



Management Change Analysis for the Clark County Multiple Species Habitat Conservation Plan

Prepared for

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1.0 Summary

The Final Multiple Species Habitat Conservation Plan and Environmental Impact Statement for Clark County was approved in 2001. The MSHCP provides for future assessments of “changed circumstances” which may occur after the Plan’s approval.

Changes in land use, management, and ownership have resulted in changes to the conservation status of lands, ecosystems, and covered species addressed in the Plan. Although no direct impacts would occur as a result of this analysis, the potential for impacts due to changes in land status and associated conservation management category are identified. Significant effects have been identified including increases and decreases in management of habitat types, ecosystem types, and species populations. These effects and specific recommended actions to address identified significant effects are detailed below.

2.0 Introduction

The Final Multiple Species Habitat Conservation Plan (MSHCP, Plan) for Clark County was approved in 2001 (RECON 2000). Section 10 regulations of the Endangered Species Act [50 Code of Federal Regulations (CFR) 17.22(b)(2)(iii)] require that a habitat conservation plan (HCP) specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the Habitat Conservation Plan Assurances (“No Surprises”) Rule [50 CFR 17.2, 17.22(b)(5) and (6); 63 CFR 8859] defines “unforeseen circumstances” and “changed circumstances” and describes the obligation of the permittees and the United States Fish and Wildlife Service (USFWS).

For the purposes of the MSHCP, “changed circumstances” include:

- Redesignation of Wilderness Study Areas (WSAs) or portions of WSAs, or other mandated land management changes by Congress resulting in reversion of areas identified in the MSHCP as Intensively Managed Area (IMA), Less Intensively Managed Area (LIMA), or Multiple-use Managed Area (MUMA) to previous management policies potentially affecting their value for conservation of habitats and species.

On November 6, 2002, the 107th Congress passed Public Law 107-282, the Clark County Conservation of Public Land and Natural Resources Act of 2002. This act designated 17 Wilderness Areas (WAs), expanded one existing WA, and released approximately 220,000 acres of land administered by the Bureau of Land Management (BLM), Las Vegas Field Office, from the designation of WSAs and Instant Study Area

(ISAs). The purpose of this analysis is to conduct a review of the effects of the WSA and ISA redesignations. Along with WSA redesignations, other updates to current land status will be accounted for in the comparison of MSHCP with current conditions including the territory adjustment between Nye and Clark Counties (State of Nevada 2001) under which 22,776 acres of Clark County land was transferred to Nye County, adjustments to the Red Rock Canyon National Conservation Area (NCA) boundaries and the establishment of the Sloan Canyon NCA under the Clark County Conservation of Public Land and Natural Resources Act of 2002, and the most recent land disposal data.

As described in Section 2.10.5 of the MSHCP (RECON 2001), an Adaptive Management Process was proposed to gauge the effectiveness of existing conservation measures and to propose additional or alternative conservation measures, as the need arises and to deal with changed circumstances.

The outcome of this analysis will be (1) an assessment of the occurrence of adverse effects on species, habitats, or key areas resulting from the changed management status of certain lands within the Clark County MSHCP area; and (2) the development of recommendations for appropriate measures to minimize, to the extent practicable, any significant and potentially adverse changes identified.

3.0 Methods

A general description of the methods used to compare land use data from the MSHCP with current conditions is included in this section. A more detailed description is provided in Attachment A.

The Change Analysis starts with baseline data from the MSHCP. These data were projected into the same coordinate system as the current data and the acreages are summarized by conservation management category in Table 1. Definitions and examples of the conservation management categories as approved in the final MSHCP are summarized in Attachment B.

**TABLE 1
SUMMARY MATRIX OF INITIAL BASELINE MSHCP ACREAGES**

Initial Conservation Management Categories	Acres
IMA	2,650,021
LIMA	380,916
MUMA	1,505,870
UMA	519,885
Total	5,056,691

IMA = Intensively Managed Area, LIMA = Less Intensively Managed Area, MUMA = Multiple-use Managed Area, UMA = Unmanaged Area

The acreages in Table 1 include slivers along the County boundary that are outside of the current data coverage due to a slight discrepancy in the County boundary between data sets that is only visible on a very large scale. These slivers, totaling about 3,800 acres of land outside of the current data coverage, were clipped out of the original data in order that the change analysis compare common acres. In addressing the territory adjustment between Nye and Clark Counties (State of Nevada 2001); the transferred area was retained in the baseline acreages and counted as a loss from management oversight in the updated calculations.

As detailed in the sections below, current distribution of conservation management categories was assembled from available sources to allow comparison with the baseline. This updated conservation management category layer was compared with the baseline to identify changes, specifically with respect to:

- total acres,
- acres of each ecosystem,
- acres of each vegetation community,
- acres of potential habitat for covered species (where identified), and
- management criteria.

For the purposes of this analysis, and based on the criteria developed in the MSHCP and EIS, criteria were developed for assessing the significance of changes in terms appropriate to the MSHCP. These criteria include consideration of the size and location of the changes, balance of ecosystem and vegetation community effects, and effects on selected species' potential habitat.

Using these criteria, any significant changes in conservation management category status were identified.

In cases where significant changes were identified, recommendations for measures to address them were developed. The initial source for these measures was the Final MSHCP and EIS, focusing on the land management category definitions and the set of approved implementation measures excerpted from the Final MSHCP and EIS are included in Attachment C.

The reader should note that the data used in the analysis vary in recency and precision. While this analysis is based on the best available current data in comparison with the original MSHCP data, there is an inherent level of uncertainty in the results due to variants in data source, projection, and precision.

4.0 Change Analysis

Changes from baseline conditions were analyzed by management category, vegetation type, ecosystem, and potential habitat for covered species. Changes are defined by comparison of current conditions as identified in this analysis with the conditions in the approved Clark County MSHCP, defined as baseline. The results of each of these analyses are summarized in the following subsections.

4.1 Change by Management Category

Comparing the baseline data against the current data gives the following changes in acreages of management category (Table 2). Figure 1 illustrates the baseline categories; Figure 2 illustrates the updated current categories; and Figures 3 through 6 show the changes in the IMA, LIMA, MUMA, and UMA categories, respectively. In the MSHCP, lands categorized as IMA or LIMA are considered to be conserved.

