

Chapter 4

Affected Environment and Impacts of MSHCP and Alternatives

4.1 Setting

Clark County is located in the southernmost tip of Nevada, as shown in Figure 4-1. It is bordered on the north by Lincoln County, Nevada; on the east by Mojave County, Arizona; on the southwest by San Bernardino and Inyo Counties, California; and on the west by Nye County, Nevada. It covers approximately 7,880 square miles, or about 7 percent of the state's total area. It is Nevada's most populated county, with an estimated 1997 population of 1,170,113, or about 67 percent of the state total (Clark County Department of Comprehensive Planning 1997).

Elevations within Clark County range from 450 feet above mean sea level along the Colorado River to 11,918 feet at Charleston Peak (see Figure 4-1). Much of the county has features that are characteristic of the Great Basin, such as mountain ranges that extend in a north-south direction and erode laterally to long, narrow desert valleys. The mountain ranges are generally steep and composed primarily of bedrock. Wide alluvial fans or aprons extend from the base of the mountains and level out to basin lowlands. The basin lowlands have been continually filling since the mountains were originally formed and have a surface generally composed of fine sand, silt, and clay.

The Las Vegas Valley extends in a northwest-southeast direction with the Spring Mountains to the west; the Pintwater, Desert, Sheep, and Las Vegas Mountains to the north; Frenchman Mountain to the east; and the Bird Spring and McCullough mountain ranges to the south. The valley drains toward the south and then easterly through Las Vegas Wash to Lake Mead and the Colorado River. Valley elevations range from 4,500 feet at the upper boundaries of the alluvial fan to 1,800 feet in the basin lowland.

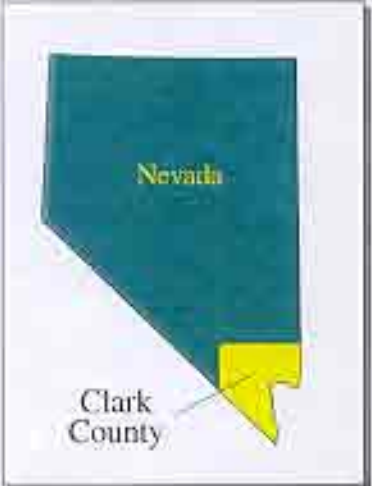
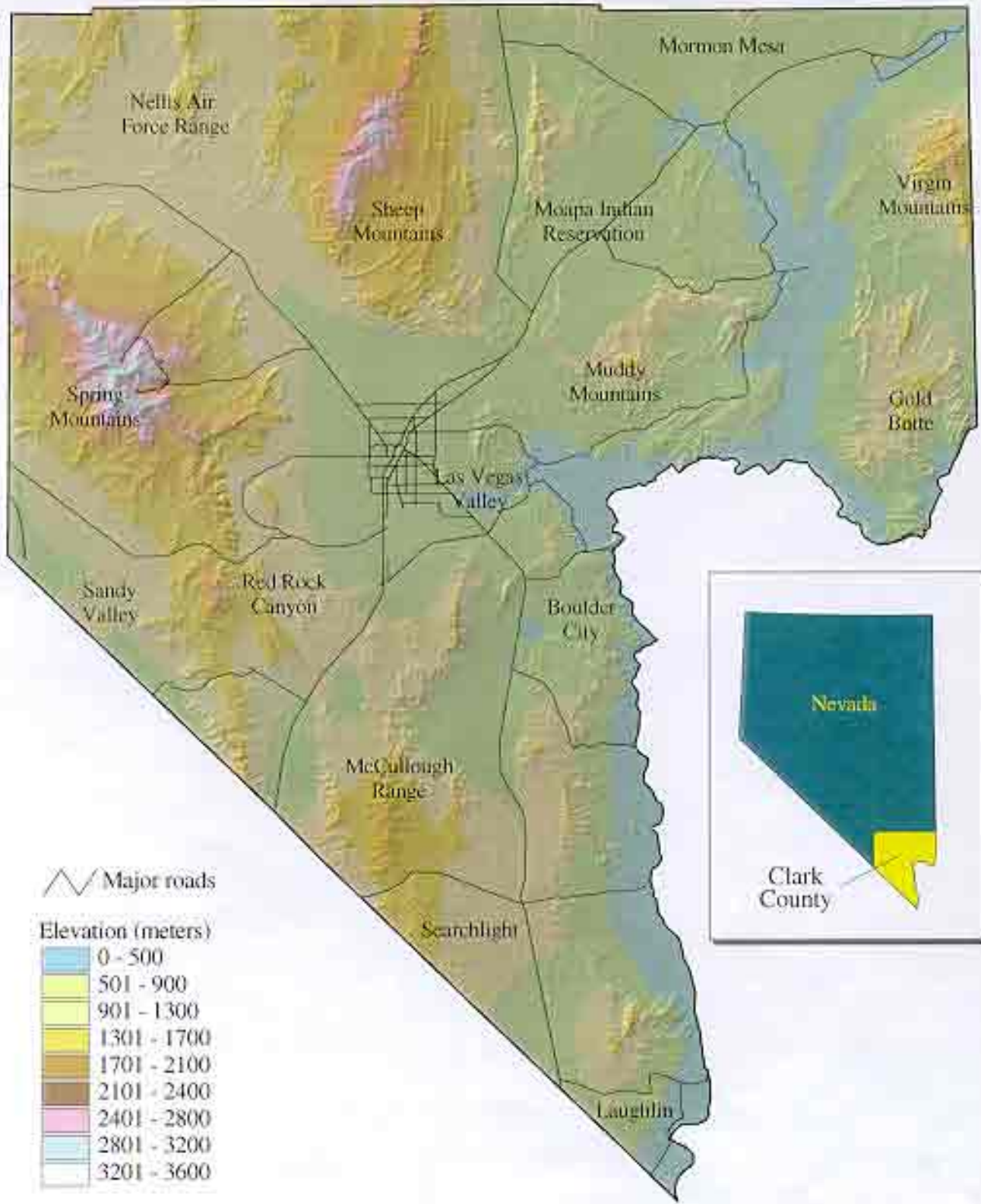
Las Vegas Valley is the major watershed in Clark County and is fed from precipitation in the Spring Range and Sheep Mountains to the west and north. Surface hydrology is marked by complex flow patterns in the alluvial fans of the valley with areas of

concentrated but shifting flows. Las Vegas Wash is the only perennial stream in the valley. Other primary surface waters include the Virgin River in the northeastern portion of the county; the Muddy River, which is spring fed; the Colorado River; and Lake Mead.

Soils in Clark County are primarily entisols and aridisols with a few mollisols occurring at the upper elevation of mountain ranges and on high plateaus. Entisols have little or no evidence of development of pedogenic horizons. They are found in areas where soils are actively eroding (steep slopes) or receiving new deposits of soil materials (alluvial fans and floodplains). Aridisols have one or more pedogenic horizons that may have formed in the present environment or may be relics from a former pluvial period. Aridisols, often associated with desert pavement, do not have water available to plants for long periods of time and the surface is generally bare. Mollisols are very dark colored, base rich soils found at high elevations. A few mollisols are found high in the Spring Mountains, in the Sheep Range, and at approximately 5,000 feet in the Virgin Mountains and Gold Butte area.

Air masses moving across southern Nevada are usually low in moisture. This arid condition is characterized by low precipitation, low humidity, and cloudless skies. Summer climate is marked by hot days and mild nights, with an average daily temperature of nearly 90 degrees Fahrenheit. Winter temperatures drop below freezing about 12 days per year, with average daily temperatures of 46 degrees Fahrenheit during the coldest period. Spring and autumn are generally moderate, with average daily temperatures of about 80 degrees Fahrenheit.

Within Las Vegas Valley, average daily temperatures range from 75 to 104 degrees Fahrenheit in summer and from 33 to 56 degrees Fahrenheit in winter. Due to the rain shadow effect of the Sierra Nevada Range and Spring Mountains to the west, moisture associated with storms originating in the Pacific Ocean rarely reach the valley. Humidity is normally low; averaging 30 percent, but moist tropical air from the southwest invades the area from mid to late summer. Thunderstorms and flash flooding frequently occur during this period. Inversions or periods of stagnant air masses occur during winter months and prevail for several days to a week.



5 0 5 10 Miles
August 31, 1998



FIGURE 4-1
Project Setting

4.2 Land Management in the Plan Area

The MSHCP plan area includes all of Clark County. In addition, specifically for the desert tortoise, the MSHCP also includes NDOT rights-of-way (including material sites) below 5,000 feet in elevation and south of the 38th parallel in Nye, Lincoln, Mineral, and Esmeralda Counties. The plan area for the Clark County MSHCP (excluding water surface, which is primarily in Federal management and outside of the plan area) totals just over 5.1 million acres (Table 4-1, Figure 4-2). Land in the plan area is divided among Federal (87.4 percent), state and local governments (2.6 percent), and private landholders (9.8 percent).

**TABLE 4-1
LAND MANAGEMENT IN CLARK COUNTY**

Management	Acres	Percent
Federal	4,423,300	87.4
BLM	2,811,500	55.6
USFWS	496,700	9.8
NPS	454,300	8.9
USFWS/Nellis Range	355,600	7.0
USFS	276,800	5.4
Nellis AFB	12,600	< 1.0 (0.24)
USAF/NSAR	7,900	< 1.0 (0.15)
USAF/ISAFAF	7,500	< 1.0 (0.14)
USAF/NAFR	300	< 1.0 (0.005)
Non-Federal	133,100	2.6
Boulder City Easement	86,700	1.7
State of Nevada (including NDOT)	32,300	< 1.0 (0.63)
NDOW Overton WMA	14,100	< 1.0 (0.27)
Private	420,500	8.3
Privately Held Lands	420,500	8.3
Native American Reservations	79,100	1.5
Moapa River Indian Reservation	71,500	1.4
Las Vegas Paiute Indian Reservation	3,900	< 1.0 (0.07)
Fort Mojave Indian Reservation	3,700	< 1.0 (0.07)
Total	5,056,100	100.0

4.2.1 Federal

4.2.1.1 Bureau of Land Management

The Bureau of Land Management administers about 2.81 million acres, or about 55.6 percent of the land, in Clark County (see Figure 4-2).

a. Existing Laws, Regulations, Plans, and Policies**(1) Management Framework Plan**

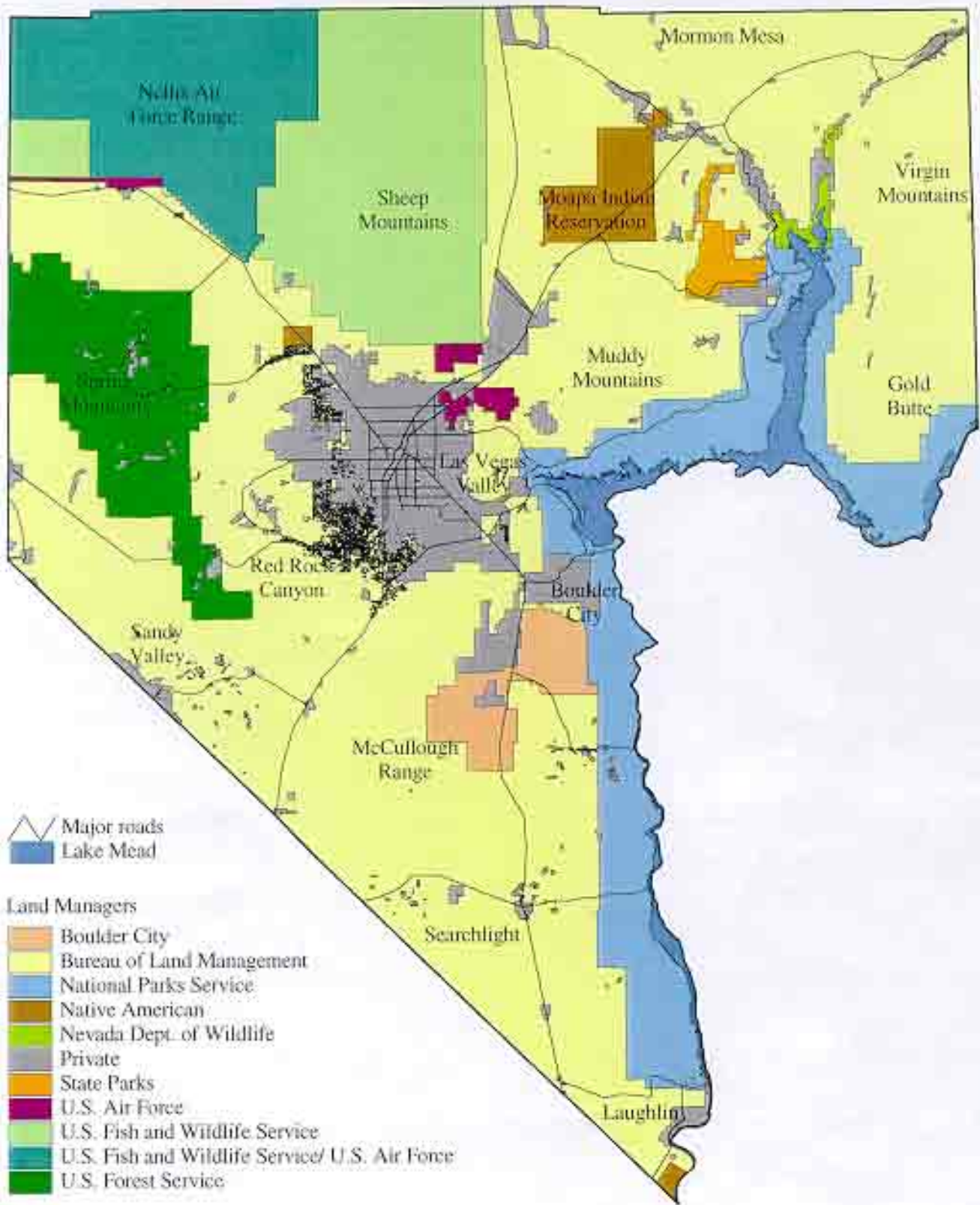
Until the recent adoption of the Las Vegas RMP, two existing land use plans, the Clark County MFP (BLM 1984) and the Esmeralda–Southern Nye RMP/EIS–Planning Area B (BLM 1986), provided management direction for the Stateline Resource Area. The MFP outlined major land use decisions and guided the management of public lands in the county. In general, the plan classified BLM holdings as suitable for disposal or as lands to be retained for multiple use:

- Lands classified for disposal (such as those in the Las Vegas Valley subunit) can be transferred to states, counties, municipalities, and private interests.
- Lands to be retained are managed by BLM for fish and wildlife development, outdoor recreation, mineral production, watershed protection, wilderness preservation, domestic livestock grazing, and preservation of public values.

(2) Las Vegas Resource Management Plan/EIS

In June 1998, BLM issued a Final Las Vegas Resource Management Plan for the management of 3.7 million acres of public lands administered by the BLM in Clark and Southern Nye Counties. BLM signed a record of decision approving the plan in October 1998. The Las Vegas RMP replaces the Clark County MFP and the Esmeralda–Southern Nye RMP. Both the Esmeralda–Southern Nye RMP/EIS–Planning Area B (1986) and the Clark County MFP required amendment or revision for several reasons: (1) a regularly scheduled five-year evaluation of the Clark County MFP indicated that the plan was not adequately providing for the rapidly changing public land use demands in Clark County; (2) neither land use plan anticipated the listing of the desert tortoise as a threatened species and did not, therefore, provide for the recovery of the desert tortoise; and (3) public land disposals and exchanges, such as Aerojet and Apex, being accomplished by legislative action had demonstrated the inadequacies of the existing land use plan.

Plan amendments normally focus on the resolution of a single issue, while a plan revision is usually developed when multiple issues need to be resolved. Rather than amend the Clark County MFP and Esmeralda–Southern Nye RMP/EIS–Planning Area B on a single-issue basis, the decision was made to prepare the Las Vegas RMP/EIS, addressing the area covered by both of the existing plans. Generally, either action would have required an EIS. Decisions in the Clark County MFP and Esmeralda–Southern Nye County RMP/EIS determined to constitute valid management were carried forward into the Las Vegas RMP/EIS.



7 0 7 14 Miles
August 31, 1998



FIGURE 4-2
Distribution of Land Managers

Over three million acres of desert tortoise habitat occur within the Las Vegas RMP. To comply with the ESA, the BLM must consult with the USFWS on all Federal actions (including the RMP/EIS) and take positive actions to aid in the recovery of all listed species. The Final Las Vegas RMP/EIS compares the provisions of Alternatives A, B, C, D, and Supplemental Alternative E as set forth in the 1992 draft Stateline Resource Area RMP/EIS and 1994 Supplemental RMP/EIS with respect to grazing, the number of acres proposed to be contained within ACECs, the number of acres proposed to be disposed of by the BLM, the number of acres proposed to be withdrawn for the Desert Tortoise Conservation Center, wild horse and burro policy, recreation and OHV use, and mining.

(3) Habitat Management Plans

The designation of DWMA/ACECs and the maintenance of their integrity require management actions and changes in land uses not currently provided for by the two existing land use plans. Decisions about specific range, wildlife, and watershed improvements are not made in the RMP/EIS, but rather in subsequent activity level plans (i.e., habitat management plans, allotment management plans, etc.) designed to implement the Las Vegas RMP/EIS decisions. In June 1992, a Piute-Eldorado Habitat Management Plan (HMP) was prepared by the BLM with cooperation of the NPS and NDOW. However, the HMP has not yet been finalized and approved by those agencies. This BLM planning document outlines management prescriptions for high-density tortoise populations within three tortoise management areas: Piute Valley, Cottonwood Valley, and Eldorado Valley. The three habitat management areas of this HMP were established through the Clark County Short-Term HCP. The BLM and the NPS (on NPS lands) are responsible for identifying and implementing land use controls through the Piute-Eldorado HMP and the Las Vegas RMP. The establishment of other DWMA/ACECs in the county will require the development of one or more activity plans.

b. Lands Managed Pursuant to the Provisions of the DCP

As part of the implementation of the DCP, BLM has designated 290,300 acres of the critical habitat in the Piute-Eldorado area as conserved habitat for desert tortoise. Additional areas totaling 397,700 acres within critical habitat (Arrow Canyon/Coyote Springs, Mormon Mesa, and Gold Butte-Pakoon) are also focused upon protection of desert tortoise and have been designated as ACECs under the Las Vegas RMP.

c. Special Status Plant Management

The BLM has also developed a strategy plan for special status plants that was adopted in October 1992. It is the policy of the BLM that special status plants and their essential habitat be conserved and that their continued existence be assured. The special status plants strategy plan focuses on four objectives: (1) land use planning for resource

protection; (2) plant inventory and studies; (3) special status plants monitoring; and (4) interagency/groups coordination.

d. Wilderness Study Area

In compliance with the Federal Land Policy and Management Act, BLM evaluated all its lands for the presence of wilderness characteristics. Recommendations as to which areas should be designated as Wilderness were forwarded to Congress, which has not yet acted upon the recommendations. Until a formal determination is made, the study areas are to be managed under an interim management plan for WSAs so as not to degrade existing wilderness values. Once a determination is made, current management prescriptions to maintain wilderness values may be modified or removed on those areas not designated.

There are 21 WSAs in Clark County. Seven WSAs, totaling more than 120,000 acres, are within desert tortoise critical habitat areas (USFWS #1, #2, and #3; a portion of Arrow Canyon, Garret Buttes, Jumbo Springs, Million Hills, and Lime Canyon; a small portion of North and South McCullough Range WSAs also extend into the Piute-Eldorado management area). Portions of six BLM WSAs were recommended for wilderness designation: 20,000 of 57,500 acres in the South McCullough Range; 36,900 of 87,200 acres in the Muddy Mountains; 13,900 of 35,100 acres in the Lime Canyon WSA; 23,000 of 42,100 acres in La Madre Mountain; 17,600 of 20,100 acres in Pine Creek; and 800 of 4,200 acres in Mount Stirling WSA. The USFS also has recommended portions of the Mount Stirling, Pine Creek, and La Madre Mountain WSAs as suitable for wilderness designation with adjacent wilderness in the Humboldt-Toiyabe National Forest.

Under interim management the only permitted activities are temporary uses that create no new surface disturbance or do not involve permanent placement of structures. Existing uses (i.e., grazing, mining, mineral leasing) may continue. The following activities may occur within WSAs:

Land Actions. Generally, no land disposals will be allowed; however, existing rights-of-way may be renewed or even approved for temporary uses as long as there is no impairment of wilderness values.

Mineral Uses. Existing mining activities such as drilling, use of existing rights-of-way, heavy equipment use, and so on may continue; however, they must be monitored to guarantee no impairment of wilderness values.

Watershed Rehabilitation and Vegetative Manipulation. Watershed rehabilitation work required by emergency conditions (e.g., fire, flood, storms, or landslides) are allowed. Land treatments such as trenching, ripping, pitting, terracing, and plowing are not permitted.

Rangeland Management. Existing grazing use is allowed and changes may be allowed in number, kind, or season of use if an environmental assessment is prepared and the effects are found to be negligible.

Wild Horse and Burro Management. Wild horse and burro populations will be managed to prevent the degradation of wilderness values. Motor vehicles may not be used in the maintenance of these populations except on an existing way or trail.

Forestry. Tree removal will be allowed only for insect and disease control or in emergencies and all tree improvement activities may not impair wilderness values.

Wildlife. Stocking of native species is allowed as is the maintenance and/or introduction of permanent structures that would enhance wilderness values (e.g., guzzlers).

Recreation. Most recreational activities including fishing, hunting, and trapping are allowed. Activities that require mechanized vehicle use are not allowed. Rockhounding, boating, river running, and camping are allowed; however, some activities will be monitored to determine potential impairment of wilderness values.

Fire Management. Prescribed fire and suppression activities must be conducted in accordance with approved plans.

e. Red Rock Canyon National Conservation Area

The 133,600-acre Red Rock Canyon NCA includes the La Madre Mountain (42,100 acres) and Pine Creek (20,100 acres) WSAs and State Park lands. Red Rock Canyon NCA has an Interim General Management Plan (BLM 1995) with an updated General Management Plan in development. The WSA portions are managed under the WSA prescriptions described above with the remaining areas under multiple recreational uses of varying intensity and development. For recreation, the area is subdivided into primitive areas (WSAs), non-motorized, roaded-natural, roaded-developed, and developed areas. Other management prescriptions include protection of natural habitats and features, including sensitive wildlife and plants, protection of aquatic features, management of wild horses and burros, protection of cultural and paleontological sites, preservation of scenic and visual features, management of roads and trails, and avoidance of new rights-of-way.

f. Other (Undesignated Land)

All other BLM lands are subject to general BLM management policies of the Las Vegas Resource Management Plan. However, some BLM lands are subject to activity level

plans that provide additional management direction, such as Special Recreation Management Areas.

4.2.1.2 National Park Service Lake Mead National Recreation Area

The National Park Service administers the Lake Mead National Recreation Area, which comprises 454,300 acres of land area, or 8.9 percent of Clark County (see Figure 4-2).

The Lake Mead National Recreation Area encompasses 182 linear miles of the Colorado River in Clark County and Arizona, including 1,484,200 acres of Federal lands and 12,600 acres of private lands. The LMNRA includes 157,900 acres of water surface and 550 miles of shoreline along Lake Mead, and 28,800 acres of water surface and 150 miles of shoreline along Lake Mojave. Its 1986 General Management Plan designates nine management categories: Environmental Protection (317,900 acres), Outstanding Natural Features (51,600 acres), Natural Environment (680,500 acres), Historic/Archaeological (51,300 acres), Reservoir (191,500 acres), Development (8,800 acres), Bureau of Reclamation lands (5,000 acres), Resource Utilization (146,000 acres), and Utility Corridor (12,800 acres). Each of these categories is distributed across the LMNRA into 68 use areas. The LMNRA also has a Resource Management Plan prepared in 1994 that includes specific programs for public education, research, monitoring, inventory, restoration and enhancement, and resource protection programs for habitats and sensitive species.

The LMNRA GMP and EIS were finalized in 1986. Since that time, there have been significant changes in regional resource management issues and priorities. The desert tortoise, the razorback sucker, and the southwestern willow flycatcher have all been listed as threatened or endangered and critical habitat has been designated by the USFWS. Recovery plans have been written for both the desert tortoise and the razorback sucker, which contain significant guidance on how certain areas should be managed to benefit these species and facilitate their recovery.

As a participant in the DCP process, NPS has agreed to strengthen protective land management measures to better protect tortoise populations at Lake Mead NRA. Clark County has agreed to help fund resource management and protection measures at LMNRA as mitigation for detrimental impacts occurring elsewhere in the county. Protection measures to be funded by the County focus on DWMAs as designed in the DCP.

In addition, the Spirit Mountains area has been designated as the Spirit Mountain/Avi Kwa Ame Traditional Cultural Property. This was a joint effort between the BLM and the NPS. A 2,300-acre portion of this area was designated as a Traditional Cultural Property on the National Register of Historic Places. In addition, 41,600 acres surrounding this area within the boundaries of LMNRA have been designated within the

historic/archeological zone. Consultation is required with the State Historic Preservation Officer, and any Federally recognized tribes culturally associated with the area, prior to any management action in these areas.

4.2.1.3 U.S. Forest Service Spring Mountains National Recreation Area

The U.S. Forest Service, an agency of the Department of Agriculture, manages approximately 276,800 acres, or 5.4 percent, of Clark County located in the Spring Mountains National Recreation Area of the Humboldt-Toiyabe National Forests (see Figure 4-2).

The Spring Mountains National Recreation Area encompasses 315,600 acres adjoining BLM's Red Rock Canyon NCA (a portion of the SMNRA around Mount Stirling is within Nye County). The SMNRA is one of five major units of the Humboldt-Toiyabe National Forest. According to its General Management Plan, the SMNRA is further divided into four management areas: Mount Stirling Wilderness Study Area (42,400 acres), Mt. Charleston Wilderness Area (42,500 acres), West Side Multiple Use Area (129,200 acres), and Developed Canyons Multiple Use Area (72,200 acres). Mount Stirling WSA and West Side multiple use areas include lands recommended for wilderness designation by the BLM. Of the 42,400 acres within Mount Stirling recommended by BLM as wilderness, the USFS recommends that 14,200 acres not be designated as wilderness. The USFS also recommends that 1,400 acres of 19,000 acres within the La Madre Mountain WSA and 300 of 4,600 acres within the Pine Creek WSA (located in the West Side multiple use area) not be designated wilderness. Within the Mt. Charleston Wilderness, the USFS has added 2,600 acres to the Research Natural Area. The SMNRA also includes private inholdings.

The General Management Plan includes goals, objectives, statements of desired future conditions, standards and guidelines, suitability assessments for various uses in specific areas and management prescriptions for the SMNRA and more specifically for each of the management areas. The USFS, USFWS, and Nevada Department of Conservation and Natural Resources are signatory to a Conservation Agreement for the SMNRA (1998), which includes additional public education, monitoring, inventory, research, restoration and enhancement, and protective measures for habitats and sensitive species.

4.2.1.4 U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service manages the 1,588,800-acre Desert National Wildlife Range, of which 496,700 acres are in Clark County (see Figure 4-2). The wildlife refuges are managed to protect species within their boundaries by permitting only those activities that are compatible with the purposes for which the area was withdrawn. Permitted activities include camping, picnicking, backpacking, wildlife observation, hunting (in appropriate seasons), and photography. Within DNWR are five Research Natural Areas

and proposed Wilderness designation areas (totaling 1.3 million acres), which are managed for limited human use.

The also USFWS manages the 60-acre Moapa Valley National Wildlife Refuge for the recovery and protection of Moapa dace and other species of concern such as Moapa White River springfish and Moapa pebblesnail.

4.2.1.5 U.S. Air Force

The U.S. Air Force manages about 383,900 acres of Clark County (7.5 percent) including Nellis Air Force Base and Nellis Air Force Range (see Figure 4-2).

