991 and was denied in December, 1991, but at the same time a call for status information was published. The goshawk is currently a federal Category 2 species. Of concern, the goshawk population on the Kaibab Plateau has reportedly dropped nearly 90 percent from an estimated 260 nesting pairs before logging to 27 pairs known pairs in 1990 (Berle, 1991).

According to the U.S. Fish and Wildlife Service (letter dated May 3, 1989), there are two Federal Candidate plant species, both Category 2, which may occur in the HMP area. Mt. Trumbull beardtongue (Penstemon distans) occurs on north and east facing slopes between 3900 and 5200 feet in elevation, generally no further east than Whitmore Canyon. Rosa stellata, the Grand Canyon rose, occurs on limestone-derived soils of the rims of large canyons near Kanab Creek. Both species occur in or below the pinyon-juniper zones.

The Endangered Species Act precludes BLM from authorizing, funding, or carrying out any action which would be likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat. Present BLM policy goes further and for actions in which any proposed species or critical habitat may be adversely affected, the policy requires conferring with the U.S. Fish and Wildlife Service (FWS). BLM policy on candidate species directs that discretionary actions must not contribute to the need to list and that technical assistance from FWS and other qualified sources should be requested on any action which may contribute to the need to list a species as T/E.

The Arizona Wilderness Act of 1984 designated as wilderness approximately 7,900 acres around Mt. Trumbull and approximately 14,600 acres around Mt. Logan. These Congressional designations provide overall guidance and direction for resource management within the wilderness areas. In effect, these acreage will be managed to maintain and protect wilderness conditions which existed at the time of designation. This equates to a goal of managing for a natural appearing landscapes essentially free from man-induced contrasts and controls. Approximately 2,600 acres of ponderosa pine, about one fifth of the total ponderosa pine type, are in designated wilderness.

The Mt. Trumbull/Mt. Logan Wilderness Management Plan, completed on August 6, 1990, recognizes wildlife as a natural component of wilderness. All wildlife management related efforts in these two designated areas should conform with this wilderness plan. The wilderness plan specifies management actions for wildlife work in each of three wilderness opportunity classes. These actions are carried forward as "planned actions" in this HMP revision (see page 23).

The Arizona Strip RMP also calls for managing 108,000 acres in the Trumbull area as a Resource Conservation Area (RCA), which means that public lands within the RCA boundaries will be a "showcase" of BLM multiple-use management. The RCA falls within the HMP boundaries (Map 3). In the RCA traditional uses would continue; however, additional efforts will be directed at maintaining natural landscapes, limiting vehicles to designated roads, etc. All future resource management work will be done in a manner compatible with the RCA, including wildlife related work proposed in this HMP revision. AGFD is expected to also play a major role in the development of the RCA management plan.

A separate, multi-disciplinary plan for management of the RCA will be developed. BLM's wildlife objectives in the RCA plan are expected to be the same as the objectives in this plan.

However, it is possible the RCA management plan, which should be developed in 1993, will require modification of this HMP.

The RMP focuses wildlife management in the RCA on mule deer, wild turkey, Kaibab squirrel, and special status species. The RMP directs management of the RCA to be compatible with the Grand Canyon National Park. When possible, the perception of remoteness to civilization will be maintained. Ponderosa pine forestry practices will be conducted for the enhancement of other uses, such as wildlife and recreation, and not primarily for timber production.

Environmental assessments (or other forms of NEPA documentation) are required for all authorized federal actions occurring in the HMP area, with the exception of emergency actions and some mineral development related actions. For example, under current regulations mining activities which disturb less than 5 acres are covered under a "3809 Notice" and are considered non-discretionary activities from BLM's perspective, which means BLM does not authorize or approve the activities. However, in the two designated ACEC's (discussed in the following paragraph), a Mining Plan of Operation will be required for any size of mining activity. Reclamation of all disturbed areas will adhere to the requirements of Appendix 5 in the RMP.

Two Areas of Critical Environmental Concern (ACEC's) totalling 810 acres are located in the HMP area. The purposes of the two ACEC's (Witch Pool-260 acres and Nampaweap-550 acres) are to protect cultural resources and to provide interpretation for public use. The ACEC designation is based on the presence of unique cultural properties eligible for nomination to the National Register of Historic Places and essentially constrains most ground or vegetation disturbing activities, including ones which could benefit wildlife resources.

4. SIKES ACT AUTHORITY - The original Mt. Trumbull HMP was developed under Supplement #1 (Sikes Act Supplement) and the Master Cooperative Agreement between the Arizona Game and Fish Commission and BLM which was in effect at that time. This revision is to be implemented under the Sikes Act, subject to the current Master Memorandum of Understanding between the two agencies, dated March 18, 1987. No Sikes Act fee is charged in the area at the present time.

H. LAND STATUS/ADMINISTRATION - The revised Mt. Trumbull HMP covers about 232,300 acres, of which 88% (204,250 acres) is federal land administered by BLM for multiple use. State and private lands each comprise about 6% of the area. However, this plan only applies to BLM administered lands within the revised boundaries and excludes some private and state land in the vicinity of the town of Mt. Trumbull (Bundyville). Most

BLM land within the HMP area is in the Vermillion Resource Area (VRA), but a small amount between Mt. Logan and Whitmore Canyon is located in BLM's Shivwits Resource Area. As previously mentioned, there are two Congressionally designated wilderness areas (Mt. Trumbull and Mt. Logan) within the revised boundary.

The original HMP area was larger and covered 438,600 acres: 121,938 acres were NPS land. The revised HMP area does not contain any NPS administered land. The original HMP boundaries also included a small portion of the Kanab Creek Wilderness Area. The revised Mt. Trumbull HMP does not include any portion of the Kanab Creek Wilderness.

Livestock grazing in the HMP area is administered by BLM in several large grazing allotments; specifically the Tuweep, Big Springs, Crosby, June Tank, Mt. Trumbull, Mt. Logan, Swapp Tank, Fern Tank, Black Canyon and Clayhole allotments. There are existing allotment management plans (AMP's) for all these allotments except the Black Canyon allotment.

The HMP area is administered by Region II of AGFD and forms a portion of AGFD's Management Unit 13A. The western boundary of this HMP area closely corresponds to the boundary between Units 13A and 13B.

- I. **MANAGEMENT PURPOSE** - The purpose of this revision is to bring the Mt. Trumbull HMP up to current BLM standards by describing actions to preserve the ecosystem upon which the wildlife species depend. Public input was derived from the RMP planning process.

The boundary of the HMP area was adjusted for several reasons in addition to dropping inclusion of NPS land. The boundary adjustment's makes the plan simpler from an administrative standpoint by: excluding pronghorn management concerns from the Trumbull HMP and administering them in the Clayhole HMP to the north; excluding desert bighorn sheep concerns and leaving them in the Paria-Kanab HMP to the east; putting the HMP area into one game management unit (13A); and placing almost all the habitat area into one BLM Resource Area (Vermillion).

1. **RMP GUIDANCE** - The Arizona Strip RMP states that HMP's will guide wildlife management efforts and that they will be revised to meet changing management conditions.

The RMP provides specific management guidance along five lines of thought:

First, it directs integrating habitat and species management activities by working closely with AGFD.

Second, it states that wildlife should be managed in accordance with the HMP's to achieve desired plant communities that will benefit wildlife species.

Third, the RMP gives guidance that future management objectives should include improving mule deer habitat by increasing sufficient forage on summer ranges and nutritious browse on winter ranges through vegetation conversion and management prescriptions.

Fourth, the RMP specifies that an objective for Merriam's turkey in the Mt. Trumbull HMP area is to maintain good ground cover for nesting and large trees for roosting.

And fifth, the RMP directs management toward natural processes and maintaining an ecologically diverse plant community.

The RMP calls for a change in existing management direction by intensifying monitoring efforts, increasing efforts to identify and correct limiting habitat factors, and emphasizing project maintenance. The RMP directs that management of non-game species habitat and non-consumptive uses will be emphasized in revision of existing activity plans. The RMP also calls for establishing desired plant community objectives in HMP's and prescribing practices to achieve these objectives. And finally, the RMP directs BLM through interagency effort with AGFD to emphasize habitat monitoring/evaluation and population dynamics studies to determine the reasons for low deer numbers and actions that might be cooperatively implemented to improve productivity.

The RMP directs that management will be carried out consistent with multiple use for the conservation of candidate species and their habitats and to ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered. No approved Recovery Plans for T/E species apply directly to the Mt. Trumbull HMP area because no listed species currently inhabit the area.

RMP Table II-2 focuses wildlife management of the Mt. Trumbull RCA on deer, turkey, squirrel, special status species, and habitats, however the RMP does not change the wildlife objectives. Valid, existing HMP objectives are refined and brought forward. Also, the RMP does not set numerical wildlife or big game population goals for the Mt. Trumbull HMP area, although it states deer numbers to manage for will be re-evaluated in HMP review and revisions.

2. **HMP GOAL** - "The overall goal of the Mt. Trumbull HMP is to improve and protect wildlife habitat." This was the goal of the original HMP and remains the goal of the revised HMP.

This revision changes the emphasis more to maintain habitat communities and non-game species. The implementation and completion of objectives and planned actions will be dependent upon the availability of funds and manpower.

3. **REVISED SPECIFIC HMP GOALS/OBJECTIVES/PLANNED ACTIONS**

GOAL A: NON-GAME AND SPECIAL STATUS SPECIES (NGASSS)

Manage, consistent with multiple use, for the conservation of all species and habitats, and to ensure that actions authorized, funded, or carried out by BLM and/or AGFD do not contribute to the need to list any species as threatened or endangered.

PLANNED ACTIONS A(1)a-e: NGASSS - INVENTORY

a) Initial priority is to inventory, in accordance with accepted methods, approximately 12,000 acres of ponderosa pine habitat in the HMP area for nesting spotted owls by September 30, 1992 - in 1992 the area will be surveyed by contract, a continuation of what occurred in 1991.

DATE OF COMPLETION _____ INITIALS _____

b) Second priority is to inventory, in accordance with accepted methods, approximately 16,000 acres of ponderosa pine habitat in the HMP area for nesting goshawks and other pine forest raptors by September 30, 1994.

DATE OF COMPLETION _____ INITIALS _____

c) Third priority is to inventory, as appropriate, for other special status species in the HMP area by September 30, 1997. (Appendix 2 is the list of state and federal special status species which may occur in the HMP area. At present, 14 species are listed. This list is expected to change over the life of this plan.)

DATE OF COMPLETION _____ INITIALS _____

d) On an annual basis, BLM will maintain and keep current Appendix 2 of this HMP.

DATE OF COMPLETION _____ INITIALS _____

e) In the ponderosa pine type of Mt. Trumbull/Mt. Logan, both in and out of designated wilderness, BLM will establish a monitoring study (after coordination with forestry specialists) to determine if either the age class of large mature trees and snags is stable, or if

the critical mature/overmature age class is declining faster than it is being replaced. The monitoring study should be established by September 30, 1993

DATE OF COMPLETION _____ INITIALS _____

OBJECTIVE A(2): NGASSS - MANAGEMENT

Provide management and protection for all special status species and their habitat, as appropriate, in the HMP area.

PLANNED ACTION A(2)a: NGASSS - MANAGEMENT

a) Management criteria appropriate to the situation will be promptly developed and put in place to protect special status species if inventory-related planned actions or other information confirms these species are present. For example, if nesting Mexican spotted owls are located, then at that time appropriate current management criteria similar to the present New Mexico BLM's guidelines for owl nesting territories would be imposed.

DATE OF COMPLETION _____ INITIALS _____

OBJECTIVE A(3): NGASSS - INFORMATION & EDUC. (I&E)

By September 30, 1995, cooperatively develop a program for the public concerning special status wildlife species in the HMP area to present facts.