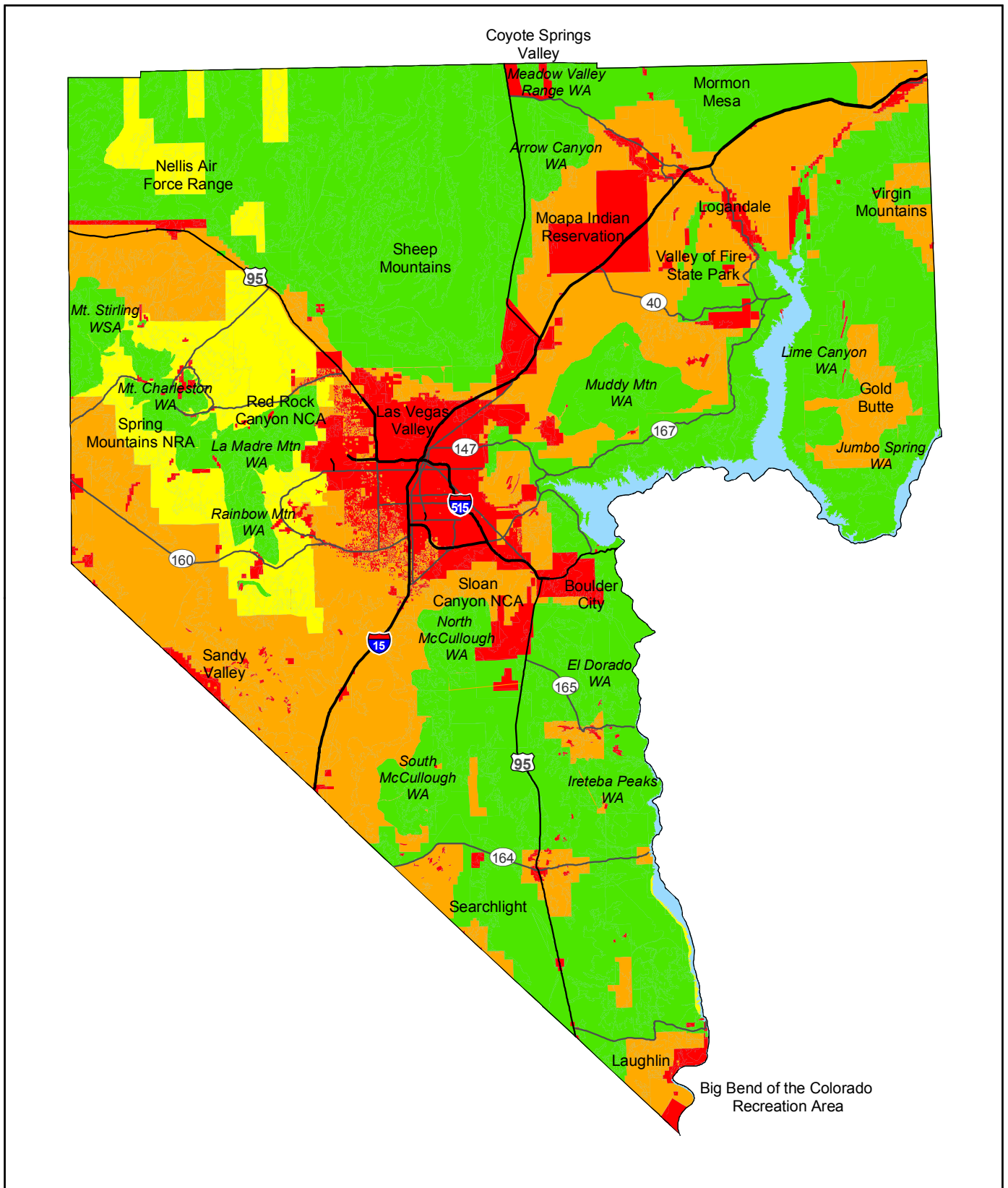
Table 2 is a matrix that shows how the baseline conservation management categories have changed. For example, in the top left-hand corner, the baseline IMA acreage is 2,646,717 acres; reading this row to the right shows the revised acreages of the baseline IMA category: 2,471,474 former IMA acres were retained as IMA, 47,995 former IMA acres are now categorized as LIMA, 117,000 former IMA acres are now designated as MUMA, and 10,249 former IMA acres are now designated as UMA. The totals for the revised categories are shown in the last row.

**TABLE 2
SUMMARY MATRIX OF CONSERVATION MANAGEMENT AREA CHANGES**

Baseline Conservation Management Categories	Baseline Acreage Totals	Revised Conservation Management Categories					Change (Baseline to Revised)
		IMA	LIMA	MUMA	No Data*	UMA	
IMA	2,646,717	2,471,474	47,995	117,000	0	10,249	-118,932
LIMA	380,720	16,163	360,505	1,510	0	2,543	53,021
MUMA	1,505,737	23,352	16,377	1,367,457	18,920	79,630	886
UMA	519,663	16,797	8,864	20,655	3,855	469,492	42,250
Total	5,052,837	2,527,786	433,741	1,506,622	22,776	561,913	

IMA = Intensively Managed Area
 LIMA = Less Intensively Managed Area
 MUMA = Multiple-use Managed Area
 UMA = Unmanaged Area

*Land that was lost from MSHCP management due to the territory adjustment between Nye and Clark Counties (State of Nevada, 2001).



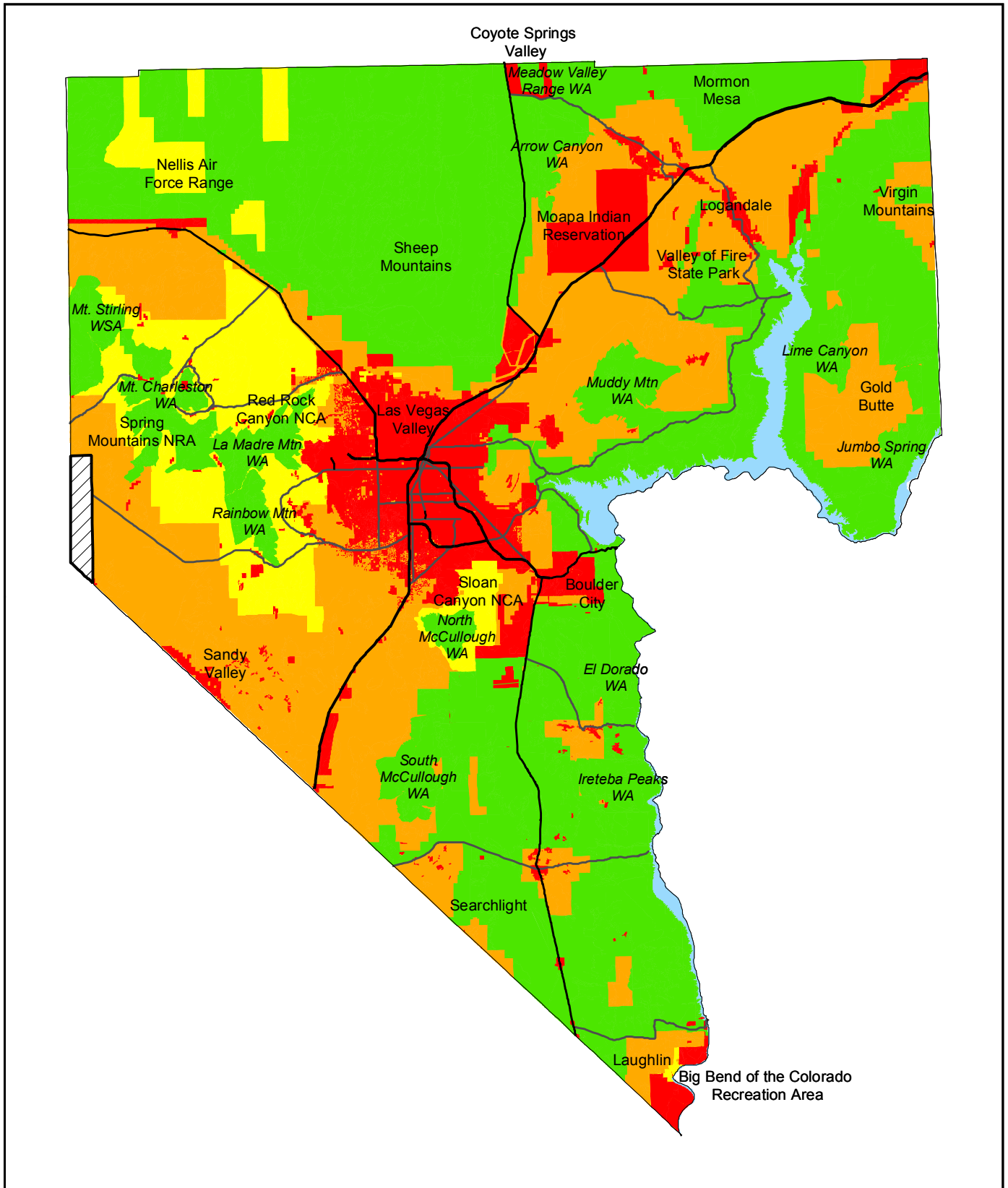
Conservation Management Categories (Baseline)