Nellis Air Force Base, Nellis Air Force Range, Nellis Small Arms Range, and Indian Springs Air Force Auxiliary Field comprise 2,945,700 acres within Nye, Lincoln, and Clark Counties. Exclusive military use of these lands was established by Congress under the Military Lands Withdrawal Act (MLWA) of 1986. “Exclusive” is defined as “withholding an area of Federal land from settlement, sale, location of entry under some or all of the general land laws, for the purpose of limiting activities under those laws in order to maintain other public values in the area or reserving the area for a particular public purpose program; or transferring jurisdiction from one department, bureau or agency to another department, bureau or agency“ (43 CFR FLPMA, chap. 11) The withdrawal terminates in November, 2001. A renewal of the withdrawal and Legislative EIS is being processed for a total area of 3,038,700 acres.

The NAFR is under the jurisdiction of the Air Force with management responsibility remaining with the BLM pursuant to the MLWA. However, the NAFR overlays a portion of the DNWR with specific management and use jurisdiction under the U.S. Fish and Wildlife Service. The Secretary of the Interior and Secretary of the Air Force have entered into a Memorandum of Understanding regarding administration and joint use of the area. There are nine additional agreements or MOUs covering use and management of the NAFR. These include an MOU with the USFWS last updated in 1976 establishing terms and conditions of use of the common area of the NAFR and DNWR for which the USFWS has primary jurisdiction; and a five-party MOU signed in 1977 with BLM, Department of Energy, USFWS, and NDOW providing for the protection, development, and management of natural resources, including fish and wildlife, vegetation, watershed, and wild horses or burros on the NAFR. These two MOUs provide the primary natural resources management agreements. For the portion of the NAFR outside of the DNWR (and Clark County), a resource plan was approved by BLM in 1991. The MOU with the USFWS expired in 1991 but has been extended by letter of agreement. Terms of a new MOU are being developed.

Within the NAFR, the area has been closed to all mining except for valid existing rights, closed to agriculture and livestock grazing, and closed to unrestricted entry and access for

recreational use, although hunting by permit is allowed. There are also 1,322,900 acres that have been identified as Wilderness Study Areas. These areas are under management by the USFWS.

In January 1999 the Integrated Natural Resources Management Plan (INRMP) for Nellis Air Force Base and Range was completed by the Air Force. The INRMP includes goals, objectives, and operational component plans for natural resources surveys and inventories (e.g., bat species, desert tortoise, chuckwalla, Merriam's bearpoppy), mapping, and data integration. The INRMP also includes eradication of tamarisk, an integrated pest management plan, and a land use management plan for the NAFB.

4.2.1.6 Other Federal Jurisdictions

The Bureau of Indian Affairs, a part of the Department of the Interior, is authorized to act as trustee for the Moapa Indian Reservation (about 71,500 acres), Fort Mojave Indian Reservation (about 3,700 acres), and Las Vegas Paiute Indian Reservation (about 3,900 acres), comprising less than 2 percent of Clark County.

The Bureau of Reclamation manages 50,700 acres, or 1 percent, of Clark County (including Hoover Dam, Lake Mead, and Lake Mohave).

4.2.2 Non-Federal

Landholdings by the state, local government, and private landowners total approximately 420,500 acres, or 8.3 percent of Clark County (see Figure 4-2).

4.2.2.1 State of Nevada

Lands held by the State of Nevada include areas managed by State Parks, NDOW, NDOT, and other state agencies. Major state parks and wildlife areas include Valley of Fire, Floyd Lamb, and Spring Mountain Ranch state parks and the Overton Wildlife Management Area, comprising 46,400 acres (almost one percent of Clark County). NDOT has an additional 14,700 acres of rights-of-way for material sites and 840 miles of highway rights-of-way of various widths in Clark County.

a. Nevada Division of Wildlife

(1) Existing NDOW Regulations

The Nevada Revised Statutes require that the state's wildlife be classified as game or as either protected or unprotected and that protected species are further classified as sensitive, threatened, or endangered. This classification of protected species was

introduced in 1987. Policies and regulations necessary to the preservation, protection, management, and restoration of wildlife and habitat, control of wildlife depredations, and the acquisition of lands, water rights, and easements are established by the Nevada Board of Wildlife Commissioners. The NRS also provides for the creation of county advisory boards to manage wildlife in each county. The Nevada Division of Wildlife administers the wildlife laws of the state. NDOW may enter into cooperative or reciprocal agreements with Federal, state, or local agencies. The provisions for the protection of wildlife established by the Spring Mountains Conservation Agreement are also recognized.

A species or subspecies of native fish, wildlife, or other fauna must be regarded as threatened with extinction when the commission, after consultation with competent authorities, determines that its existence is endangered and its survival requires assistance because of overexploitation, disease, or other factors, or its habitat is threatened with destruction, drastic modification, or curtailment. Any animal so declared to be threatened with extinction must be placed on the list of fully protected species, and no member of its kind may be captured, removed, or destroyed at any time by any means except under special permit issued by the division NRS (503.585). The commission shall use its authority to manage land to carry out a program for conserving, protecting, restoring, and propagating selected species of native fish, wildlife, and other vertebrates and their habitats which are threatened with extinction and destruction NRS (503.587).

In counties where the population is 400,000 or more and in which exists a species or subspecies of wildlife that has been declared endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended, the Board of County Commissioners may by ordinance establish, control, manage, and operate an area or zone for preservation of wildlife habitat. In addition, the board, in cooperation with the responsible state and Federal agencies, may encourage in any other manner the preservation of those species or subspecies or any candidate species of wildlife in the county, including the expenditure of money under subsection 2 or the participation in an agreement made pursuant to NRS 503.589. The board may purchase, exchange, or lease real property, personal property or water rights, grazing permits, and other interests in such property for this purpose.

(2) Overton Wildlife Management Area

The Nevada Division of Wildlife's Overton Wildlife Management Area, leased from NPS, totals 17,900 acres (3,800 acres of which are considered as part of the LMNRA for purposes of this document). Wildlife management is focused upon enhancement of waterfowl migration and wintering areas for recreational hunting, and game fish for recreational fishing at the edge of Lake Mead. Livestock grazing is prohibited, though

there is some agricultural use. The state is acquiring water rights to maintain water levels for fish and wildlife.

b. Nevada Division of Forestry

The Nevada Division of Forestry regulates the collection of cactus and yucca throughout the State of Nevada (NRS 527.070) and the collection of flora listed as critically endangered (under NRS 527.270) by the state of Nevada (NRS 527.050). Permits for the collection of cacti or yucca for commercial purposes must be obtained from the State Forester Firewarden. Commercial purposes are defined as the removal of, or possession of, six or more of such plants in any one calendar day, or the removal or possession of less than six of such plants each for seven or more consecutive calendar days, except removal or possession of the plants for scientific or educational purposes. Species listed as critically endangered cannot be lawfully removed, except under special permit.

c. Nevada Division of Parks

The state lands include five state parks: Valley of Fire, Floyd Lamb, Spring Mountain Ranch, Old Mormon Fort, and Big Bend State Recreation Area (totaling 32,300 acres). These parks are managed for public recreation.

The management of state park lands is directed by NAC 407, which prescribes general regulations for state park lands, as well as specific regulations for individual park units, including Valley of Fire State Park and Spring Mountain Ranch State Park. These regulations generally limit use of these parklands to existing facilities, roads, and trails. The regulations prohibit activities which might result in degradation of existing natural features, including vegetation and wildlife.

d. Nevada Department of Transportation

The area covered by this plan under the jurisdiction of NDOT includes approximately 840 miles of roadway right-of-way of varying width; approximately 14,700 acres of material sites and other rights-of-way as mentioned above, in Clark County. For the purpose of this MSHCP, NDOT rights-of-way are broadly defined to include lands purchased or withdrawn from public lands for the use of highways, transportation facilities, material sites and their access roads. NDOT rights-of-way also include those areas of highway facilities that extend beyond the purchased or withdrawn property. This includes drainage or V-ditches constructed and regularly maintained by NDOT.

4.2.2.2 Local Government and Land Use Plans

Local governments include Clark County and the cities of Las Vegas, North Las Vegas, Henderson, Boulder City, and Mesquite. Additional local government agencies with management responsibilities over landholdings include Las Vegas Valley Water District;

Clark County School, Parks, Water, Flood Control, and Sanitation districts; Clark County Department of Aviation; and the Clark County Resource Conservation District. Clark County has developed a wetlands park master plan for the Las Vegas Wash, an approximately 2,300-acre area to be developed for habitat restoration, recreation, and education. There are an additional 6,300 acres used by local government for public works, government, and public facilities. An additional 175,000 acres (3.4 percent of the county) held by BLM is planned for disposal to private as well as state or local government interests.

a. Clark County Comprehensive Plan

The Clark County Comprehensive Plan describes land uses throughout the county, provides for regional services and facilities, and governs development within unincorporated areas. The land use element of the comprehensive plan includes numerous planning documents that provide guidance for land uses within communities throughout the county. Land use guidance has been prepared for the unincorporated towns/areas in the Las Vegas Valley (e.g., Lone Mountain, Sunrise Manor, Whitney, Winchester, Paradise, Enterprise, and Spring Valley) and for the outlying areas of the county (e.g., Laughlin, Virgin Valley, Indian Springs, Moapa Valley, and Mt. Charleston), as well as for rural areas outside the Las Vegas Valley including the northeast, northwest, and south portions of the county. All planning documents are generally updated every five years. Other adopted plans that are related to habitat conservation and management include:

Park and Open Space Plan covers the acquisition, expansion, improvement, operation, and maintenance of parks and facilities in unincorporated areas;

208 Water Quality Management Plan addresses municipal wastewater treatment, groundwater management, stormwater programs, the Las Vegas Wash, agriculture diffuse sources, and water quality standards;

Clark County Wetlands Park Master Plan contains a conceptual guide for the future development of the Clark County Wetlands Park and identifies the riparian and wetlands conservation prospects and recreational potential for the Las Vegas Wash;

Comprehensive Stormwater Management Plan (Phases I and 2) includes a valley-wide drainage inventory and recommends basic flood parameters; and

Clark County Federal Lands Element describes the role of the Federal land management agencies in the county, identifies issue areas, and establishes policies for the county relative to those issues for the majority of the Federal land agencies operating within the county.

b. Boulder City Comprehensive Plan

Boulder City's Comprehensive Plan includes individual plans and policies to conserve physical resources, coordinate future development, promote economic development, accommodate housing and transportation needs, and provide community services and facilities. Resource conservation and land use policies call for the protection of critical areas and maintenance of natural habitats, consistent with public needs, health, and safety.

c. Boulder City Conservation Easement

During the spring of 1995, Boulder City acquired approximately 107,500 acres of land within the Eldorado Valley, from the Colorado River Commission of Nevada, for the conservation of the desert tortoise. In July 1995, Clark County entered into an Interlocal Agreement with Boulder City to purchase a conservation easement on 86,700 of the total 107,500 acres acquired. In September 1995, Clark County made payment in the amount of \$300,000 to Boulder City for the purchase of the easement and Boulder City has officially annexed the easement lands through city ordinance. Approximately 22,500 acres of the Eldorado Lands Act lands that were transferred are currently not covered by the easement.

The lands are to be preserved and protected as partial mitigation for incidental take of desert tortoises and their habitat in other areas of Clark County. The conservation easement has specific restrictions on land uses (motorized vehicle activity, military maneuvers, grazing, flora and fauna collection, dumping or disposal, pets, physical improvements, firearms, etc.). Recreational use, discharge of wastewater, new utilities, fire suppression, and habitat enhancement or research activities are permitted as outlined in the easement. The County works with the City to ensure enforcement of the terms of the easement. The easement may be withdrawn after a period of 50 years subject to the status of the desert tortoise recovery.

d. City of Henderson Comprehensive Plan

The City of Henderson's Comprehensive Plan establishes goals and policies regarding city planning and management, land use, public facilities and services, transportation, residential neighborhood design, and environmental quality. Environmental quality policies include denial of permits for uses not in compliance with Federal, state, and local standards and cooperation with all environmental enforcement agencies.

e. City of Las Vegas General Plan

The City of Las Vegas General Plan includes long-, mid-, and short-range goals. The long-range plan sets general objectives and policies for the growth and management of the city to the year 2000. The mid-range plan defines more specific policies and programs for economic development, land use, housing, public services and facilities,

transportation, conservation, environmental hazards, parks and recreation, historic preservation, and the visual environment. Mid-range conservation policies and programmatic goals call for preservation of significant environmental resources. The short-range plan establishes three types of residential planning districts (urban, suburban, and rural) and sets planning standards and dwelling unit densities for each.

f. City of Mesquite General Plan

Mesquite is the county's newest incorporated city. Past development of the area was covered by the county's community plans.

g. City of North Las Vegas Comprehensive Plan Update 1998

The purpose of the North Las Vegas Comprehensive Plan Update 1998 is to provide the city with an assessment of the existing opportunities and constraints currently confronting this rapidly growing community and to provide an updated plan that will adequately address these issues and concerns through sound policies oriented to guide new development, revitalization, preservation, and municipal facility investment.

h. Las Vegas Valley Water District

The Las Vegas Valley Water District owns and manages a 180-acre parcel of land within the Las Vegas Valley known as the North Well Field. While the parcel is an integral part of the valley-wide potable water storage recovery and transmission system with numerous water production and distribution facilities located within its boundaries, it also supports native habitats including creosote-bursage, mesquite, and desert riparian habitat and listed and MSHCP Covered Species. A conceptual master plan was adopted in August 1997 and a community-based design process has been under way for the Las Vegas Springs Preserve project in the District's North Well Field. A habitat management plan for the Las Vegas bearpoppy was completed in December 1999 and two additional plans are under development: A biological resource management plan and a restoration plan for biological resources.

i. Private Lands

Land management for private lands is only restricted by local land use controls or state or Federal laws pertaining to specific activities. The cities of Las Vegas, North Las Vegas, Henderson, Mesquite, and Boulder City have comprehensive or master plans that provide policies and land use plans for existing and future uses and development. Clark County's Comprehensive Plan and land use and development plans provide direction for development in unincorporated communities and other areas of Clark County. The remaining private lands are zoned for low density residential (1 dwelling per 2 to 10 acres). No management specific to ecosystem conservation is assumed under any of the development categories, so no distinctions are made as to different land use types under this category. The potential conservation value of private open space is recognized;

however, to provide conservation value over the 30-year term of the permit, conservation agreements or easements would need to be entered into.

(1) Las Vegas Valley

The Las Vegas Valley comprises 246,000 acres (5 percent of the county) of non-Federal land and is the urbanized core of southern Nevada. The incorporated cities of Las Vegas, North Las Vegas, and Henderson within Las Vegas Valley comprise approximately 96,500 acres (1.9 percent of the county).

The majority of Clark County's population (96 percent) is concentrated in Las Vegas Valley, as is the region's urban development. The Las Vegas Valley is variously defined depending on whether urbanization or natural features are used as boundaries (e.g., the Las Vegas Valley hydrographic unit plus Boulder City covers about 1,571 square miles, or about 20 percent of Clark County). Outside the valley, communities are referred to as rural.

(2) Northeast Clark County

The Northeast Clark County land use planning area includes an area of approximately 2,700 square miles (1,728,000 acres, or 34.1 percent) of Federal, state, and local government and private lands in the county is bounded by Lincoln County to the north; the state of Arizona to the east; Lake Mead and urbanized Las Vegas Valley to the south; and the Desert National Wildlife Range to the west. It includes the unincorporated towns of Bunkerville, Glendale, Moapa, and Moapa Valley (including Logandale and Overton). In the unincorporated town areas, which comprise approximately 85,000 acres (including adjacent BLM lands), or about 1.7 percent of the county, there were 5,371 residents living in 1,784 dwellings in 1992. Approximately 9,600 acres had been developed for residential, commercial, industrial, or public service uses. It also includes the 21,000-acre Apex industrial/solid waste disposal area and 12,000 of the 52,000-acre Aerojet manufacturing site. Based upon current land use planning, a total of 15,800 acres of private lands and 58,700 acres of public lands are available for residential, commercial, industrial, or other development within the unincorporated cities area of northeastern Clark County (in addition to the 9,600 acres already developed). Future population could increase to 46,316. The remaining private lands are zoned for low density residential (1 dwelling per 2-10 acres).

(3) Northwest Clark County

The Northwest Clark County land use planning area includes 2,750 square miles (1,760,000 acres, or 35 percent) of Federal, state, and local government and private lands in the county and is bounded by Lincoln County, Nevada, to the north; Nye County, Nevada, and Inyo County, California, to the west; the South County land use planning area to the south; and urbanized Las Vegas to the east. Approximately 99 percent of the planning area consists of public lands or is within the Las Vegas Paiute Indian Reservation. Private land ownership comprises about 35 square miles (22,400 acres) and includes unincorporated communities around Indian Springs, Cold Creek, Kyle and Lee Canyons on Mt. Charleston, Mountain Springs, and the Calico Basin, Blue Diamond, Cactus Springs, and Blue Diamond Road areas of Red Rock. In 1994, there were an estimated 3,567 residents and 1,390 dwellings in these areas. There is a potential population increase of 9,535 residents with development of an additional 3,300 acres in these unincorporated community areas. The remainders of the private lands are designated for low density residential at 1 dwelling per 2 to 10 acres.

(4) South Clark County

The South Clark County land use planning area covers about 1,980 square miles (1,267,200 acres, or 25.0 percent) of Federal, state, and local government and private lands in the county. It is bounded by Las Vegas Valley on the north; the Colorado River to the east; and Laughlin and California to the south and west. Over 99 percent of the planning area is in Federal ownership, primarily BLM and NPS Lake Mead. The private lands are centered around the unincorporated town of Searchlight and communities of Cal-Nev-Ari, Goodsprings, Jean, Laughlin, Nelson, Sandy Valley, Sloan, and Primm. In 1993 there were 3,188 residents in 1,225 dwellings and a total of 2,841 developed acres in these communities. It is estimated that the maximum potential population is 16,804 residents with 24,644 developed acres under current land use designations.

4.3 Affected Environment and Impacts of the MSHCP and Alternatives

4.3.1 Biological Resources

4.3.1.1 Existing Conditions

Detailed information on habitats and wildlife in Clark County are presented in Volumes II and III of the MSHCP.

a. Threatened, Endangered, and Candidate Species

A number of species listed as threatened or endangered under Federal or Nevada Revised Statutes, and one candidate for Federal listing, occur in the planning area. Background information on each species is contained in Appendix B of the MSHCP. The status of these species is summarized in this section.

- Desert tortoise is a Federally listed threatened species for which a recovery plan and Section 10(a) Permit has been issued. It is currently covered under the DCP, and is proposed for coverage under the MSHCP.
- Yellow-billed cuckoo is a state listed endangered species that is transient, or a rare resident, and inhabits riparian habitat. It has been documented on the Virgin and Muddy rivers, and in Las Vegas Wash. There is no formal recovery or conservation plan for the species. It is proposed for coverage under the MSHCP.
- Southwestern willow flycatcher is Federally listed as endangered and protected in the State of Nevada. It is a transient or rare resident in Clark County, inhabiting riparian habitat. It has been documented on the Virgin and Muddy rivers, and in Las Vegas Wash. There is currently no formal recovery plan. The southwestern willow flycatcher is proposed for coverage under the MSHCP.
- The Moapa dace is Federally and state listed as endangered and only occurs in stream and spring outflows of the Muddy River. A Recovery Plan for the Rare Aquatic Species of the Muddy River Ecosystem has been developed. The Moapa dace is a High Priority Evaluation Species but is not currently proposed for coverage under the MSHCP.
- The woundfin and Virgin River chub are Federally and state listed as endangered and occur in the Virgin River (a separate population of chub that is state protected occurs in the Muddy River). A Recovery Plan for Virgin River Fishes has been developed.

Both are High Priority Evaluation Species but are not currently proposed for coverage under the MSHCP.

- Blue Diamond cholla is a Federal candidate for listing, and is state listed as critically endangered. It is endemic to the Blue Diamond Hills and only occurs in an area encompassing 300 acres west of Las Vegas. Of this habitat, 83 percent is within BLM lands. Take of the species without a permit is prohibited under the Nevada Revised Statutes. A Conservation Agreement for the Blue Diamond cholla is under development by the BLM, USFWS, NDF, and a private mining entity. The Blue Diamond cholla is proposed for coverage under the MSHCP.
- Las Vegas bearpoppy is listed by the State of Nevada as critically endangered. It is estimated that 25 percent of the species' range has been lost to urban development in the Las Vegas Valley. Of the remaining habitat, roughly 92 percent occurs under Federal jurisdiction. Take of the species without a permit is prohibited under the Nevada Revised Statutes. BLM has developed a Habitat Management Plan, and NPS manages for the species under their general management practices. Three parcels in the Las Vegas Valley contain genetically unique populations of bearpoppy that should be protected. A Memorandum of Agreement designed to facilitate development of range-wide conservation strategies for the bearpoppy is being circulated among various jurisdictions. This MOA will, in particular, facilitate development of strategies for long-term protection of the three Las Vegas Valley populations. The Las Vegas bearpoppy is proposed for coverage under the MSHCP.
- Threecorner milkvetch and sticky buckwheat are also listed by the State of Nevada as critically endangered. Both species occur primarily in sandy soils in Mojave desert scrub communities that fall under BLM, NPS, and private jurisdiction. Each species has approximately 20 known populations in Clark County. Take of either of these species without a permit is prohibited under the Nevada Revised Statutes. To date, no formal management plans have been developed. Both are proposed for coverage under the MSHCP.
- American peregrine falcon was removed from Federal endangered status in 1999. It is proposed for coverage under the MSHCP. The ESA requires the USFWS to monitor the status of delisted species for at least five years following delisting. If a delisted species is found to be at risk, the USFWS can review the best available information and if necessary invoke the emergency listing clause of the ESA and relist the species.

b. Other MSHCP Covered Species

Additional MSHCP Covered Species are described in detail in Appendix B. They include 4 mammals (3 bats and Palmer's chipmunk), 6 additional birds, 14 additional reptiles, 1

amphibian, 10 species of invertebrates (8 butterflies and two springsnails), 33 additional vascular plants, and 4 species of moss.

Additional MSHCP High Priority Evaluation Species are described in detail in Appendix B. They include 4 additional species of mammals, 1 bird, 3 reptiles, 1 amphibian, 4 fishes, and 13 invertebrates.

c. Other Biological Resources

The distribution of species, habitats, and ecosystems within Clark County is the result of the unique biogeography and climate of the region. The interface between ecoregions, climates, desert basins and the Colorado River watershed creates a dynamic topographic, hydrologic, and climatic region. A number of habitat types or ecosystems occur in Clark County, including alpine, bristlecone pine, mixed conifer, pinyon-juniper, sagebrush, blackbrush, salt desert scrub, Mojave desert scrub, mesquite/catclaw, and desert riparian. These ecosystems, which are described in detail in Appendix A, provide habitat for a variety of unique species, including those that are endemic to southern Nevada or are otherwise rare or sensitive. In particular, the Spring Range provides habitat for 27 species found nowhere else in the world.

Overall, Clark County provides habitat for at least 775 species of plants, 41 species of fish, 9 species of amphibians, 54 species of reptiles, 392 species of birds, and 142 species of mammals. Approximately 102 species, other than those identified as Covered Species, are evaluated in the MSHCP. These species are identified and discussed in greater detail in Appendix B. Higher elevation ecosystems (alpine, bristlecone pine, mixed conifer, pinyon-juniper, and sagebrush) provide for a majority of the MSHCP evaluated species occurring in Clark County. All fish species and a great number of bird species are located in water-related communities (desert spring, desert riparian, and lakes).

4.3.1.2 Impacts

Under any future scenario, biological resources will be subject to the loss of up to 113,000 acres of habitat on private lands in Clark County under the existing DCP and increased use of Federal and state land by the general public, particularly for recreation. Differences in the impacts of the alternatives are focused on the amount of habitat that would be lost (up to 145,000 acres in the MSHCP) and the degree of conservation that would be afforded to species and habitats under the different alternatives.

a. No Action**(1) Threatened, Endangered and Candidate Species**

Management and recovery of the desert tortoise would continue under the No Action Alternative, and the status of the species in Clark County should ultimately improve through continued implementation of the Desert Tortoise Recovery Plan and under the management direction of BLM, NPS, USFWS, NDOW, and other agencies with management authority or responsibility. The DCP would remain in place under the No Action Alternative, resulting in the loss of up to 111,000 acres of desert tortoise habitat on private lands, primarily in Las Vegas Valley. Clark County, the other DCP Applicants, and their partners, would continue to implement the minimization and mitigation measures outlined in the DCP.

Conservation plans for the southwestern willow flycatcher and the yellow-billed cuckoo have not been developed for southern Nevada. These two bird species would continue to be managed by the Federal management agencies, under general management direction for riparian and aquatic resources, and by NDOW, through funding received under section 6 of the ESA (assistance to states), or through the State's non-game budget.

The High Priority Evaluation fish species—Moapa dace, woundfin, and Virgin River chub—are all included within existing recovery plans, and interagency teams have been formed to develop recovery implementation plans for these species. The USFWS, NDOW, and others would continue to carry out actions to protect, enhance, and recover these species and their habitats through various interagency efforts, as funding permits.

The Las Vegas bearpoppy would continue to be managed primarily under the BLM Bearpoppy Habitat Management Plan, under NPS general management direction, and through implementation of the terms of the Memorandum of Agreement. The bearpoppy is a relatively high priority species for both agencies, but funding to carry out conservation actions for the species would be dependent upon the commitment of the agencies to continue to regard the species as high priority. Therefore, bearpoppy populations and habitats may improve in some years when Federal budgets are adequate to carry out the conservation actions in existing management plans. However, in years of decreased budgets, conservation actions may not be completed and Bearpoppy populations may experience local declines in status and habitat quality. Given budget and staffing limitations, NDF management would be fairly limited in scope, and likely limited to coordinating meetings of the Bearpoppy Working Group, and issuance of permits for take on private lands. Bearpoppy populations on private lands in the Las Vegas Valley would continue to decline under the No Action Alternative, and protection of vital bearpoppy populations within the Valley, as identified in the Bearpoppy MOA, would not benefit from of funding and coordination under the MSHCP.

The Blue Diamond Cholla Conservation Agreement should be signed in early 2000. BLM, USFWS, NDF, and the private mining entity, as signatories to the agreement, would commit to implementation of conservation actions outlined in the agreement to ensure the long term survival of the species, as funding and staffing levels permit. NDF would likely provide minimal assistance in carrying out the terms of the conservation agreement, given limited staff and funding levels.

Threecorner milkvetch and sticky buckwheat would be managed in accordance with available BLM and NPS funding and staffing, as the only land management agencies with jurisdiction over the habitat of the species. NDF, in administering the Nevada critically endangered plant law, would be responsible for overseeing management of the species on non-Federal lands, subject to the limitations of their existing budgets which provide only very limited funding for management of endangered species. These funding limitations would likely result in further reductions in the distribution of these species over time and would be subject to direct and indirect impacts without the additional conservation measures, funding, and adaptive management proposed as part of the MSHCP.

(2) Other MSHCP Covered Species

Conservation management for other MSHCP Species under the No Action Alternative would be dependent upon existing Federal and state agency management policies and actions. The Spring Mountains NRA Conservation Agreement provides the basis for conservation and protective management for the following MSHCP Covered Species (* indicates species endemic to the Spring Mountains, ** indicates species endemic to southern Nevada or the region, *** indicates species otherwise included in the conservation agreement, + indicates species under shared management authority with BLM Las Vegas District and Red Rock Canyon NCA):

MAMMALS

Palmer's chipmunk*
 Long-eared myotis***+
 Long-legged myotis***+

INVERTEBRATES

Dark blue butterfly*
 Spring Mountains icarioides blue*
 Mt. Charleston blue butterfly *
 Spring Mountains acastus checkerspot*
 Morand's checkerspot*
 Carole's silverspot*

Spring Mountains comma skipper*+
 Nevada admiral**+
 Southeast Nevada springsnail**+
 Spring Mountains springsnail**+

PLANTS

Clokey eggvetch**
 Rough angelica*+
 Charleston pussytoes*
 Rosy King sandwort*
 Clokey milkvetch*
 Spring Mountains milkvetch*+
 Clokey paintbrush**
 Clokey thistle*
 Jaeger whitlowgrass*
 Charleston draba*
 Inch high fleabane**
 Clokey greasebush*
 Smooth pungent greasebush**
 Pungent dwarf greasebush**
 Hidden ivesia*
 Jaeger ivesia**+
 Hitchcock bladderpod**
 Charleston pinewood lousewort**+
 Charleston beardtongue*
 Jaeger beardtongue**
 Clokey mountain sage**+
 Clokey catchfly*
 Charleston tansy*
 Charleston kittentails*
 Charleston grounddaisy
 Limestone violet**

The Conservation Agreement includes a suite of education, inventory, monitoring, restoration, and protection measures for these species. Without the MSHCP, additional funding and implementation support would need to be developed to assure that the conservation goals for these species are met.