PLANNED ACTION A(3)a: NGASSS - I&E

a. BLM and AGFD will put together a 20 minute slide show and script on the HMP area's special status wildlife species for presentations at local schools.

DATE OF COMPLETION _____ INITIALS _____

GOAL B: BIG GAME AND SMALL GAME SPECIES

Manage habitat to achieve and maintain optimum numbers and distribution of game species for consumptive and non-consumptive enjoyment.*

OBJECTIVE B(1): BIG GAME - MULE DEER

Increase mule deer production and fawn survival to maintain the yearlong mule deer population in the HMP area at a minimum of 600 head by January 31, 1996.

PLANNED ACTIONS B(1)a-j: BIG GAME - MULE DEER

a. Survey, once every three years, beginning in 1992, mule deer populations, cooperatively by AGFD and BLM.

DATE OF COMPLETION _____ INITIALS _____

b. Investigate, if and when deer become available for transplant to the Mt. Trumbull area, the feasibility of a transplant. If a transplant is then deemed appropriate by both BLM and AGFD, it would occur in cooperation with both agencies, and cooperative measures to determine success or failure would be taken.

DATE OF COMPLETION _____ INITIALS _____

c. BLM will ensure forage and other habitat needs for 800 deer are provided for on a yearlong basis.

DATE OF COMPLETION _____ INITIALS _____

d. 5000 acres of mule deer summer and year-long mule deer habitat on the east side of Mt. Trumbull will be inventoried by BLM in accordance with the Ecological Site Inventory (ESI) procedures in order to define site potentials in areas of actual key use and to establish desired plant community objectives.

DATE OF COMPLETION _____ INITIALS _____

* AGFD classifies mule deer and wild turkey as big game species. BLM's Arizona Strip District RMP/EIS designated mule deer, wild turkey, and Kaibab squirrels as key management species. Specifically for mule deer, this HMP establishes the population size both agencies will initially manage for as a range of between 600 and 800 head yearlong. The current yearlong deer population size is unknown, but believed to be less than this range. However, during a given year, the population may actually fluctuate above 800 due to seasonal migration into the HMP area.

e. BLM will eventually modify present livestock grazing allotment management plans (AMPs) to achieve yet-to-be determined multi-disciplinary Desired Plant Community (DPC) objectives and possibly will use livestock grazing as a management tool to effect the desired changes for mule deer. (Changing the season of livestock grazing may be used to shift the competitive advantage to forbs and shrubs for wildlife.)

DATE OF COMPLETION _____ INITIALS _____

OBJECTIVE B(2): BIG GAME - WILD TURKEY

Maximize wild turkey populations through protection and improvement of existing turkey habitat.

PLANNED ACTIONS B(2)a-h: BIG GAME - WILD TURKEY

a. BLM will maintain all existing turkey roosting habitat, with the entire Ponderosa pine type in the HMP area treated as winter range. The existing 6.6 roosts per section should be retained on a continuous basis.

DATE OF COMPLETION _____ INITIALS _____

b. BLM and AGFD cooperatively will identify suitable potential and existing wild turkey foraging, nesting, and brooding habitats by September 30, 1996.

DATE OF COMPLETION _____ INITIALS _____

c. BLM will maintain 70% of the identified and existing suitable turkey foraging, nesting, and brooding habitats on a continuous basis.

DATE OF COMPLETION _____ INITIALS _____

d. BLM will establish desired plant community objectives for turkey foraging and brooding habitat based on ecological site inventories (ESI) by September 30, 1997.

DATE OF COMPLETION _____ INITIALS _____

e. BLM will maintain or improve a minimum of 5 existing acres of turkey foraging habitat by prescribed burning per year beginning in 1996 for a minimum of five years. Areas burned may be fenced with an electric fence to temporarily exclude livestock. Wildfire occurrence will be taken in account, as appropriate.

DATE OF COMPLETION _____ INITIALS _____

f. Maintain the feral pig closure on federal land in the Mt. Trumbull area. Both agencies will continue to support the closure and thus eliminate all feral and trespass pig use of federal lands in the Trumbull HMP area.

DATE OF COMPLETION _____ INITIALS _____

g. Monitor the turkey population on a 1-3 year basis, in cooperation with AGFD.

DATE OF COMPLETION _____ INITIALS _____

h. BLM will establish by June 30, 1995, a vegetative monitoring regime on 20 acres in the key turkey use area in the old burn behind the Nixon administrative site to determine if the desired plant community (DPC) for turkeys is being attained and/or maintained. This effort will be closely coordinated with the BLM range program and any proposed tree planting proposals.

DATE OF COMPLETION _____ INITIALS _____

OBJECTIVE B(3): SMALL GAME - KAIBAB SQUIRRELS

Maintain the established, viable population of Kaibab squirrels within all suitable habitat within the ponderosa pine vegetation type of the HMP area.

PLANNED ACTIONS B(3)a-d: SMALL GAME - KAIBAB SQUIRRELS

a. BLM and AGFD will on a continuing basis protect and maintain both horizontal and vertical stand diversity, along with canopy closure, of ponderosa pine stands in order to support a thriving population of Kaibab squirrels. This will be accomplished by reviewing and commenting upon proposals which alter the characteristics of ponderosa pine stands.

DATE OF COMPLETION _____ INITIALS _____

b. Both agencies will continue to promote the Kaibab squirrels at Mt. Trumbull as part of BLM's Fish & Wildlife 2000 "Watchable Wildlife" initiative, as opportunities and funding occur.

DATE OF COMPLETION _____ INITIALS _____

c. BLM will secure funding and have the lead in producing, in cooperation with AGFD, 2500 brochures for the public which will discuss the life history of the Kaibab squirrel in relation to Mt. Trumbull and BLM's "Watchable Wildlife" program, by June 1, 1996.

DATE OF COMPLETION _____ INITIALS _____

d. BLM will secure funding and have the lead in producing, in cooperation with AGFD, an interpretative sign to be erected in the Nixon Flats area, which will discuss the life history of the Kaibab squirrel in relation to Mt. Trumbull and BLM's "Watchable Wildlife" program by August 15, 1996.

DATE OF COMPLETION _____ INITIALS _____

GOAL C - RIPARIAN HABITAT AND WILDLIFE WATER RELATED

Manage, improve, and protect all riparian areas and sources of water in order to achieve healthy ecological conditions, as well as to provide safe and reliable water available for wildlife use.

OBJECTIVE C(1) - WILDLIFE WATER

Existing natural water sources and wildlife water developments will be managed and maintained so that water which is needed by wildlife is available and provided in a reliable manner on a continuing basis.

PLANNED ACTIONS C(1)a-c: WILDLIFE WATER DEVELOPMENTS

a. Cooperatively inspect and maintain all existing wildlife water developments in the HMP area at least once every three years beginning in 1992. Appendix 6 lists the existing developments of both agencies.

DATE OF COMPLETION _____ INITIALS _____

b. All existing wildlife water developments in the HMP area (Table 3) will be cooperatively evaluated by BLM and AGFD personnel together on each site by March 1, 1997, to determine the extent of wildlife use and dependency upon -- i.e., the biological need of -- each development. Projects will be ranked in order of their relative biological importance. Projects, if any, which lack biological importance, should be abandoned and removed.

DATE OF COMPLETION _____ INITIALS _____

c. Existing wildlife water developments determined to be in need of either repair, reconstruction, or replacement will be dealt with promptly. Priorities for such work will be cooperatively determined by BLM and AGFD and based upon the wildlife use a development receives, alternative water sources in the vicinity, funding, and manpower considerations.

DATE OF COMPLETION _____ INITIALS _____

PLANNED ACTIONS C(2)a-f: RIPARIAN PROTECTION

a. AGFD will support BLM actions to ensure when either a pipeline becomes broken or a specific water appropriation is fulfilled, that spring sources are not unduly dewatered and that riparian areas are maintained.

DATE OF COMPLETION _____ INITIALS _____

b. BLM, as part of either new, amended, or transferred Section 4 permits, cooperative agreements, right-of-way grants, reconstruction approvals, and other land use authorizations, will ensure that all pipelines originating at spring sources in the HMP area become equipped with a shutoff valve near the source, as opportunities to do such occur.

DATE OF COMPLETION _____ INITIALS _____

c. BLM will secure legal water rights for wildlife and riparian use at eight springs (Randall, Nixon, Quaking Aspen, Witch, Orson, Coyote, Lava Flow, and Big Spring.) located in the Mt. Trumbull HMP area by 1 Jan 94. As a minimum, such use should be quantified to be equivalent to the use of five deer each drinking one gallon per day for 180 days per year at each spring source.

DATE OF COMPLETION _____ INITIALS _____

d. BLM will monitor physical, chemical, and biological water quality at 4 AGFD/BLM mutually selected water sources which are used by wildlife. Special attention will also be given to determining if cyanobacteria (blue-green algae) present either an acute or chronic toxicity problem and if so, what can be done to reduce the problem, by September 30, 1995.

DATE OF COMPLETION _____ INITIALS _____

e. Both agencies will identify problem catchments and take all actions reasonable and necessary to prevent drowning and other accidents from occurring to all species of wildlife, as opportunities and funding occur.

DATE OF COMPLETION _____ INITIALS _____

f. Both agencies will identify water sources in the HMP area which have restrictive fences and other problems limiting wildlife access to water. These problems will be corrected as their identification, degree of concern, and funding occur. To set a good example, all fences around wildlife waters will be modified to meet BLM fence standards (BLM Manual H-1741-1) for wildlife passage.

DATE OF COMPLETION _____ INITIALS _____

GOAL D. WILDERNESS COMPATIBILITY

BLM and AGFD wildlife management actions and facilities in the Mt. Trumbull and T. Logan Wilderness Areas will be compatible with the wilderness values of these two areas.

OBJECTIVE D(1): COMPLIANCE WITH WILDERNESS PLAN

Both agencies will comply with the Mt. Trumbull/Mt. Logan Wilderness Management Plan by implementing the specific wildlife related planned actions of that plan as funding and personnel permit by January 1, 1995.

PLANNED ACTIONS D(1)a-h: WILDERNESS TASKS

a. The Mt. Trumbull #1, Witch, Pa's Pocket, and Slide Mountain Wildlife Catchments will be painted to reduce their visual contrast by fall of 1993, and repainted in the future as needed. Painting will be the responsibility of the agency who is responsible for maintenance of a particular project. The paint used will be lead-free.

DATE OF COMPLETION _____ INITIALS _____

b. When catchment reconstruction is needed, AGFD and BLM will jointly evaluate the feasibility of either 1) relocation outside wilderness, 2) abandonment, or 3) reconstruction on the existing site. Minimum tool considerations to achieve the desired action, while meeting wildlife needs, and with the least possible impact to existing wilderness values will be used. Mt. Trumbull #1 will be evaluated by August 1992.

DATE OF COMPLETION _____ INITIALS _____

c. Include T&E surveys and documentation as part of wilderness patrols or projects. All actions, including wilderness management actions, will comply with the Endangered Species Act.

DATE OF COMPLETION _____ INITIALS _____

d. Both agencies will respond to requests for predator control in a manner which fully recognizes wilderness values and the role of predators in the natural ecosystem.

DATE OF COMPLETION _____ INITIALS _____

e. Both agencies will use correspondence, press releases, and field contacts to notify licensed hunters each year of wilderness management concerns, as well as other land management concerns.

DATE OF COMPLETION _____ INITIALS _____

f. BLM will evaluate requests and needs for wildlife project maintenance using the minimum tool policy to determine the method of maintenance which least impacts wilderness values.