- IMA (Intensively Managed Areas)
- LIMA (Less Intensively Managed Areas)
- MUMA (Multiple Use Managed Areas)
- UMA (Unmanaged Management Areas)



FIGURE 1

Baseline Categories



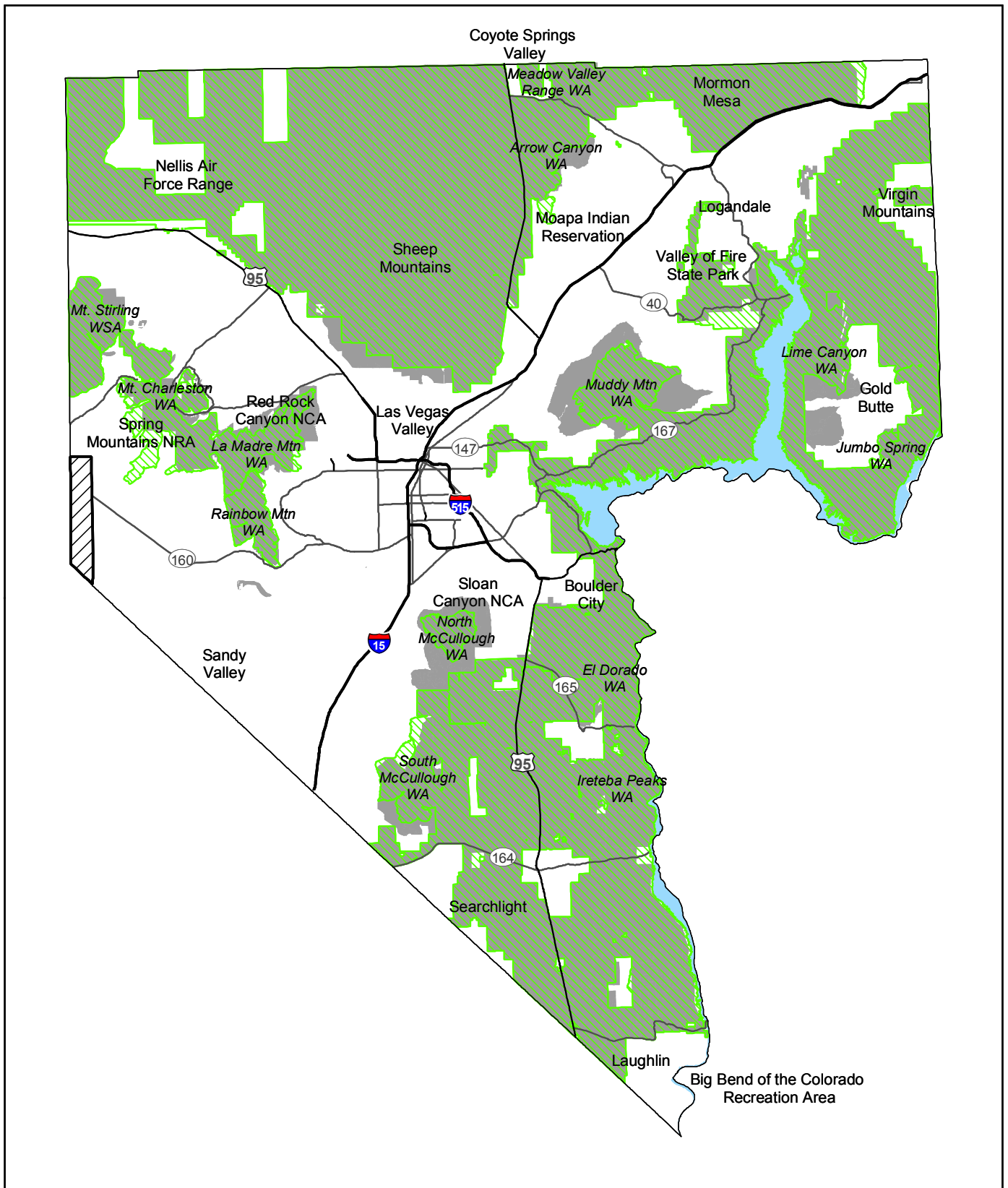
In 2001 this portion of Clark County was annexed to Nye County per Senate Bill No. 395


Conservation Management Categories (Updated)



- IMA (Intensively Managed Areas)
- LIMA (Less Intensively Managed Areas)
- MUMA (Multiple Use Managed Areas)
- UMA (Unmanaged Management Areas)