Other existing agency programs providing conservation benefits to the MSHCP species include:

- BLM Mesquite Management Program: phainopepla, forked buckwheat

- BLM/NPS Bearpoppy Management: Las Vegas bearpoppy, sticky ringstem
- NPS spring inventory and restoration: relict leopard frog
- Red Rock Canyon NCA Sensitive Plant Management: Red Rock Canyon aster, alkali mariposa lily
- Nellis Air Force Range Sensitive Plant Management Program: white bearpoppy

The management programs for these species are subject to the availability of adequate funds and staff and do not carry the same level of priority as programs such as, for example, desert tortoise recovery. While policies to treat these species as sensitive and programs to perform, at minimum, monitoring of populations and habitat are included in current management, implementation of these programs can not be assured at current funding levels and interagency coordination has not been formalized. If the No Action Alternative were selected, inventory, monitoring, assessment of status, and identification and implementation of protective or restorative measures would proceed on a piecemeal basis, dependent upon each agency's funding availability and prioritization. Protection from the impacts of specific permitted projects or activities would remain; but deterioration of habitat quality, loss of habitat, reductions in population levels and distribution, and disturbances to individual species from natural causes and indirectly from otherwise legal activities and use of the land that has occurred historically would continue.

The following species are not the subject of specific agency management programs. Conservation management of these species and their habitats in the near future would be under general agency management direction. The range of some of these species, particularly the reptiles, overlaps with the desert tortoise and would therefore be afforded the incidental conservation benefits of desert tortoise management and recovery programs. However, over time, if these non-specific management programs did not provide adequate conservation benefits, the status of these species may decline. At this point, the species may warrant listing unless the responsible management agencies were able to quickly develop and fund management programs.

MAMMALS

Silver-haired bat

BIRDS

Vermilion flycatcher

Summer tanager

Blue grosbeak

Arizona Bell's vireo

REPTILES & AMPHIBIANS

Banded gecko

Desert iguana

Western chuckwalla

Western red-tailed skink

Large-spotted leopard lizard

Great Basin collared lizard

California kingsnake

Glossy snake

Western leaf-nosed snake

Western long-nosed snake

Sonoran lyre snake

Sidewinder

Speckled rattlesnake

Mojave green rattlesnake

PLANTS

White-margined beardtongue

Anacolia menziesii

Claopodium whippleanum

Dicranoweisia crispula

Syntrichia princeps

These species would not be afforded the adaptive management (inventory, monitoring, and status evaluation) or protective measures relative to species or habitat maintenance or enhancement measures identified in the MSHCP (see Appendix B for species specific conservation measures proposed). Without the supplementary funding and coordination afforded to species and other biological resources through the MSHCP and existing resource management agency efforts, adverse effects to the species may include loss of

habitats, degradation of habitat quality, disturbance to wildlife and reductions in population size and more restricted distributions.

(3) Other Biological Resources

Management of biological resources under the No Action Alternative would continue under the existing management plans, policies, and directions of BLM, USFS, NPS, USFWS, NDOW, NDF, and other agencies and entities with resource management authority. Funding and efforts would be placed on maintaining and enhancing game and nongame habitats, widespread and unique communities, and pockets of biodiversity, including riparian and spring systems, sand dunes, alpine and subalpine environments, and woodlands. Ongoing programs that would provide specific benefits to biological resources include the Spring Mountains NRA Conservation Agreement, Mesquite Management Plan, Muddy River, Virgin River, and Las Vegas Wash planning efforts, Red Rock Canyon NCA, and Lake Mead NRA management. Wilderness management would provide benefits to high elevation biological resources, and actions undertaken through the Desert Tortoise Recovery Plan to conserve habitat in the ACECs for the desert tortoise would benefit biological resources in low elevation communities. Under the No Action Alternative, funding and coordination under the DCP would enhance conservation efforts for desert tortoise and associated biological resources.

POTENTIAL WSA REDESIGNATION

With WSA redesignation, approximately 60 percent of the habitats in WSAs would be shifted from IMA to the more general MUMA conservation management categories. The largest shifts would occur within mountain shrub, pinyon-juniper, sagebrush, blackbrush, and Mojave desert scrub habitats as shown in Table 4-2.

**TABLE 4-2
MANAGEMENT CATEGORIES AND HABITATS AFTER WSA REDESIGNATION**

Category	IMA	LIMA	MUMA	Total
Blackbrush	11,500	25,600	47,700	84,800
Mesquite/catclaw	400	300		700
Creosote	80,90	500	143,700	225,100
Grassland		4,900		4,900
Juniper			1,900	1,900
Mojave scrub	33,200	1,500	70,600	105,300
Mountain shrub		9,800	4,400	14,200
Pinyon		3,100		3,100
Pinyon-juniper		6,300	5,600	11,900
Sagebrush	4,500	9,400	8,000	21,900
Salt desert scrub		700	700	1,400
Total	130,500	62,100	282,600	475,200

The only Federally listed species recorded within WSAs is the desert tortoise, which is covered under the DCP, thus any change in management would not affect conservation of the tortoise. The WSAs are mostly within the Spring Mountains NRA and Red Rock Canyon NCA and thus would be subject to either intensive land management or directed conservation measures if the WSA redesignation were to occur. Sensitive species that have been recorded in areas of WSAs that may be returned to multiple use management include Las Vegas bearpoppy, white-margined beardtongue, western chuckwalla, and Great Basin collared lizard. The habitat management plan for the Las Vegas bearpoppy would be implemented regardless of redesignation, however conservation management of the other species may be lessened if redesignation were to occur.

Of the 475,200 acres within the BLM WSA and ISA areas, with redesignation, 130,500 acres (27.5 percent) would remain as IMA managed lands, primarily as critical or conserved habitat for the desert tortoise; 62,100 acres (13.1 percent) would be managed as LIMA, within the Red Rock Canyon NCA; and 282,600 acres (59.5 percent) would be managed under existing multiple use BLM management objectives under the BLM Las Vegas RMP.

For BLM, the WSA designation imposes additional use restrictions and management requirements relative to other BLM multiple use managed areas. The BLM WSAs currently include management areas for wild horses and burros, allow grazing only by existing rights, and mining of valid mineral claims. WSAs are closed to new grazing or mining exploration and are avoidance areas for new roads or rights-of-way. Recreational uses are generally dispersed with OHV use restricted to designated roads and trails. Fire is managed at the lowest suppression level possible.

If WSAs are redesignated, approximately 60 percent of the areas under BLM jurisdiction would revert to multiple use management rather than intensive management to maintain wilderness values of the land. This may increase the level of land use intensity and range of uses from current management. Management of desert tortoise habitat under the provisions of the DCP would remain in effect after redesignation. Thus, no significant deterioration of habitat quality or direct or indirect unmitigated impacts to sensitive species should result. The cumulative area of habitat that would be affected (approximately 475,200 acres) is limited in area and comprised primarily of blackbrush and Mojave desert scrub, which are the most extensive ecosystems in Clark County.

The management policies and actions contained in the BLM Las Vegas RMP will enhance conservation on BLM lands, which is the largest Federal land jurisdiction in Clark County. The Las Vegas RMP designates approximately 950,000 acres as areas of critical environmental concern for special status wildlife and plants and to protect habitat. The habitats and their acreage are listed below.

<u>Habitat</u>	<u>Acres</u>
Blackbrush	140,300
Catclaw/mesquite	4,300
Creosote-bursage	621,700
Juniper	1,100
Lowland riparian	2,300
Mojave mixed scrub	169,400
Mountain shrub	15,000
Pinyon	750
Pinyon-juniper	6100
Sagebrush	3,600
Salt desert scrub	<u>2,600</u>
Total	967,150

In general, the RMP increases conservation management of habitats and species relative to existing management actions and increases the conservation potential on BLM lands. BLM has formally designated over 103,000 acres as ACECs from existing undesignated MUMA status lands for the conservation of Federally listed and special status wildlife and plants. It will also manage 870,000 acres for full ecological potential as bighorn sheep habitat and incorporate the MSHCP Covered Species as BLM special status species. Implementation of the measures and follow-up agreements with respect to desert tortoise recovery and habitat management are also included in the RMP.

b. MSHCP

(1) Threatened, Endangered, and Candidate Species

The MSHCP identifies those actions necessary to maintain the viability of natural habitats in the county for approximately 232 species residing in those habitats, including 4 species Federally listed as endangered (southwestern willow flycatcher, Moapa dace, woundfin, Virgin River chub), 1 threatened species (Mojave desert tortoise), and 1 candidate species (Blue Diamond cholla). While the MSHCP addresses all 232 species, it proposes that 79 of these species be covered by a Section 10(a) Permit for those species which are currently listed and prelisting agreements for those species which are not listed (Covered Species). All Covered Species are treated in this plan as though they are listed and are subject to the standards set forth in Section 10(a)(1)(B) of the Act and 50 CFR 17.32(b) and 17.22(b). By addressing the habitat needs of the Covered Species, the MSHCP benefits many of the other species that utilize the same habitats. In addition, the MSHCP establishes a process that may be utilized to assure the maintenance of the viability of the natural habitats of the remaining approximately 153 Evaluation and Watch List species described in the MSHCP.

Because five species inhabiting Clark County are Federally listed as threatened or endangered under the Endangered Species Act, the USFWS must consider the level of protection afforded these species when evaluating the participating agencies' and jurisdictions' application for a permit. Elimination of endangered species habitat in conjunction with short-term development may adversely affect the long-term viability of those species. Three of the six threatened, endangered, and candidate species in the county are covered by the MSHCP and 10(a) Permit in the initial stages of the MSHCP (Table 4-3). The table also shows the predominant ecosystem(s) associated with each species, the estimated acres of that ecosystem subject to disturbance under the proposed incidental take permit, and the level of significance of that estimated take based on the percentage of the total ecosystem within Clark County.

**TABLE 4-3
ESTIMATED LOSS OF HABITAT FOR FEDERAL
THREATENED, ENDANGERED, AND CANDIDATE SPECIES COVERED BY MSHCP**

Federally Listed Species	Associated Ecosystem (acres)	Estimated Take (acres)	Estimated Take (%)
Endangered			
Southwestern willow flycatcher	< 20,000	0	~0
Threatened			
Mojave desert tortoise	> 4,000,000	145,000	~3.6
Candidate			
Blue Diamond cholla	300	15	~5.0

As can be seen from Table 4-3, the estimated loss of habitat for Federally listed species due to the issuance of the permit is less than 5 percent of the habitat associated with the species. For desert tortoise, the remaining habitat is extensive and the loss from take would not substantially reduce habitat size or population levels. In addition, the MSHCP conservation measures are consistent with the recovery plan for the tortoise. Blue Diamond cholla has very limited habitat area and very few populations. Under the terms of the Blue Diamond Cholla Conservation Agreement, nearly 95 percent of the habitat area would be within BLM NCA lands. Little to no loss of southwestern willow flycatcher habitat would occur because a riparian habitat acquisition program would be implemented on the Muddy River in the first biennium and a similar program would be planned and implemented on the Virgin River in the near future. Habitat acquisition programs under way on both systems should largely preclude loss of flycatcher habitat in Clark County.

(2) Other Biological Resources

The actual amount of land disturbance affecting each of the species and/or ecosystem covered by the permit and MSHCP during the proposed 30-year term of the MSHCP

cannot be determined precisely. However, the maximum proportion of land disturbance allowed to occur can be estimated based on the total number of acres of each ecosystem in the plan area and the existing management status of those acres. Private and non-Federal lands, defined as Unmanaged Areas in the MSHCP, that are potentially subject to land disturbance under the proposed permit are shown in Table 4-4. As can be seen, the ecosystem most represented in the UMAs is Mojave desert scrub (285,000 acres), salt desert scrub (19,900 acres), and blackbrush (8,700 acres). The ecosystems with the greatest proportion potentially subject to land disturbance are desert aquatic (35.5 percent) and mesquite/catclaw (23.0 percent).

**TABLE 4-4
ACRES OF ECOSYSTEM, EXISTING LAND USES,
AND EXISTING HABITAT IN CLARK COUNTY**

Ecosystem	Clark County Total	UMA Total	Existing Urban	Existing Agriculture	Habitat in Clark County	Habitat in UMA	Percent of Habitat in UMA
Alpine	500	0	B	B	500	B	0
Bristlecone pine	15,800	1,000	B	B	15,800	1,000	6.3
Mixed conifer	56,400	1,500	B	B	56,400	1,500	2.6
Pinyon-juniper	281,700	4,200	B	B	277,800	4,200	1.5
Sagebrush	139,000	900	B	B	134,600	900	0.6
Blackbrush	831,500	8,800	B	B	824,700	8,700	1.0
Salt desert scrub	208,600	22,400	1,000	B	190,700	19,900	10.4
Mojave desert scrub	3,466,500	455,100	169,900	B	3,273,100	285,000	8.7
Mesquite/catclaw	34,500	15,900	400	10,500	21,700	5,000	23.0
Desert aquatic	21,600	10,000	300	3,700	16,900	6,000	35.5
Other		1,800					0.0
System Totals	5,056,100	521,600	171,600	14,200	4,812,200	332,200	6.9

For the most part, past urban land disturbance in Clark County occurred in Mojave desert scrub, with small amounts in salt desert scrub, mesquite/catclaw, and desert aquatic ecosystems. Past agricultural activities have affected primarily the mesquite/catclaw and desert riparian ecosystems.

Direct and indirect effects from multiple use activities may occur within Federal and state lands managed for uses other than conservation of biological resources. These areas are classified as Multiple Use Managed Areas in this plan. The maximum proportion of the county potentially subject to direct or indirect effects of land use and land disturbance activities (in areas classified as MUMA and UMA) varies from none for the alpine ecosystem to 54.0 percent for desert aquatic (Table 4-5).

**TABLE 4-5
LANDS POTENTIALLY SUBJECT TO DIRECT AND INDIRECT EFFECTS (percent)**

Ecosystem	Clark County Total Acres	Remaining Habitat in UMA	Remaining Habitat in MUMA	Total UMA + MUMA
Alpine	500	0	0	0
Bristlecone pine	15,800	6.3	0	6.3
Mixed conifer	56,400	2.6	0	2.6
Pinyon-juniper	281,700	1.5	6.6	8.1
Sagebrush	139,000	0.6	11.7	12.3
Blackbrush	831,500	1.0	33.6	34.6
Salt desert scrub	208,600	9.5	18.9	28.4
Mojave desert scrub	3,466,500	8.2	32.0	40.2
Mesquite/catclaw	34,500	14.4	23.1	37.5
Desert aquatic	21,600	27.7	26.3	54.0
Ecosystem Totals	5,056,100	6.5	29.2	35.7

(3) Other MSHCP Species

The other covered MSHCP species and programs that currently focus on conservation of these species are discussed under the No Action Alternative. The MSHCP alternative would provide assistance in the form of funding and coordination to the management agencies. Implementation of the conservation measures identified in the AMP will significantly enhance the likelihood that viable populations and habitats of these species will be maintained. Conservation plans and programs currently in existence or under development by the management agencies would be enhanced, and new programs would be developed and implemented through the MSHCP. Among the new programs that would be developed under the MSHCP are the riparian conservation plans for the Muddy and Virgin rivers, which focus on protecting and conserving species habitats through a program of land acquisition, exchange, or conservation easements with willing landowners. These programs would identify and negotiate opportunities for landowners to exchange property in the floodplain for less sensitive, upland that could be developed without adversely affecting the MSHCP species or other biological resources within the county.

c. Low Elevation Ecosystems MSHCP

(1) Threatened, Endangered, and Candidate Species

The Low Elevation Ecosystems MSHCP would provide coverage for Federal and state listed species and candidates, including desert tortoise, southwestern willow flycatcher, yellow-billed cuckoo, Blue Diamond cholla, Las Vegas bearpoppy, threecorner milkvetch, and sticky buckwheat, through funding and coordination of conservation measures in the low elevation habitats of these species. Programs described under the No

Action and MSHCP alternatives benefitting these species would be funded and coordinated under this alternative.

This alternative would not initially cover Moapa dace, woundfin, or Virgin River chub. While recovery plans have been completed for these species, explicit recovery and conservation tasks for Clark County are under development. The funding and coordination of the riparian site conservation plans for the Muddy and Virgin rivers under this alternative would provide measurable benefits to these species by increasing the amount of habitat for these species placed under Federal management status, and would likely result in their being proposed for permit coverage in the future.

(2) Habitats and Management

This alternative would cover the lower elevation ecosystems (blackbrush, salt desert scrub, Mojave desert scrub, mesquite/catclaw, and desert riparian). Lands supporting these ecosystems are primarily under the jurisdiction of BLM, NPS, NDOW, State Parks, and NDOT. Conservation measures proposed under the MSHCP that apply to these areas would be implemented fully.

Existing conservation plans and measures and actions for ecosystems at higher elevations above the blackbrush community would continue to be implemented but would not receive the benefits of funding and coordination of conservation activities through the MSHCP. Incidental take of high elevation species would not be covered under this permit and would require separate consultation and permits for individual take under Section 10 of the ESA. Habitats at high elevations in the Desert National Wildlife Range, Spring Mountains, and the Red Rock Canyon NCA, under the jurisdiction of the USFWS, USFS, and BLM, would not be included in the Low Elevation Ecosystems MSHCP. Thus, impacts to high elevation species would be the same as under the No Action Alternative.

Table 4-6 lists habitats and conservation management categories included under this alternative. Funding and coordination of conservation actions and adaptive management would primarily extend to habitat under the management of the BLM, NPS, and DNWR/NAFR (USFWS). Existing management programs and plans for low elevation species including the Boulder City Conservation Easement area, NPS Lake Mead NRA, BLM, Las Vegas District, NDOW, WSAs, and State Parks would be supported, thus increasing conservation benefits to species and habitats in these areas beyond what would be available under the No Action Alternative.

**TABLE 4-6
ECOSYSTEM AND MANAGEMENT ACRES
IN LOW ELEVATION ECOSYSTEMS MSHCP**

Ecosystem	Total of Habitat	IMA	LIMA	MUMA	Take (UMA)
Salt desert scrub	190,700	18,879	39,475	19,642	19,900
Mojave desert scrub	3,273,100	1,767,474	104,739	1,109,581	285,000
Mesquite/catclaw	21,700	8,593	B	7,986	5,000
Desert aquatic	16,900	5,188	B	5,695	6,000
Springs*	193	93	6	39	55

*Numbers indicate total number of springs, not acreage.

(3) Other MSHCP Species Covered

In addition to endangered, threatened, and candidate species, this alternative would cover approximately 16 of the 72 other species proposed for coverage under the MSHCP. Fifty species, primarily in high elevation ecosystems, would not be covered by the alternative but would continue to be managed under existing land use policies and agreements. Covered species included under the Low Elevation Ecosystems Alternative include the following:

BIRDS

Vermilion flycatcher
Phainopepla
Summer tanager
Blue grosbeak
Arizona Bell's vireo

REPTILES & AMPHIBIANS

Banded gecko
Desert iguana
Western chuckwalla
Relict leopard frog

VASCULAR PLANTS

Sticky ringstem
Alkali mariposa lily
Forked buckwheat
White-margined beardtongue
Parish's phacelia

These lower elevation species are more likely to be impacted, either directly or indirectly, from future development or intensive land uses occurring on private lands within Las Vegas Valley, along the Virgin and Muddy Rivers, and in other areas of Clark County. Implementation of this alternative would provide conservation benefits for low elevation species occurring on lands under Federal, state, or local jurisdiction. Educational and monitoring programs for lower elevation species not already covered under an existing conservation agreement would be undertaken in a comprehensive or cooperative interagency process. Unfunded or underfunded programs identified by BLM and NPS benefiting low elevation species would receive additional coordination and funding under this alternative.

d. Permit Only for Threatened, Endangered, and Candidate Species

(1) Threatened, Endangered, and Candidate Species

The primary focus of funding and coordination under this alternative would be species listed under Federal law and state statutes, specifically desert tortoise, southwestern willow flycatcher, yellow-billed cuckoo, Blue Diamond cholla, Las Vegas bearpoppy, threecorner milkvetch, and sticky buckwheat. Conservation activities under this alternative would therefore be focused in the habitats of these species, including the BLM desert tortoise ACECs, Lake Mead NRA, Red Rock Canyon NCA, in gypsum and sandy substrates, and in low elevation riparian areas.

This alternative would not initially cover Moapa dace, woundfin, and Virgin River chub. However, funding and coordination of riparian site conservation plans for the Muddy and Virgin rivers under this alternative would provide measurable benefits to these species, and would likely result in their being proposed for coverage in the future. These plans would also provide conservation benefits to the southwestern willow flycatcher and the yellow-billed cuckoo.

As can be seen from Table 4-7, the estimated loss of habitat for Federally listed species due to the issuance of the permit is less than 5 percent of the habitat associated with the species. This short-term loss is more than made up for by the long-term benefits of implementation of the MSHCP, as the result of increased conservation management of the majority of habitat for the species and through the implementation of the actions identified in the AMP.

**TABLE 4-7
ESTIMATED LOSS OF HABITAT
FOR THREATENED, ENDANGERED, AND CANDIDATE SPECIES**

Federally Listed Species	Associated Ecosystem (acres)	Estimated Take (acres)	Estimated Take (percent)
Endangered			
Peregrine falcon ¹	>400,000	20,000	<5.0 ²
Southwestern willow flycatcher	<20,000		~0
Threatened			
Mojave desert tortoise	>4,000,000	145,000	~3.6
Candidate			
Blue Diamond cholla	300	15	~5.0

¹Delisted in August 1999.

²Due to lack of eyrie sites.

(2) Habitats and Management

Funding and coordination of conservation actions under this alternative would be focused in the habitats of the listed species, including the Mojave desert scrub, salt desert scrub, desert riparian communities, and in gypsum and sandy substrates. These habitat types collectively cover a large portion of the County, thus, the benefits of conservation activities focused on listed species will extend across an extensive area. Focusing conservation activities in the BLM ACECs and riparian areas, which are important to listed species as well as many other species, will provide significant benefits overall to biological resources. These habitats will be protected and enhanced through increased conservation management. Listed species are not present within the high elevation communities; therefore, much of the Spring Mountains NRA, Desert National Wildlife Range, and Red Rock Canyon NCA would not receive the benefits of funding and coordination of conservation actions. Conservation management in high elevation communities would be dependent upon existing agency budgets, which may vary on an annual basis and may not always include sufficient funding for biological resource management.

(3) MSHCP Covered Species

The remaining 72 species proposed for coverage in the MSHCP would not be covered under this alternative. To a limited extent, species not covered by this alternative would benefit from measures within habitats shared with the listed species.

e. Alternative Permit Terms for the MSHCP

Either of the alternative permit terms would not change the types of conservation actions proposed under the MSHCP. Benefits to habitats and species and levels of impact would be essentially the same as the MSHCP. There would be some difference in the degree to

which MSHCP programs would be funded on a biannual basis. A greater level of funding would be available on an biennial basis for the 20-year permit, but more total funds could be expended during a 50-year permit. Intuitively it seems that greater conservation benefits might be realized by expending more total dollars over a longer period of time based on longer term monitoring efforts, however, it is not possible to distinguish specifically differences in conservation benefits among these alternatives.

4.3.2 Hydrology and Water Quality

4.3.2.1 Existing Conditions

Most of Clark County is hydrographically located within the Colorado River Basin but a portion falls within the Central Region. The Las Vegas Valley Basin is the major watershed and encompasses the urbanized portions of the valley.

Surface hydrology is marked by complex flow patterns in the alluvial fans of the valley, with areas of concentrated but frequently shifting flows (Figure 4-3). The dynamic drainage pattern, topography, and soils of the alluvial fan generally are more conducive to sheeting runoff than to channelized flow. Consequently, pronounced gullies and ravines rarely develop, and flash floods are a recurrent problem.

Las Vegas Wash is the only perennial stream in the valley and one of few in the entire county. The other primary surface waters include Virgin River, Muddy River and Muddy Springs, Colorado River, Lake Mead, and Lake Mojave. Las Vegas Wash is supplied with water from springs, runoff channeled during rains, and water from the Las Vegas Sewage Treatment Plant. Heaviest flow occurs during the winter months, when the most precipitation falls and evapotranspiration rates are lowest. Mean annual flow has been measured at 57.6 cubic feet per second, with a peak discharge of 6,510 cubic feet per second recorded in 1975 and a low flow of 4.8 cubic feet per second in 1960.

From the primary surface waters listed above, only Virgin River has a significant riparian area. Approximately 194 acres, this area covers 9 miles of the river's length. Vegetation within the riparian area consists primarily of tamarisk and saltgrass.

Subsurface hydrology in the valley is characterized by laterally moving groundwater and artesian aquifers. Groundwater recharge in Las Vegas Valley derives primarily from winter and spring precipitation, which represents 50 percent of the total annual precipitation. The moisture is stored in snowpack found in the Spring Mountains and Sheep Range, which reaches groundwater reservoirs by way of streams or direct infiltration in consolidated rock. Additional recharge stems from urban irrigation, treatment plant effluent, and some upward flow from deep artesian aquifers.

The Clark County Regional Flood Control District is developing a comprehensive, integrated flood control system for Las Vegas Valley and nearby areas. This system will include 21 detention basins, 1 debris basin, and over 100 miles of channels, pipelines, dikes, and levees. Many of the planned facilities are located on BLM land and, because of local flooding problems, are deemed essential to the protection of existing as well as new development on private land.