DATE OF COMPLETION _____ INITIALS _____

g. BLM will ensure that if fire suppression efforts remove water from wildlife water sources, then reasonable efforts are made to restore the water in a timely manner.

DATE OF COMPLETION _____ INITIALS _____

h. AGFD will construct a gate and install a lock on the Pa's Pocket Wildlife Catchment access road by March 31, 1994.

DATE OF COMPLETION _____ INITIALS _____

GOAL E. CONSERVATION AND COORDINATION

Recognize that all native wildlife, including predators and non-game, are vital components of the ecosystem.

OBJECTIVE E(1): CONSERVATION AND COORDINATION

On a continuing basis, BLM and AGFD will strive to manage using an ecosystem approach and will coordinate management actions in order to preserve and protect wildlife resources, including habitat.

PLANNED ACTIONS E(1)a-f: CONSERVATION AND COORDINATION

a. BLM will manage, on a continuing basis, all wildlife habitat in the HMP area by incorporating appropriate considerations in planning documents, and through protective provisions in all leases, licenses, or permits issued by BLM for areas where wildlife presence and use have been identified during the Bureau planning process or based on other relevant data, as being of such nature that it requires special consideration.

DATE OF COMPLETION _____ INITIALS _____

b. Both agencies will help to maintain biodiversity and emphasize a conservation biology approach on the ground in the HMP area by providing appropriate input to all proposals in a timely and effective manner.

DATE OF COMPLETION _____ INITIALS _____

c. BLM will ensure AGFD has the opportunity to provide comments on all significant anticipated land use or habitat management measures within the HMP area which may affect wildlife production and carrying capacity, in accordance with the Master Memorandum of Understanding (MOU) between the two agencies, dated March 18, 1987.

DATE OF COMPLETION _____ INITIALS _____

d. AGFD will ensure BLM has the opportunity to provide comments on all significant anticipated wildlife harvest or other population management measures which may affect wildlife production and carrying capacity, in accordance with the Master Memorandum of Understanding (MOU) between the two agencies, dated March 18, 1987.

DATE OF COMPLETION _____ INITIALS _____

e. If situations arise where animal damage control measures are needed, control actions will be done in accordance with an approved animal damage control plan which meets the current standards of both agencies. Until an up-to-date animal damage control plan is finalized, requests for control will be evaluated on a case-by-case basis through the NEPA process by BLM, including ample opportunity for public comment.

DATE OF COMPLETION _____ INITIALS _____

f. BLM will ensure AGFD is given ample opportunity for participation and involvement in the RCA planning process. The Mt. Trumbull RCA management plan is expected to be developed FY-93.

DATE OF COMPLETION _____ INITIALS _____

4. **INFORMATION SOURCES TO SUPPORT ACTIONS** - Supporting rationale/information is listed in Appendix 3.

5. **WATER RIGHTS CONSIDERATIONS** - The Mt. Trumbull HMP area is very dry and has few natural water sources. Most existing springs and seeps were filed on many years ago by private parties. These existing water rights are often for livestock purposes and exceed the amount of water actually used. Water rights are established in priority by date - first in time is first in right. In a few cases, a judicial decree (Nixon Spring) rather than a water right establishes ownership of the water. Arizona statutes state that valid decrees must be taken in their entirety for inclusion in any subsequent decree.

Springs and seeps are the only waters which can be filed upon in the HMP area because there are no flowing streams. Under Arizona state law, ground water is unappropriatable and does not naturally flow to the surface. Thus, wells are exempt

from state appropriative procedures unless the well is removing water from a known underground stream. In a like manner, surface water is unappropriatable if it is diffuse which is that obtained either directly off of an artificial or altered surface or directly off of slickrock which has no defined channels leading directly into a drainage. Thus, catchments are also exempt.

Arizona Department of Water Resources (ADWR) policy assures that BLM is aware of and authorizes any new surface water development, ground water use development, or mineral exploration actions affecting public land (ADWR, 1990). AGFD and all state agencies are directed to determine the impacts of their policies and operations upon riparian resources and, where appropriate, implement changes that allow for restoration.

BLM policy is to apply for water rights for wildlife under state law, where appropriate. BLM policy is also that ongoing or proposed uses of public lands are managed to ensure protection of riparian areas. Every activity associated with use or disturbance of riparian areas must incorporate adequate management or restoration practices to ensure their long term viability.

J. EVALUATION AND MONITORING OF THE HMP

By September 30 of each year, a written summary of accomplishments and monitoring will be prepared for this revised plan. The intent of the monitoring is to see if the objectives are being achieved. Monitoring and subsequent evaluation of monitoring results should determine:

- 1) if the objectives are still valid;
- 2) if objectives should be modified or dropped;
- 3) if objectives are not being met, why;
- 4) if objectives have been met or exceeded, and are therefore no longer needed;
- 5) if new objectives should be developed; and
- 6) if planned actions should be changed.

1. SPECIFIC MONITORING BY OBJECTIVE

a. NON-GAME AND SPECIAL STATUS SPECIES - The purpose of monitoring special status species is to detect changes in population levels, especially downward changes. Monitoring should identify an area of particular concern and allow for the evaluation of the effectiveness of specific actions, be they habitat or animal related. In order for BLM to preclude the need for future T&E listings, the monitoring of special status species populations will be required.

The starting place for monitoring will begin with the planned action surveys listed previously; in other words, surveys for spotted owls, goshawks, etc., will serve to establish base line data.

Subsequent to the initial contract surveys for spotted owl, goshawk, etc., it is envisioned that follow-up surveys will need to be done periodically for each species.

Overall monitoring for raptors will be accomplished by monitoring for the special status species, as described above, or as part of other state or region-wide efforts, such as the existing five year BLM/AGFD peregrine survey effort.

Specific monitoring to ensure raptor protection is occurring may also be accomplished through compliance with stipulations attached to use and project authorizations issued by BLM. Monitoring will be done to determine if stipulations are being followed, if their intended purpose is being met, and if additional stipulations are needed.

b. BIG GAME AND SMALL GAME:

(1) MULE DEER - AGFD's primary responsibility is for population management. However, because of the low numbers of mule deer in the HMP area at the current time, AGFD does not feel annual intensive population monitoring would be cost effective.

In the future, if deer numbers naturally increase, additional monitoring by both agencies should occur. A detailed plan for monitoring and evaluation will be required if a transplant of mule deer is authorized.

BLM will monitor to ensure that the habitat requirements of 600-800 deer are provided yearlong. Vegetation monitoring will be accomplished through coordination with the range program and using an interdisciplinary approach to vegetation monitoring. The Arizona Strip RMP directs that habitat monitoring will be the primary basis for determining either increases or decreases of reasonable numbers for which to manage.

(2) WILD TURKEY - Wild turkey roost size, number, and density will be evaluated every five years beginning in 1992, using what information is available, to determine if the planned actions for wild turkey are meeting the objectives. Population trends determined from AGFD game survey and hunt data will be used as a separate indication of habitat trend.

As in the case of all species, specific monitoring to ensure the intent of the wild turkey related objectives are being met will be accomplished through compliance with stipulations attached to use and project authorizations issued by BLM. Monitoring will be done to determine if stipulations are being followed, if their intended purpose is being met, and if additional stipulations are needed.

(3) **KAIBAB SQUIRRELS** - Kaibab squirrel population trends determined from AGFD game survey and hunt data will be used as a separate indication of habitat trend. However, it is recognized that squirrel populations are likely cyclic and a decrease in population may only be of a short term nature.

c. **RIPARIAN HABITAT AND WILDLIFE WATER RELATED** - The implementation and monitoring of the objectives/actions in this category are closely tied to the inspection and maintenance of the wildlife water developments.

Also in this category, at least two of the action items are dependent upon a reconstruction or major maintenance effort because installation of a shutoff valve and flow meter in existing pipelines would only occur when reconstruction or major maintenance occurs. Monitoring water quality will be done in close coordination with other BLM programs, notably watershed and wilderness.

d. **WILDERNESS COMPATIBILITY** - Monitoring and evaluation for this element will be accomplished in accordance with the Mt. Trumbull/Logan Wilderness Management Plan because the HMP planned actions are objectives of the wilderness plan. Monitoring will be closely coordinated between the wildlife and wilderness programs.

e. **CONSERVATION AND COORDINATION** - AGFD and BLM each will annually prepare a separate reports documenting HMP area work and concerns. BLM's will focus on habitat and AGFD's on population management. At the annual coordination meeting between the two agencies, these reports will be presented and discussed. Copies of these annual HMP evaluation reports will be kept and help form the basis for changes in future HMP direction.

The effects of non-wildlife activities in the HMP area upon wildlife habitat and populations should be included in the annual evaluation reports.

L. COORDINATION WITH OTHER BLM PROGRAMS, AGENCIES, & ORGANIZATIONS

1. COORDINATION NEEDS WITH OTHER BLM PROGRAMS

a. TIMBER AND FUEL WOOD CUTTING

(1) PONDEROSA - Removal of ponderosa pine, whether green, standing dead, or down, can conflict with habitat management objectives. Large trees (over 28" DBH) are especially valuable in providing nesting, food, and cover for a variety of species. While trees past the age of maximum wood production are referred to by foresters as "overmature", these overmature trees along with ponderosa snags, broken top trees, and standing dead trees are quite valuable for wildlife - some scientists suggest that a dead tree is more valuable from an ecological perspective than a live one.

(a) Given the relatively small amount of ponderosa pine and its high value for wildlife, firewood cutting of ponderosa pine, generally including snags, should be prohibited.

(b) Silvicultural practices should only be conducted to enhance long-term wildlife and recreation values in the Trumbull area.

(c) Salvage of dead standing ponderosa -- for example, following a wildfire -- should only occur after wildlife needs are fully satisfied.

(d) Expansion of the ponderosa pine type should be encouraged, if feasible. However, the planting of additional ponderosa pines trees should be done in such a manner as to increase bio-diversity and to avoid a monoculture of one tree species of one age. Replanting of trees in old burns should not be viewed as expansion of the ponderosa pine type. Such replanting may conflict with the existing use of old burns by wild turkeys, etc.

(2) GAMBEL OAK - Some limited cutting of oak where patches are becoming decadent may be beneficial for the long-term maintenance of the oak in a variety of age classes. However, oak is especially important to wildlife as a food source and for nesting cavities. Authorization for the cutting of oak in the HMP area should be on a case-by-case basis, with approval through a resource area woodland activity plan, in coordination with the AGFD and done very conservatively. No oak cutting will be authorized until the Mt. Trumbull RCA Management Plan is finalized.

(3) **ASPEN** - There is only one notable aspen stand in the HMP area and most of it is inside the Aspen Wildlife Catchment fence. No harvesting of aspen here should be permitted unless it can be shown that such harvesting would increase the health of the aspen stand. Scattered individual aspen trees should not be removed.

(4) **PINYON/JUNIPER** - Collection of dead and down pinyon/juniper for campfires, even in wilderness, is presently authorized and a vast extent of pinyon/juniper is available. Firewood cutting is restricted by permit to specific locations. When extensive firewood cutting for either private or commercial purposes is authorized in the HMP area, or when firewood cutting areas are designated, such cutting should be restricted only to p/j.

b. **FIRE SUPPRESSION** - Whenever possible, fire suppression activities should be conducted in a manner supportive of wildlife management goals and objectives, especially in the higher elevation ponderosa pine type. Fire fighting efforts should not drop large ponderosa trees and snags unless it is absolutely necessary. Planning efforts to reduce fuel loads on the forest floor should recognize that slash and litter are a chief source of wildlife nesting habitat, food, and cover. Too large a reduction in fuel loads would be counterproductive to wildlife resource values.