FIGURE 2
Updated Categories



 In 2001 this portion of Clark County was annexed to Nye County per NRS 243.293

 Updated IMA
 Baseline IMA


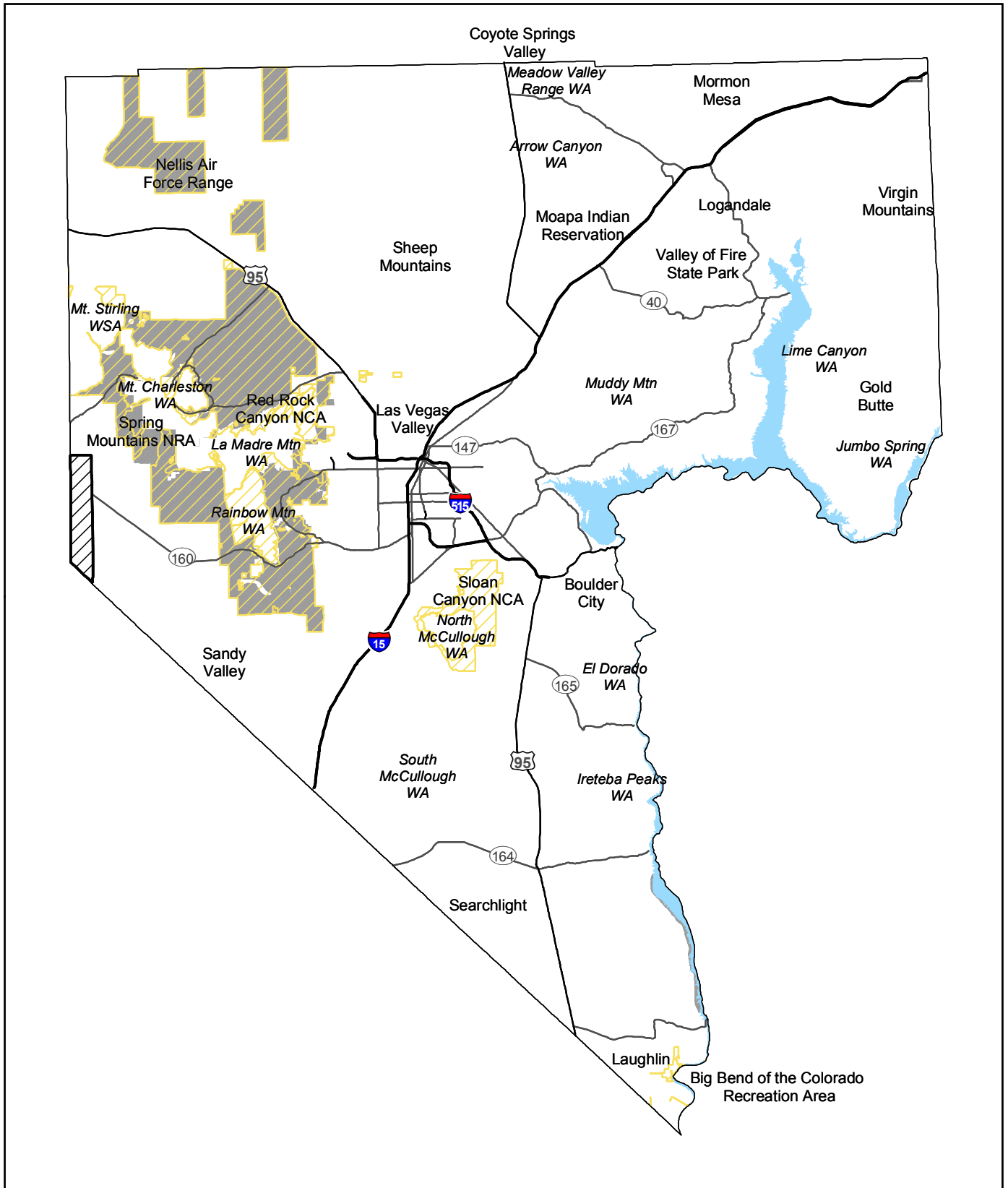
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FIGURE 3
Changes in IMA Category