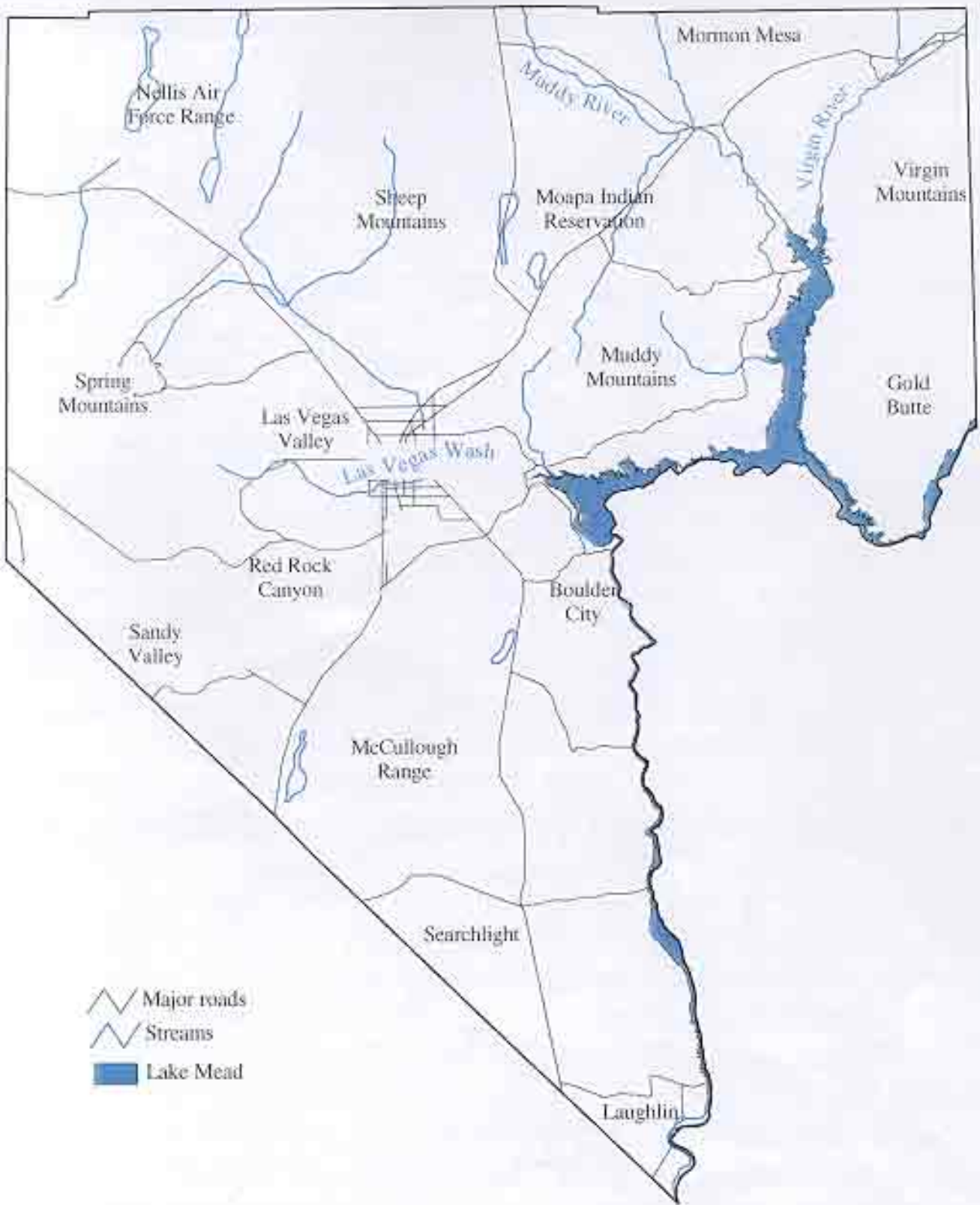
Water supplies in Clark County include the Virgin, Muddy, and Colorado Rivers, groundwater, and wastewater reuse. Water from the Colorado River is highly regulated, and the net depletion of the mainstream for all of Nevada is limited to 300,000 acre-feet per year, unless a surplus is declared by the Secretary of the Interior, in which case Nevada would be able to consumptively use more than 300,000 acre-feet per year. The Las Vegas Valley relies on the Southern Nevada Water Authority and groundwater from wells; current forecasts indicate that at the current rates of use, existing supplies will be able to meet local needs until the year 2013. Sewage and wastewater treatment needs are currently handled at facilities managed by the county and individual cities. Currently, three of the wastewater treatment plants in the Las Vegas Valley are being expanded. Clark County also is planning a central activated sludge treatment plant to process sewage from the unincorporated area.

4.3.2.2 Impacts

a. No Action

Under the No Action Alternative, water resources would continue to be developed concurrent with human population growth. If the No Action Alternative is selected, then Federal agencies would not receive targeted funding needed to implement specific agency actions that would benefit both species and water resources in Clark County, such as funding for conservation actions to protect riparian areas from grazing, reduce sediment flows, decrease stormwater runoff, and more effectively retain floodwaters. The land management agencies would continue to manage water resources to maintain Federal and state water quality standards, and to ensure the availability of water to meet management objectives for their trust resources.

Implementation of current agency management objectives for hydrological resources could result in adverse effects to biological resources. This could include the facilitation of a hopscotch pattern of urban development, which has the potential to result in inefficient uses of water resources. If the actions proposed to achieve these objectives have the potential to affect listed species, other than the desert tortoise, they would require the development of avoidance and minimization measures within the provisions of Section 7 or Section 10 of the ESA. Impacts to non-listed species and habitats on Federal lands would be evaluated on a project-by-project basis and could result in project modifications.



7 0 7 14 Miles
August 31, 1998



FIGURE 4-3
Surface Drainage Features

POTENTIAL WSA REDESIGNATION

To the extent that agency management direction provides for protection of watersheds and water features, removal of the WSA designation should not adversely affect water resources. If the WSA designations were removed, there would be potential for increased activities such as recreation, off highway vehicle use, grazing and mining in these areas that could affect water resources.

b. MSHCP

The MSHCP would result in funding assistance to the management agencies in implementing measures (described below) that would result in a net improvement in the water resources of Clark County. The measures would monitor, rehabilitate, and improve aquatic and riparian habitats on Federal lands. Mechanisms to reduce sediment flows, decrease stormwater runoff, more effectively retain floodwaters, and protect riparian areas from grazing would result in improved water quality. The MSHCP would provide funding and assist in coordination of specific agency actions and general management direction that would benefit both MSHCP species and water resources in the plan area. The range of management activities addressing water resources that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP.

c. Low Elevation Ecosystems MSHCP

Implementation of this alternative would result in funding assistance to management agencies in implementing measures which would monitor, rehabilitate, and improve aquatic and riparian habitats within the low elevation ecosystems primarily on BLM, NPS, state, and potentially some private lands. While the resource agencies have management policies in place to maintain hydrologic and water quality characteristics, there would be a benefit from the potential for increased funding for these activities through a Low Elevation Ecosystems MSHCP. No additional funding for high elevation ecosystems and species would be provided, therefore, these resources would be afforded management only through the existing Federal policies of USFS, USFWS, and BLM for high elevation ecosystems, through existing budgets.

Additional funding sources and means to provide coordination between agencies and to prioritize activities would be provided for springs, aquatic and riparian resources in lower elevation ecosystems, which are those most at risk to potential effects of increased human use and associated impacts. Specific measures beneficially affecting hydrological resources that would be coordinated and funded under a low elevation ecosystems MSHCP are those listed under BLM, NPS, USAF, and NDOT, in Section 4.3.2.2. In summary, the MSHCP would provide incidental benefits to hydrological resources and water quality by providing increased funding for coordination of conservation measures for the MSHCP species as compared to the No Action Alternative.

d. Permit Only for Threatened or Endangered and Candidate Species

This alternative would result in funding and coordination to benefit the seven listed and candidate species, including actions to monitor, rehabilitate, and improve any habitats used by these species, primarily on BLM, NPS, and USFWS lands. While many of these areas are under existing resource agency management direction to maintain hydrologic and water quality characteristics, there would be some incremental benefit from the potential for increased funding through actions benefitting listed and candidate species, particularly in assistance to the agencies in implementing conservation actions that would benefit listed species occurring in the Muddy and Virgin rivers, and in Las Vegas Wash (summarized in Section 4.3.2.2.).

Additional funding sources and means to provide coordination between agencies and to prioritize activities would not be available through this MSHCP alternative for springs, aquatic, and riparian resources not used by listed or candidate species (e.g., those of high elevation riparian systems, and low and high elevation seeps and springs). Many of these systems and the species that inhabit them would be at risk to potential effects of increased human use and associated impacts.

e. Alternative Permit Terms for the MSHCP

Water resources would benefit under this alternative under essentially the same circumstances as those of the proposed MSHCP (see actions listed under 4.3.2.2). The major differences would be in the length of time funding and coordination would be available through the MSHCP (20 or 50 years) and the quantity of funding available for actions benefitting the MSHCP species, and hence, water resources, as described in 3.3.5.

4.3.3 Air Resources**4.3.3.1 Existing Conditions**

Clark County, Nevada, has adopted the National Ambient Air Quality Standards (NAAQS). These standards include carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀), sulfur dioxide (SO₂), and lead (Pb). In addition, the State of Nevada has established its own ambient air quality standards for total suspended particulates (TSP), hydrogen sulfide (H₂S), and visibility.

Currently, air quality is generally considered acceptable if pollutant levels are less than or equal to established standards on a continuous basis, as is the case for those areas lying outside Las Vegas Valley. These areas are characterized by a sparse population and few pollution sources. However, the Las Vegas Valley presently exceeds standards for inhalable particulate matter (PM₁₀) and carbon monoxide. Consequently, the Las Vegas

Valley has been termed a Moderate-2 non-attainment area for CO and a serious non-attainment area for PM₁₀.

The primary contributor of PM₁₀ throughout the Las Vegas Valley is fugitive dust, both human caused and naturally occurring in the desert environment. The former is largely responsible for excesses of the PM₁₀ NAAQS within the Las Vegas Valley. The major sources of PM₁₀ emissions in the valley are paved and unpaved roads, construction activities, industrial/commercial facilities, motor vehicle exhaust, and disturbed vacant land. Carbon monoxide is produced primarily by incomplete fuel combustion in motor vehicles with the highest concentrations occurring near the sources (busy streets and freeways). The highest carbon monoxide measurements usually occur in the winter when winds are light and temperature inversions trap air near the ground surface from early evening through mid-morning, preventing pollutant dispersal. Table 4-8 identifies source categories and amounts of emissions within the Las Vegas Valley.

Although air quality outside the Las Vegas Valley is in conformance with the NAAQS, there are several primary stationary sources of pollutant emissions outside the Las Vegas Valley area. Two power-generating stations (the Reid-Gardner Power Plant in the northeastern part of the county at Moapa, Nevada, and the Mojave Generating Station in the far southern part of the county at Laughlin, Nevada) are the largest stationary source contributors of air pollution outside the Las Vegas Valley. According to 1994 data, the Reid Gardner Power Plant emits 2,398 tons of PM₁₀, 8,740 tons of oxides of nitrogen (NO_x), and 9,652 tons of sulfur dioxide (SO₂) annually. The Mojave Generating Station is the largest pollutant source with 2,505 tons of PM₁₀, 21,704 tons of NO_x, and 35,852 tons of SO₂ emitted annually.

4.3.3.2 Impacts

a. No Action Alternative

Air emissions are expected to increase in Clark County, with or without a MSHCP in place, as the human population grows, resulting in increased vehicle use and a more developed road network. All future development in Clark County is subject to existing air quality rules and regulations. However, without the MSHCP, future development in the Las Vegas Valley could become more fragmented and spread out. More circuitous transportation routes would develop in order to avoid sensitive habitat on private lands. If this were to occur, increased trip lengths could increase air quality emissions relative to those that would occur under the proposed action. This would be a potentially adverse indirect impact on air quality.

Under the No Action Alternative, a number of existing agency conservation measures that benefit air resources may not be fully funded in the future (these actions are summarized in MSHCP Alternative, below). Under the No Action Alternative, the indirect benefits on

TABLE 4-8
LAS VEGAS VALLEY ESTIMATED EMISSIONS FOR 1999
(tons/year)

Source Category	PM ₁₀	CO	VOC	No _x	SO ₂
Stationary point sources ^a	23,456	4,344	1,011	4,654	1,049
Stationary area sources ^b	–	2,198	12,650	1,546	–
On-road mobile sources ^c	1,770	156,777	20,317	22,564	–
Non-road mobile sources ^d	–	16,767	3,883	9,515	–
Totals	25,226	180,086	37,861	38,279	1,049

SOURCE: Clark County Health District, Hock, 1995; Clark County Comprehensive Planning, Cates, 1995; and Nevada Department of Environmental Protection, Branmueller, 1995.

^aGenerally, any stationary source for which individual records are collected and maintained. Point sources are usually defined as any facility which releases more than a specified amount of a pollutant.

^bAn aggregation of stationary sources too small, difficult, or numerous to classify as point sources.

^cAny moving source of air pollutants utilizing roadways such as automobiles.

^dAny moving source of air pollutants not utilizing roadways such as aircraft, locomotives, and construction equipment.

air quality of implementing these conservation measures may not be realized, if agencies budgets did not include funding for these measures.

Existing resource management agency plans include management activities that directly or incidentally improve air quality. For example, The BLM Las Vegas RMP would create ACECs that would include increased management prescriptions against disturbance and reduced intensity of uses in these areas that could indirectly benefit air quality. Additionally, the RMP includes the following provisions for air resources management:

- Ensure that the planning process addresses air quality considerations by incorporating objectives and actions into resource activity plans, such as Allotment Management Plans, Habitat Management Plans, and Watershed Management Plans. Where applicable, include “conformity” demonstration in site-specific activity plans and/or National Environmental Policy Act documentation.
- Permit only those activities on BLM-administered lands that are consistent with Federal, state, and local air quality standards and regulations. Require that all appropriate air quality permits are obtained before BLM approval of an action is granted. Where applicable, demonstrate how proposed management actions comply with local, state, tribal, and Federal air quality laws, regulations, and standards (Conformity; per 40 CFR 93.100 et seq.).

The Final EIS for the Las Vegas RMP identified the following air resource management effects:

- From Vegetation: Windblown particulates would be reduced through the improvement of protective ground cover.
- From Lands Management: Increases of 243 tons per year in airborne particulates in the Las Vegas Valley Non-Attainment Area compared to increases of between 907 and 2,384 tons per year in airborne particulates under the no action alternative. Increases of 1,750 tons per year of carbon monoxide compared to increases of 91 to 238 tons per year of carbon monoxide under the no action alternative. The RMP would also result in increases of 370 tons per year of VOC [volatile organic compounds] and NO_x and 10.2 tons per year of SO₂.
- From Recreation Management: Off-highway vehicle events, if held upwind of the Las Vegas Valley, would potentially contribute to short term further degradation of the air quality in Las Vegas Valley Non-Attainment Area.
- From Minerals Management: Sand and Gravel operation in Las Vegas Valley Non-Attainment Area would produce approximately 743 tons of PM₁₀ annually compared to particulate emissions of 900 tons per year under the no action alternative.

The Las Vegas RMP does not include programs or policies that would change existing Federal or state air quality rules and regulations. The final EIS for the Las Vegas RMP concludes that the RMP would be compliant with all Federal, state, and local air quality standards and regulations, including the Clean Air Act, with project-specific mitigation. Management plans for USFS, NPS, are also compliant and when implemented, should reduce the level of adverse air quality impacts.

POTENTIAL WSA REDESIGNATION

Removal of the WSA designation and conversion to general management practices would potentially increase the range and intensity of uses in these areas. More intense use of these areas could increase air emissions, which would be an indirect adverse impact of the redesignation. Most potentially ground-disturbing activities would require permits and additional environmental review subject to existing Federal and state air quality rules and regulations. Redesignation of the WSAs would not change existing Federal or state air quality rules and regulations. No adverse direct air quality impacts would result with redesignation of the WSAs. However, redesignation of the WSAs could result in indirect adverse air quality impacts.

b. MSHCP Alternative

The MSHCP would not change the projected growth rate in the county, nor would it directly alter air emissions in the county. By allowing incidental take for a range of species occurring in diverse habitats, issuance of the MSHCP permit would tend to decrease the amount of development fragmentation occurring in the county by enhancing the development potential of private lands which might otherwise be avoided due to the presence of sensitive species and habitat. More contiguous development could result in reduced trip lengths relative to those which would occur if development were spread over a larger area, thus resulting in reduced air emissions overall.

Therefore, although air emissions are anticipated to increase within Clark County, implementation of the proposed action is not expected to increase the rate of emissions growth and in fact may have a beneficial effect. All new development in Clark County must comply with the rules and regulations of the Clark County Health District Air Pollution Control Division.

The range of management activities addressing air quality that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP. The MSHCP does not include programs or policies that would change existing Federal or state management of air quality resources. The management directions of the various land management plans should directly or indirectly decrease the level of adverse effects on air quality through the programs described. Therefore, adverse air quality impacts are not anticipated with implementation of the proposed action, and air quality should

improve as a result of MSHCP funding and coordination of beneficial resource management actions.

CLEAN AIR ACT CONFORMITY COMPLIANCE

As noted in EPA's *Federal Register* notice, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans," Final Rule (40 CFR Parts 6, 51, 93, page 63221): "As implemented by this rule, Section 176(c) of the Act requires that a Federal agency ensure conformity with an approved state SIP for those air emissions that would be brought about by agency action, and that are subject to a continuing program responsibility of that agency. A Federal agency has no responsibility to attempt to limit emissions that do not meet those tests, or that are outside the Federal agency's legal control. Moreover, neither Section 176(c) of the Act nor this regulation require that a Federal agency attempt to 'leverage' its legal authority to influence or control non-Federal activities that it cannot practicably control, or that are not subject to a continuing program responsibility, or that lie outside the agency's legal authority. For example, neither Section 176(c) of the Act nor this regulation requires a Federal agency to withhold a Federal grant of financial assistance to a grant applicant that otherwise satisfies legal requirements in order to obtain assurances from the applicant with respect to the applicant's activities that the agency cannot practicably control, or that are beyond the agency's continuing program responsibilities, or lie outside the Federal agency's jurisdiction."

EPA's *Federal Register* notice, "Determining Conformity of General Federal Actions to State and Federal Implementation Plans," Final Rule (40 CFR Parts 6, 51, 93, page 63229), also states: "Actions that a Federal agency recognizes as clearly de minimus, such as actions that do not cause an increase in emissions, do not require a positive determination. Instead, such actions are exempt from the rule as provided in Section 51.853(c)(1)."

In the case of issuing an incidental take permit, the USFWS's action would not contribute any direct emissions in the non-attainment area. An increase in emissions would reasonably be expected as an indirect effect of issuing the permit, although as indicated above this may not be the case in Clark County due to the overall availability of private land. Nevertheless, the USFWS cannot condition the incidental take permit on the Applicants' ability to achieve attainment or to affect in any way indirect emissions. Because the USFWS would not be causing any direct emissions and, under EPA's final rule, cannot be held responsible for indirect emissions, the USFWS's proposed action is truly de minimus, under the meaning of EPA's final rule, and is therefore exempt from the rule's conformity requirements as provided in Section 51.853(c)(1).

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on air quality would be similar to those of the proposed MSHCP Alternative. As with the proposed MSHCP, the amount of development-related fragmentation in the Las Vegas Valley and other low elevation areas could be reduced through the take provisions of the permit issued for the plan, as conservation activities for the covered species would be focused on public lands rather than on non-contiguous parcels. More contiguous development should reduce vehicular traffic by concentrating development. The species conservation activities of BLM and other agencies responsible for management of low-elevation ecosystems, including those that provide indirect benefits to air quality would be the focus of funding and coordination under the MSHCP. Therefore, the low elevation MSHCP would be beneficial to air quality.

d. Permit Only for Threatened or Endangered and Candidate Species

Because of the limited focus of this alternative on actions to benefit listed and candidate species, the overall impacts would be similar to those of the No Action Alternative. The desert tortoise is the most widely distributed listed species in the County, and many of the conservation actions undertaken under this alternative would be focused on the tortoise. Similarly, the No Action Alternative retains the provisions of the DCP. The funding provisions of this alternative would be directed towards BLM and NPS actions in the ACECs, for conservation actions to benefit desert tortoise and Las Vegas bearpoppy. Additional conservation activities in Mojave desert scrub communities would focus on Blue Diamond cholla, threecorner milkvetch, and sticky buckwheat. Conservation activities focused on the other listed species would occur largely in aquatic and riparian habitats. Air quality should improve as an indirect effect of the conservation activities carried out by BLM and NPS under this alternative.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on air quality would be similar to those of the proposed MSHCP Alternative. The major differences would be in the length of time funding and coordination would be available through the MSHCP (20 or 50 years), and the quantity of funding available for actions benefitting the MSHCP covered species, which would provide incidental benefits to air quality.

4.3.4 Wild Horses and Burros**4.3.4.1 Existing Conditions**

Grazing by wild horses and burros occurs in many areas within the county, including lands managed by the BLM, NPS, and USFS. The Wild and Free-Roaming Horse and Burro Act mandates that wild horses and burros be protected from unauthorized capture,

branding, harassment, or death. Wild horse and burro herds are found in the Spring, Muddy, and Eldorado Mountains and in the Gold Butte region and in the vicinity of Red Rock Canyon. Portions of the Spring Mountains, Johnnie Territory, and Red Rock Canyon are managed by the USFS as the Spring Mountains NRA Territory. Burros occurring within Lake Mead NRA are managed under the Lake Mead NRA burro management plan. BLM has lead agency responsibility for other Herd Management Areas in Clark County. Currently, Clark County has six herd areas as shown on Figure 4-4. Wild horse and burro population and herd areas sizes are summarized in Table 4-9.

**TABLE 4-9
EXISTING WILD HORSE AND BURRO HERD MANAGEMENT AREAS**

Herd Area	Current Population Estimate		Current Herd Area Status	BLM Acres	USFS Acres
	Horse	Burro			
Eldorado Mountains	0	20	HMA	15,600	
Gold Butte	0	72	HMAP	177,900	
Johnnie Territory	49	37	HMA	177,700	34,900
Muddy Mountains	2	99	HMA	77,000	45,400
Spring Mountains	110	50	HMA	297,700	
Red Rock Canyon	61	50	HMA	197,900	
Amargosa	0	0	HMA	8,500	
Total	222	328		952,300	80,300

SOURCE: BLM, Supplement to the Final Las Vegas RMP and EIS, 1998.

The wild horse population is estimated at approximately 222 animals within Clark County. The number of wild burros is estimated at approximately 328. Burros inhabit the lower desert areas throughout the year, whereas wild horses are found at lower elevations during the winter, then retreat to the mountains during the summer months. Urban expansion and increased recreational use of Red Rock Canyon National Conservation Area and Lake Mead National Recreation Area are impacting wild horse and burro herds in the Spring Mountains and the Muddy Mountains Herd Management Areas.

4.3.4.2 Impacts

a. No Action

Under the No Action Alternative, wild horses and burros would continue to be managed by BLM, USFS, and NPS under management direction set forth in the the BLM Las Vegas RMP, SMNRA GMP, and Lake Mead NRA management plans. The Las Vegas RMP includes the following measures directed at managing wild horse and burro herds to benefit desert tortoise and other Covered Species.

- Use of desert tortoise ACECs by wild horse and burro herds is not allowed.

- Establish Appropriate Management levels within Herd Management Areas (Table 4-10).

**TABLE 4-10
FUTURE WILD HORSE AND BURRO HERD MANAGEMENT AREAS**

HMA	Initial Herd Size	Estimated AML
Eldorado	75 burros	0 burros
Gold Butte	600 burros	98 burros
Muddy Mountains	29 horses	0 horses
	110 burros	50 burros
Red Rock	50 horses	50 horses
	130 burros	50 burros
Johnnie	125 horses	50 horses
	300 burros	75 burros
Spring Mountains	110 horses	47 horses
	50 burros	21 burros
Amargosa	0	0
Ash Meadows*	0	0

*Ash Meadows HMA was inadvertently left out of previous planning documents.

- Limit utilization of current year's production by all herbivores on key perennial forage species within Herd Management Areas to 50 percent for grasses and 45 percent for shrubs and forbs.
- Develop and maintain dependable water resources, consistent with BLM policy for wilderness management, to allow more even distribution of horses and burros throughout the Herd Management Areas.
- In Herd Management Areas not constrained by desert tortoise restrictions, manage for healthy, genetically viable herds of wild horses and/or burros in a natural, thriving ecological balance with other rangeland uses
- Use by wild horses and burros will not be allowed in that portion of the Gold Butte Herd Management Area that overlaps with the desert tortoise Gold Butte Area of Critical Environmental Concern.
- Adopt Herd Management Area boundaries to existing 1971 locations; this will increase the size of some Herd Management Areas but will not decrease any in size.
- Wild horses and burros that become problem animals or traffic hazards on Nevada State Routes 159 + 160 or in urban areas will be removed as soon as possible.

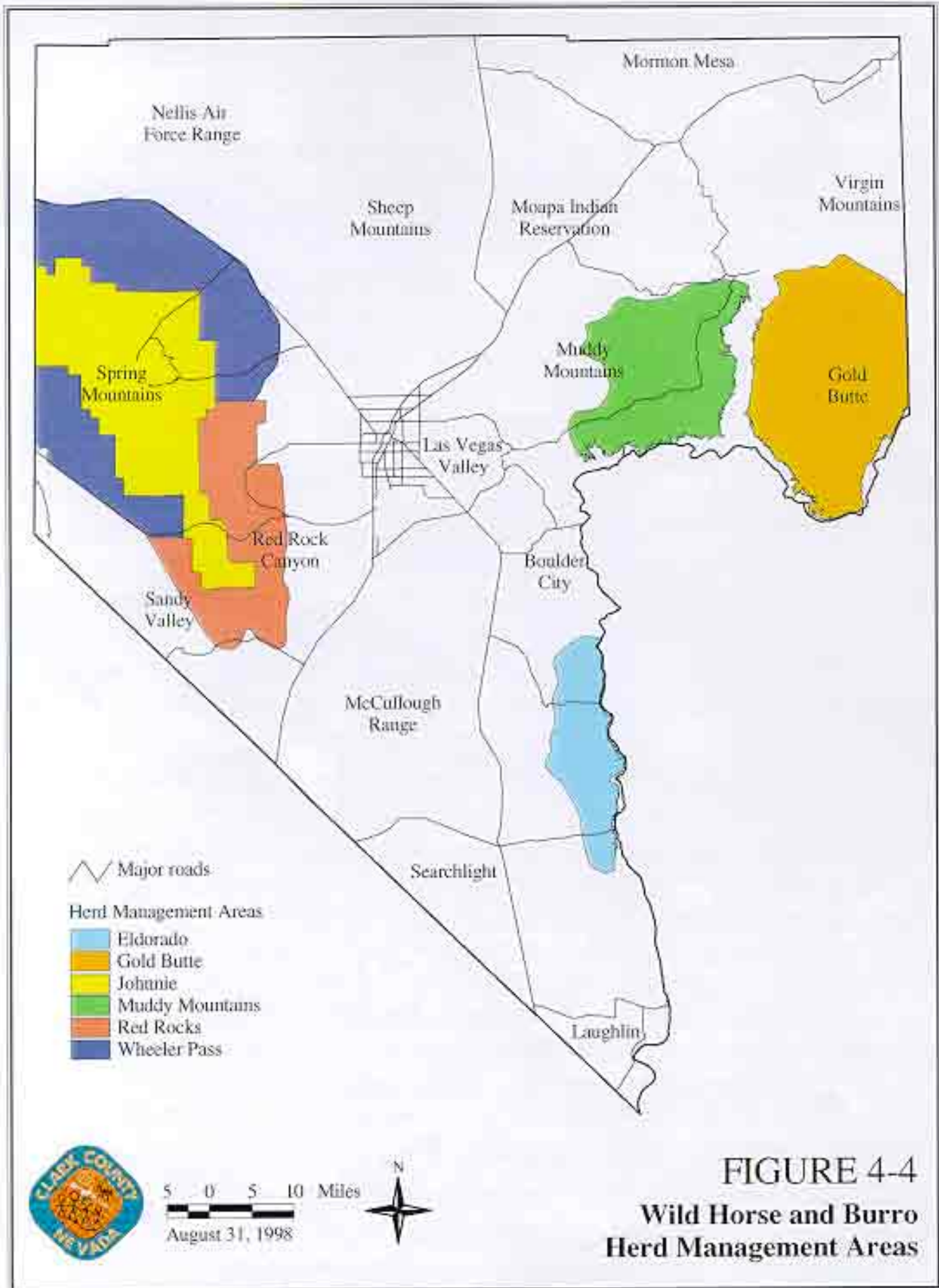


FIGURE 4-4
Wild Horse and Burro
Herd Management Areas

- Wild horses and burros will be scheduled for removal as expeditiously as possible from fenced private lands within the planning area, after a request is made by the private landowner and reasonable efforts to restrict the animals from private property have failed.
- Wild horses and burros will be removed when animals are residing on lands outside the Herd Management Area or when the Appropriate Management level is exceeded.
- Construct underpasses or other structures within highway rights-of-way to allow safe passage of wild horses and burros. Appropriate locations will be determined by BLM and the Nevada Department of Transportation in coordination with affected interests.