Frequency and size of wildfires in the other vegetation types in the HMP area is considered slight and fire suppression activities in these types are generally not seen as a problem for wildlife.

c. **RANGE** - BLM wildlife and range personnel will work together to establish desired plant community objectives.

As per existing BLM policies, livestock water sources will be made and maintained safe and available for wildlife use. Whenever possible, water will be left in troughs for wildlife when livestock are moved. Livestock troughs will be kept properly equipped with small animal escape ramps.

New livestock control fences will be designed (and constructed) to allow free access and seasonal movement of wildlife. Existing fences will be modified to facilitate wildlife passage when problems are identified.

As AMP's are revised and/or updated with DPC objectives, close coordination with AGFD and BLM's wildlife program will occur. Files containing records of the ten grazing allotments which either entirely or partially overlap the Mt. Trumbull HMP area can be found in the BLM Resource Area office, as can project files for existing BLM projects.

d. VEGETATION MANIPULATION - Pinyon/juniper control treatments and clearing projects should be confined to extensive, dense stands more than 1/2 mile wide which exhibit an average crown cover exceeding 20 percent combined with overall tree densities greater than 75 trees per acre, and which contain widespread scarcity of understory forage and browse.

The design of vegetation treatment projects can provide for optimum wildlife benefits. General guidelines for pinyon/juniper treatments are:

- (1) Cleared areas should not exceed 660 feet in width.
- (2) Cleared areas should have irregular boundaries.
- (3) Leave areas should be at least as wide as treated areas.
- (4) Roads and water sources should be bordered by leave areas.
- (5) Ponderosa pine stringers and individual trees should remain untreated.
- (6) Trees and snags to be left for wildlife may be designated.

Guidelines for sagebrush treatment projects are similar. These guidelines may conflict with some existing AMP's, but should guide planning on future proposed projects.

e. WILDERNESS AND RECREATION - Hunting, when conducted in accordance with state laws and regulations, will continue to be recognized as a legitimate multiple-use activity on BLM administered public land, including wilderness.

BLM's wildlife and recreation program will work closely together to develop informational signs and brochures for the public in such programs as "Watchable Wildlife". As has been done in recent years, these two programs, in cooperation and with support from AGFD, will also work to provide land management information and maps to hunters.

Site specific designations for Off-Highway Vehicle (OHV) closures may be recommended where the use of motorized vehicles is causing habitat degradation. The

needs of the hunting public and the needs of AGFD and BLM to access existing wildlife projects to conduct maintenance work will be emphasized when specific OHV closures and/or restrictions are proposed.

The Arizona Strip RMP provides guidelines for OHV use (RMP Appendix 19). In areas where vehicle use is limited to designated roads or trails, after BLM has completed an OHV activity plan, these guidelines will restrict vehicle parking to within 50 feet of designated roads and hunters may not use motorized vehicles off designated roads to retrieve downed animals. These guidelines alter some current practices of the hunting public.

When wildlife related work is to be done in wilderness, such as the needed reconstruction of BLM's Mt. Trumbull #1 catchment, close coordination will also be done to ensure that wilderness values are not impaired. Another relevant example is flagging necessary to accomplish spotted owl inventories will be removed upon completion of the inventory.

f. MINERALS - Mining (also called "hard rock" or locateable mineral") and oil and gas ("leasable" or "fluid mineral") activities can potentially impact almost all wildlife species found in the HMP area. The rate and scale at which mineral activities occur changes and is primarily dependent upon market conditions. BLM records indicate approximately 44 surface acres have been disturbed in the last 10 years by authorized mineral related activities in the HMP area. Special stipulations and/or mitigation measures may be needed to reduce impacts. These may include seasonal restrictions of activities and surface occupancy, degree of slope restrictions, restoration requirements, protection of sensitive areas, and other measures.

In accordance with the RMP, in the next few years it is expected that approximately 209,800 acres in the HMP area will be offered in oil and gas lease sales. The only areas excepted from being offered will be 22,500 acres of designated wilderness areas. Potential for full field oil and gas development in the HMP area is low, but some exploration will probably occur. Standard and special stipulations will be used to protect wildlife values.

In the area covered by the Mt. Trumbull HMP, the operator will be required to notify both BLM and AGFD within 48 hours when wildlife mortalities occur in

conjunction with mineral development activities. A notice to the operator to this effect will be included with future site specific mitigation/stipulations and authorizations in the HMP area.

Special attention will be given to the proper disposal of waste compounds and other materials which pose a toxicity threat to wildlife, such as drilling muds. Whenever possible, they will promptly be injected underground or hauled off-site to an approved disposal site. Proof of proper disposal may be required. If these compounds and materials are temporarily collected in a stockpile or pond, it will be fenced, netted over the top, and otherwise made inaccessible to all wildlife, including birds.

Future mineral sales (saleable minerals include sand, gravel, volcanic cinders, flagstone, building stone, etc.) may occur, but should be confined where possible to areas of low wildlife habitat value. There are no existing permitted mineral sale sites in the HMP area. One decorative lava rock sale permit was issued in 1989 near the Arkansas Aqueduct Road (T.34 N., R. 8 W., Sec. 10) and has expired.

In the extreme eastern part of the HMP area, the Grand Canyon Game Preserve, established in 1906, withdraws a small area from hard rock mining, but not oil and gas leasing. This existing withdrawal should be reviewed to see if it currently serves any purpose.

In order to avoid potential conflicts under the Endangered Species Act and to protect potentially affected listed, proposed, and candidate plant and animal species, BLM shall notify all claimants and operators to the extent possible when their mining claims or exploration activities are located in the habitat of special status species. The purpose in doing this is to alert the operator to the possible presence of special status species and her/his responsibilities and requirements under the Endangered Species Act.

g. **WATERSHED MANAGEMENT** - Water right filings on springs will be closely coordinated with the BLM watershed program.

Water quality monitoring will be done in conjunction with the BLM's watershed and recreation programs.

h. **LANDS** - Legal access to public land throughout the Mt. Trumbull HMP area is generally very good. No access problems are known to have occurred recently involving either the hunting public or agency personnel.

The RMP identifies two locations in the HMP area where legal vehicular access acquisition is needed:

- (1) North side of Mt. Trumbull (T. 35 N., R. 8 E., sec. 15, S1/2SE1/4; sec. 14, S1/2SW1/4; 1 mile).
- (2) Upper Toroweap Valley (T. 35 N., R. 7 W., sec. 20, S 1/2; 3/4 mile).

During the 10 year life expectancy of this plan, BLM may acquire some parcels of state and/or private land in the HMP area. If and when parcels of land return to federal ownership within the boundaries of the HMP (See Location Map, page 4), they will automatically be covered by this plan. Existing fences, water developments, and other improvements on these parcels will either be required to meet to BLM wildlife standards once the parcels are in federal ownership or removed.

Wildlife input into BLM 's lands program work, such as granting of new rights-of-way and upgrading of old rights-of-way, would be accomplished through the NEPA process. Mojave County Road 5 crosses the HMP area and is an example of an existing right-of-way.

i. **CULTURAL RESOURCES** - Protection of cultural resources should have little or no impact on the objectives contained in this HMP (with the exception of the Witch Pool and Nampaweap ACEC's which have restrictive management prescriptions). Surface disturbing activities will be required to undertake measures, such as inventories, designed to assess cultural resources, and possibly mitigation if cultural properties cannot be avoided. Native American notification may be required for certain projects on a case-by-case basis. Law enforcement activities related to cultural resource protection will complement wildlife law enforcement efforts in the area.

2. COORDINATION NEEDS WITH OTHER AGENCIES AND ORGANIZATIONS

a. **AGFD** - AGFD is the primary cooperating agency of this HMP. All elements of this draft plan are subject to review and possible revision by AGFD. Future revision of this plan after it is approved can also occur at any time upon mutual agreement between BLM and AGFD. Revisions or modifications will be approved by both the BLM Vermillion Resource Area Manager and the AGFD Region II Supervisor.

Coordination between AGFD and BLM occurs on a frequent basis and will continue. AGFD normally will be contacted for comments and concerns when activities are

either proposed to or by BLM, and when BLM activity plans are developed in the HMP area. In a similar manner, BLM normally will be contacted by AGFD for comments on AGFD related proposals and plans. AGFD maintains data on the occurrence of state listed and other special status species and will be contacted at times for this data.

Wildlife-related law enforcement activities and their coordination needs are outside the purview of this plan. These activities and needs will be coordinated between AGFD and BLM law enforcement personnel.

b. **FWS** - The FWS will be involved in any matters concerning federally listed or proposed species. The federal status of a particular species may change over the projected 10 year life of this plan. Also, the FWS may be contacted for technical information regarding federal candidate species in the HMP area. Federal wildlife law enforcement by FWS is generally outside the purview of this plan.

c. **APHIS** - The Animal and Plant Health Inspection Service (APHIS) will be involved in the development and implementation of a district-wide ADC plan. Such a plan could have significant impacts to wildlife populations in this HMP area

M. WILDLIFE ECONOMICS

Neither benefit/cost analysis or cost-effectiveness analysis can be effectively done for the planned actions listed. While there will be a positive benefit to wildlife by the implementation of this HMP, monetary benefits remain obscure. The value of seeing wildlife and preserving wildlife, while extremely positive in our modern society, is intangible.

1. **CONSUMPTIVE USE OF WILDLIFE** - Deer hunt costs and benefits are hard to track by HMP area because deer harvests are not reported by HMP area, and the deer may not spend their entire life in one HMP area. Also, while the overall intent of this plan is to benefit wildlife, it is not realistic to state that a given HMP planned action will result in a given increase in buck deer numbers.

In 1990, 48% of the 100 general deer permit holders in Unit 13A, a large unit of which the HMP area comprises a portion, were successful and spent an average of 8.04 days per deer harvested. These values (the number of permits and the rate of success) appear to be representative of recent years for this unit. Also in 1990 in Unit 13A, there were a reported 119 archery deer hunters who harvested 5 buck deer.

The average deer hunter who uses a rifle during the general season on the Arizona Strip spends an estimated \$100 per day

to hunt. Assuming that unsuccessful deer hunters spend fewer days hunting than do successful hunters, perhaps the average time hunting for all hunters is about 5 days. This would mean that for the 13A general deer hunt which has about 100 permits each year, about \$50,000 per year is generated. Approximately half of the 13A total would be generated in the Mt. Trumbull HMP area.

Cost estimates are highly variable and dependent upon such factors as the: distance the hunter drives to go hunting; cost of food and supplies; brand, age and condition of his/her equipment; size of the hunting party; number of years of hunting equipment costs can be prorated against; effort spent on pre-hunt preparations including scouting; if a guide's or taxidermist's services are used; does the hunter at night camp or stay in a motel; and the extent of equipment breakage and/or injuries.

All turkey hunting and squirrel hunting in Unit 13A occurs in the ponderosa pine found in this HMP area and the animals remain in the HMP area yearlong. Thus, costs and benefits generated by these hunts can be tracked specifically to the Mt. Trumbull HMP area. It is estimated that each year approximately 50-75 hunters would spend about \$100 per day over four days.

2. NONCONSUMPTIVE USE OF WILDLIFE - Direct costs and benefits of nonconsumptive wildlife use by the public in the HMP area are not known. Nonconsumptive use of game species; for example, the viewing or photography of deer, confounds the issue, as does the nonconsumptive enjoyment of wildlife incidental to different primary activity, such as watching a hawk when sightseeing or driving to Tuweep.

Nonetheless, estimated costs of some planned actions can be estimated; for example, inventories for spotted owls and goshawks would each cost approximately \$1.00 per acre per year (in 1992 dollars). Therefore, planned action A(1)a should cost about \$12,000 and planned action A(1)b should cost about \$16,000. The cost of not doing a planned action, especially in the case of legally protected species, could ultimately be more expensive than doing the planned action.