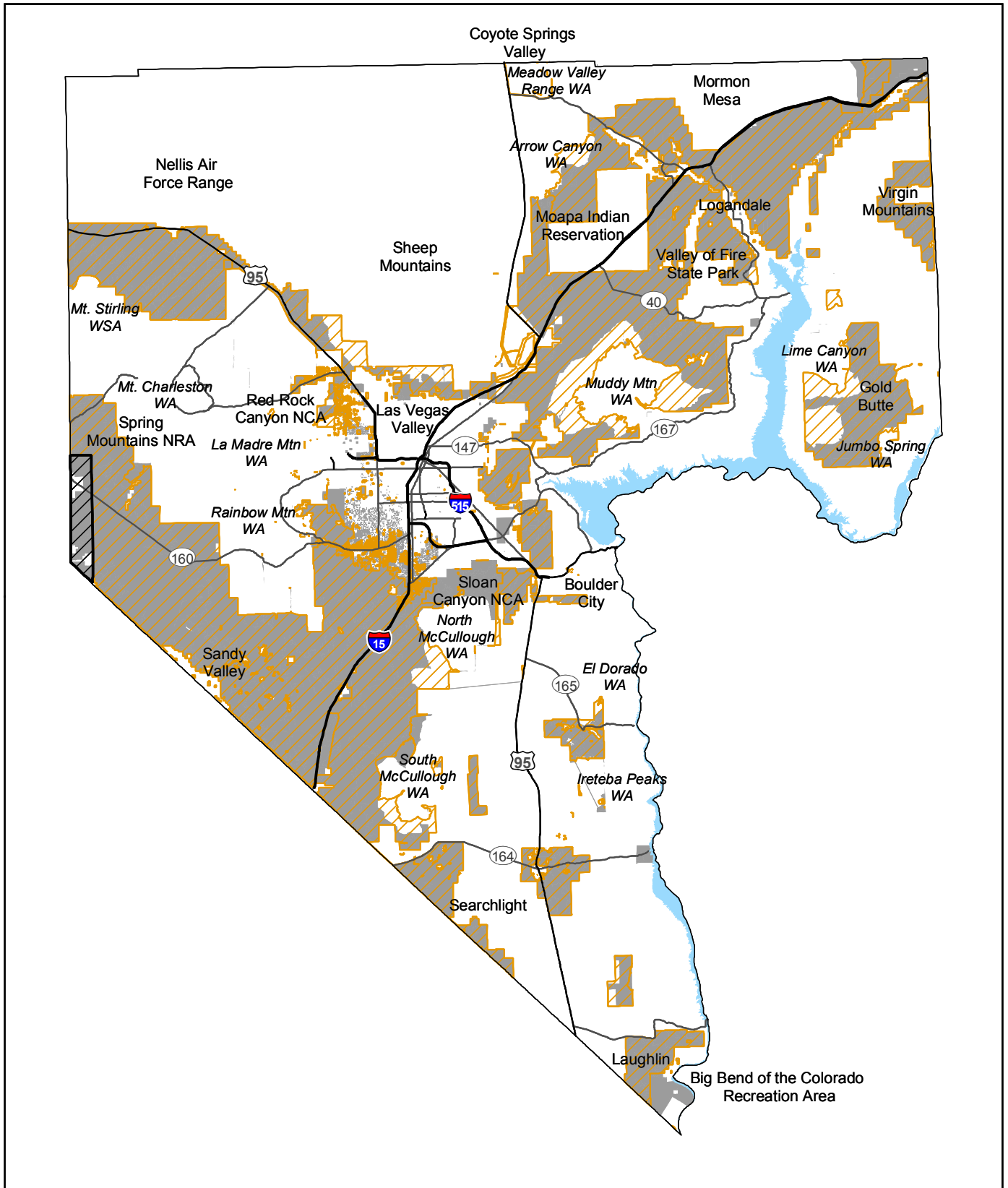



In 2001 this portion of Clark County was annexed to Nye County per NRS 243.293



Updated LIMA
Baseline LIMA



FIGURE 4
Changes in LIMA Category



 In 2001 this portion of Clark County was annexed to Nye County per NRS 243.293

 Updated MUMA
 Baseline MUMA


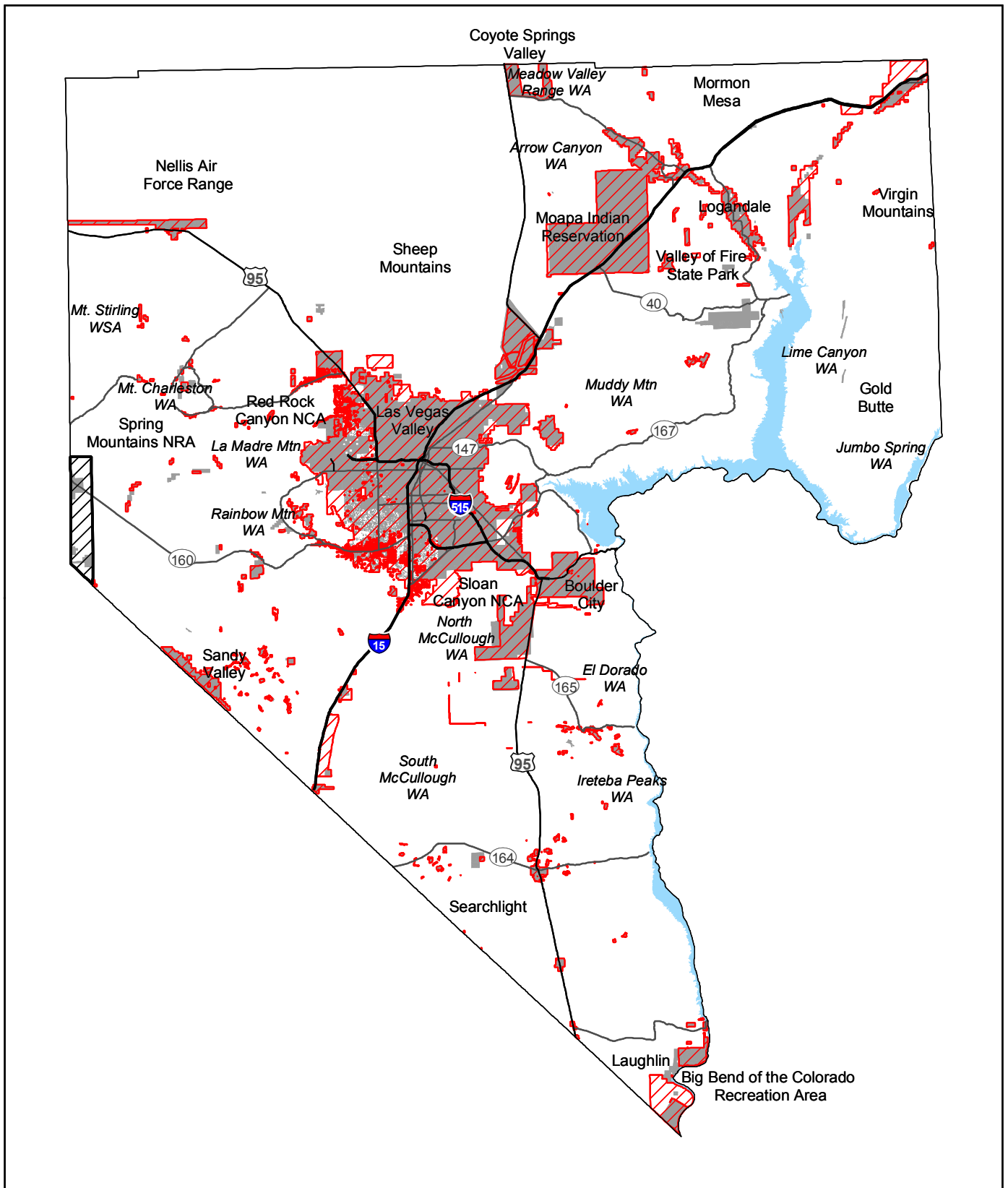


0 Miles 15 

FIGURE 5
Changes in MUMA Category



In 2001 this portion of Clark County was annexed to Nye County per NRS 243.293

 Updated UMA
 Baseline UMA

0 Miles 15 

FIGURE 6
Changes in UMA Category

The overall plan area changes in acreages are: a decrease in IMA of 119,000 acres (-4.5 percent), an increase in LIMA of 53,000 acres (+13.9 percent), no substantial change in MUMA, and an increase in UMA of 42,000 acres (+8.1 percent).

The changes and overall decrease in IMA acreage primarily resulted from The Clark County Conservation of Public Land and Natural Resources Act of 2002 which designated 17 WAs on Public Land in Clark County, expanded one existing WA, and released a portion of former WSAs and ISA on Public Land from study. This affected the following areas previously designated as WSAs: Muddy Mountains, North and South McCullough Mountains, La Madre Mountains, Quail Springs, Garret Buttes, Lime Canyon, Arrow Canyon, Mount Stirling, Pine Creek, Jumbo Springs, El Dorado, Ireteba Peaks, and Meadow Valley. Where WAs were released, the management category reverted to its underlying management category based on the definitions and examples in the MSHCP (see Attachment B).

The changes and overall increase in LIMA acreage primarily occurred in three areas of the County. Scattered changes totaling approximately 37,000 acres of increased LIMA occurred throughout the Toiyabe National Forest in the northwest including: WSA release (La Madre Mountain, Mount Stirling, and others) and boundary adjustments to the Red Rock Canyon National Conservation Area and the Spring Mountain NRA. LIMA increased by approximately 33,000 acres in the central County area due to WSA release from the North McCullough Mountains, and the creation of the Sloan Canyon National Conservation Area (NCA).

As shown in Table 2, 16,163 acres of baseline LIMA are currently classified as IMA; this change occurred in two locations: 13,572 acres throughout the Toiyabe National Forest in scattered areas due to boundary adjustments and 2,589 acres in the Lake Mead NRA due to reclassification of this area as IMA rather than LIMA (this does not represent a change in management).

State Lands in the area of a Nevada State Park, Big Bend of the Colorado Recreation Area, in the southern tip of the County, were included as MUMA in the original analysis. More detailed boundary information was available for the Big Bend area in this updated analysis. Based on the categories in Section 2.4.2.7 of the MSHCP (RECON 2000), the current analysis correctly includes this State Park as a LIMA. The park boundary was not identified in the original analysis, and the approximate 2,000 acres of the park were classified as UMA. Former State Lands in this area outside of the park have been transferred to private ownership and zoned for development; this transferred area was categorized as MUMA in the original analysis and is categorized as UMA in this updated analysis. State Lands in this area (including those transferred to private ownership) were approximately 9,000 acres in the baseline data and 11,000 acres in the updated data, the increased acreage representing the Big Bend of the Colorado Recreation Area.