In the Spring Mountains NRA, the USFS continues to manage wild horses and burros in a thriving ecological balance with long-term ecosystem health. Appropriate management levels will be based upon limiting factors, including available water and forage; area sensitivity; and animal conditions. Once AMLs are achieved the USFS will manage for adoptable wild horses and burros. Wild horses and burros will be excluded from areas outside their territories, riparian areas, highways, and other sensitive areas or areas where their presence poses a threat to public safety or themselves. Gather methods will be employed to sustain AMLs and reduce population growth. Populations will be managed to exhibit sustainable sex ratios and age distributions, and selection will be used to promote historic color and confirmation traits to increase adoptability.

The NPS manages burros in the Lake Mead NRA to the extent that their presence does not result in environmental change, and so that natural, cultural, and recreational resources are protected. Burros are being removed from areas containing sensitive resources, including critical habitat of the desert tortoise. Areas where burros are allowed to remain are being closely monitored to assure minimal impacts from burro use. The Eldorado Mountains HMA population, and adjacent NPS administered lands, is targeted at zero burros in accordance with the Las Vegas RMP and the Lake Mead NRA Burro Management Plan (1995).

POTENTIAL WSA REDESIGNATION

Redesignation of WSAs to mixed use management would probably not change agency policies or management of wild horses and burros. The management would still be directed towards sustainable resources, protection of water sources and specific protection for populations of sensitive species.

b. MSHCP

Wild horses and burros pose a threat to the MSHCP species through competition for forage with other herbivores, competition for water sources, and damage to grazing land

and water sources from trampling. The proposed MSHCP would fund and coordinate agency management actions to protect sensitive habitat and species from the indirect impacts of wild horses and burros. These management actions would allow for the recovery of vegetation and threatened species due to overgrazing. In the long term, these measures would improve the overall forage conditions and water quality and quantity within Herd Management Areas. The range of management activities addressing wild horses and burros that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP.

All conservation activities undertaken through this alternative would be in compliance with the existing management policies of the BLM and NPS.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on wild horses and burros would be similar to those of the proposed MSHCP. Higher elevation areas within HMA's total about 289,547 acres or about 21 percent of the total herd area. This is predominately within the Johnnie/Spring Mountains/Red Rock HMA's in the Spring Mountains and within Gold Butte (2,230 acres). Management of these higher elevation HMA's under USFS jurisdiction has already been established under the SMNRA GMP and CA, and the Las Vegas RMP.

Wild horse and burro management at low elevations would continue through the Las Vegas RMP and Lake Mead NRA management plans. The Low Elevations Ecosystems MSHCP would supplement budgets and coordinate conservation actions with BLM and NPS, as discussed under the MSHCP Alternative to accomplish management of wild horses and burros to benefit the covered species. All conservation activities undertaken through this alternative would be in compliance with the existing management policies of the BLM and NPS.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on wild horses and burros would be similar to those of the No Action Alternative. Many of the conservation actions undertaken under this alternative would be focused on protection of the desert tortoise. Similarly, the No Action Alternative retains the provisions of the DCP which focus management on conservation of desert tortoise habitat on Federal lands. The funding provisions of this alternative would be directed towards BLM and NPS actions in the ACECs, particularly for conservation actions to benefit both desert tortoise and Las Vegas bearpoppy. Additional conservation activities in Mojave Desert scrub habitats would be focused on Blue Diamond cholla, the threecorner milkvetch, and sticky buckwheat. Conservation activities focused on the other listed species would occur largely in aquatic and riparian habitats. All conservation activities undertaken through this alternative would be in compliance with the existing management policies of the BLM and NPS.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on wild horses and burros would be similar to those of the proposed MSHCP. The major differences would be in the length of time funding and coordination would be available through the MSHCP (20 or 50 years) and the quantity of funding available for actions benefitting the MSHCP covered species. All conservation activities undertaken through this alternative would be in compliance with the existing management policies of the BLM and NPS.

4.3.5 Cultural and Paleontological Resources

4.3.5.1 Existing Conditions

a. Cultural Resources

Cultural resources are tangible remains of past human activities. Clark County encompasses a unique region, being located at the interface of three distinct geographical zones:

- Colorado Plateau
- Mojave Desert
- Great Basin

Each zone shows evidence of the distinctive cultural groups who adapted to the natural resources of the area.

Prehistoric Native Americans called hunter-gatherers collected plant resources and hunted seasonally abundant game. Specific artifacts and features indicative of the kinds of activities that prehistoric Native Americans employed in their methods to acquire food and resources, such as manos and metates used to grind seeds and nuts, knives, and sharpened stone flakes, are found in archaeological sites that record these procurement and processing activities. Such hunter-gatherer occupations in southern Nevada begin about 11,000 B.C., as documented by the prehistoric site of Tule Springs in the northwest Las Vegas Valley, and in the rock-shelters and caves found in the Muddy Mountains and the Arrow Canyon Range.

Other types of prehistoric sites include stone features such as rock rings and rock art locales. Rock art panels are common in certain areas, generally near water sources, along game trails, or near resource procurement locations. Keyhole Canyon is a site within Clark County that was fenced for protection and signed for interpretation

Historic uses of southern Nevada began with the exploration of routes such as the Old Spanish Trail/Mormon Road (1844 to the early 1900s). Historic formations from mining sites, ranches, and quarries are found within Clark County. These historic resources document the adaptations and technological changes employed in this region.

b. Paleontological Resources

Paleontological resources (fossils) are remains or traces of plants and animals that existed during the 600-million-year geological history of southern Nevada. A minimal amount of paleontological research has been conducted in this region.

A recent paleontological survey on the Eglinton Escarpment (in the north Las Vegas Valley) discovered one significant paleontological site. This site contained numerous specimens, including a camel jaw. In 1991, construction activities along the Kern River pipeline uncovered a mammoth tusk and tooth in this escarpment. Other potential areas for paleontological finds are the dry lake beds and shorelines of Pleistocene-age Ivanpah and Roach Lakes, located southwest of Las Vegas.

Trace fossilized imprints in limestone sediment at the north end of the Arrow Canyon Range are considered evidence of 20 million year old large birds. The complete skeleton of a 20,000-year-old Shasta ground sloth was discovered in May 1991 near the California-Nevada border.

Invertebrate fossils occur in several limestone formations, including the Spring, Dry Lake, Arrow Canyon, Las Vegas, Mormon and Virgin Mountain ranges. Fossilized trees in the form of petrified wood are found at the base of the Aztec Sandstone in the Chinle Formation outcrops; the east base of the Red Rock Escarpment, and in the Muddy Mountains adjacent to Valley of Fire State Park.

4.3.5.2 Impacts

a. No Action

The No Action Alternative would continue existing Federal and state management of cultural or paleontological resources. Known eligible archaeological sites in the BLM-managed lands are protected under the National Historic Preservation Act. Protection is provided paleontological resources under existing Federal or state management policies only when a Federal project accidentally discovers an important find.

The Las Vegas RMP includes ACEC designations for archaeological, historical and paleontological properties within BLM managed lands. It also includes increased management prescriptions against disturbance and reduced intensity of uses in these areas which would directly benefit conservation of cultural and paleontological resources and may also benefit the conservation of habitats and wildlife in those areas. The Las Vegas

District manages nearly 200 sites that are eligible for inclusion, or are currently included on the National Register of Historic Places.

The SMNRA includes goals and objectives for protection of cultural and heritage resources, including maintaining a cooperative relationship with local tribes, resource interpretation, and protection of cultural and resource resources from destruction, adverse effects, and vandalism. As presently known, the USFS has management authority for approximately 200 archaeological sites on the SMNRA. The NPS has similar management direction for cultural resources, and has management authority for various sites within the LMNRA that are eligible for inclusion, or included on the National Register.

Unknown impacts may occur to cultural or paleontological on private lands in Clark County as the result of land disturbance activities associated with development or otherwise lawful activities. Based on the density of cultural resources estimated by BLM to occur on potential disposal lands (2,100 potentially eligible sites on 1,022,314 acres), it could be expected that approximately 298 sites potentially eligible for the National Register of Historic Places might be affected by land disturbance in Clark County during the next 30 years..

POTENTIAL WSA REDESIGNATION

Removal of WSA designations and conversion to general agency management practices would potentially increase the range and intensity of use in these areas. However, most potentially ground-disturbing activities would require permits, which would include review of impacts to sensitive cultural and paleontological resources.

b. MSHCP

The MSHCP does not include programs or policies that would change existing Federal or state management of cultural or paleontological resources. Existing programs include locating and identifying sites, and managing known cultural or paleontological sites. Take authorizations under the proposed MSHCP would only be granted to otherwise lawful activities, which would still be subject to Section 106 of the National Historic Preservation Act. Thus there would be no difference in impacts whether the MSHCP were implemented or not. Funding and coordination of management activities for covered species and their habitats under the MSHCP, in some cases, may benefit the species of concern, particularly if activities are undertaken in covered species habitats that are also rich in cultural resources. For example, protection, restoration, and management programs put in place through the MSHCP in the desert tortoise ACECs, mesquite woodlands, and along the Muddy and Virgin River corridors, should also provide benefits for cultural resources.

The potential impacts to cultural or paleontological resources on private lands in Clark County resulting from land disturbance activities under the MSHCP would be essentially the same as those under the No Action Alternative.

Most, if not all, future ground disturbance activities associated with habitat restoration or enhancement will occur on Federal lands. These activities will require review under Section 106 for potential impacts to cultural resources, and incorporate appropriate avoidance or mitigation measures.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on cultural and paleontological resources

would be similar to those of the proposed MSHCP, except that funding and coordination of management activities for covered species and their habitats at higher elevations would not be available through this alternative. Cultural resources occurring within the habitat of the covered species on the SMNRA and higher elevation lands under BLM management would therefore not receive the incidental benefits associated with covered species management under the low elevation ecosystems MSHCP.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on cultural and paleontological resources would be similar to those of the proposed MSHCP, in that cultural resources occurring in the desert tortoise ACECs, Las Vegas bearpoppy and Blue Diamond cholla habitat, in the sandy substrates associated with the occurrence of the threecorner milkvetch and sticky buckwheat, and in riparian areas supporting habitat for southwestern willow flycatcher and yellow-billed cuckoo, would receive the incidental benefits associated with funding and coordination of management activities through the Threatened, Endangered, and Candidate Species MSHCP. Cultural resources occurring at high elevations and in other areas where non-listed, non-covered species do not occur (e.g., mesquite woodlands) would receive no incidental benefits, unless additional species were to become listed.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on cultural and paleontological resources would be similar to those of the proposed MSHCP, in that cultural resources would receive the incidental benefits associated with covered species management through funding and coordination under the MSHCP. Funding levels and therefore, intensity of management, would vary under shorter or longer permit terms.

4.3.6 Recreation

4.3.6.1 Existing Conditions

Public lands within Clark County contain ecologically diverse landscapes that include mountains, dry lake playas, Joshua tree forests, sand dunes, sandstone bluffs, and riparian areas. This diversity offers outstanding opportunities for casual and organized recreational activities. Demand for recreational opportunities is increasing due to the expansion of the Las Vegas metropolitan area.

Regional sites are those composed primarily of Federal and state agency lands and serves the dual function of protecting resources and providing recreation opportunities. Such sites include Lake Mead National Recreation Area, Red Rock Canyon National Conservation Area, Spring Mountains National Recreation Area, Desert National Wildlife Range, Valley of Fire State Park, and Overton Wildlife Management Area (Figure 4-5). As shown on Table 4-11, 1.8 million acres of Federal land and state parks are designated within Clark County.

**TABLE 4-11
REGIONAL PARKS AND RECREATION AREAS WITHIN CLARK COUNTY**

Recreation Area	Acreage
Desert National Wildlife Range	852,000
Red Rock Canyon National Conservation Area	197,900
Lake Mead National Recreation Area	454,300
Spring Mountains National Recreation Area	276,000
Valley of Fire State Park	32,300
Overton Wildlife Management Area	14,100

The recreational opportunity spectrum includes five classes based upon an areas setting and activities:

Primitive or semi-primitive non-motorized use is characteristic of areas designated for Wilderness, and WSAs. These areas are typically roadless, of rugged terrain, and lack ready access. Uses include hiking, camping, rock climbing, nature study, and hunting.

Semi-primitive motorized use is typical in areas adjacent to WSAs and Wilderness. Uses are similar to those of the non-motorized areas but include OHV touring on roads, trails, and dry washes.

Roaded natural areas comprise the majority of BLM's jurisdiction as well as portions of the Spring Mountains NRA, Red Rock Canyon NCA and Lake Mead NRA. Visitor use can be moderate to high with specific opportunities for picnicking, hiking, OHV touring,

free play, organized events, camping, and interpretive activities. Vehicle use is restricted to approved roads within the Lake Mead NRA.

Rural recreational areas typically have some ambient human presence; developed recreation facilities and the natural environment is less important. Visitor use is moderate to high with competitive games and events, spectator sports, OHV touring, free play, and events. Sunrise Mountain/Rainbow Gardens, Nellis Dunes, and organized recreational shoreline areas along Lake Mead are examples of this level of recreation.

Urban sites are those within the jurisdiction of the local governments and allow for playing fields, tennis courts, swimming pools, stables, golf courses, and arenas.

Casual or dispersed recreation, the principal opportunities available to visitors within the Clark County, requires a variety of sites yet need no special facilities. These opportunities include automobile touring, hiking, hunting, fishing, primitive camping, backpacking, birdwatching, photography, rock climbing, caving, and competitive and non-competitive off-highway vehicle events. Water-based recreation is limited primarily to Lakes Mead and Mojave on the Colorado River and Overton Arm, and a few artificial ponds such as the one in Floyd R. Lamb State Park.

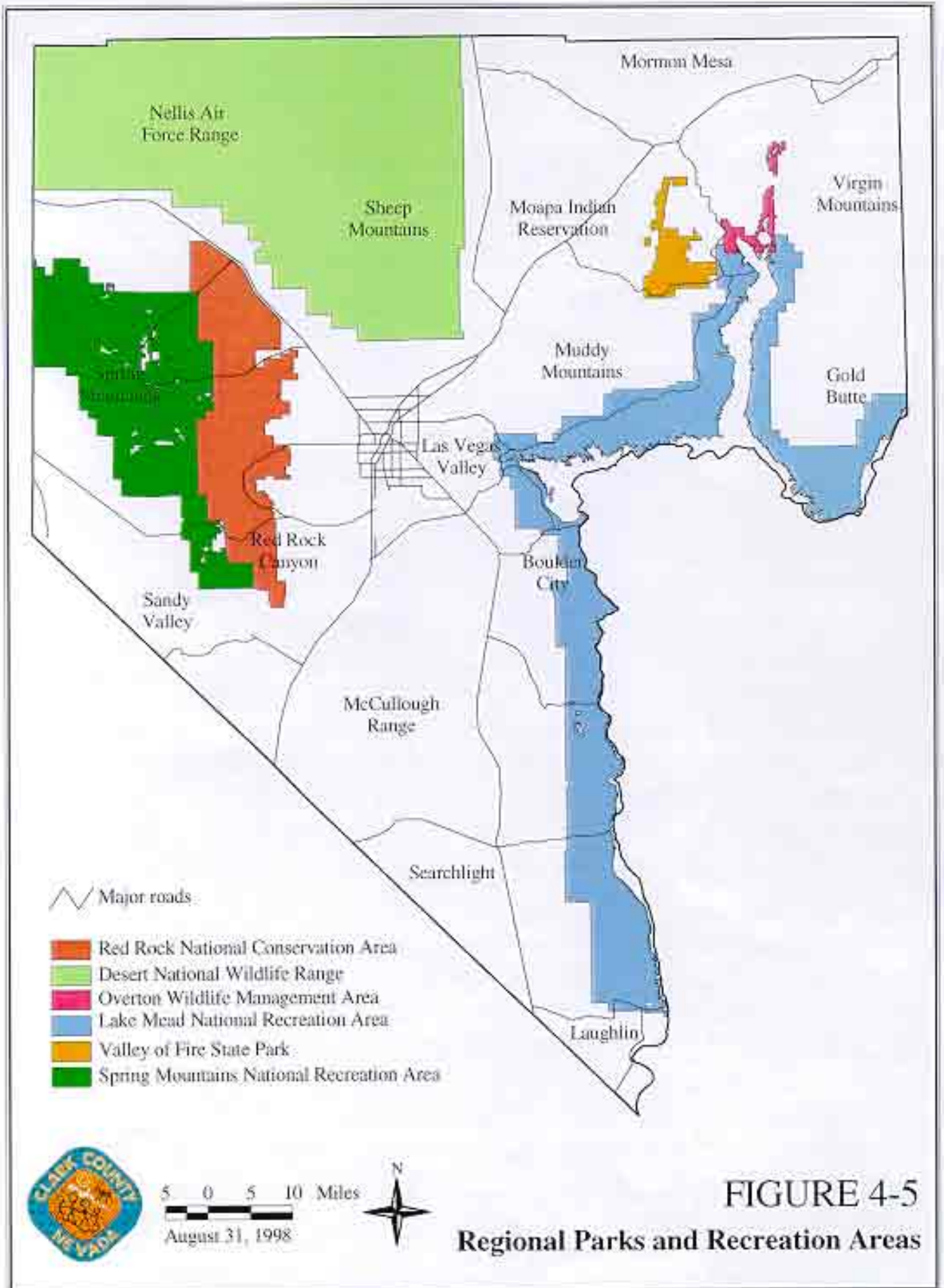
Organized competitive events on public lands include model airplane fly-ins, model rocketry launches, dog field trails, horse endurance rides, and all-terrain bicycle events. Off-highway vehicle use accounts for the greatest single recreational use of the public lands.

4.3.6.2 Impacts

a. No Action

Outdoor recreation is expected to increase commensurate with the increase in the population of Clark County. Recreational pursuits would continue under existing recreation management guidelines, subject to specific management in ACECs, SRMAs, desert tortoise critical/conserved habitat, restrictions in wilderness areas and within the Spring Mountains NRA, Red Rock Canyon NCA, and Lake Mead NRA. Overall recreational opportunities would not diminish as a result of urban development in the Las Vegas Valley or elsewhere on private lands in Clark County. Urban recreation opportunities would increase as local governments develop park infrastructures to match demands of the growing population.

Implementation of the Las Vegas RMP will result in long-term managed recreation activities and the resolution of conflicts between users and resource values on public lands. The BLM will continue to manage areas of recreational importance including Red Rock Canyon NCA, Virgin River Recreation Lands, Las Vegas Dunes Recreation Lands,



two back country byways, and several caves. These areas would provide various recreational opportunities including hiking, mountain biking, climbing, and automobile and off-highway vehicle touring. In addition, the BLM's Clark County and Spring Mountain Special Recreation Management Areas would be managed for a wide variety of recreation opportunities, in particular, off-highway vehicle use. The Stateline Extensive Recreation Management Area, which encompasses most of the lands not included in the Red Rock Canyon NCA or the Special Management Areas, would also be managed to provide a wide variety of recreation opportunities. All BLM recreation management would emphasize resource protection, in particular, protection of habitat in the desert tortoise ACECs, and conservation management for other species of concern. Recreational opportunities in some areas on public lands would be restricted or curtailed by species and habitat protection needs.

The USFS would continue to provide a range of recreational opportunities to the public in the SMNRA, both concentrated at developed sites and dispersed throughout the landscape. Developed sites include campgrounds, picnic sites, a ski area, and a snowplay area. Dispersed uses of USFS lands include rock climbing, caving, automobile and off-highway vehicle touring, equestrian use, backpacking, hiking, hunting, and fishing. Under the SMNRA Act, the Spring Mountains will continue to be managed for a variety of public outdoor recreation benefits. Recreation management under the SMNRA GMP and Conservation Agreement will ensure the focus on providing a diversity of recreational opportunities while maintaining the health, diversity, and integrity of the ecosystem, including areas of high biodiversity and habitats for threatened, endangered, and sensitive species.

In Lake Mead NRA, the most popular recreational activities will continue to be water related, including boating, water skiing, fishing, and swimming. However, there will continue to be ample opportunities for dispersed, desert-based recreation, including camping, hiking, and back country use, including off-highway vehicle use on approved roads. Facility development and recreational use of the NRA is continually evaluated and species of concern are closely monitored to ensure that visitor impacts are minimized or eliminated.

Recreational opportunities on the DNWR will continue to include activities such as automobile and off-highway vehicle touring, hunting, wildlife viewing, and hiking. New recreational opportunities will be focused in the less sensitive areas of the DNWR, protective measures for biological resources will continue to be in place, and the effects of potentially harmful activities such as rock climbing will be evaluated and management direction will be changed if species and habitats are being adversely affected.

POTENTIAL WSA REDESIGNATION

If WSA designations are removed, park and recreational areas located within the WSAs would revert back to their respective underlying management policies. Some of the areas released from wilderness consideration would experience little or no effect to the recreational resources. For example, Arrow Canyon WSA would still be regarded as a recreational area, despite the removal of the WSA designation. In addition, WSAs such as Garret Butte, Ireteba Peaks, and Jumbo Springs would be unaffected by the WSA removal, because of limited or no recreational opportunity at these locations.

For some WSAs, the redesignation would result in an intensification of semi-primitive motorized recreational uses. The following areas would experience a significantly higher level of recreational activity than previous levels if WSA redesignation occurred.

- Mount Stirling WSA: 3,500 acres out of the 4,200 acres within the WSA would be managed for semi-primitive motorized recreation opportunities.
- Muddy Mountains WSA: 20,400 acres out of 87,200 acres would be managed for semi-primitive motorized recreation activities. In addition, 10,659 acres would be managed for roaded natural recreation opportunities.
- Nellis A-B-C WSA: The entire 6,000 acres would be managed for semi-primitive motorized recreation activities.
- Quail Springs WSA: The entire 12,400 acres would be managed for semi-primitive motorized recreation opportunities.
- South McCullough Mountains WSA: 10,300 acres out of 57,500 acres would be managed for semi-primitive motorized recreation opportunities. About 18,900 acres would be managed for recreational activities such as hiking, camping, interpretation, mountain bike riding, picnicking, photography, hunting, and nature study.

b. MSHCP

Under the MSHCP alternative, Clark County would assist the land management agencies in coordinating and funding conservation measures, that may prohibit or limit recreational activities determined to be detrimental to the biological resources found within the urban and regional recreational sites of Clark County. Consequently, some recreational areas would receive either greatly reduced use or less intense use. Other recreational areas could receive greater use because recreational activities would be shifted to more managed areas so that impacts of such activities would not affect sensitive biological and ecological resources. Furthermore, the measures would ensure enforcement of the recreation policies and monitoring of the effects of the activities that are not adequately

enforced now. The proposed conservation measures would specifically address recreation impacts within the jurisdictional boundaries of the USFS, USFWS, BLM, and NPS, with the primary intent of ensuring resource protection, supervision, and public safety. The various agency management activities addressing recreation that may be funded or coordinated under the MSHCP over the life of the permit are listed in Sections 2.8.4 through 2.8.9 of the MSHCP. The range of management activities addressing recreational impacts may be summarized as follows:

- Education: Develop and distribute educational materials (brochures, presentations, signs, etc.) emphasizing biodiversity, endemic species, ecosystem, species, and habitat protection, with a particular emphasis on the SMNRA and BLM-managed lands.
- Monitoring: Develop and implement monitoring programs to assess the effects of recreation on ecosystems, biodiversity hotspots, habitats, and species.
- Protection: Focus new recreational developments (campgrounds, picnic areas, and other facilities) in the least sensitive areas to lessen visitor impacts on species and other sensitive resources; protect species and habitats from the adverse effects of recreation (e.g., hiking, camping, off-highway vehicle use, climbing, caving) by designating camping areas, trails, roads, and other recreational features, or by instituting permanent or temporary closures in sensitive areas.
- Restoration and Enhancement: Develop and implement comprehensive habitat restoration plans for developed facilities such as campgrounds and picnic areas that enhance resources of the species of concern.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on recreation would be similar to those of both the proposed MSHCP and No Action alternatives. Conservation of the desert tortoise and other covered species in Mojave desert scrub and other low elevation, upland communities would be a major focus of this alternative. Low-elevation riparian systems including the Muddy and Virgin rivers, and Las Vegas Wash, and the desert springs areas would also receive management attention. Recreational activities in these areas would be monitored, and subject to restrictions where recreational activities are found to be causing adverse effects to species of concern and their habitats. The AMP would assist in focusing funding and coordination on the species and resources requiring additional management. Recreation activities at higher elevations particularly in the SMNRA and portions of the Red Rock Canyon NCA would not be affected by species and ecosystem management under this alternative. The USFS and BLM would not receive the funding and coordination benefits from the MSHCP for high elevation communities, and would continue to manage recreational resource under their annual budgets. The lack of supplementary funding may lead to additional species listings in

high elevation communities if recreation use increases and agency budgets for recreation management were curtailed.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on recreation would be similar to both the No Action and Low Elevation Ecosystems MSHCP alternatives. Protection of the desert tortoise and its critical habitat would be a major focus of recreation management, and funding and coordination of conservation activities addressing recreation management concerns under this alternative would be focused in the ACECs. Management of Las Vegas bearpoppy would also be a priority, therefore management actions to protect the bearpoppy in high use recreational areas such as Sunrise Mountain and the Nellis Dunes would be emphasized. Recreational use of riparian areas, sandy substrates and other habitats for the southwestern willow flycatcher, yellow-billed cuckoo, Blue Diamond cholla, threecorner milkvetch, and sticky buckwheat would also be monitored and addressed as needed. High elevation ecosystems subject to recreational impacts, including the SMNRA and much of the Red Rock Canyon NCA would not initially receive the benefits of funding and coordination of management activities under this alternative since listed species do not occur in these areas. However, if new species were listed the focus of the alternative would change over time.

e. Alternative Permit Terms for the MSHCP

The effects of 20- and 50-year MSHCP permit terms on recreation would be the same as for the proposed MSHCP. The primary differences would be that funding levels and therefore, intensity of management, would vary under shorter or longer permit terms. The AMP process would provide the necessary level of monitoring and oversight to ensure that MSHCP funding and coordination are appropriately focused. Intuitively it appears that more total funding directed to manage impacts over a longer period of time would result in greater conservation benefits, however, it is impossible to determine the difference of conservation benefits difference that alternative permit periods would provide.

4.3.7 OHV Activities

4.3.7.1 Existing Conditions

Off-road vehicle use accounts for the greatest single recreational use of public lands within Clark County. These activities include competitive and non-competitive OHV events, as well as non-organized, casual OHV use. Most public lands have inherent value for recreational OHV use based on the area's setting and activities. The BLM's Recreation Opportunity Spectrum identifies three levels of road-based recreational opportunities in Clark County:

- Semi-primitive motorized recreation opportunities occur in predominantly unmodified environments, and activities are limited to off-highway vehicle touring on existing roads, trails, and dry washes. Eighteen such areas have been identified on BLM managed lands in Clark County. These areas have received low to moderate visitor use.
- Roaded natural recreation opportunities include most of the basins and valleys on public lands. Specific activities include off-road vehicle touring and free play. Visitor use has been moderate to high, with past management control ranging from low to high, depending on the area.
- Rural recreation opportunities include five areas on BLM managed lands that are characterized by a highly modified environment, where the sites and sounds of humans are readily available. Off-highway vehicle touring and freeplay are predominant uses in these areas.

Areas of recreational importance to OHV users on BLM managed lands include the following areas:

The Nellis Dunes Special Recreation Management Area includes 10,000 acres managed for intensive off-road activities including organized off-highway vehicle events, casual off-road vehicle free play, and other non-off-road vehicle commercial and competitive permitted activities.

The Sunrise Mountain Special Recreation Management Area includes 37,000 acres where non-speed events (such as all terrain bicycle events, motorcycle trials, non-competitive off-road vehicle events, and commercial permitted events and activities are allowed on designated roads and trails on a case-by-case basis pending completion of the management plan for this area and in accordance with management direction for species protection needs.

The Nelson Hills/Eldorado Special Recreation Management Area includes 81,600 acres managed for competitive off-road vehicle events on existing, previously used courses, and elsewhere based on seasonal restrictions to protect desert tortoise habitat.