3. LOCATION OF ECONOMIC BENEFITS - Expenditures to accomplish planned actions would benefit local economies located away from the HMP area. BLM costs of the planned actions related to salaries, and to a lesser extent materials, will lead to the dollars being spent primarily in the St. George area of southern Utah, while similar AGFD incurred expenses may be more likely to be spent in Arizona. Contract costs will primarily benefit the economy from where the contractor and employees reside. As the dollars generated by these actions move through the respective communities, at least a five-fold multiplier effect would also occur.

Arizona will gain the most economic benefit from expenditures related to hunting because 90% of the hunting permits will be allocated to Arizona residents. Hunters will tend to buy most of what they need for their hunt in the way of equipment and supplies before coming to hunt on the Arizona Strip. Some incidental purchases for gas, food, motel, and repairs will be made in the communities of Fredonia, Colorado City, Kanab, Hurricane, and St. George.

N. PUBLIC AFFAIRS

AGFD and BLM will cooperate on all public affair matters relating to this HMP. Help will be sought from AGFD's Information and Education Division and from BLM's Public Affairs Staff.

BLM funds and personnel to accomplish the comprehensive public affairs actions will be included in each annual work plan needs analysis. The existing Vermillion Resource Area wildlife biologist is expected to provide incidental manpower needs. Funding needs for public affairs to consider are:

Costs for the printing and distribution of approximately 25 copies of the final HMP.

Costs may also include entrance and boundary signs for the HMP area, and signs to explain on-the-ground actions.

Costs of developing slide shows, writing articles, designing and printing brochures, and installing and maintaining interpretative signs.

O. COSTS AND FUNDING NEEDS

Precise values to be developed with other BLM staff and AGFD after review of this draft and policy decisions concerning mule deer program direction.

P. CONCURRENCE AND APPROVAL

This HMP revision as written meets with our concurrence and approval.

1. ARIZONA GAME AND FISH DEPARTMENT

Regional Supervisor,
Region II, Flagstaff, AGFD

Date

2. BLM

District Manager,
Arizona Strip District, BLM

Date

Q. **APPENDICES**

APPENDIX 1

LITERATURE CITED - MT. TRUMBULL HMP REVISION

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APPENDIX 2.

SPECIAL STATUS SPECIES WHICH MAY BE FOUND IN THE MT. TRUMBULL HMP AREA AS OF MAY 12, 1992. THIS APPENDIX INCLUDES STATE AND/OR FEDERALLY LISTED, CANDIDATE, AND PROPOSED SPECIES, AND INCLUDES PLANTS AS WELL AS ANIMALS.

COMMON AND SCIENTIFIC NAME	STATUS *	REMARKS
BIRDS		
Peregrine Falcon <u>Falco peregrinus</u> <u>anatum</u>	SC - FE	Not known to nest in HMP area, but a number of peregrines do nest in nearby Grand Canyon, Kanab Creek, etc. 1987 falcon nest survey searched in Toroweep Valley.
Bald Eagle <u>Haliaeetus</u> <u>leucocephalus</u>	SE - FE	Not known to nest in HMP area. Highly unlikely due to lack of fish. Occasionally seen flying over area, especially in winter months.
Spotted Owl <u>Strix occidentalis</u> <u>lucida</u>	ST - PT	Not confirmed in HMP area. 1991 and 1992 inventories did not locate any spotted owls.
Northern Goshawk <u>Accipiter gentilis</u>	SC - F2	Likely to nest in HMP area. In 1980's. one pair was documented to fledge young. Several goshawk sightings reported in 1992 in HMP area.
Snowy Egret <u>Egretta thula</u>	ST - NL	Not known to be in Vermillion Resource Area (VRA).
Western Snowy Plover <u>Charadrius</u> <u>alexandrius nivosus</u>	SC - F2	Not known to be in VRA.
Ferruginous Hawk <u>Buteo regalis</u>	ST - F2	Not known to be in HMP area. Has been seen 10 miles north of the HMP area.
White-Faced Ibis <u>Plegadis chihi</u>	F2	Not known to be in HMP area. Has been seen near Colo.City
Mountain Plover <u>Charadrius montanus</u>	F2	Not known to be in VRA.
Long-Billed Curlew <u>Numenius americanus</u>	F2	3 Long-billed Curlews were seen in the HMP area near Little Robinson in 1991.

COMMON AND SCIENTIFIC NAME	STATUS *	REMARKS
MAMMALS		
Merriam's K-rat <u>Dipodomys merriami</u> <u>frenatus</u>	F2	Not known to be in HMP area, but type specimen is from Toquerville, UT and others have been collected on the Strip.
Spotted Bat <u>Euderma maculatum</u>	SC - F2	Not known from HMP area, but spotted bats have been collected on the Kaibab Plateau & along Ft. Pearce Wash.
PLANTS		
Mt. Trumbull Beardtongue <u>Penstemon distans</u>	F2	Found on north and east facing slopes between 3900 and 5200 feet in elevation, gen. west of Whitmore Canyon.
Grand Canyon Rose_ <u>Rosa stellata</u> spp. <u>abyssa</u>	F2	Not known from HMP area, but does occur on limestone soils along Kanab Creek's west rim.

* EXPLANATION OF STATUS CODES:

SE - STATE ENDANGERED SPECIES

ST - STATE THREATENED SPECIES

SC - STATE CANDIDATE SPECIES

FE - FEDERAL ENDANGERED SPECIES

FT - FEDERAL THREATENED SPECIES

F2 - FEDERAL CANDIDATE CATEGORY 2 SPECIES

NL - FEDERALLY NOT LISTED

PT - FEDERAL PROPOSED THREATENED

APPENDIX 3

SUPPORTING INFORMATION

a. COPIES OF DOCUMENTS AND ARTICLES - The Literature Cited (Appendix 1) provides the literature sources used to support the actions. In most cases, copies of the documents and articles are available from the Vermillion Resource Area. A general discussion by objective is found below in the supporting rationale.

b. SUPPORTING RATIONALE FOR OBJECTIVES/ACTIONS

(1) NON-GAME AND SPECIAL STATUS SPECIES

Proper multiple-use management is based upon information and facts. At the present time information is simply lacking on many non-game and special status species in the Trumbull HMP area. The lack of information may prevent or stall needed management actions from happening. Spotted owls are given priority because they are currently a high profile and controversial species, and probable cause exists to think they might occur in the HMP area. Goshawks are known to nest in the area and should be given the next highest priority.

First, with regard to listed T&E species, this objective is the law of the land. In the Endangered Species Act, Congress directed all federal agencies to seek to conserve T&E species. BLM is ultimately responsible for T&E species management on BLM lands; therefore it follows BLM must carry out programs to conserve ecosystems of T&E species. FWS opinions merely address survival (Bill Radtkey, W.O. BLM, pers. comm.).

The management of threatened and endangered species can be considered a technical controversy because the preservation of such species often requires policies based in science. Public opposition to policy is a continuous problem for natural resource managers who are required by the Endangered Species Act to conserve T&E species (Strassman and Ham, 1990).

The above objectives were established by BLM raptor specialists as Bureau-wide direction and reworded to be more specific to the Mt. Trumbull HMP. These objectives and specified management actions were established to be implemented in order to reach the overall raptor goal stated in the BLM's Fish and Wildlife 2000 Plan. The Mt. Trumbull/Mt. Logan area is one of 223 Key Raptor Areas which has been identified on public lands in the United States.

Recent information from trend counts done in western raptor flyways indicates most raptor species appear to be doing well. The three species for which there appears to now be a concern are the prairie falcon, the golden eagle, and the northern goshawk. All three are known to be found in the Mt. Trumbull HMP area.

(2) MULE DEER

In the late 1950's the Mt. Trumbull area supported high numbers of deer. Densities were estimated to be as high as 50 deer per square mile in prime locations (Swank, AGFD Special Report, dated Nov. 1959).

Like most others, the Mt. Trumbull deer herd has declined since the 1950's and 1960's (AGFD Memo dated August 6, 1981). This happened despite a dramatic improvement in forage conditions and water distribution since the 1960's (BLM Mt. Trumbull Study File, 1981). Barlow and McCulloch (1984) have reported that the nearby Kaibab deer population declined 9% per year from 1972 to 1979.

Numerous physical, on-the-ground, habitat improvement projects including water developments, seedings, and chaining have been done since the original HMP was developed (HMP 1988 Eval.). When the original HMP was written, the trend of deer numbers was down and it was felt habitat improvements were needed. What happened is that despite the addition of structural habitat improvements, deer numbers continued their decline. It is now felt by those closest to the problem that habitat is not the limiting factor. Supporting this statement is the fact that a transplant of 107 mule deer from Utah two years ago seemed to improve deer numbers resident in the area.

Other factors including: 1) cessation of domestic sheep grazing; 2) improved management of cattle grazing; 3) natural deer population fluctuations; 4) elimination of predator poisoning programs; 5) over harvesting and/or poaching; and 6), fire suppression have been suggested as contributing factors in the decline of deer numbers (Arizona Strip RMP, III-32, 1990). The resultant increase in predator numbers due to the cessation of extensive predator control programs in the early 1970's is believed to be a major factor by most local field biologists.

Investigations of mule deer populations, mule deer ecology, and long-term plant community trends support the hypothesis that succession of grasses to woody plants was the principal cause of mule deer irruptions in the Intermountain West until the mid-60's. The invasion of woody plants was set in motion by intensive grazing and by a marked reduction in the size, intensity, and frequency of fires.

Mule deer habitats in an advanced state of succession may require removal of trees by cutting or fire. Following fire, it may be 20 or more years to realize optimum deer habitat because fire can set plant succession back to the earliest seral stages which are less productive of mule deer (Gruell, 1986). The use of prescribed fire as a management tool in the Mt. Trumbull HMP area is constrained by strict air quality standards over the Grand Canyon.

Prescribed fire is only one management tool which can be used to manipulate vegetation. Other available possibilities include: 1) mechanical treatment, such as chaining; 2) water development; 3) grazing; and 4), chemical treatment. The first three have already been used extensively in the Mt. Trumbull area. All have advantages and disadvantages and are potentially controversial.

It should also be noted that while it is clear mule deer numbers have declined over most of the species' range since the 1960's, the course of corrective management is not. And, it is not realistic to expect record high numbers of deer forever. The various western states have tried different strategies to achieve deer population recovery and none has been shown to be markedly successful. Unfortunately, the generalization that best holds true throughout the West is "that practically every identified trend in land use and plant succession on deer ranges is detrimental to deer" (Connolly, 1981).

Gathering needed information can be done in different ways. Radio-telemetry often provides better and more direct information than other techniques. Radio locations can best provide unbiased point sampling of habitat use over time (Loft and Kie, 1988). However, radio-telemetry is expensive; monitoring may have to be done every few days and require the use of aircraft.

Current literature contains significant disagreement on whether the distribution of pellet groups accurately reflects use of habitat. Defecation rates have been shown to vary between animals and variation has also been demonstrated within individual animals over time. This variability lessens the accuracy of the pellet group count technique (Joyal and Ricard, 1986). Fecal deposition rates are not necessarily the same among habitats (Loft and Kie, 1988). In general, indirect methods of assessing habitat use are less commonly used today because of more direct methods now available. In addition, indirect methods, such as pellet plots, are not cost effective in situations of extensive habitat area with low animal densities (L. Carpenter, CSU, pers. comm.). For these reasons, the use of pellet plots is not carried forward in the revision.