State Lands in the area of the Big Bend of the Colorado Recreation Area (including those former State Lands recently transferred to private ownership and zoned for development) include 11,368 acres; lands within the boundary of Big Bend State Park (2,214 acres) are updated as LIMA in this change analysis, and lands transferred to private ownership and zoned for development are updated as UMA (9,154 acres). State Lands in this area, which totaled 9,156 acres in the baseline data, were categorized as MUMA in the MSHCP. Due to a recent change to private ownership, this area, currently totaling 9,154 acres, was re-categorized from MUMA to UMA. The 9,154 acres affected by this change make up less than one percent of each of the baseline MUMA and UMA acreages.

The 2,214 acres within the Big Bend State Park were categorized as UMA in the baseline data due to data indicating private ownership. Updated ownership data for the Big Bend area were obtained during this analysis, and the lands within the Big Bend State Park were updated to LIMA. The 2,214 acres of the Big Bend State Park that were recategorized to LIMA, make up less than one percent of the updated LIMA acreage. Although the area within the park boundary is categorized differently, the ability to manage the park has not changed.

The changes in MUMA acreage primarily resulted from WSA redesignation. In areas where WSAs were released from study, including areas where the currently designated WA is a smaller area than the former WSA, MUMA was the underlying management category. Muddy Mountains, Garret Butte, and Lime Canyon were most notably affected.

The changes in UMA acreage primarily resulted from development and the disposal of Public Lands. These occurred in the Big Bend/Laughlin area, in the southwest edge of the Las Vegas Valley, and in the northeast corner of the County. Other examples include the Ivanpah Airport in the southwest and a shooting range north of the Las Vegas Valley.

As a means to identify the important implications of changes in management, the current conservation category coverage by vegetation type, ecosystem type, potential habitat and/or known locations were compared with the baseline. The change from baseline was categorized as one of the following: large increase (>+5 percent change), small increase (between +1 and +5 percent), no change (between -1 and +1 percent), small decrease (between -1 and -5 percent), or large decrease (>-5 percent change). Potential impacts based on this categorization are discussed below by vegetation type, ecosystem type, and potential habitat and/or known locations for covered species.

4.2 Change by Vegetation Type

Table 3 shows the acres gained and lost from IMA, LIMA, and MUMA categorization by vegetation type. These changes are compared to the total acreage of each vegetation type. This comparison is based on vegetation data from the Clark County MSHCP.

**TABLE 3
VEGETATION ACRES GAINED AND LOST FROM IMA, LIMA, AND MUMA CATEGORIES**

Vegetation Type	Total Acres in County*	IMA Acres Gained	IMA Acres Lost	IMA Net Change	IMA Percent Change†	LIMA Acres Gained	LIMA Acres Lost	LIMA Net Change	LIMA Percent Change†	IMA+ LIMA Net Change	IMA + LIMA Percent Change†	MUMA Acres Gained	MUMA Acres Lost	MUMA Net Change	MUMA Percent Change†
Alpine	479	0	-1	-1	-0.1	1	0	1	+0.1	0	0	0	0	0	0
Blackbrush	818,290	11,976	-28,093	-16,117	-2.0	18,414	-3,263	15,151	+1.9	-965	-0.1	+13,158	-11,002	+2,156	+0.3
Bristlecone Pine	15,856	835	-914	-79	-0.5	758	-204	554	+3.5	+475	+3.0	0	0	0	0
Catclaw	7,748	3	-67	-64	-0.8	8	0	8	+0.1	-56	-0.7	+80	-466	-386	-5.0
Creosote–Bursage	2,455,221	23,091	-90,563	-67,472	-2.7	14,725	-4,008	10,717	+0.4	-56,755	-2.3	+93,408	-84,965	+8,443	+0.3
Grassland	17,049	242	-15	226	+1.3	25	-137	-112	-0.7	+114	+0.7	0	-9	-9	-0.1
Juniper	6,959	6	-1,216	-1,210	-17.4	1,391	0	1,391	+20.0	+181	+2.6	0	-181	-181	-2.6
Lowland Riparian	16,876	64	-1,319	-1,255	-7.4	269	0	269	+1.6	-986	-5.8	+217	-2579	-2,363	-14.0
Mesquite	13,881	394	-67	327	+2.4	235	0	235	+1.7	+562	+4.0	+142	-964	-822	-5.9
Mojave Mixed Scrub	816,429	6,707	-38,155	-31,448	-3.9	23,250	-721	22,529	+2.8	-8919	-1.1	+26,391	-16,638	+9,753	+1.2
Mountain Shrub	108,411	2,318	-5,845	-3,527	-3.3	4,930	-2,123	2,807	+2.6	-720	-0.7	+1,631	-112	+1,519	+1.4
Pinyon	56,111	4,147	-744	3,402	+6.1	759	-4,155	-3,396	-6.1	+6	+0.0	+4	<1	+3	0
Pinyon–Juniper	106,181	2,523	-987	1,536	-1.4	1,148	-2,584	-1,436	-1.4	+100	+0.1	+71	-104	-34	0
Ponderosa Pine	41,968	2,557	-2,642	-85	-0.2	3,114	-2,267	847	+2.0	+762	+1.8	0	0	0	0
Ponderosa Pine/Mountain Shrub	6,881	16	-26	-10	-0.1	100	-1	99	+1.4	+89	+1.3	0	0	0	0
Sagebrush	131,901	732	-3,218	-2,486	-1.9	2,422	-437	1,985	+1.5	-501	-0.4	+1,426	-707	+719	+0.5
Sagebrush/Perennial Grassland	2,660	11	-2	9	+0.3	34	-11	23	+0.9	+33	+1.2	0	0	0	0
Salt Desert Scrub	190,341	227	-707	-480	-0.3	773	-117	656	+0.3	+177	+0.1	+495	-5,508	-5,013	-2.6
White Fir	7,563	285	-590	-305	-4.0	617	-186	430	+5.7	+125	+1.7	0	0	0	0

IMA = Intensively Managed Area

LIMA = Less Intensively Managed Area

*Total acres of vegetation type prior to the territory adjustment between Nye and Clark Counties (State of Nevada, 2001).

Bold indicates a loss of 5 percent or greater.

†Percentage of net change compared to total acres of vegetation type in County.

For this analysis, a loss of five percent of vegetation type is considered to be a potentially significant impact and would require a more detailed analysis of changes in management and land use. When IMA and LIMA categories are considered as a whole, land status changes result in a large loss (greater than five percent) of lowland riparian vegetation type. Only two vegetation types, creosote–bursage and Mojave mixed scrub, show small (between -1 and -5 percent) decreases. Although there is a large decrease of the IMA category in the juniper vegetation type, when IMA and LIMA categories are considered together there is a small net increase in Juniper. The large loss in IMA category for juniper was due to the release of North McCullough WSA lands. There is a large loss in lowland riparian vegetation type, both when IMA and LIMA categories are considered together, and when IMA is considered alone. The large loss in IMA category for lowland riparian was due to updated private ownership within the Overton Wildlife Management Area (WMA).