Jean/Roach Dry Lakes Special Recreation Management Area includes 216,000 acres open to competitive off-road vehicles events, in accordance with desert tortoise and other species protection needs.

The Back Country Byways include the Gold Butte Back Country Byway and the Bitter Spring Back Country Byway. The Gold Butte Back Country Byway contains approximately 60 miles of paved, graded dirt, and jeep trail roads with an area of highly scenic desert landscapes. The Bitter Spring Back Country Byway includes 28 miles of

high-clearance/four-wheel-drive road located in highly scenic geologic formations. There are over 635 miles of approved backcountry roads within the Lake Mead NRA.

In the Red Rock Canyon NCA, BLM requires all motorized vehicles and mountain bikes to stay on designated roads and trails. Other areas are managed by BLM for defined levels of OHV activities under existing and future a Habitat Management Plans to limit off-highway vehicle use and restrict competitive events. The remainder of the public lands are managed as the Southern Nevada Extensive Recreation Management Area, where vehicle-based recreation is permitted, but subject to prohibitions in desert tortoise critical habitat and in the habitats of other species of concern. The BLM regulates and manages organized recreational activities on County RS2477 roads under the BLM/Clark County Interlocal Agreement approved on July 1, 1997.

The Spring Mountains NRA includes over 400 miles of surfaced and unsurfaced roads, many of which are passable only with high-clearance, four-wheel drive vehicles. There are no designated trails or use areas specifically for OHV use, but all existing roads are open to OHV use. The USFS strives to provide diverse opportunities for recreational opportunity, where consistent with the conservation of natural and other resources. The Desert NWR and Lake Mead NRA have designated OHV use only to approved existing roads and trails.

4.3.7.2 Impacts

a. No Action

Under the No Action Alternative, existing management actions and policies would continue to govern current OHV activities within Clark County. Management measures dedicating specific areas in which OHV activities can occur, limiting the types of activities, the number of events and participants, and the permitted dates in which events could occur, would continue based on existing management direction. Some management activities to reduce impacts of OHV activities on natural resources may not be implemented under this alternative, if agency funding is not available.

Under the BLM Las Vegas RMP and Biological Opinion for desert tortoise, OHV speed events, four-wheel drive hill climbs, rides, high speed testing, and other speed-based events will continue to be prohibited in desert tortoise ACECs, while non-speed events will be permitted subject to the restrictions of the Biological Opinion. The No Action Alternative would result in the facilitated resolution of disagreements among various groups in the County as to whether or not use of rural roads crossing public lands has a significant impact on species and habitats.

Under the SMNRA GMP, designation and signing of roads and road ends would increase to provide information to visitors on where vehicle use is permitted and to reduce

resource damage. As funding permits, spurs roads and road through sensitive areas, such as riparian habitats, would be closed and rehabilitated. Lake Mead NRA and DNWR would continue to manage road use under their jurisdiction to avoid impacts to species and habitats.

POTENTIAL WSA REDESIGNATION

The impacts to WSAs from OHV activities would be minimal regardless of WSA designation removal. Underlying management policies and the implementation of the MSHCP would be sufficient to protect these areas from all types of OHV activities. The following WSAs would experience an increase in OHV and other recreational activities if redesignated.

- Mount Stirling WSA: 3,500 acres out of 4,200 acres would be managed for semi-primitive motorized recreation opportunities.
- Muddy Mountains WSA: 20,400 out of 87,200 acres would be managed for semi-primitive motorized recreation activities. About 10,700 acres are set for roaded natural recreational opportunities.
- Nellis A-B-C WSA: The entire 6,000-acre WSA would be managed for semi-primitive motorized recreation activities.
- Quail Springs WSA: The entire 12,400-acre WSA would be managed for semi-primitive motorized recreation opportunities.
- South McCullough Mountains: 10,300 out of 57,500 acres would be managed for semi-primitive motorized recreation opportunities.

Under any alternative, if WSA designations were removed, there would be the potential for increased OHV activities from semi-primitive motorized and non-motorized vehicles. The less restrictive underlying management policy would be insufficient in protecting WSAs from increased vehicular traffic and area coverage.

b. MSHCP

Under the MSHCP, funding and coordination would be available for specific conservation measures addressing the effects of OHV activities on the covered species and their habitats. Some measures could prohibit or limit OHV activities determined to be detrimental to the biological resources found within the urban and regional recreational sites of Clark County.

The proposed restrictions of the MSHCP relating to the allowance of activities within WSAs, NCAs, IMAs, and LIMAs would be enforced only to the extent possible under existing agency budgets and management direction. BLM management of OHV activities within ACECs would continue to be managed under the existing RMP and terms and conditions of the Biological Opinion for the desert tortoise. These policies limit and restrict activities to designated areas to avoid interfering with Covered Species. The range of management activities addressing OHV that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP.

In addition, under the MSHCP alternative, the BLM would agree to consider measures developed by the Rural Roads Management Subcommittee, consisting of representatives of organized OHV users, rural and conservation interests, to:

- Relax permitting restrictions on non-speed OHV events, to the extent that such relaxation does not threaten other resource values
- Impose specific conditions on organized OHV events inside and outside the ACECs (looser out, tighter in), as described in Section 2.8.6 of the MSHCP (BLM[212]) during the first three years of the MSHCP or until the initial phase of the rural roads component of the AMP is complete; at which time conditions may be modified to reflect the results of the AMP process
- Utilize a streamlined permit process as described in Section 2.8.6 of the MSHCP (BLM[212]) for permitting non-speed OHV events within and outside of desert tortoise ACECs.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on OHV activities would be similar to those of the proposed MSHCP, with respect to management of OHV use on BLM land. BLM would consider the recommendations of the Rural Roads Management Subcommittee. The SMNRA and the higher elevation portions of Red Rock Canyon NCA would not benefit from the funding and coordination provided by the MSHCP for conservation purposes.

Conservation of the desert tortoise and other covered species in Mojave desert scrub and other low elevation, upland communities would be a major focus of this alternative. Low-elevation riparian systems including the Muddy and Virgin rivers, and Las Vegas Wash, and the desert springs areas would also receive management attention. OHV activities in these areas would be monitored, and subject to restrictions where determined to be having adverse effects on the species of concern and their habitats. The AMP would assist in focusing MSHCP funding and coordination on the species and resources requiring additional management. The USFS and BLM would not receive the funding

and coordination benefits from the MSHCP for high elevation communities, and would continue to manage recreational resource under their annual budgets. The lack of supplementary funding may lead to additional species listings in high elevation communities if OHV activities were to increase and agency budgets for management for OHV activities were curtailed in future years. To manage for newly listed species, additional road closures could become necessary.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on OHV use would be similar to both the No Action and Low Elevation Ecosystems MSHCP alternatives. Protection of the desert tortoise and its critical habitat would be a major focus in OHV management, and funding and coordination of conservation activities addressing recreation management concerns under this alternative would be focused in the ACECs. Management of Las Vegas bearpoppy would also be a priority, therefore management actions to protect the bearpoppy in high use recreational areas such as Sunrise Mountain and the Nellis Dunes would be emphasized. OHV use of riparian areas, sandy substrates, and other areas providing habitat for the southwestern willow flycatcher, yellow-billed cuckoo, Blue Diamond cholla, threecorner milkvetch, and sticky buckwheat would also be monitored and addressed as needed. High elevation ecosystems subject to OHV impacts, including the SMNRA and much of the Red Rock Canyon NCA would not initially receive the benefits of funding and coordination of management activities under this alternative since listed species do not occur in these areas. However, if new species were listed the focus of the alternative would change over time.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on OHV activities would be similar to those of the proposed MSHCP. The primary differences would be that funding levels and therefore, intensity of management, would vary under shorter or longer permit terms. The AMP process would provide the necessary level of monitoring and oversight to ensure that MSHCP funding and coordination are appropriately focused.

4.3.8 Livestock Grazing

4.3.8.1 Existing Conditions

Grazing allotments on public lands in Clark County were originally delineated in 1934; allotment boundaries, grazing preference (number of animal unit months), season of use, and base property (private land or water rights) were established. Grazing use (authorized grazing period) is normally designated through land use planning and can range from a few days to a full year. Range inspections are made prior to grazing authorizations to determine if adequate forage is available, or if the potential to produce forage exists. The

type of livestock authorized to graze each allotment within the county was originally designated by The Clark County Management Framework Plan and Esmeralda–Southern Nye Resource Management Plan. Most livestock operators in the county have breeding herds rather than stocker-feeder operations. Numbers of livestock range from as few as 12 cows to as many as 625.

Under the Las Vegas RMP, grazing currently is authorized on approximately 2.35 million acres of lands managed by the BLM and on private lands. Livestock grazing is prohibited on USFWS lands in Clark County. Grazing on lands within the SMNRA historically occurred on eight allotments. The last of the grazing permits expired in 1993, and no new grazing permits have been issued. Grazing is authorized but not currently active on two allotments within the Lake Mead NRA in Clark County.

Clark County's Short Term HCP and subsequent Biological Opinion (#1-5-91-F-36) by the USFWS set restrictions on grazing throughout the BLM's Las Vegas District that could impact desert tortoises within their critical habitat. All grazing allotments were divided into three types, with a seasonal restriction for allotments under Prescription 1, a forage utilization restriction under Prescription 2, and open grazing under Prescription 3. As a result of development of the Short-Term HCP and DCP, six grazing allotments were purchased in cooperation with or by The Nature Conservancy. Under the DCP, The Nature Conservancy in cooperation with Clark County may purchase additional allotments in the future.

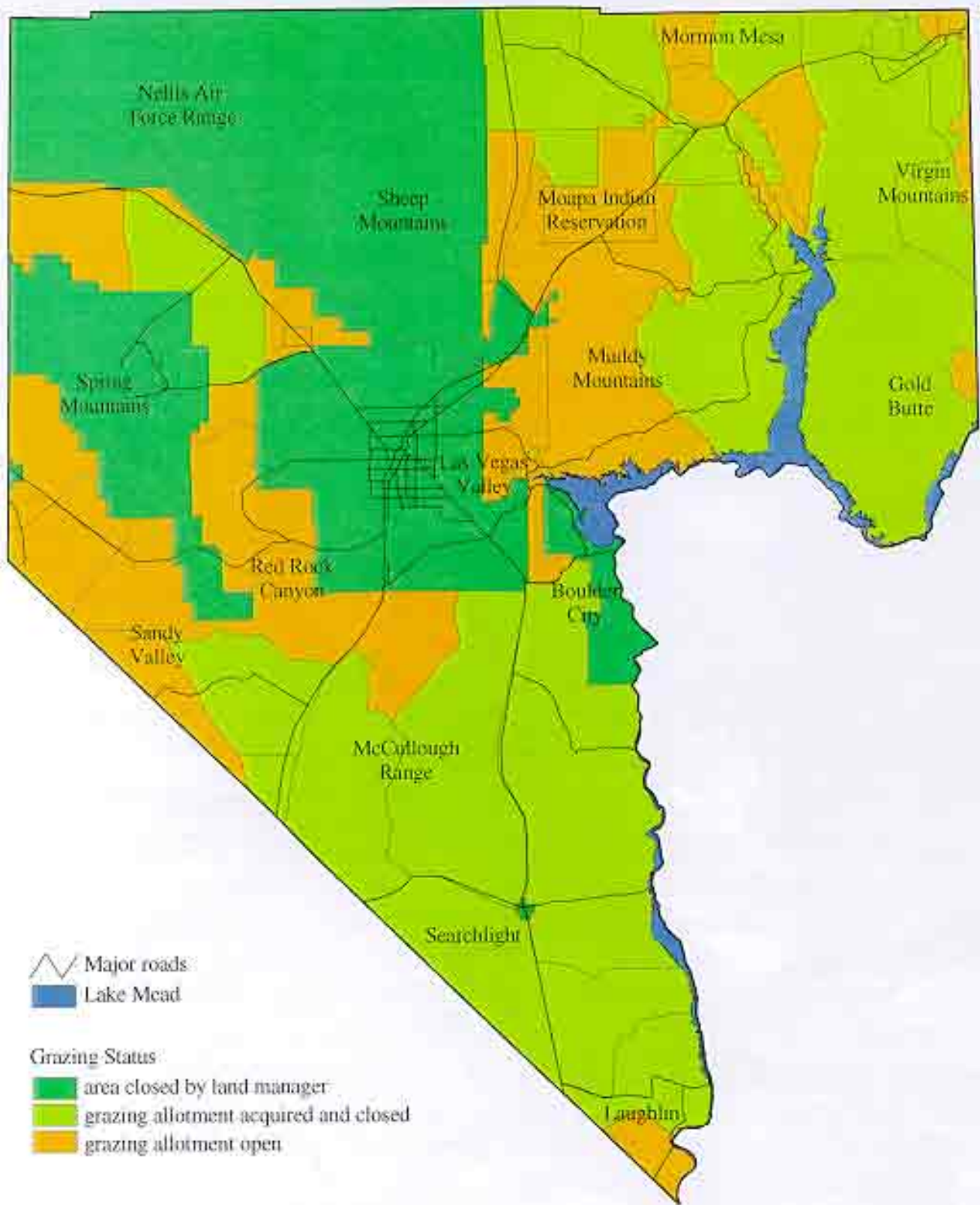
By the close of 1999, Clark County, through the DCP, and with full cooperation of willing sellers, will have contracted to purchase and will have removed cattle from over 2 million acres of public lands within the County. Over 50 percent of the areal extent of grazing allotments in Clark County have now been purchased or contracted for purchase and grazing terminated pursuant to provisions of the DCP. Figure 4-6 shows the current grazing allotment status in Clark County.

4.3.8.2 Impacts

a. No Action

Under the No Action Alternative, assuming retention of the WSA designation, BLM would continue to manage livestock grazing under the Las Vegas RMP. Existing grazing prescriptions for desert tortoise would continue under the No Action Alternative. Existing and future grazing of publicly held lands would be subject to all approved planning and legislative actions.

With more than 50 percent of the areal extent of grazing allotments in Clark County already terminated, future acquisition of additional grazing allotments in the county by a conservation or land trust would not be ensured but would be possible and likely to



5 0 5 10 Miles
 August 31, 1998



FIGURE 4-6
Grazing Status

continue. The future purchase, or contracting for purchase, of grazing lands for the purpose of terminating grazing could continue, pursuant to provisions of the DCP. The removal of grazing/livestock land through acquisition from willing sellers would not result in significant grazing/livestock impacts. The long-term economic viability of grazing and livestock activities in Clark County is marginal. The willingness of current operators to sell their leases is, in part, a result of this condition. Therefore, acquisition of grazing leases from willing sellers will have little or no effect on this activity.

The livestock grazing program will be managed to meet the following BLM Standards and Guidelines, as developed by the Southern Great Basin/Mojave Resource Advisory Committee:

- STANDARD 1. SOILS: Watershed soils and stream banks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle.
- STANDARD 2. ECOSYSTEM COMPONENTS: Watersheds should possess the necessary ecological components to achieve state water quality criteria, maintain ecological processes, and sustain appropriate uses. Riparian and wetlands vegetation should have structural and species diversity characteristics of the stage of stream channel succession in order to provide forage and cover, capture sediment, and capture, retain, and safely release water.
- STANDARD 3. HABITAT AND BIOTA: Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses. Habitats of special status species should be able to sustain viable populations of those species.

Specific management objectives and directions in effect under the RMP include the following:

- The BLM Las Vegas RMP will provide for the continued grazing of domestic livestock on the public lands consistent with law, regulation, established standards and guidelines and policy on areas open to livestock grazing.
- Manage the range resource consistent with the phenological and physiological requirements of key perennial species.
- Livestock grazing on all ephemeral allotments will be permitted if on-the-ground evaluations determine that forage is available, and use consistent with standards and guidelines and allotment specific objectives.

- Provide for increased plant vigor and reproductive capability of perennial forage on the open allotments through livestock grazing management.
- Maintain static trend or achieve upward trend of key perennial forage species through livestock grazing management.
- Salt and mineral supplement will be placed a minimum of one mile from water.
- Manage grazing allotments outside the desert tortoise Areas of Critical Environmental Concern. Livestock use may occur on open allotments in desert tortoise habitat outside Areas of Critical Environmental Concern/Desert Wildlife Management Areas from March 1 to October 14, as long as forage utilization does not exceed 40 percent on key perennial grasses, forbs, and shrubs. Between October 15 and February 28, forage utilization will not exceed 50 percent on key perennial grasses and 45 percent on key shrubs and perennial forbs.
- Designate allotments that currently have an existing closure as permanently closed.
- Establish grazing management systems including rest rotation, deferred rest rotation, or other management approaches as needed to meet specific resource management objectives.
- Include water availability for all uses as part of any grazing system, considering riparian areas, livestock, wildlife, wild horses, and burros.
- Develop range improvements, as needed, to reach more uniform distribution of livestock consistent with management objectives.
- Incorporate standards and guidelines into all livestock use authorizations, grazing systems, and management plans to ensure rangeland health is improved or maintained.
- Manage allotments open to grazing using the “selective management” approach. management plans to ensure rangeland health is improved or maintained.

Management actions to protect livestock grazing on BLM lands within Clark County would enhance the condition of existing wildlife habitat by reducing grazing pressure on the open space, water, and forage areas shared by wildlife and livestock. These management actions would specifically protect endangered wildlife and sensitive plants from trampling, herbivory, and disease transmission.

Livestock grazing under the No Action Alternative would be affected under the following circumstances: Livestock operators who are unwilling to manage use in riparian areas

could sustain economic hardships due to removal of cattle when use levels are exceeded. Protection of rare plants in the Las Vegas District could potentially require changing grazing strategies or removal of livestock from rare plant habitats. Utilization levels identified for key forage species could result in reduced herd size, which could affect the economic viability of most permittees' operations.

In achieving the recovery goals for desert tortoise, only 11 allotments would be open to domestic livestock grazing, and grazing use would be in accordance with the Desert Tortoise Recovery Plan. Of the approximately 1,000,000 acres within ACECs, approximately 127,800 acres would be available for grazing. Thirty-nine allotments will be closed, including five active allotments used by nine operators. This would reduce the number of animal unit months available for grazing of livestock from 10,000 to 2,400.

POTENTIAL WSA REDESIGNATION

Grazing is currently allowed within WSAs only by existing right and is closed to new grazing except for changes in number, kind, or season of use except when allowed pursuant to completion of an environmental assessment, and then, only where environmental effects are found to be negligible. Lands managed by both the USFWS and USFS would not be eligible for grazing of livestock and sensitive habitats managed by these two agencies would not be affected. Redesignation of existing WSA lands managed by the BLM would remove grazing constraints on approximately 209,500 acres (see Figure 4-6, "grazing allotment open") within the Fish and Wildlife 2 and 3, Muddy Mountains, Million Hills, North McCullough Mountains, Pine Creek, Quail Springs, Sunrise Mountain and Virgin Mountain WSAs.

Areas released from further consideration as a WSA or from designation as Wilderness would revert to underlying management policy. However, portions of the WSAs are subject to the grazing prescriptions for protection of the desert tortoise and the grazing opportunities would not change with the redesignation. Removal of the WSA designation from all study area lands would not result in any management change on affected lands currently within the USFWS or USFS jurisdiction. Similarly, the loss of the WSA designation would not result in a change in current management practices on lands outside the existing WSA boundaries, whether private or publicly held.

b. MSHCP

Management actions funded or coordinated under the MSHCP pertaining to livestock grazing on Federal lands within Clark County would enhance the condition of the habitat of the covered species by reducing grazing pressure on the open space, water, and forage areas shared by livestock and the MSHCP species. The range of management activities addressing livestock grazing that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP.

The effects of the MSHCP Alternative on livestock grazing would be essentially the same as effects under the No Action Alternative. As under the DCP, the County would continue to make funds available to purchase and exchange grazing allotments from willing sellers. The primary difference between the MSHCP and No Action alternatives would be the additional funding and coordination available to the BLM and other management agencies to carry out livestock grazing management activities that would protect or enhance the covered species and their habitats. None of the effects incurred through management activities undertaken under the MSHCP to limit or change livestock grazing practices would depart from existing and future agency management direction.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on livestock grazing would be essentially the same as those under the proposed MSHCP. The majority of the livestock grazing in the County occurs at low elevations on BLM lands. Funding and coordination of management activities affecting livestock grazing under this alternative would be focused in the desert tortoise ACECs, in ACECs designated for protection of other covered species, and in the habitats of other covered species including low elevation riparian habitats. Clark County would continue to make funds available to purchase and exchange grazing allotments from willing sellers. As with the No Action Alternative, the removal of grazing/livestock land through acquisition from willing sellers would not result in significant grazing/livestock impacts.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on livestock grazing would be similar to those of the No Action Alternative. The majority of the livestock grazing in the County occurs in desert tortoise habitat on BLM lands. Funding and coordination of management activities affecting livestock grazing under this alternative would be focused in the desert tortoise ACECs. Additional activities would be focused in low elevation riparian habitats where listed species habitats were present or restorable. As under the DCP or MSHCP, Clark County would continue to make funds available to purchase and exchange grazing allotments from willing sellers. As with the No Action Alternative, the removal of grazing/livestock land through acquisition from willing sellers would not result in significant grazing/livestock impacts.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on livestock grazing would be similar to those of the proposed MSHCP. The primary differences would be that funding levels and therefore, intensity of management, would vary under shorter or longer permit terms. The AMP process would provide the necessary level of monitoring and oversight to ensure that MSHCP funding and coordination are appropriately focused.

4.3.9 Mineral Extraction

4.3.9.1 Existing Conditions

Mining in southern Nevada began in 1857 with discovery of lead ore at the Potosi mine, which later became the area's second largest producer of zinc. In 1892, the discovery of gold in the Keystone mine greatly stimulated activity in the Goodsprings district and southern Nevada. Much of the BLM Las Vegas District is open to mine exploration and development. All but small designated areas within the Spring Mountains NRA, Red Rock Canyon NCA, and Lake Mead NRA are closed to new mining claims under the 1872 mining laws. Desert tortoise conserved/critical habitat are also closed to new mining claims. Other areas within BLM jurisdiction are open to new claims. There are very few areas of private lands with mining potential in Clark County.

Development of metallic and nonmetallic deposits continues with nonmetallic mineral production exceeding metallic mineral production in both tonnage and value. Many mining districts on Clark County have yielded significant production in the past, and some are currently producing large quantities of material. The principal mining districts are Searchlight, Eldorado Canyon, Bare Mountain (Fluorine), and Goodsprings (Potosi, Yellow Pine).

Metallic mineral commodities currently being produced or processed in Clark County are gold and silver. Other metallic minerals known to occur include cobalt, copper, lead, manganese, mercury, nickel, palladium, platinum, thorium, tungsten, uranium, vanadium, and zinc.

Nonmetallic mineral production commodities include alum, alunite, barite, bentonite, industrial and common clays, borates, feldspar, fluorspar, glauberite, gypsum, limestone, dolomite, magnesite, marble, mica and beryl, natrate, perlite, quartz, salt, silica, sand and gravel, stone, turquoise, vermiculite, and zeolite.

Exploration and mining of locatable minerals (all valuable mining deposits except those categorized as leasable or salable, see below) is authorized under the General Mining Law of 1872. Federal regulations are intended to provide for protection of nonmineral resources, reclamation of disturbed areas and assure that activities are conducted in a manner that prevents unnecessary or undue degradation. Prior to approval of the BLM Las Vegas RMP, approximately 95 percent of the Las Vegas District was open to entry under locatable mining laws. The Las Vegas RMP EIS identifies 7,328 acres disturbed by locatable mining activities between 1981 and 1995 with 4,853 acres reclaimed after disturbance.

Leasable minerals (oil, gas, geothermal, sodium and potassium) are permitted with stipulations to assure protection of nonmineral resources susceptible to impacts resulting

from exploration and development of leasable mineral resources. With listing of the desert tortoise in 1990, no new leases were issued pending completion of the Las Vegas RMP. While there are areas within the Las Vegas District with potential for development of solid leasable minerals (sodium and potassium), there are no existing leases for these compounds, and no areas are classified as having high potential for their development. There has been no fluid leasable mineral (oil and gas) or geothermal production within the Las Vegas District.

Salable minerals (common varieties of sand, gravel, stone, etc.) disposal is administered by BLM under the Materials Act (1947) as amended, on a case-by-case basis.

4.3.9.2 Impacts

a. No Action

BLM estimates that over a 20-year period, between 14,500 and 41,500 acres could be disturbed by new mining activities on BLM lands. New claims over 5 acres in size are subject to a Plan of Operations, which receives NEPA review and consultation under Section 7 of the ESA, if impacts to listed or candidate species would result. BLM would also review the plans for impacts to the BLM list of special status species. However, the current list of special status species is not as broad as the Covered Species under the MSHCP and impacts to Covered Species that are not currently listed could result.

The Las Vegas RMP would substantially limit new mining claims in ACECs, desert tortoise critical conserved habitat, and within 0.25 mile of springs and all riparian habitats. The management objectives and directions identified below would provide conservation management for species and habitats, but would also impact mining in Clark County by closing approximately 1,000,000 acres to new locatable or saleable mineral claims. The closures would provide benefits to conservation of habitats and sensitive species, in particular, the desert tortoise, Las Vegas bearpoppy, and riparian species.

- Where lands remain open to entry provide for orderly exploration and development of valuable minerals.
- Use appropriate environmental safeguards to allow for the preservation and enhancement of fragile and unique resources.
- Allow solid mineral leasing on 1,872,673 acres of lands outside identified disposal and administrative areas, outside riparian and natural spring areas, and outside ACECs, and subject to standard lease terms and conditions.
- Allow fluid mineral leasing subject to standard terms and conditions on 1,909,351 acres outside of identified disposal and administrative areas and outside ACECs.

- Allow fluid mineral leasing, subject to No Surface Occupancy stipulations, on approximately 866,000 acres, or subject to Timing and Surface Use Constraints on approximately 112,000 acres, within areas having important cultural, geological, and riparian resources, special status plant and animal habitats, Areas of Critical Environmental Concern, and areas of other sensitivity.
- An estimated 2,135,146 acres of lands would remain open to locatable minerals
- The 11,000 acre Desert Tortoise Conservation Center Management Area would be withdrawn from mining operations; 1,227,226 acres of desert tortoise ACECs, Special Recreation Management Areas, and riparian zones, validity determinations of mining claims would be required prior to approval of mine plans on pre-existing mining claims.
- Salable mineral disposal would be allowed outside ACECs, and for highway maintenance use in desert tortoise ACECs, only within 0.50 mile to either side of identified State highways and County roads
- Mineral material disposal determined to be detrimental to desert tortoise would not be authorized.
- Material rights-of-way would be allowed outside ACECs, and for highway maintenance use in ACECs, only within 0.50 mile to either side of identified Federal aid highways.

POTENTIAL WSA REDESIGNATION

WSAs are closed to new mining claims until a decision is reached on their status. BLM has evaluated the potential for new locatable and saleable minerals exploration and fluid energy extraction on each of the WSAs, if they are withdrawn. In general the potential for locatable and saleable minerals is low to moderate with low fluid energy and geothermal potential. A number of locations that may have economic deposits are not likely to be exploited due to remoteness of the locations, distance to market and lack of transportation routes. Fish and Wildlife 1, 2, and 3 have existing sand and gravel sites and additional sites could be located on the edges of these WSAs. Approximately 6 percent of the area within Ireteba Peaks, the eastern portion of the Muddy Mountains, and approximately 20 percent of South McCullough Mountains WSA have locatable minerals deposits that may be economic.

Any development of locatable or saleable minerals deposits would be subject to review of a Plan of Operations and subject to review under NEPA and Section 7 of the Endangered Species Act for evaluation of impacts to habitat or special status species.

b. MSHCP

Under the MSHCP, BLM management of mining resources would continue as under the No Action Alternative. Funding and coordination of conservation measures would lessen the impacts associated with mining and mineral extraction, such as: direct mortality from mining activities, the loss and degradation of habitat, fragmentation of wildlife habitat, and incidental take. The range of management activities addressing mining resources that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP.