Fecal analysis is a commonly used procedure for estimating range herbivore food habits which can compare the diets of two or more animals, places no restrictions on animal movement, and requires very little equipment (Cooperrider et al, 1986).

Nelson et al (1982) presented data which correlated diet quality with a form of fecal nitrogen found in the undigestible portions of bacteria cell walls. This method may be used to evaluate diet quality and estimate carrying capacity by monitoring DAPA levels related to nutritional stress.

Once seasonal ranges are defined, analysis of the deer diets by season may show diet deficiencies and would show the proper direction to take in possible habitat improvement needs, if any. Fecal analysis done in the Trumbull area in the late 1970's indicated the deer were eating mostly oak and juniper, but it was unclear how the samples were taken. In order to acquire meaningful results, sampling has to be done by seasonal range and have an adequate sample size.

A mule deer diet high in juniper may indicate poor winter range (AGFD memo, McColloch, 1977). However, Andersen (1990) reported on the Kaibab Plateau that the high electivity index noted for juniper probably was because deer sought thermal and escape cover in juniper stands. Juniper also has a very high calcium plus magnesium to phosphorus ratio.

As stated previously, a number of water developments, chainings, seedings, etc., have been done in the habitat area since 1977, but the mule deer population has not responded positively. The reasons for this lack of positive response are not clear, but it is now felt that before additional intensive habitat development projects are undertaken, the deer population dynamics should be more thoroughly understood. However, it would not be cost effective to do intensive surveys every year. Once every three years should be adequate to quantify significant population trends.

Mule deer transplants to existing habitat in the Mt. Trumbull area are one way to increase the herd size. Past habitat improvements have not seemed to work. The one transplant which was tried seemed to work. If predators are limiting recruitment in the deer population, a sudden influx of additional animals would temporarily move the existing predator-prey equilibrium to a higher level. Transplants operations also provide an opportunity to equip deer with radio-collars since the animals are already being captured and handled.

Transplanted deer are usually ear tagged in order to identify released animals. However, experience has shown ear tags alone may not be adequate and more intensive monitoring, such as the use of some radio-collars should be considered.

The purpose of this monitoring would be to learn the effects of the transplant action in order to provide managers with information needed as a basis for identifying future wildlife resource enhancement opportunities (BLM 6600 Manual). Monitoring may also identify new or emerging issues.

(3) WILD TURKEY

A study of Merriams turkey roost characteristics was conducted in the HMP area (Moeller, 1985). The study recommended that the entire area be treated as winter range because the Mt. Trumbull turkey population is unable to move from a summer to a winter range. It also recommended 6.6 roosts per section be retained to ensure adequate roosting habitat and because the number of trees per roost was low in the area. Four roosts/section was reported as the minimum standard for winter range. However, this study found the Mt. Trumbull area

only had an average of 5.6 trees per roost site compared to 27 trees per roost site in the Bill Williams Mountain area. This may indicate that when large groups of roost trees are absent, a greater number of roost sites are needed. There is a preference for over-mature, open-crowned ponderosa pine roost trees.

The introduction of Merriam turkeys to the Mt. Trumbull in 1961 was very successful. The population has been hunted since 1964 and today is estimated at between 150 and 300 birds. The habitat is believed fully occupied. To maintain this success, it is important to maintain habitat components, such as nesting and brooding habitats, which sustain the population. The RMP states as existing management guidance which carries forward from the HMP's "to maintain good ground cover for nesting" (Arizona Strip Resource Management Plan, II-26, 1991).

Nesting habitat can vary, but overhead canopy density is higher at nests than in surrounding stands. Schemnitz et al. (1983) found livestock had no effect on nesting habitat because most nests were located on steep slopes with dense understory vegetation which cattle did not utilize. However, no nests were found in clearcuts of any size.

With regard to brood rearing habitat, the same authors reported selective cutting appears to enhance the habitat by providing small openings in the forest. Moderate grazing may promote turkey brood-rearing habitat by keeping vegetation cropped, which facilitates poult movement, and possibly by increasing insect abundance.

As an example, the 1985 burned area behind the Nixon Administrative Site was fenced following a wildfire to exclude livestock for three years and now is one of the best turkey foraging areas available. This objective merely attempts to repeat that success.

(4) FERAL PIGS

Periodically, stray or feral hogs are seen on public lands in the Mt. Trumbull and Mt. Logan areas despite a legal closure and unrestricted public hunting. The State of Arizona's Livestock Board has written to BLM that the land manager is responsible for disposal of feral pigs by

whatsoever means (State Livestock Board letter, dated Feb. 17, 1988). Feral hogs also are not covered by AGFD regulations (pers. comm., Tom Britt, AGFD, 1988).

Pigs can be a serious competitor with native wildlife, especially wild turkey, squirrels, black bear and deer. The diet of hogs completely overlaps the diet of these species, yet the pigs' nutritional demands are greater. Hogs also root for and destroy underground structures of perennial plants, i.e. rhizomes, corms, bulbs, and tubers, as well as the underground bark and cambium of tree roots. Having the highest reproductive potential of any large mammal in North America, hogs have the capability to rapidly displace native species.

There are additional problems associated with wild pigs. First, wild pigs clearly are not part of the natural biota in the Mt. Trumbull area, and thus, are not compatible with the two designated wilderness areas. Second, in addition to competing with wildlife for food, hogs can also prey upon certain species, such as wild turkeys and young deer. Third, they are recognized as a disease reservoir for brucellosis, trichinosis, pseudorabies, and external and internal parasites, and may pose a health hazard for domestic livestock, wildlife, and humans.

The pigs are believed to be coming from two parcels of private land near Mt. Trumbull. Pigs on BLM land in the area have been well documented since late 1983 (BLM Certificate of Livestock Count, dated 12/1/83, Memo dated Dec. 7, 1983 by T. Soderquist, and Memo dated Jan. 3 1984 by S. Sloan, etc.). Efforts to work with the land owners have been tried repeatedly and have not been successful.

On November 17, 1988, a closure order was published in the Federal Register (F.R. Vol. 53, No. 222, page 46507) which legally closed all BLM administered federal lands in 8 townships near Mt. Trumbull to pigs. The effective date of the closure was December 19, 1988; since then the public has been encouraged to harvest any pigs they find on federal land. No license requirements, season, or bag limits are applicable, and the public has effectively kept the pig population down. This management action has been well received by the public especially in the Fredonia/Kanab area and costs BLM almost nothing.

Therefore, the closure and public harvesting should continue. Realistically though, it is unlikely that this pig problem will be completely and forever eradicated until there are changes made on the private land parcels.

(5) KAIBAB SQUIRRELS

The Kaibab squirrel is probably the most unique wildlife species in the HMP area. Due to its presence, the Mt. Trumbull area is currently the only area on the Arizona Strip listed as a "Watchable Wildlife" location. "Watchable Wildlife" is a new BLM program which identifies and enhances areas with opportunities to view wild animals. As an important part of the Fish and Wildlife 2000 and Recreation 2000 efforts, it is intended to improve management of wildlife and recreation resources (Defenders of Wildlife, 1990).

The Kaibab squirrel was introduced to the Mt. Trumbull area nearly twenty years ago. The species has done well and now occupies all the available Ponderosa pine habitat. Densities of Kaibab squirrel at Mt. Trumbull exceed densities on the Kaibab Plateau. The Mt. Trumbull area is believed to be the only place other than the Kaibab Plateau itself where a population of these distinctive looking squirrels is found. And is the only BLM land where these squirrels are found.

It is believed the revised planned actions will keep the Kaibab squirrel population at their current levels. The squirrels are not limited to pure stands of Ponderosa, but their preferred habitat is an all-aged forest of ponderosa pine averaging 11-13 diameter at breast height (dbh.) and 150 to 250 square feet of basal area per acre. Within the stand, other variables such as stems per acre, density of larger trees, crown density and height, understory components and duff layer all play a part in determining habitat quality. The most important food item, by volume and frequency of occurrence, is fungi. Apical buds and the inner pine bark are eaten in significant quantities only during winter (Stephenson, 1975).

Squirrels prefer a crowded tree within a group of trees for cover when selecting nest trees; i.e., nest trees are usually codominants. Nests are 30 to 50 feet above the ground. Nest tree inventory plots of Abert squirrels, of which Kaibabs are a

color phase, had a higher density than timber inventory plots for every diameter class but one. 84 percent of nest sites were in stands with a basal area class from 101 to 250 square feet per acre. Tree densities that prevent herbaceous growth accumulate large amounts of tree litter which as it decomposes creates favorable conditions for certain fungi sought by squirrels yearlong (Patton, 1975).

Relative to monitoring squirrels and other species, Bureau policy is to implement monitoring activities that reflect a long-term commitment to management of renewable resources and that will assist in evaluation of cumulative impacts of implementing land-use plans and records of decision. For this reason monitoring to determine population trends is a joint AGFD/BLM responsibility. Monitoring also is also necessary to determine compliance with stipulations and if mitigation measures are effective (Olendorff, Bibles, Dean, Haugh, and Checkered, 1989).

(6) RIPARIAN HABITAT AND WILDLIFE WATER RELATED

There are presently 31 wildlife waters in the HMP area (Appendix 6). Some were built by AGFD, some by BLM, and some cooperatively by both, but actual ownership is not important. The key point is that they remain functional in providing water to wildlife. Both agencies need to cooperatively work together in order to make inspection and maintenance of all wildlife waters as efficient and as cost effective as possible.

Some projects currently need repair. And as projects age, maintenance needs become more likely (1988 HMP Eval.) Therefore, systematic inspection and subsequent maintenance must be implemented to ensure the water developments stay functional. It is also more preferable to take care of existing projects upon which wildlife has established some degree of dependence than it is to build totally new projects and not keep existing ones working.

This should be done as springs in the Mt. Trumbull HMP area are developed, or when reconstruction of previously developed springs occurs (1989 HMP Eval.). This should be done regardless of the purpose of spring work, i.e., wildlife, culinary, livestock, etc.

Maintaining riparian values at spring sources is an important consideration (BLM Riparian Policy Statement). With a shutoff valve in place and used on a pipeline coming from a spring, if the pipeline develops a leak halfway down the hill, the water would remain at the spring site, maintaining natural riparian values at the source. Otherwise, the water would just dump on the ground somewhere down the line and be wasted. The valve may also make repairs easier.

It is Bureau policy to file for water rights under State law in order to protect BLM's interests and to appropriate water necessary to manage public lands for the purposes intended by Congress (BLM Manual 7250).

The eight springs are Randall, Nixon, Quaking Aspen, Witch, Orson, Coyote, Lava Flow, and Big Spring. These were selected because they are the higher elevation springs in the HMP area which would be more closely tied to use of summer ranges by mule deer. These springs are in or near designated wilderness (Trumbull/Logan Wilderness Management Plan).

Five deer is a reasonable estimate to use. Mule deer drink at least one gallon per day water, with a range of 3.8 to 10.4 liters per day (Hervert and Krausman, 1986). Deer and other wildlife in the area would not need water yearlong due to rain and snow.

Many of the water developments constructed for in the Mt. Trumbull HMP area do not appear to receive much use. In some cases because of their design and low rates of turnover, it has been speculated that the water may be such poor quality that it is actually harmful to any wildlife which ingests it. To date in the HMP area, water quality has not been monitored and the possibility of an algae toxicity problem has not been looked into. The overall purpose of this objective is to start to monitor water quality in wildlife developments.

Blue-green algae are known to produce both acute and chronic toxic effects to livestock and other animals, including turkeys, rats, fish, hogs, ducks, and dogs. Algal toxins may be a more serious environmental hazard than is generally recognized. The problem typically occurs in warm, shallow lakes during hot, dry weather, according to

Repavich et al. (1990); conditions which commonly occur in the HMP area.