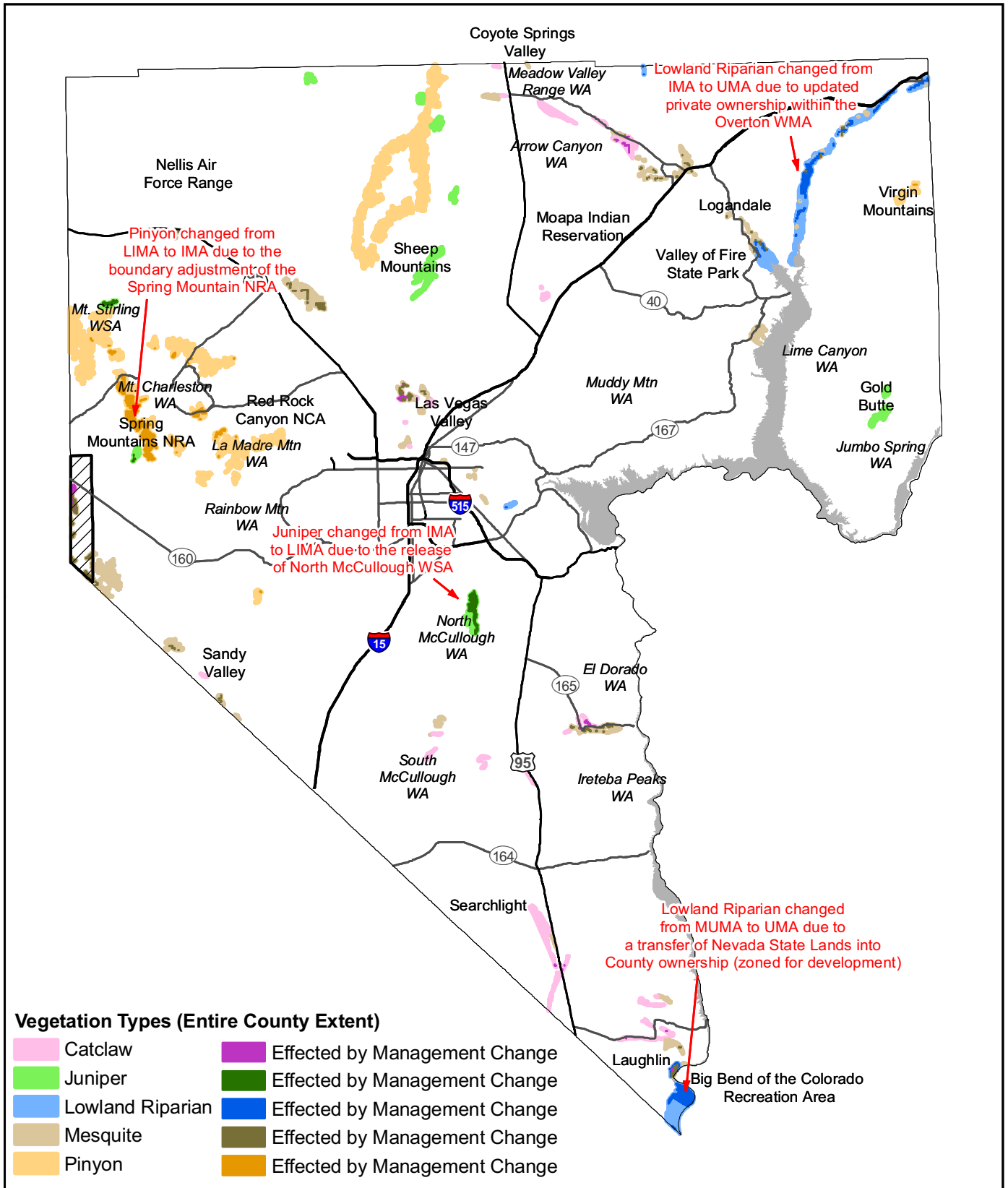
Table 3 indicates that for the pinyon vegetation type, there was a large increase in IMA that corresponds to a large loss in LIMA. This change was due to the adjusted boundary of the Spring Mountain NRA.

A large loss in MUMA is noted in Table 3 for lowland riparian. This loss primarily represents the former State-owned Lands near Big Bend that have been transferred to private ownership and zoned for development, and are therefore updated to the category of UMA. Table 3 also shows large losses in MUMA for catclaw and mesquite vegetation types; these losses are predominantly acres that were lost in the territory adjustment between Nye and Clark Counties (State of Nevada 2001) and scattered acres that are currently categorized as UMA.

Figure 7 shows the vegetation types with a large decrease in IMA, LIMA, or MUMA: juniper, lowland riparian, pinyon, catclaw and mesquite; and indicates large consolidated areas of change.

The vegetation types in the former State Lands in the area of the Big Bend of the Colorado Recreation Area that were transferred to private ownership include 6,461 acres of creosote–bursage, 2,470 acres of lowland riparian, and 224 acres of Mojave mixed scrub. The acreages of creosote–bursage and Mojave mixed scrub in this transferred area are less than one percent of the county-wide coverages of each vegetation type. The acreage of lowland riparian in this transferred area is 14 percent of the county-wide coverage, as seen in Table 3.

The vegetation types within the Big Bend State Park, where this analysis correctly re-categorized land within the Park from UMA to LIMA, include 1,484 acres of creosote–bursage, 269 acres of lowland riparian, 235 acres of Mesquite, and 178 acres of Mojave mixed scrub. The acreages of creosote–bursage and Mojave mixed scrub are less than one percent of the county-wide coverages of each vegetation type; and the acreages of



In 2001 this portion of Clark County was annexed to Nye County per Senate Bill No. 395



FIGURE 7

lowland riparian and mesquite are less than two percent of the county-wide coverages of each vegetation type.

As shown in Figure 7, the analyzed change in lowland riparian vegetation includes two major areas: the area adjacent to Big Bend and the Overton WMA. Lowland riparian vegetation in former State Lands in the area adjacent to Big Bend was re-categorized from MUMA to UMA due to the transfer of these lands to the County and zoned for development; lowland riparian vegetation within a portion of the Overton WMA changed from IMA to UMA due to updated private ownership.

4.3 Change by Ecosystem Type

Table 4 shows the acres gained and lost from IMA, LIMA, and MUMA categorization by ecosystem type. These changes are compared with the total acreage of each ecosystem type. This comparison is based on baseline ecosystem data from the MSHCP. To be consistent with the ecosystem analysis in the MSHCP, Table 4 also notes the vegetation types included in each ecosystem, and which vegetation types are considered to be the “habitat” portion of the overall ecosystem.