Abandoned mines in some instances provide important roosting and overwintering habitat for bat species, which may eventually be covered under the MSHCP. Management direction included under existing agency plans provides the basis for management of abandoned mines for bat habitats. Such measures include abandoned mine surveys, bat gates for roost protection, and other forms of protective management. The MSHCP would provide funding and coordination for such measures.

Impacts to mining activities from implementation of the MSHCP would not adversely affect ongoing or future operations for saleable, locatable, or leasable minerals, fluids, or energy. The closures to exploration are proposed by the respective agencies as part of their overall management objectives. The goal of the MSHCP is for agencies to fully implement their existing regulatory processes in review of new claims and to ensure that habitats and Covered Species are given full consideration in reviews for new permits. Development of locatable or saleable minerals deposits would be subject to NEPA review and conformance with the conservation measures contained in the MSHCP. Section 7 consultation with the Service would be required. It is expected that these measures would minimize impacts to habitats or sensitive species.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on mineral extraction activities would be similar to those of the proposed MSHCP, because the higher elevation ecosystems are located within the Spring Mountains NRA, Red Rock Canyon NCA and Desert National Wildlife Range, where mining is restricted to existing claims or small designated locations.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on mineral extraction activities would be similar to those of the No Action Alternative. The desert tortoise is the only widely distributed species within the county. Restrictions on mining activities within the desert tortoise ACECs would be under effect through the DCP. The Blue Diamond cholla and Las Vegas bearpoppy are covered by existing management agreements. Other species would be threatened by mining locatable and saleable

materials and sand and gravel extraction along streams and riparian areas and in the Las Vegas valley.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on mineral extraction activities would be similar to those of the proposed MSHCP. The primary differences would be that funding levels and therefore, intensity of management, would vary under shorter or longer permit terms. The AMP process would provide the necessary level of monitoring and oversight to ensure that MSHCP funding and coordination are appropriately focused.

4.3.10 Transportation

4.3.10.1 Existing Conditions

Major transportation facilities in Clark County include Interstates 15, 215, and 515; Highways 93 and 95; State Routes 160, 163, 164, 168, and 169; McCarran International Airport; and the Union Pacific Railroad (Figure 4-7). In general, road construction throughout Las Vegas Valley has accelerated over the past 10 years in response to urban growth. Highway 95 and Interstate 15 were expanded over the period, using mostly public lands and, as with other local transportation projects, sand and gravel from local operations. Planned improvements include a beltway around Las Vegas from Interstate 15 to Interstate 515; continued widening of Route 160 between Las Vegas and Pahrump; a 55.5-acre expansion of McCarran Airport; a cargo airport in Ivanpah Valley, a commercial airport near Mesquite, widening of Highway 95 (including the segments between Railroad Pass and Route 163 and adjacent to the SNWA North Well Field); a Hoover Dam bypass; a Boulder City bypass; a proposed rail system within the Las Vegas Valley; and a proposed high-speed train from California to Nevada.

NDOT has the responsibility for maintaining approximately 1,000 miles of highway through desert tortoise and other habitats and for necessary improvements to these existing roads to meet the demands of increased traffic volumes in a manner consistent with public safety standards. NDOT rights-of-way are broadly defined to include lands purchased or withdrawn from public lands for the use of highways, transportation facilities, material sites and their access roads. NDOT rights-of-way also include those areas of highway facilities that extend beyond the purchased or withdrawn property. This includes drainage or V-ditches constructed and regularly maintained by NDOT.

Transportation facilities occur on both non-Federal and Federal lands in Clark County. Most major highways cross Federal lands and involve Federal highway funds.

4.3.10.2 Impacts

a. No Action

Under the No Action Alternative, incidental take of the desert tortoise would be permitted for transportation projects on non-Federal lands and for maintenance and construction projects within NDOT rights-of-way. Maintenance and construction would be allowed in NDOT rights-of-way outside DWMA south of the 38th parallel below 5,000 feet in elevation. Within DWMA only routine and emergency maintenance would be allowed. Routine NDOT maintenance activities are listed on page 2-53.

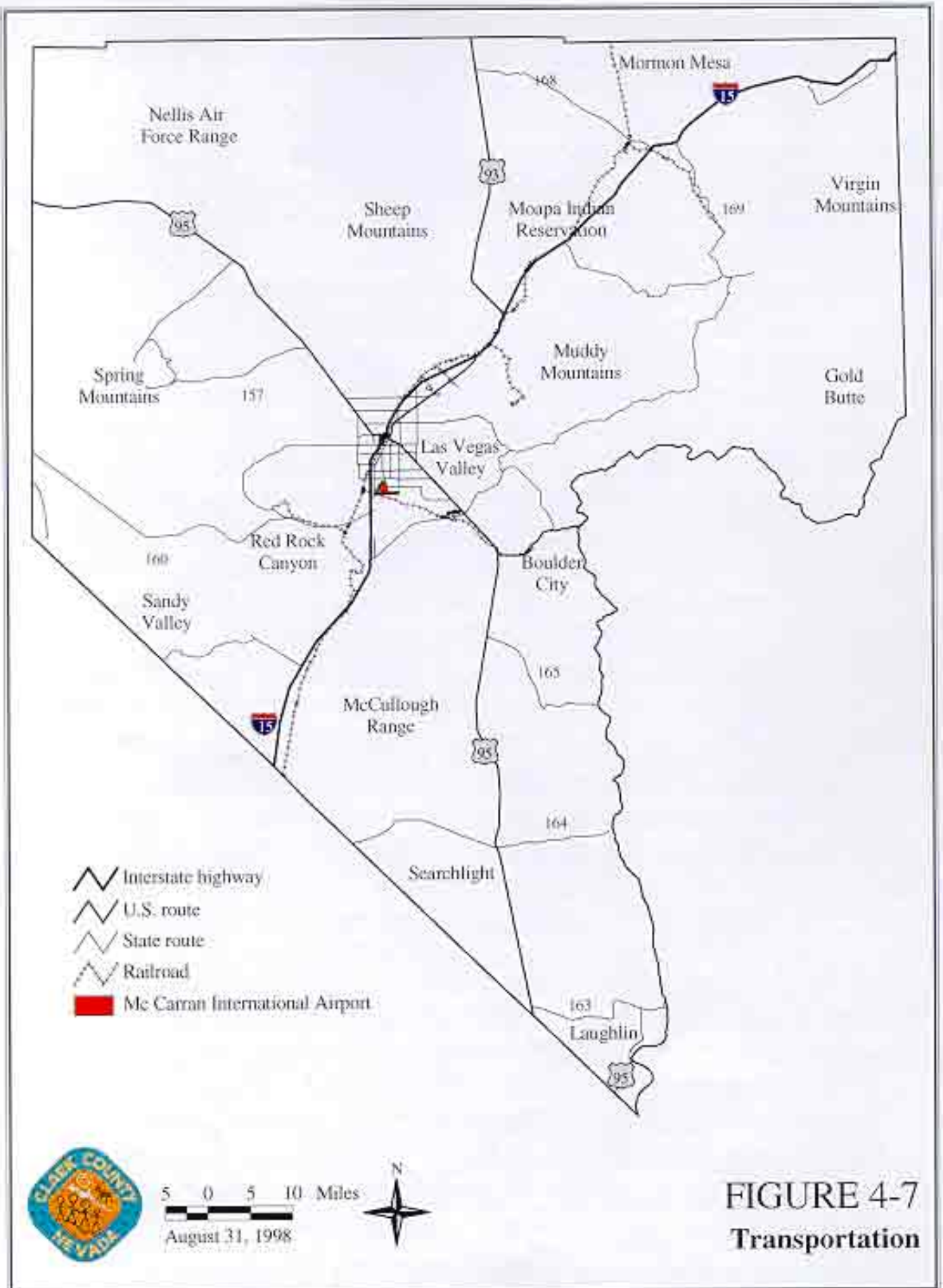
Also under the No Action Alternative, the DCP Road Barrier Construction Program initiated in 1999 would continue. This program consists of (1) retrofitting of existing highways rights-of-way fence with desert tortoise proof fencing material and (2) construction of new tortoise fencing. This program minimizes mortality of desert tortoise on highways.

Without the MSHCP, incidental take of species other than the desert tortoise during development of new transportation resources on non-Federal lands would not be permitted. Therefore, new transportation planning on non-Federal lands would continue to be impacted by the presence of environmentally sensitive lands. Additionally, the reduction in development fragmentation within the County anticipated with adoption of the MSHCP would not be realized under the No Action Alternative. This could result in the indirect adverse effect of longer, more circuitous transportation routes required to serve the resulting development caused by avoiding environmentally sensitive lands. More circuitous transportation routes would result in incremental increases in automotive emissions.

Existing environmental review of proposed transportation projects on both public and private lands, as required by existing state and Federal legislation, would continue unchanged.

ACECs established under the Las Vegas RMP will include increased management prescriptions against disturbance and reduced intensity of uses in these areas. With respect to transportation resources, the ACECs can be divided into two categories: desert tortoise ACECs and other resource ACECs.

For desert tortoise ACECs, reclamation of temporary roads is required. New roads will be authorized in response to specific proposed actions where no feasible alternative exists.



**FIGURE 4-7
Transportation**

Access to private property will be assured. For all other ACECs, reclamation of temporary roads will also be required. New roads will be authorized in response to specific authorized actions only, and access to private property will be assured.

The Las Vegas RMP includes measures agreed to in the DCP to support fencing of highways and moderately to heavily traveled dirt roads with tortoise-proof fencing and installation of culverts to allow tortoises to cross under the highway.

Additionally, the proposed RMP includes the following provisions for rights-of-way management relative to transportation:

- Except as otherwise identified, all Areas of Critical Environmental Concern and all lands within 0.25 mile of significant caves, *exclusive of any designated corridors*, are designated as right-of-way avoidance areas.
- Linear right-of-way exclusion areas are limited to the Hidden Valley District, Sloan Rock Art, and Big Dune Areas of Critical Environmental Concern.
- Site type right-of-way exclusion areas are limited to all areas of critical environmental concern, except within 0.50 mile on either side of Federal Aid Highways.
- All public land within the planning area, except as otherwise identified, are available at the discretion of the agency for rights-of-way under the authority of the Federal Land Policy Management Act.
- Allow new material site rights-of-way designation outside Areas of Critical Environmental Concern. An exception is described below for material site rights-of-way in desert tortoise Areas of Critical Environmental Concern.
- *Exception:* Gold Butte A, Coyote Springs, Mormon Mesa, and Piute/Eldorado desert tortoise Areas of Critical Environmental Concern would remain open to the granting of material site rights-of-way only within 0.50 mile to either side of those Federal aid highways identified on Maps 2-12 and 2-13 of the proposed RMP. These authorizations would only be issued to governmental entities. Apply acreage limitations identified under Management Direction MN-1-k of the proposed RMP.

The Las Vegas RMP EIS identified the following Rights-of-Way Management impacts for the RMP:

Within the Las Vegas BLM District, there are 178 material site rights-of-way, totaling approximately 15,800 acres. No new material site rights-of-way would be authorized until the following are completed:

- Incorporate the terms and conditions for material site rights-of-way contained in Appendix M of the RMP in all new material site rights-of-way.
- Coordinate with the NDOT and evaluate the need for existing sites.
- Encourage the NDOT to relinquish sites no longer needed.
- Receive justification by the NDOT for continued use of existing sites or need for additional sites.

The RMP EIS concludes that the impacts of these management actions would result in:

Designation of rights-of-way exclusion areas, constituting a loss of 5,600 acres of public land available for linear rights-of-way and a loss of 1,005,000 acres of public land available for site type rights-of-way (excluding existing established communication sites).

Designation of rights-of-way avoidance areas, constituting a potential loss of 1,011,100 acres of public land available for all types of rights-of-way.

(1) Potential WSA Redesignation

WSAs are currently designated as avoidance areas for new roads although existing roads are maintained. Redesignation could result in the extension of new roads, associated with a permitted and lawful activity. New right-of-way acquisition and roadway construction on public lands previously designated as WSAs would continue to be subject to additional environmental review (preparation of an EA or EIS) as required by existing state and Federal legislation. If potential impacts to listed or candidate species were identified, a Section 7 consultation would be entered into with the Service. The WSA Redesignation Sub-Alternative action would not alter the required environmental review process for transportation projects on public lands.

No adverse impacts to transportation resources are anticipated with the WSA Redesignation Sub-Alternative action.

b. MSHCP

Incidental take of Covered Species within Clark County and desert tortoise below 5,000 feet south of the 38th parallel would be allowed in connection with maintenance and construction projects within NDOT rights-of-way. Consistent with the DCP, routine maintenance and construction would be allowed in NDOT rights-of way outside IMAs

and LIMAs. Within IMAs and LIMAs, only routine and emergency maintenance would be allowed.

The area covered by the MSHCP would include approximately 840 miles of roadway right-of-way of varying width; approximately 14,700 acres of material sites; and other rights-of-way as mentioned above, in Clark County. Consistent with the terms of the DCP, the MSHCP would also cover desert tortoises and their habitat (areas below 5,000 feet in elevation and south of the 38th parallel) on approximately 260 miles of NDOT rights-of-way in Nye, Lincoln, Mineral, and Esmeralda Counties that are presently maintained by NDOT. Also covered in the MSHCP would be any additional right-of-way, which may be added in the future, the routing of which would consider avoidance of areas being conserved for species. For species other than the desert tortoise, the area covered by the MSHCP for NDOT activities would be limited to Clark County.

Some of NDOT's routine maintenance activities may impact species addressed in the MSHCP. These routine maintenance activities would not disturb areas outside of NDOT's right-of-way. NDOT's maintenance activities should not significantly impact species covered by the MSHCP, although some loss of habitat and species impacts will occur as a result of road widening activities, new highway construction, and materials extraction.

The DCP Road Barrier Construction Program consisting of retrofitting of existing highways rights-of-way fence with desert tortoise proof fencing material, and construction of new tortoise fencing, would continue under the MSHCP, and would minimize mortality of desert tortoise and other species on highways.

The range of management activities addressing transportation that may be coordinated or funded over the life of the permit is listed in Section 2.8.9 of the MSHCP.

NDOT would agree to implementation of 35 conservation actions under the MSHCP, including worker education programs, desert tortoise fence monitoring, inventory of covered species and habitats on NDOT rights-of-way, preconstruction surveys and species relocations, on-site monitoring, minimization and avoidance of species and habitat disturbance during construction and maintenance activities, restrictions on chemical use in habitats of the covered species, and installation of movement directing devices.

No significant adverse impacts to existing transportation resources are anticipated with implementation of the MSHCP. New right-of-way acquisition and roadway construction on non-Federal lands within Clark County would be covered by the MSHCP. Therefore, implementation of the MSHCP could facilitate development of new transportation facilities on non-Federal lands within Clark County. The MSHCP could have the indirect positive effect of more direct roadways since sensitive lands would not necessarily be avoided in new roadway planning. Furthermore, implementation of the MSHCP is

anticipated to reduce “checkerboard” development in the county by facilitating more contiguous development. This also could result in the indirect positive effect of shorter, more direct roadways and transportation corridors. Implementation of the proposed MSHCP would not have significant adverse effects on maintenance of existing transportation resources since such activities would be covered under the MSHCP.

New right-of-way acquisition and roadway construction on Federal lands would not be covered by the MSHCP and would continue to require additional environmental review (preparation of an EA or EIS) subject to existing state and Federal legislation. Implementation of the MSHCP would not alter the required environmental review process for transportation projects on public lands. Additionally, adoption of the MSHCP would close IMAs and LIMAs to state roadway development.

Therefore, no significant adverse impacts to transportation resources are anticipated with implementation of the proposed action. The proposed action could have an indirect positive effect on transportation resources by allowing the development of shorter, more direct roadways on private lands.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on transportation would be similar to those of the proposed MSHCP. Most of the County’s transportation network is located at low elevations. NDOT and BLM conservation activities associated with roads would be funded and coordinated under this alternative. Conservation actions focused on roads at higher elevations (USFS activities such as coordination with NDOT, and minimization or avoidance of road impacts on species and habitats), would not be coordinated or funded under this alternative. No significant adverse impacts to transportation resources are anticipated with implementation of this alternative. As under the MSHCP alternative, implementation of the Low Elevations Ecosystem alternative could have an indirect positive effect on transportation resources by allowing the development of shorter, more direct roadways on private lands.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on transportation would be similar to those of the No Action or MSHCP alternatives. Funding and coordination of conservation activities addressing transportation concerns under this alternative would be focused in the desert tortoise ACECs, in Las Vegas bearpoppy habitats, and in the sandy habitats of the three-corner milkvetch, and sticky buckwheat. Listed species and their habitats in riparian areas would be monitored and addressed as needed. High elevation ecosystems subject to transportation impacts, in particular the SMNRA, would not initially receive the benefits of funding and coordination of management activities under this alternative since listed species do not occur in these areas. However, if new species

were listed the focus of the alternative would change over time. No significant impacts to transportation resources are anticipated with implementation of this alternative.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on transportation would be similar to those of the proposed MSHCP. The primary differences would be that funding levels and therefore, intensity of management, would vary under shorter or longer permit terms. The AMP process would provide the necessary level of monitoring and oversight to ensure that MSHCP funding and coordination are appropriately focused. No significant impacts to transportation are anticipated with implementation of this alternative.

4.3.11 Utility Rights-of-Way

4.3.11.1 Existing Conditions

Rights-of-way on public lands are authorized for a variety of uses including roads, electrical transmission lines, telephone lines, sewer lines, culinary water lines, natural gas pipelines, communication sites, electrical power plants and substations, and related power distribution lines. The authorization process involves analysis of potential impacts to the environment as a result of the proposed action and preparation of an Environmental Assessment or Environmental Impact Statement if appropriate. Resource protection stipulations are developed prior to approval.

In Clark County, two designated utility corridors are reserved for the United States Government, as the result of special legislation. Public Law 101-67, the Apex Legislation, reserved numerous corridors within the area, including existing power-line rights-of-way, ranging from 300 to 1800 feet in width, for a total length of approximately 32 miles. The Aerojet legislation established a corridor in Coyote Springs Valley, with a total length of four miles, in Clark and Lincoln County.

Three major utility rights-of-way transect Clark County from north to south. None of these rights-of-way are within a designated corridor. Each Federal agency is responsible for the permitting of utility rights-of-way across lands under their jurisdiction. Establishment of designated corridors for utility rights-of-way must be identified in the agency's land use plan.

4.3.11.2 Impacts

a. No Action

Under the No Action Alternative, BLM management of utility rights-of-way would occur in accordance with the Las Vegas RMP. Although utility rights-of-way would not be limited to designated corridors, all efforts would be focused on utilizing corridors

whenever possible and to their maximum capacity. Under the Las Vegas RMP, the BLM would meet public demand and reduce impacts to sensitive resources by providing an orderly system of development for transportation, including legal access to private inholdings, communications, flood control, major utility transmission lines, and related facilities. The RMP includes the following provisions for rights-of-way management relative to utilities:

- Rights-of-way for new roads in ACECs would be only in response to specific authorized actions only, or to ensure access to private property. Relocation of rights-of-way would occur, as required, to reduce impacts to desert tortoise and other listed species.
- The following corridors would be designated:
 - A corridor 1,400 feet wide from the north side of the Sunrise Instant Study Area south through Rainbow Gardens to the Lake Mead crossover. This corridor is described as west of the east boundary of the IPP-McCullough power lines. Activation and use of this corridor is contingent upon Congressional action releasing the Instant Study Area from further wilderness consideration and study.
 - Designate the corridor as shown on Map 2-4 of the Las Vegas RMP. An approximate total of 158,800 acres is involved, including legislative designations and the proposed Sunrise Mountain designation. The corridors range in width from 1,400 feet to 3,000 feet, for a total length of approximately 538 miles.
- The following corridors would not be extended:
 - The corridor entering Nevada at Nipton Road and designated as Contingent Corridor W in the California Desert Conservation Area Plan, dated 1980, will not be carried forward in this alternative. The 1988 Mojave National Scenic Area Management Plan recommended elimination of the corridor; this was accomplished by a plan amendment to the California Desert Conservation Area Plan.
 - The corridor designated along the eastern boundary of U.S. Highway 93 between the Aerojet conveyance area and the Apex project area will not tie into the corridor designated inside the west boundary of the Apex project area. Per an industry request, the corridor will stop approximately five miles short of the project area, continue east, and tie into the corridor extending southwesterly from the Moapa Indian Reservation.
- When feasible, and where compatible, major pipeline rights-of-way will be placed within power-line corridors.

- Provide right-of-way access for local flood control agencies to develop or maintain flood control developments, consistent with right-of-way avoidance and exclusion areas.
- ACECs and all lands within 0.25 mile of significant caves, exclusive of any designated corridors, are designated as right-of-way avoidance areas.

The Final EIS for the Las Vegas RMP identified the following Rights-of-Way management impacts:

- Designation of rights-of-way exclusion areas would constitute a loss of 5,600 acres of public land available for linear rights-of-way and a loss of 1,005,000 acres of public land available for site type rights-of-way (excluding existing established communication sites).
- Designation of rights-of-way avoidance areas would constitute a potential loss of 1,011,100 acres of public land available for all types of rights-of-way.

POTENTIAL WSA REDESIGNATION

WSAs are currently designated as avoidance areas for new roads and utilities although existing roads and utilities are maintained. Redesignation could result in the extension of new roads, associated with a permitted and lawful activity. Utilities would also potentially be extended through WSAs. Road and utility extensions through areas previously designated for avoidance would require review under NEPA and, if listed species were present, Section 7 consultation with the Service under the ESA.

b. MSHCP

Under the MSHCP, agency conservation activities offsetting the potential adverse impacts of utility rights-of-way on the covered species and their habitats would be funded and coordinated. Existing agency management is focused on restricting designation of rights-of-way to specific areas, and minimizing the proliferation of randomly placed, single-use utility lines. Thus, the potential degradation to the covered species and their habitats would be limited to very specific areas. The range of management activities addressing utility corridors that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP.

The effects of the MSHCP Alternative on utility rights-of-way would be essentially the same as effects under the No Action Alternative, to the extent that no conservation actions carried out under the MSHCP would exceed what is allowable under existing agency management plans and future agency management direction for utility -rights-of-way.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on utility rights-of-way would be similar to those of the proposed MSHCP. The majority of the utility rights-of-way occur at low elevations on BLM lands. Funding and coordination of management activities affecting utility rights-of-way under this alternative would be focused in the desert tortoise ACECs, in ACECs designated for protection of other covered species, and in the habitats of other covered species including low elevation riparian habitats. Activities allowable under the USFS SMNRA GMP, and management plans covering other high elevation areas in the County would not receive the benefits of funding and coordination from the Low Elevation MSHCP. None of the effects incurred through management activities undertaken under the low elevation MSHCP to limit or change management of utility rights-of-way would differ from existing and future agency management direction and programs. No significant impacts to rights-of-way are anticipated with implementation of this alternative.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on utility rights-of-way would be similar both to those of the No Action Alternative and the MSHCP Alternative. Funding and coordination of conservation activities addressing rights-of-way under this alternative would be focused in the desert tortoise ACECs, in Las Vegas bearpoppy habitats, and in the sandy habitats of the threecorner milkvetch, and sticky buckwheat. Listed species and their habitats in riparian areas would be monitored and addressed as needed. High elevation ecosystems subject to rights-of-way impacts, such as those in the SMNRA, would not initially receive the benefits of funding and coordination of management activities under this alternative since listed species do not occur in these areas. However, if new species were listed the focus of the alternative would change over time. None of the effects incurred through management activities undertaken under this alternative to limit or change management of utility rights-of-way would differ from existing and future agency management direction and programs, as described under the No Action Alternative. No significant impacts to rights-of-way are anticipated with implementation of this alternative.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on utility rights-of-way would be similar to those of the proposed MSHCP. The primary differences would be that funding levels and therefore, intensity of management, would vary under shorter or longer permit terms. The AMP process would provide the necessary level of monitoring and oversight to ensure that MSHCP funding and coordination are appropriately focused. No significant impacts to rights-of-way are anticipated with implementation of this alternative.

4.3.12 Fire Management

4.3.12.1 Existing Conditions

Wildfires present an uncontrolled and potentially harmful event. Federal and State fire management policies are focused on suppression of wildfires, with operational priority assigned to preserve human life, protect property, and safeguard natural resources. BLM fire management activities are conducted under an Initial Attack Management system, which links the level of fire fighting response to the resource values within a specific geographic area or suppression zone. The designations developed for an initial attack response are used to efficiently organize and distribute fire personnel and equipment to those areas of highest resource priority. Baseline management goals are suggested for the following Initial Attack Management levels:

- Suppress all wildfires at 500 acres or less 90 percent of the time.
- Suppress all wildfires at 100 acres or less 90 percent of the time.
- Suppress all wildfires at 10 acres or less 90 percent of the time.

The use of certain fire suppression techniques are incorporated into pre-attack scenarios so that fire suppression strategies and tactics are acceptable to protect the primary resource concerns, which include riparian areas, designated natural areas, Wilderness Study Areas, mining districts, cultural resources and historic properties, desert tortoise habitat areas, airshed management areas, and special plant communities. The rural/urban/wildland interface zones also require special response tactics.

There are two major uses of prescribed fire to achieve specific fire and resource goals in southern Nevada. Wildland fire hazard reduction involves decreasing a quantity of accumulated fuel that could through natural means become a devastating event. Prescribed burns also facilitate vegetative manipulation to benefit habitat.

The range of wildfires does not follow jurisdictional boundaries. The use of cooperative agreements promotes the common goals of the agencies in managing incidents in a cost-effective manner for the protection of life, property, and natural resources. It is in the interests of city, county, state, tribal, and Federal agencies to work toward a common goal concerning an incident.

4.3.12.2 Impacts

a. No Action

Fire suppression and management activities would continue with existing policies. Populated areas, areas with intensive recreational use or developed facilities would receive more intense fire response and suppression activities. The Spring Mountains NRA and Red Rock Canyon NCA have fire suppression policies that include minimization of impacts to habitats and sensitive species, balanced by the needs for personal safety and personal property. BLM has low response and suppression policies for WSAs and special status species habitats, including desert tortoise.

Under the Las Vegas RMP, the BLM will implement the following management activities:

- Provide fire suppression on approximately 3.3 million acres of public lands, based on suppression areas and zones, and resource management needs. The planning area is managed in three suppression zones based on site specific resource management needs, including desert tortoise critical habitat..
- Allow prescribed fire for resource enhancement purposes based on resource management needs, including noxious or invasive species infestations.
- Provide fuels reduction management for resource and property protection in specific areas.

POTENTIAL WSA REDESIGNATION

WSAs are currently managed for low-level suppression response and limited use of mechanized equipment. With removal of the WSA designation, the level of suppression actions (fuel management, fire breaks, staging or use of mechanized equipment) could be increased.

b. MSHCP

Fire management related conservation measures proposed under the MSHCP alternative would comply with the Initial Attack Management goals to minimize detrimental impacts to resources. Measures to reduce impacts to soil and water resources from fire suppression activities are also proposed. BLM and the USFS would authorize prescribed burns to reduce fuel, which would ultimately enhance fire-adapted habitats. The range of management activities addressing fire management that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP.