Unfortunately, in the past some projects including wildlife projects have caused death of animals. Usually mortalities have been small mammals and birds, but some mule deer and coyotes are known to have drowned.

At the present time, in the HMP area some observers see a strong need for gopher control, especially in areas which have been reseeded. Ironically, others see a need to reduce predators such as coyotes. The point being that animal damage control is an important and ever present issue in the HMP area.

However, the existing Arizona Strip ADC Operating plan is out of date and does not conform to present BLM requirements. While the scope of the District plan is larger than just the Mt. Trumbull HMP area, the plan clearly needs to be updated. Future ADC activities should be conducted in a manner which recognizes the continued viability of all species, even ADC target species, on public lands. When ADC activities are conducted on public lands, wilderness constraints and the welfare of all T&E species are major concerns and special protection areas will be mapped (BLM Manual 6830.41D).

In addition, the existing outdated MOU covering ADC efforts on the Arizona Strip is between APHIS and BLM and is for livestock purposes only. AGFD should be made a full partner to the ADC MOU and be actively involved in all future annual ADC meetings (BLM Memo, dated Oct. 4, 1989). Current AGFD and BLM policy statements directing that ADC activities be directed toward individual or local populations of predators or depredating animals where damages have been verified need to be incorporated into planning documents.

This objective was limited to specifically worded planned actions to be accomplished by the date above because a number of the planned actions were not specific, but general and procedural. For example, it is possible to set a date for painting a catchment apron to reduce its visual contrast; it is not possible to set a date for when that same catchment will actually need reconstruction (T/L Wilderness Mgmt. Plan, page 21).

The revision of the Mt. Trumbull HMP to incorporate wilderness management direction is a planned action of the wilderness management plan. As stated in the introduction to this revision, wilderness management in the Congressionally designated areas is the controlling management direction and wildlife management actions should in most cases be guided by wilderness concerns. This restriction applies only to the relatively small portion, approximately 5%, of the HMP area which is designated as wilderness, however.

Input into proposals of other activities in the HMP area is very important because frequently other activities, especially commodity development activities, cause degradation or adverse modification of wildlife habitats. These activities in the future may be fully funded even when wildlife program activities are not.

APPENDIX 4

JOB DOCUMENTATION REPORTS (JDRs)

None needed at this time.

APPENDIX 5

NEPA COMPLIANCE

ENVIRONMENTAL ASSESSMENT
MT. TRUMBULL HABITAT MANAGEMENT PLAN (HMP) REVISION
EA# AZ-010-92-018

NEED FOR THE PROPOSED ACTION

The proposed action to revise the Mt. Trumbull HMP is necessary in order to meet Bureau responsibilities for wildlife activity planning and related habitat management on BLM administered lands. The original HMP was finalized in 1977. Revision is needed to update the original plan and to bring it within current acceptable legal and policy standards. Implicit in the need for the proposed action is a need for better wildlife management.

The increased national emphasis on non-game species, the wilderness designations made by Congress in 1984, an apparent decline of estimated mule deer numbers, the full establishment of wild turkeys and Kaibab squirrels, previous HMP evaluations, and the new Arizona Strip District Resource Management Plan (RMP) all were factors which indicated a strong need to revise the original Mt. Trumbull HMP. The revised HMP stresses maintaining existing conditions and gathering information through monitoring and various studies. Implementation of the revised HMP will result in a number of separate planned actions occurring. Further environmental analysis of individual planned actions will be required.

Conformance with Land Use Plans

The Arizona Strip RMP, dated January 1992, directs that wildlife habitat be managed under the HMP program, guidance documents, Bureau wildlife policy, and needs as determined by monitoring. The RMP further directs that HMP's are to be revised to meet changing management conditions (RMP, p II-26) and that non-game species are to have increased emphasis. The proposed action is in conformance with this land use plan guidance.

The revised HMP is also in conformance with the Trumbull/Logan Wilderness Management Plan. The Trumbull RCA Plan is not yet developed, but this revised HMP may need to be revised again to conform to the future RCA plan.

PROPOSED ACTION AND ALTERNATIVES

Proposed Action

The proposed action is to revise the original HMP and provide new objectives and planned actions. The original HMP emphasized mule deer and habitat developments. This revision focuses more on other species and does not propose any new developments. The proposed action also changes the HMP boundary, primarily to exclude National Park Service

administered land (see attached map).

The new objectives and planned actions are grouped in five categories: a) non-game and special status species; b) big game and small game; c) riparian and wildlife water related; d) wilderness considerations; and e), other coordination.

Highlights of the proposed action are to inventory and manage for special status species, ensure that forage and other habitat needs for 800 deer are available, maintain existing wild turkey and Kaibab squirrel habitat to support existing populations in the Ponderosa pine type, do more public outreach/wildlife education efforts, control feral pigs, inspect and maintain wildlife water developments, meet the wildlife related objectives of the wilderness plan, preserve and protect wildlife resources using an ecosystem and coordinated approach in cooperation with AGFD, etc. (See attached plan for complete details.)

No Action Alternative

The No Action Alternative consists of not revising the existing Mt. Trumbull HMP.

Wildlife habitat in the Mt. Trumbull area would continue to be managed in accordance with the original plan, although some of the original plan objectives have been met, or are no longer applicable. For example, the Kaibab squirrel population is now established and viable. Increasing to 5000 deer hunter days by 1996 in the Trumbull HMP area and increasing average fawn:doe ratios to 75:100 were original objectives, but are no longer considered obtainable.

AFFECTED ENVIRONMENT

The affected environment (Map A.) is physically located on the Arizona Strip in northwest Arizona north of the Grand Canyon National Park, south of the Clayhole region, and generally between the Hurricane Fault on the west and Kanab Creek on the east. A detailed ecosystem description is found in the final draft revision - the proposed action - on pages 6-10, and in the original HMP's E.A. (# AZ-010-6-106).

ENVIRONMENTAL IMPACTS

Impacts of the Proposed Action

The proposed action is anticipated to result in a number of beneficial impacts to the wildlife resources in the subject area. At the same time, implementation of the proposed action may impact (by limiting the management of) other resources. However, this EA tiers to the existing RMP/EIS which found no significant impacts to other resources from wildlife and special status species management.

For special status species, implementation of the proposed action will cause inventories to be undertaken which should lead to increased knowledge concerning the occurrence, population parameters, and habitat conditions of various federally and state listed, proposed, and candidate species. The increased knowledge will be used when management decisions are made. This, in turn, will ensure that actions authorized, funded, or carried out by BLM do not contribute to the need to list species either as threatened or endangered, which is a beneficial impact to those species. (It is also beneficial to the local public and resource users not to have more species become listed.) No impacts to currently listed plant or animal species are anticipated.

In the case of game animals, implementation of the proposed action should result in the maintenance of the existing thriving populations of wild turkey and Kaibab squirrels by maintaining existing habitat conditions. Habitat conditions will be defined by establishing desired plant community objectives. Maintaining turkey habitat maintains the turkey population which helps sustain turkey hunting activities which benefit sportsmen/sportswomen, sporting good stores, gas stations, etc. Mule deer habitat will also be maintained so that the present population can expand.

Game species benefits lead to and benefit recreation, and provide input into local and statewide economies. However, maintaining ground cover may also increase wild fire potential. If major fires occur, while existing standing timber can be lost, a more natural fire mosaic forest is maintained, which over the long term benefits a diversity of wildlife species. Fire fighters and local businesses (such as caterers, tire stores, and helicopter companies) frequently benefit from fighting major fires in the form of increased income.

The proposed action should also result in better protection of riparian areas, improved maintenance of wildlife water developments, reservation of legal water rights for wildlife purposes, and more attention to water quality concerns. This benefits most species of wildlife; however, it should also be noted that when predatory animals, such as coyotes, receive a benefit, the prey species, such as mule deer, may be adversely impacted.

Additionally, the proposed action by calling for the painting of catchment aprons should make those wildlife projects in the Mt. Trumbull and Mt. Logan Wilderness Areas slightly less noticeable and more compatible with wilderness values. This will result in a slight positive impact to the wilderness areas and to most wilderness visitors. Implementation of this part of the proposed action should have no impact to other resources.

And finally, due to the ecosystem approach taken, the proposed action should result in better coordination and the incorporation of appropriate stipulations to protect wildlife values in leases, licenses, and permits issued by BLM. This is a very positive impact to wildlife. However, stringent protection of wildlife habitat values may result in negative impacts to other interests, such as timber, range, and mineral development. Often the agents of negative habitat change are activities of commodity oriented programs, such as timber, range, and minerals.

Specific surface disturbing planned actions of the proposed action will be subject to future, separate site-specific environmental review and analysis when the actions are scheduled. All actions, including non-surface disturbing ones, such as inventory efforts, will have some form of NEPA documentation (EA, CX, AD, etc.) completed. Actions in wilderness or involving T/E species will probably require an EA. Preparation of these documents will take time and money and result in a slight negative impact to BLM's wildlife program.

Impacts of the No Action Alternative

Selection of the No Action Alternative would result in continuing to follow an old plan. Management of big game habitat would continue to be emphasized, but little would occur since most original HMP objectives have been met or are no longer applicable. Implementation of the No Action Alternative would result in negative impacts to the wildlife program and result in less opportunities for future program funding.

The No Action Alternative would not be in conformance with the Arizona Strip RMP. Wildlife program actions which took place would generally not be done under the framework of an HMP, which would violate BLM policy guidelines. Wilderness considerations would not be recognized in wildlife planning documents. Information regarding special status species in the HMP area may not be gathered. HMP objectives for wildlife which either have been met or need to be changed, would not be replaced. Overall, what has been learned would not be applied, no fresh approaches would be tried, and the wildlife resources may be impacted in a negative manner.

Cumulative Impacts

The cumulative impacts of the proposed action are generally beneficial to wildlife resources. The benefits are slight because the revised HMP puts its emphasis upon maintaining existing conditions and gathering information through monitoring and studies above building projects. There will be moderate constraints on other activities to protect wildlife resources.

Increases in deer numbers are not predicted. Past construction of water development projects and vegetation treatment efforts were not conducive to deer population increases. It is now believed that habitat factors are not responsible for low deer numbers, and that more than adequate habitat is available for the existing deer population. However, it is unclear what management actions can be undertaken to increase the deer population.

Mitigation Measures

None.

Residual Impacts

Existing wildlife populations levels, including low deer numbers, will probably continue. Existing harvest levels will be maintained, and a slight increase in non-consumptive wildlife enjoyment will occur. Other programs will be somewhat constrained, depending upon what they propose to do and how that may affect wildlife habitat.

PERSONS OR AGENCIES CONSULTED

Mike Small was the primary preparer of this EA. BLM Wildlife Biologists Mike Herder, Tim Duck, and Eddie Guerrero were also involved.

Other BLM personnel involved or consulted include Dennis Curtis, Ken Moore, Bob Sandberg, Phil Seegmiller, Laurie Ford, Stephanie Ellingham, Aline LaForge, Greg Taylor, Bill Wall, and Tom Folks.

AGFD personnel include Don Randall, Randy Smith, and Richard Miller.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the analysis of potential environmental impacts contained in this environmental assessment, impacts are not expected to be significant and an environmental impact statement is not required.

APPENDIX 6: LIST OF WILDLIFE WATER DEVELOPMENTS IN THE MT.
TRUMBULL HMP AREA (MAY 12, 1992).

PROJECT NAME/ID #	LOCATION	OWNER/REMARKS
Aspen Catchment (WLC) #1971 - G&F 618	T34N, R8W, S7, SWSE	AGFD/Fence not to standards.
Broad Canyon WLC #4491 - G&F 825	T35N, R7W, S15,	AGFD/
Hancock Knoll WLC #4493	T35N, R6W, S19, NENE	BLM/
Hell's Hole WLC #4487	T34N, R9W, S10, SWSE	BLM/Apron rebuilt in 1991.
Hurricane Cliffs WLC #4118 - G&F 758	T36N, R9W, S31, NWNW	AGFD/
Death Valley WLC #5053	T34N, R9W, S3,	BLM/Saucer-type built in 1986.
Langs Run WLC #4504 - G&F 828	T36N, R9W, S34, NWNW	AGFD/
Lava Flow Spring #1965 - G&F 600	T34N, R8W, S4, NWNW	AGFD/
Lion WLC #5052	T34N, R8W, S5, SW	BLM/Asphalt apron. Built in 1987.
Logan Turkey WLC #4780 - G&F 986	T34N, R9W, S12, SESE	AGFD/BLM Coop. Project in 1989. AGFD maintenance.
Mt. Trumbull #1 #1966 - G&F 613	T36N, R8W, S35, NENW	AGFD/
Mt. Trumbull #2 #1967 - G&F 614	T35N, R8W, S11, NENE	AGFD/
Mt. Trumbull #3 #1968 - G&F 615	T36N, R8W, S31, SESE	AGFD/
Mt. Trumbull #4 #1969 - G&F 616	T34N, R8W, S1, SWNW	AGFD/
Mt. Trumbull #5 #1970 - G&F 617	T34N, R8W, S14, SENW	AGFD/
Mt. Trumbull #7 #1972 - G&F 619	T35N, R9W, S24, NWSE	AGFD/
Mt. Trumbull #8 #1973 - G&F 620	T36N, R7W, S33, NWNW	AGFD/

PROJECT NAME/ID #	LOCATION	OWNER/REMARKS
Mt. Emma #1 #4480 - G&F 817	T33N, R9W, S1, NE	AGFD/Is on edge of wilderness.
Mount Trumbull #1 #4490	T35N, R8W, S26, SWSW	BLM/Apron has collapsed. Is in wilderness.
Nixon Spring Drinker #4726	T35N, R8W, S27, NWSW	BLM/
Pa's Pocket WLC #4481 - G&F 816	T33N, R8W, S18, SW	AGFD/Is on edge of wilderness.
Ponderosa Burn WLC #5001	T35M, R8W, S32, NENE	BLM/Built in 1987.
Rim #1 WLC #4486	T35N, R9W, S17, SESE	BLM/
Rim #2 WLC #4485	T35N, R9W, S28, SWSW	BLM/Has collapsed apron.
S B WLC #4501	T35N, R5W, S19, SWSW	BLM/
Sawmill WLC #4488	T34N, R9W, S1, SESE	BLM/Apron rebuilt in 1991.
Slide Mountain WLC #4482 - G&F 818	T34N, R8W, S32, SE	AGFD/Is in Mt. Logan Wilderness.
Witch WLC #4492	T35N, R8W, S25,	BLM/Is in Mt. Trumbull Wilderness.
Turkey Track WLC #4489	T34N, R8W, S8, SESE	BLM/Project modified in 1989 to provide excess water to livestock.

DECISION RECORD

Revision of Mt. Trumbull Habitat Management Plan (HMP)

I. DECISION

The decision is to accept the proposed action and to revise the Mt. Trumbull HMP. No EIS is required.

II. RATIONALE FOR DECISION

Revision is needed to update the original plan and to bring it within current acceptable legal and policy standards. However, separate planned actions of the revised habitat plan will be subject to additional individual site-specific environmental analysis and review when the individual actions are to be undertaken.

The "No Action" Alternative, which consisted of not revising the existing Mt. Trumbull HMP -- written in 1977 -- was considered and rejected. Primary factors in rejecting the "No Action" Alternative were: 1) BLM policy mandating plans be kept current; 2) the 1977 HMP had some objectives which have either been met or are no longer applicable; and 3) changes in wildlife habitat management emphasis called for by the recently completed Arizona Strip Resource Management Plan (RMP).

The decision rationale to accept the planned action and to proceed with revision of the Mt. Trumbull HMP is predicated upon the using the RMP as an umbrella document and then ensuring objectives of individual activity plans, such as this HMP, are compatible with the new RMP. According to Part III.C.3.c. of BLM Manual H-1790-1 (NEPA Handbook), tiering is appropriate because the HMP/EA tiers to the RMP/EIS which established wildlife objectives for the area.

The decision to revise the HMP as proposed is also influenced by recognition that this revision follows RMP direction, appears to be acceptable to AGFD, and would be completed by the end of this fiscal year, as planned.

While there are almost an infinite number of ways to revise an original HMP, the proposed action represents a series of negotiated compromises with AGFD and is compatible with the wilderness plan, as well as the RMP. Both BLM and AGFD clearly support placing more emphasis in the Mt. Trumbull area on turkeys, squirrels, and non-game.

III. COMPLIANCE AND MONITORING

The revised HMP contains a section on planned evaluation and monitoring. No additional compliance monitoring is needed.

Future revision may be needed to ensure the HMP is compatible with what is developed in the yet-to-be written RCA plan.

Dennis Curtis
Vermillion Resource Area Manager

Sept. 3, 1992
Date

FIRE SUMMARY FOR TRUMBULL
LOGAN AREA 1986 TO 1990

1986

Ponderosa pine

6172	2.5 ac.	Farewell
6239	1.0	
6180	3.0	Snowmobile
6195	0.1	
6219	0.1	
6194	<u>0.1</u>	
	6.8	

Pinon-Juniper

6173	0.1 ac.	
6006	0.1	
6218	0.1	
6220	0.2	
6181	5.0	Limbo
6196	1.5	
6224	0.1	
6240	<u>1.0</u>	
	8.1	

1987

Ponderosa Pine

7048	0.2 ac.
7062	0.1
7043	0.1
7061	0.1
7056	<u>6.0</u>
	6.5

Pinon-Juniper

7013	0.1 ac.
7026	0.1
7023	0.1
7047	<u>0.4</u>
	0.7

1988

Ponderosa Pine

8118	0.1 ac.	
8091	0.1	
8182	0.1	
8090	0.1	
8187	40.0	Columbus
8147	0.2	
8180	<u>13.0</u>	Lava

Pinon-Juniper

8177	1.0 ac.
8183	0.1
8166	0.1
8126	<u>0.2</u>
	1.4

53.6

17 fires are .1 AC

ave = 39.44

1989

Ponderosa Pine

C202	78.0	ac.	Spring
C196	25.0		Mountain
C237	18.0		Hump
C229	0.2		
C212	0.1		
C197	0.2		
C204	1.0		
C198	7.0		Slide
C210	<u>0.2</u>		
	129.7		

Pinon-Juniper

C207	0.1	ac.
C190	F.A.	
C211	0.1	
C006	F.A.	
C238	<u>0.1</u>	
	0.3	

1990

Ponderosa Pine

C037	0.1	ac.
C038	0.1	
C039	0.1	
C040	0.1	
C041	0.1	
C046	<u>0.1</u>	
	0.6	

Pinon-Juniper

C060	<u>0.9</u>	ac.
	0.9	

11.4

avr = 2.28

33

1992 HABITAT MANAGEMENT PLAN EVALUATION: MT. TRUMBULL HMP

REVISION STATUS - In 1992, the Mt. Trumbull HMP revision was completed. An environmental assessment on the plan and a decision record were prepared. The document is ready for signature pending incorporation of a few final review comments.

The revised Mt. Trumbull Habitat Management Plan (HMP) carries forward the goal of the original Mt. Trumbull HMP to improve and protect wildlife habitat, and updates the objectives and planned actions. The intent of this revised plan is to guide all coordinated wildlife work between the Bureau of Land Management (BLM) and the Arizona Game and Fish Department (AGFD) in the Mt. Trumbull area. Compatibility with the Trumbull/Logan Wilderness Management Plan is an important consideration of this revision.

Increased emphasis on non-game species, wilderness designations, apparent decline of mule deer numbers, full establishment of wild turkeys and Kaibab squirrels, previous HMP evaluations, and the new BLM land use plan were all factors which indicated a need to update and revise the original Mt. Trumbull HMP, which had been finalized in 1977.

The revised HMP contains new objectives and planned actions. The revised objectives reflect current knowledge, resource conditions, and a conservation biology/ecosystem approach. These objectives and planned actions are grouped in five categories: a) non-game and special status species; b) big game and small game; c) riparian and wildlife water related; d) wilderness considerations and e) other coordination.

Boundary adjustments are also part of this HMP revision. Approximately twenty-eight percent of the original HMP area was land administered by the National Park Service (NPS). This revision changed the southern HMP boundary to drop out all NPS land. Boundaries of the Mt. Trumbull HMP area were also changed to more closely match AGFD and BLM administrative boundaries and to recognize Paria-Kanab Creek HMP boundaries which were developed after the Mt. Trumbull HMP was written.

HABITAT OVERVIEW - Established seedings in the Mt. Logan area in 1992 were in excellent shape with heavy production through mid-summer. Overall, vegetation conditions throughout the HMP were above average due to increased precipitation. This trend is expected to continue due to the precipitation already received in FY-93. No significant fires occurred in FY-92. However, the increase in ground fuels may lead to an increased chance of wildfire in '93.

Several BLM wildlife water development projects dating from the 1970's need major maintenance. Mt. Trumbull, Rim #2, and Kanab

Creek catchments continue to provide water, but have partially collapsed aprons over their storage tanks. These are expected to be repaired in FY-93. Sawmill and Death Valley catchments were of the same design and have already been repaired. No new water developments are presently planned. Maintenance is expected to continue to be a workload every year from here on out.

Most wildlife catchments in the Trumbull HMP area were inspected in FY-92 and no significant problems were found. However, the fire crew reported a dead antelope in the fence at Hancock Knoll catchment and some of the fences around older wildlife catchments do not follow present standards for wildlife access; Aspen Catchment is one example. The catchments in general seem to benefit the abundant birdlife as much as they do big game.

SPECIAL STATUS SPECIES - Goshawks sighting in the Trumbull area were reported throughout FY-92, although no nest sites were located. An inventory for nesting goshawks is needed and is identified in the HMP revision. BLM's two year inventory effort for Mexican spotted owls did not find any of this species on the Arizona Strip District. And the five year BLM/AGFD cooperative peregrine survey effort on the Strip, which is now complete, did not locate any peregrine nests in the Mt. Trumbull HMP area.

OTHER - With the completion of the Arizona Strip RMP, an area somewhat smaller than the HMP area was designated as a Resource Conservation Area (RCA). Planning for the RCA has begun using an ecosystem/interdisciplinary approach. In addition to BLM staff, AGFD, the AZ Chapter of the Wildlife Society, Grand Canyon Trust, Kaibab Industries, Grand Canyon National Park, and other have been involved. Planning management for the RCA is expected to take about one year.

No harvesting of ponderosa pine occurred or was seriously contemplated in 1992. However, a proposal to plant approximately 25,000 seedlings has moved forward. After coordination with AGFD, the tree planting will probably take place in several small patches in 1993. Firewood cutting is now restricted to pinyon/juniper in designated locations.

No significant mineral related activities took place in the Mt. Trumbull HMP area in 1992. None are expected in 1993.

While it is generally believed that more of the public is visiting the area, BLM traffic counters do not indicate this. Much of the tourist traffic in the Trumbull area is thought to be tied to the Tuweep Overlook. Mt. Trumbull has been identified as a watchable wildlife location, specifically for Kaibab squirrels.

Of special note, in 1992 the Nixon Administrative Site received major vandalism the day after Thanksgiving. It should be repaired this spring.