The effects of the MSHCP Alternative on fire management would be similar to effects under the No Action Alternative. The MSHCP would provide increased funding and coordination of fire management activities to offset the adverse effects of wildfire, and enhance the covered species and their habitats. Conservation activities undertaken as part of the MSHCP would not deviate from existing and future agency management direction for fire management. Overall, the increased funding made available under the MSHCP would enhance the abilities of the agencies to manage fire incidents in a cost-effective manner for the protection of life, property, and natural resources.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on fire management would be similar to those of the No Action Alternative. Conservation of the desert tortoise and other covered species in Mojave desert scrub and other low elevation, upland communities would be a major focus of this alternative, and funding and coordination of conservation activities addressing fire management concerns would be focused in the ACECs. Low-elevation riparian systems including the Muddy and Virgin rivers, Las Vegas Wash, and the desert springs areas would also receive management attention. The USFS and BLM would not receive the funding and coordination benefits from the MSHCP for high elevation communities, and would continue fire management under existing budgets.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on fire management would be similar to those of the proposed MSHCP and the No Action Alternative. Protection of the desert tortoise and its critical habitat would be a major focus of this alternative and funding and coordination of conservation activities addressing fire management concerns under this alternative would be focused in the ACECs. Fire management of desert tortoise habitats would also benefit the four state listed plants, Blue Diamond cholla, Las Vegas bearpoppy, threecorner milkvetch, and sticky buckwheat, each of which occur within low elevation plant communities. Fire management in riparian areas, including the Virgin and Muddy rivers and Las Vegas Wash, particularly where there is potential habitat for the southwestern willow flycatcher and yellow-billed cuckoo, would also be addressed. Fire management in high elevation ecosystems including the SMNRA and much of the Red Rock Canyon NCA would not initially receive the benefits of funding and coordination of management activities under this alternative since listed species do not occur in these areas. However, if new species were listed the focus of the alternative would change over time.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on fire management would be similar to those of the proposed MSHCP. The primary differences would be that funding levels and

therefore, intensity of management, would vary under shorter or longer permit terms. The AMP process would provide the necessary level of monitoring and oversight to ensure that MSHCP funding and coordination are appropriately focused.

4.3.13 Socioeconomics

4.3.13.1 Area and Population

According to the Nevada State Demographers Office (1997), Clark County's population was estimated at more than one million in July 1996; it is expected to more than double by the year 2010 and then to exceed 2.5 million by 2017. Las Vegas Valley, a highly developed urban area where the majority of the state's population (66 percent in 1996) resides, is the hub of Clark County and southern Nevada (Figure 4-8). As many as 6,000 people move into the Las Vegas Valley each month. According to the Census Bureau's data for 1990 to 1996, the fastest-growing U.S. city with a population over 100,000 is Henderson, and the sixth fastest-growing is Las Vegas. If current economic growth and in-migration trends continue, Clark County will comprise the majority of the Nevada population for the next 20 years.

Housing estimates from July 1997 indicate that there are at least 446,864 occupied residential units and a total of 469,748 occupied and unoccupied units. More than 154,519 residential units have been added since 1990, with 74 percent of the growth occurring in the past five years. To accommodate the expected population growth over the next 10 years, another 200,235 units will be required. Based on historical trends, nearly 47 percent of the new units are likely to be single-family homes.

On the subregional level, population forecasts indicate that Las Vegas Valley will continue to contain more than 90 percent of the county population well into the next century. Likewise, the unincorporated area is expected to maintain slightly less than a 50 percent share of the valley's population for the next 40 years.

- Over the next 10 years, the county as a whole is expected to gain over 531,643 residents, at an annual rate of 3.8 percent; of that increase, about 36 percent is expected to occur in unincorporated towns.
- New construction is likely to occur throughout the valley, with major increases expected in the existing master planned community, Summerlin (Phase One). Other master planned communities under construction or expected to begin construction soon are Summerlin South, Rhodes Ranch, and the Southern Highlands.
- Between 1979 and 1986, the amount of developed land in the valley increased annually by about seven percent. That trend is expected to continue.

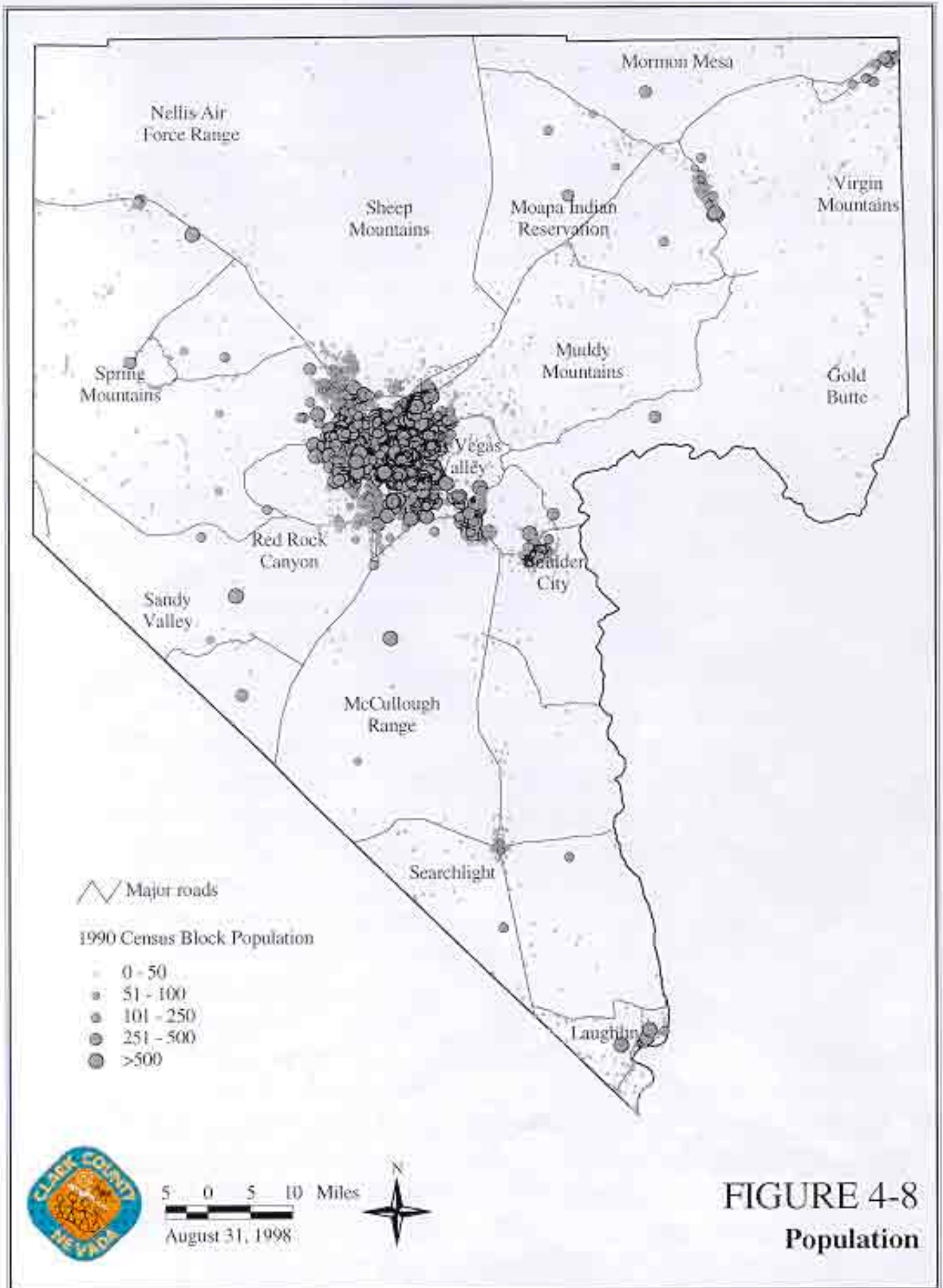


FIGURE 4-8
Population

Growth in rural Clark County has kept pace with the Las Vegas Valley's growth, but it has varied across the different rural areas. The northeast portion of unincorporated Clark County, including the City of Mesquite has experienced substantial growth which is likely to continue into the future. The South County area has grown in part in response to employment opportunities at Primm. Laughlin's dramatic growth has not continued, but it still continues to grow at an average of two percent per year, which is sustainable in the near future.

Situated within Clark County are Las Vegas Paiute, Fort Mojave, and Moapa River Indian reservations. The Moapa's resident population is an estimated 330 persons. The resident population of the Las Vegas tribe is 114. The resident population of Fort Mojave is 1,120 in both Arizona and Nevada. The annual growth rate of these tribes is three percent.

4.3.13.2 Income and Employment

The service industries are the single most important employers and income producers for Clark County, with Federal and state government providing the second largest source of income. In 1995, approximately 282,000 workers were employed by service industries and 62,000 by the government. The predominance of the service industries is attributable to gaming employment.

Approximately 28.3 million tourists and conventioners from all over the world came to the Las Vegas Valley in 1994, and the numbers have continued to increase. Visitors are attracted to Clark County by the gaming and resort industry, which has made Las Vegas one of the nation's most impressive economic growth phenomenon. In 1994, visitor expenditures provided \$19.2 billion to the southern Nevada economy. The gaming and resort industry of southern Nevada, as well as the favorable tax climate, induced growth in the services, manufacturing, construction, and retail industries, and is undoubtedly the driving force for community and economic development in southern Nevada.

Both farming and ranching occur within Clark County. Irrigated agriculture occurs on a small scale within the Muddy and Virgin River valleys, and in a limited area located northeast of Laughlin in the southern tip of the county. Total agricultural operations affect an estimated 17,000 acres in the county; primarily in the mesquite/catclaw and the desert riparian/aquatic ecosystems due to their proximity to water sources. An estimated 30 percent of the private and/or Native American land holdings along the Muddy River and 64 percent of private holdings along the Virgin River are in agricultural production. Private landholdings in these areas account for 95 and 44 percent of river frontage, respectively.

The unemployment rate for December 1997 was 3.9 percent for Clark County, a drop of 1.2 percent from the previous year. An expanding labor force led to the increase of employment. Clark County, with about 66 percent of the state's total employment,

created 80 percent of the new jobs in the last year. The annual per capita personal income for 1995 in Clark County is \$23,812, below the average of \$24,361 for the state's 17 counties. Clark County ranked fourth among the state's counties.

4.3.13.3 Social Setting, Attitudes, and Values

The State of Nevada is characterized as an individualistic state that affords and favors income-earning opportunities to miners, farmers, ranchers, and merchants; and more recently to those employed in the gaming entertainment, recreation, and construction industries. This assessment is particularly relevant for Clark County.

A 1995 social research study conducted by the University of Nevada, Las Vegas, revealed social attitudes and values of the southern Nevada urban and rural populations. Both populations generally favor economic development, industrial growth, and community expansion. However, the Las Vegas urban population recorded its need for environmental protection actions in relation to water demand, air quality, and traffic congestion. Urbanites related greater concern than rural counterparts about wildlife and ecosystem values. Rural closeness to the natural ecosystem may account for this value disparity in contrast to urbanites that yearn for the rural experience and day-to-day closeness with the natural environment. The rural population is more concerned with urban water use, outside government control of their densities, and intrusions into their territory.

Special recognition from the Federal government is given to tribal governments and members concerning their land, cultural, and economic resources. In particular, consideration must be given when land use plans, activities or actions affect tribal trust resources, trust assets, or tribal health and safety. Also, the U.S. Department of the Interior is responsible in maintaining a government-to-government relationship in the identification, protection, and conservation of these tribal resources.

4.3.13.4 Impacts

a. No Action

Under the No Action Alternative, new development or industrial activity with potential for incidental take of desert tortoise would be covered under the DCP, with a development fee of \$550 per acre to fund minimization and mitigation measures. Take of other threatened, endangered or candidate species would be not be covered and would require individual HCPs for activities resulting in incidental take of listed species. This could adversely impact regional economic activity and growth by lengthening the regulatory review process for issuance of individual Section 10(a) permits; create additional costs for acquisition of private lands for mitigation and the costs of management of the mitigation lands, and add uncertainty into the process of otherwise lawful development or expansion of activities. Project level mitigation of impacts could result in a more fragmented landscape of development and open space and less

comprehensive conservation management for a range of species. Future listings of new species could further impact development as new conservation measures and mitigation requirements would need to be established.

The socioeconomic impacts of the Las Vegas RMP were assessed by BLM in the Final Las Vegas RMP EIS. Negative fiscal impacts from restrictions on cattle grazing in desert tortoise habitats were identified, as a result of grazing closures in critical habitat. Under the DCP, Clark County will continue to obtain grazing and water rights from willing sellers. The socioeconomic impacts of the SMNRA GMP were evaluated in the 1996 EIS and found to be generally positive as the result of increased recreational opportunities which could, in turn, provide additional opportunities for services or businesses in the surrounding communities.

POTENTIAL WSA REDESIGNATION

Redesignation of WSAs would have minor impacts to the region's economy and would potentially expand the locations where economic activities (grazing, minerals extraction) or recreational uses could be pursued on public lands. The economic and social effects would not be significant.

b. MSHCP

The MSHCP would allow incidental take of listed, candidate and future potential listed species on private lands in Clark County. Development fees would remain at \$550 per acre. With these funds and the implementation of the conservation measures in the plan, otherwise lawful activities and new development could proceed without additional regulatory review. Future listings of species covered in the plan would not impact activities or development in the permit area. The MSHCP conservation measures do not preclude or severely burden existing economic activities on public or private lands. Funding and coordination of conservation measures would help to offset the impacts of issuance of permits for activities on Federal lands, such as grazing, locatable and saleable minerals and energy extraction, roads and utilities and maintenance, and intensive public recreational activities. This is because additional funding and coordination would protect currently unprotected habitats, reduce adverse impacts from human habitat-damaging activities, and restore and enhance important sensitive habitats, thereby increasing habitat carrying capacity for future wildlife use.

Conservation activities funded or coordinated under the MSHCP include various opportunities for public involvement, partnerships, and volunteerism through the process of protecting and enhancing the covered species and their habitats. The MSHCP's Implementation and Monitoring Committee, currently meets on a regular basis to discuss development of the MSHCP. Upon issuance of a permit for the MSHCP, the I&M Committee would continue to meet to discuss implementation of the plan. This group

provides an important venue for public involvement. The MSHCP's Public Information and Education Subcommittee is active in planning and implementing activities that inform the community on a variety of topics including species conservation. The goal of this subcommittee is to increase public understanding and awareness of the value of Clark County's natural ecosystems. The MSHCP also funds and coordinates other community interests, including the activities of the Muddy River Regional Environmental Impact Alleviation Committee, and the Rural Roads Management Subcommittee. All of these activities seek to minimize or avoid impacts on the citizens and communities of Clark County through awareness and involvement. The range of management activities addressing socioeconomic concerns that may be coordinated or funded over the life of the permit is listed in Sections 2.8.4 through 2.8.9 of the MSHCP.

c. Low Elevation Ecosystems MSHCP

The effects of the Low Elevation Ecosystems MSHCP on social and economic resources would be similar to those of the proposed MSHCP, except that funding and coordination of management activities for covered species and their habitats at higher elevations would not be available through this alternative. Management activities for species and habitats in the SMNRA and on higher elevation lands under other Federal management authority would continue under existing agency management directives. The USFS and BLM would continue to carry out public education and involvement programs to the extent possible under existing budgets. Conservation measures undertaken as part of a low elevation ecosystems MSHCP would not preclude or severely burden existing economic activities on public or private lands. Overall, the effects of this alternative on socioeconomic resources would be positive as a result of increased funding assistance and coordination in reducing and mitigating the effects of private land activities.

d. Permit Only for Threatened or Endangered and Candidate Species

The effects of a permit only for listed and candidate species on socioeconomics would be similar to those of the No Action Alternative, in that species and habitat conservation activities would be focused primarily in the desert tortoise ACECs. Additional activities would be funded and coordinated to benefit the Las Vegas bearpoppy, threecorner milkvetch, sticky buckwheat, Blue Diamond cholla, and in riparian areas, the southwestern willow flycatcher and yellow billed cuckoo. Species and habitats occurring at high elevations and in other areas where non-listed, non-covered species do not occur (e.g., mesquite woodlands) would not receive direct benefits under this alternative. Overall, the effects of this alternative on socioeconomic resources should be positive as a result of increased funding assistance and coordination in mitigating the effects of private land activities.

e. Alternative Permit Terms for the MSHCP

The effects of the alternative permit terms on socioeconomics would be similar to those of the proposed MSHCP. The primary differences would be that funding levels and therefore, intensity of management, would vary under shorter or longer permit terms. The AMP process would provide the necessary level of monitoring and oversight to ensure that MSHCP funding and coordination are appropriately focused. The 20-year permit period would allow fewer acres of incidental take, a higher level of biennial expenditures on conservation actions, and a lower level of total expenditures over the permit term. The 50-year permit would allow more acres of incidental take, require a lower level of biennial expenditures, and result in a higher level of total expenditures over the permit term. From the perspective of land use and fiscal planning, 20 to 30 years is typically the most appropriate planning horizon because of the limitations in the ability to predict future conditions.

4.4 Cumulative Impacts

Cumulative impacts are those which result from past, present, or reasonably foreseeable projects that can result from individually minor but collectively significant actions taking place over time. By virtue of developing and analyzing a County-wide ecosystem conservation plan such as the MSHCP, a cumulative effects analysis has largely been completed. The MSHCP has already taken into account future development within the private lands that are subject to the 10(a) Permit. Land disposals in Las Vegas Valley by BLM have also been taken into account for the MSHCP analysis.

The MSHCP integrates the actions of current conservation plans for listed, candidate and special status species. These include the DCP, Virgin River Fishes Recovery Plan, Muddy River Aquatic Species Plan, Memorandum of Agreement for the Las Vegas bearpoppy, Conservation Agreement for the Spring Mountains NRA, Lake Mead Resource Management Plan, Las Vegas Wash Master Plan, and the Boulder City Conservation Easement.

Federal actions that could affect the adequacy of the conservation measures, such as uses which might be allowed in the event of redesignation of the WSAs, would be subject to three levels of review: conformance with the conservation measures and implementing procedures of the MSHCP; NEPA, and, if listed or candidate species were to be impacted, Section 7 consultation with the USFWS as required under the ESA.

4.5 Summary of the Impacts of Alternatives

The analyses of environmental effects of the five alternatives are summarized by issue in Table 4-12. Effects are defined in relative terms from significantly adverse to significantly beneficial. In the cases where potential effects can vary or are less predictable, a range is presented.

The potential effects of the redesignation of WSAs and implementation of agency management plans are summarized in Table 4-13.

TABLE 4-13
RELATIVE EFFECTS OF WSA REDESIGNATION AND AGENCY MANAGEMENT PLANS

Issue	Potential WSA Redesignation	Agency Management Plans
Biological Resources	Adverse	Beneficial
Threatened/Endangered Species	Adverse	Beneficial
MSHCP Covered Species	Adverse	Beneficial
Hydrology and Water Quality	No effect	Beneficial
Air Resources	No effect to adverse	No effect to beneficial
Wild Horses and Burros	No effect	Beneficial
Cultural and Paleontological	No effect	No effect
Recreation	No effect to beneficial	No effect to adverse
OHV Activities	No effect to beneficial	Adverse
Livestock Grazing	No effect	Adverse
Mineral Extraction	Beneficial	Adverse
Transportation	Beneficial	No effect to adverse
Utility Rights-of-Way	Beneficial	No effect
Fire Management	No effect	No effect
Socioeconomic	No effect	No effect
Cumulative Impacts	No effect	Beneficial

**TABLE 4-12
SUMMARY OF EFFECTS OF THE ALTERNATIVES**

Issue	Alternatives					
	No Action	20-year MSHCP	Proposed 30-year MSHCP	50-year MSHCP	Listed/Cand. Spp. MSHCP	Low Elevation MSHCP
Biological Resources	Adverse to significantly adverse	Significantly beneficial	Significantly beneficial	Significantly beneficial	Beneficial	Beneficial
Threatened/Endangered Species	Adverse to significantly adverse	Significantly beneficial	Significantly beneficial	Significantly beneficial	Significantly beneficial	Beneficial
MSHCP Covered Species	Adverse to significantly adverse	Significantly beneficial	Significantly beneficial	Significantly beneficial	Beneficial	Beneficial
Other Biological Resources	Adverse to significantly adverse	Significantly beneficial	Significantly beneficial	Significantly beneficial	Beneficial	Beneficial
Hydrology and Water Quality	No effect to adverse	Beneficial	Beneficial	Beneficial	No effect to beneficial	No effect to beneficial
Air Resources	No effect to adverse	No effect to beneficial	No effect to beneficial	No effect to beneficial	No effect to adverse	No effect to beneficial
Wild Horses and Burros	No effect	No effect	No effect	No effect	No effect	No effect
Cultural/Paleontological Resources	No effect	No effect to beneficial	No effect to beneficial	No effect to beneficial	No effect	No effect to beneficial
Recreation	No effect	No effect to adverse	No effect to adverse	No effect to adverse	No effect	No effect to adverse
OHV Activities	No effect	Adverse to beneficial	Adverse to beneficial	Adverse to beneficial	No effect	Adverse to beneficial
Livestock Grazing	No effect	No effect	No effect	No effect	No effect	No effect
Mineral Extraction	No effect	No effect to adverse	No effect to adverse	No effect to adverse	No effect	No effect to adverse
Transportation	No effect	No effect to adverse	No effect to adverse	No effect to adverse	No effect	No effect to adverse
Utility Rights-of-Way	No effect	No effect to adverse	No effect to adverse	No effect to adverse	No effect	No effect to adverse
Fire Management	No effect	Significantly beneficial	Significantly beneficial	Significantly beneficial	No effect	Beneficial
Socioeconomics	No effect to significantly adverse	Significantly beneficial	Significantly beneficial	Significantly beneficial	No effect	Significantly beneficial
Cumulative Impacts	Significantly adverse	Significantly beneficial	Significantly beneficial	Significantly beneficial	Adverse to beneficial	Adverse to beneficial

4.6 Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long Term Productivity

The proposed MSHCP and Section 10(a)(1)(B) Permit are an attempt to balance the short-term development of private lands within Clark County's natural environment with the relatively long-term (30 years) funding for new and existing actions to conserve a wide variety of species and their habitats throughout the public lands of the county. Under this proposal, development projects on private land that would harm a Federally listed species could proceed under the MSHCP permit, instead of being required to complete a separate permit application. In addition, 77 other candidate or otherwise sensitive species would be covered by the action.

Although the entire permit area includes an estimated 375,000 acres with potential for development, not all of the land will be developed during the 30-year permit period. Population projections described in Sections 2.3.3 and 2.11 of this MSHCP estimate that approximately 145,000 acres may be developed by the end of the proposed term of the MSHCP in the year 2030. Population forecasts continue to indicate that more than 90 percent of the county population growth will occur within the Las Vegas Valley.

Some direct loss of habitat will occur on Federal lands during the permit period. However, all of the projected 145,000 acres of land disturbance covered by this MSHCP will occur on non-Federal lands or property disposed of by Federal agencies. Although the incidental take provisions of this MSHCP apply only to non-Federal actions (i.e., land disturbance on private lands), to provide a comprehensive analysis this plan anticipates some level of impacts on Federal lands as a result of increased public use. Federal actions that may affect listed species will require consultation under the provisions of Section 7 of the ESA; Federal actions that result in impacts to other resources will require review under the provisions of NEPA. These impacts are discussed in detail in the Cumulative Impacts chapter of this EIS.

The MSHCP identifies those actions necessary to maintain the viability of natural habitats in the county for approximately 223 species residing in those habitats, including 5 listed species (southwestern willow flycatcher, Moapa dace, woundfin, Virgin River chub, Mojave desert tortoise), and 1 candidate species (Blue Diamond cholla). While the MSHCP addresses all 223 species, it proposes that 79 of these species be covered by a Section 10(a) Permit for those species which are currently listed and prelisting agreements be in place for those species which are not listed. All Covered Species are treated in this plan as though they were listed and are subject to the standards set forth in Section 10(a)(1)(B) of the Act and 50 CFR 17.32(b) and 17.22(b). By addressing the

habitat needs of the Covered Species, the MSHCP benefits many other species that utilize the same habitats. In addition, the MSHCP establishes a process that may be utilized to assure the maintenance of the viability of the natural habitats of the remaining approximately 155 species described in the MSHCP.

The estimated loss of habitat for Federally listed species due to the issuance of the permit is less than five percent of the habitat available to the species within the county. It should be noted that the habitats expected to be lost are mainly low quality habitats in the Las Vegas Valley while higher quality habitats will be preserved and in some cases enhanced through a myriad of conservation activities. The conservation activities will likely increase the carrying capacity of many existing habitats and allow for viable populations of wildlife to persist in the county. Thus the short-term loss of sensitive habitat is more than made up for by the long-term benefits of implementation of the MSHCP.

The conservation actions of the proposed MSHCP have been designed to serve both short-term and long-term needs. They include public information and education, adaptive management, land use policies, and conservation actions. The land use policies and conservation actions include habitat restoration and enhancement measures, protective measures which may include regulatory prescriptions, use restrictions, or other land management actions, and changes to underlying management policies.

While the initial measures to be funded by the MSHCP will be effective to conserve both habitats and the Covered Species, conditions within Clark County, the status of habitats, and the overall conditions of individual species over time will change. In addition, it is quite likely that additional and different conservation measures, not contained within the MSHCP, will be suggested and proven to be effective during the term of the MSHCP. Finally, it may be found that measures currently funded by the MSHCP or undertaken by the land managers may prove to be ineffective to conserve either species or the habitats. The AMP will entail a program of research, trend monitoring, and inventory to assess species and habitat status to gauge the effectiveness of existing conservation measures and to propose additional or alternatives conservation measures, as the need arises, and to deal with changed circumstances.

Beyond endangered species concerns, funding and coordination of management of sensitive habitat serves the interests of a variety of other sensitive plant and animal species. It is entirely possible that several of these species may be proposed for listing in the future. A key threat in any subsequent species listing proposal would be loss of habitat. The funding of measures to survey for, protect, and monitor the viability of such species may avert listing by providing for the management of permanent habitat necessary for species viability.

Implementation of the MSHCP sets in motion several processes that potentially enhance the environment over the long term. Without the MSHCP, the probability that

contiguous, high-quality habitat on private lands would be systematically preserved is low. Since there is three times the amount of private land necessary to meet future development needs, those areas without sensitive species would be developed opportunistically, without a conservation plan, and would leave undeveloped private lands with sensitive habitat too fragmented to provide sufficient high-quality habitat for long-term species protection. Also, without the long-term MSHCP funding, existing conservation management guidelines, which could benefit the long-term viability of species, may go unimplemented. With the MSHCP in place, sensitive species protection would be the primary objective of land managers such that the probability of preserving species for the long term would be greatly enhanced.

In the short term, the issuance of a permit removes an obstacle from development (habitat loss) occurring on private lands in portions of Clark County. Infrastructure costs would be reduced under the MSHCP because it would allow for orderly development rather than a leap frog pattern around listed species habitat areas. Extending infrastructure and providing public services in a leap frog development pattern is more costly, and could result in increases in local taxes relative to an orderly and planned expansion of development. However, negative effects of allowing development in a defined area are more than balanced with the long-term positive effects of substantial funding for the management of public lands for the conservation of high-quality habitat for Federally listed threatened and endangered species throughout Clark County.

4.7 Irreversible Commitment of Resources

The proposed action is the issuance of a permit under Section 10(a)(1)(B) of the ESA to initially allow the incidental taking of 1 endangered species, 1 threatened species, 1 candidate species, and other Federal and state species of concern. Under the proposed permit, approximately 375,000 acres of private land in Clark County will be open to development without ESA restrictions on incidental take of the southwestern willow flycatcher and Mojave desert tortoise. The MSHCP and permit will also make prelisting provisions for the candidate and other species of concern. The permit which is requested would allow no more than 145,000 acres of the 375,000 acres of private land within the permit area to be disturbed during the 30-year permit period.

Issuance of the permit by the USFWS will cause adverse and irreversible environmental changes to the habitat of the species for which the incidental take permit is issued. Because the MSHCP provides overall mitigation by funding existing and future conservation measures and provides for the coordination of multi-agency conservation efforts, the habitat losses on private lands will not be further mitigated on a project-by-project basis. Once converted to a development use, existing habitat will no longer function as natural habitat for these species. In some cases, direct loss of listed species will occur. Under the proposed permit, land development during the 30-year term of the permit may irrevocably convert to a development use little to no southwestern willow flycatcher habitat and less than four percent of desert tortoise habitat in the county. These losses are not considered significant.

The amount of taking and habitat loss due to the proposed action would be largely irreversible. However, because there is so much protected existing habitat in Clark County, these incremental changes to endangered species habitat are not likely to threaten the continued existence of any of the listed or other species of concern.