Although there is a large decrease of the desert aquatic type currently categorized as IMA; when IMA and LIMA categories are considered as a whole, Table 4 shows only a small net loss. The large loss in IMA category for desert aquatic was due to updated private ownership within the Overton WMA. A small decrease in IMA is also identified for three ecosystem types, blackbrush, Mojave Desert scrub, and sagebrush. When IMA and LIMA categories are considered as a whole, land status changes do not result in any large losses of ecosystem types, and only the desert aquatic and Mojave Desert scrub ecosystem types show a small decrease.

A large loss in MUMA is noted in Table 4 for desert aquatic. This loss primarily represents the former State-owned Lands near Big Bend that have been transferred to private ownership and zoned for development, and are therefore updated to the category of UMA. Table 4 also shows small losses in MUMA for the mesquite–catclaw and salt desert scrub ecosystem types. Salt desert scrub changed from MUMA to UMA at the Ivanpah Airport and the Las Vegas Valley. For mesquite–catclaw, the losses in are predominantly acres that were lost in the territory adjustment between Nye and Clark Counties (State of Nevada 2001) and scattered acres that are currently categorized as UMA adjacent to existing development northeast of the Moapa Indian Reservation and in the Las Vegas Valley.

Figure 8 shows the ecosystem types with a large decrease in IMA, LIMA, or MUMA; desert aquatic, mesquite–catclaw, and salt desert scrub for MUMA and indicates large areas of consolidated change.

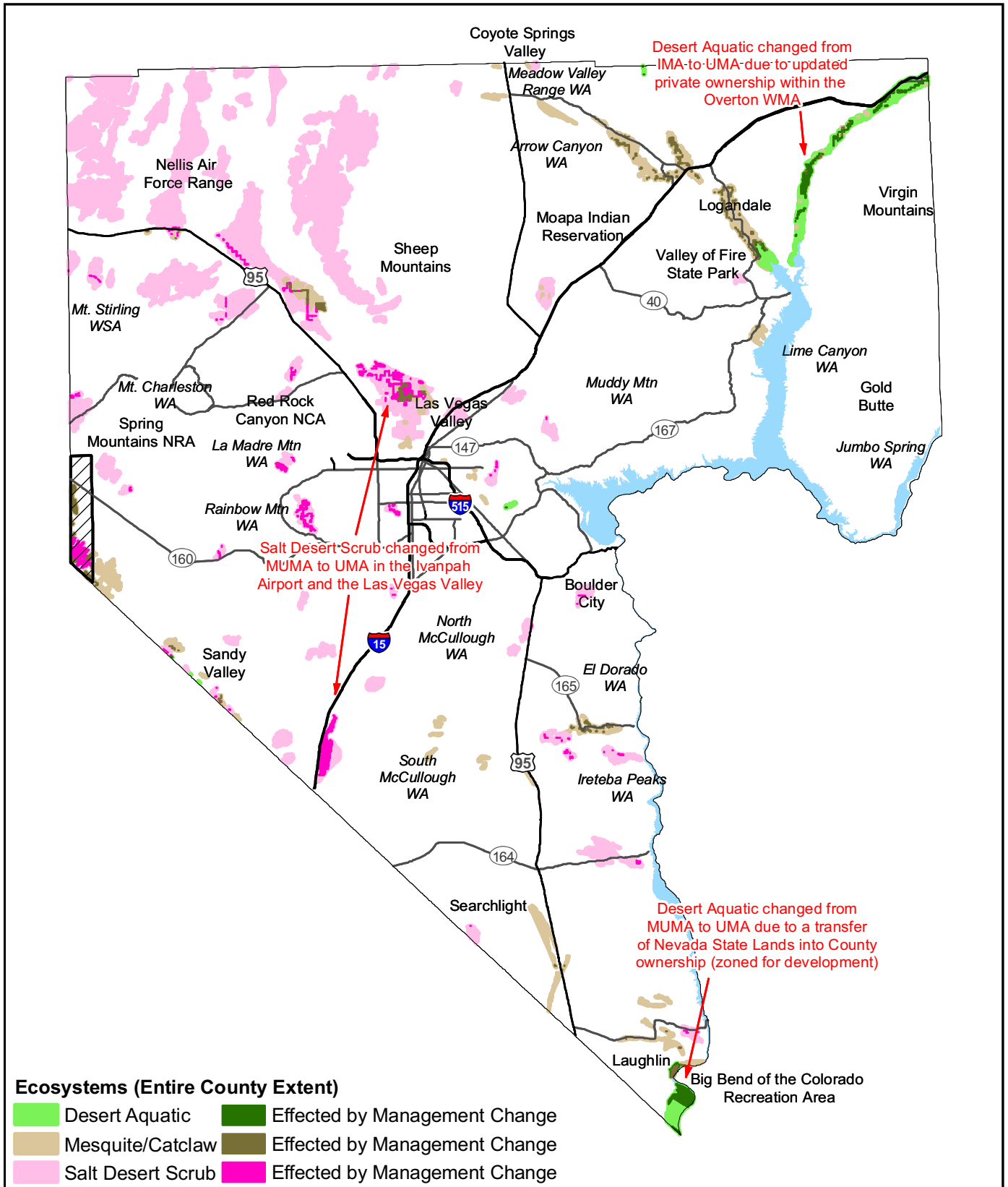
**TABLE 4
ECOSYSTEM ACRES GAINED AND LOST FROM IMA, LIMA, AND MUMA CATEGORIES**

Ecosystem Type Included Vegetation Coverages	Total Acres in County*	IMA Acres Gained	IMA Acres Lost	IMA Net Change	IMA Percent Change†	LIMA Acres Gained	LIMA Acres Lost	LIMA Net Change	LIMA Percent Change†	IMA+ LIMA Net Change	IMA + LIMA Percent Change†	MUMA Acres Gained	MUMA Acres Lost	MUMA Net Change	MUMA Percent Change†
Alpine Alpine	479	0	-1	-1	-0.1	1	0	+1	0.1	0	0	0	0	0	0
Blackbrush Blackbrush <i>Grassland</i> ‡ Hopsage	830,261	12,129	-28,095	-15,966	-1.9	18,417	-3,299	+15,118	1.8	-848	-0.1	+13,158	-11,002	+2,156	+0.3
Bristlecone Pine Bristlecone Pine	15,856	835	-914	-79	-0.5	758	-204	+554	3.5	475	+3.0	0	0	0	0
Desert Aquatic <i>Agriculture</i> <i>Urban</i> Lowland Riparian	21,598	64	-1,319	-1,255	-5.8	269	0	+269	1.2	-986	-4.6	+272	-2,864	-2,592	-12.0
Mesquite/Catclaw <i>Agricultural</i> <i>Urban</i> Mesquite Catclaw	34,463	529	-136	394	+1.1	258	0	+258	0.7	652	+1.9	+416	-1,928	-1,512	-4.4
Mixed conifer White Fir Ponderosa Pine Ponderosa Pine/Mountain Shrub	56,413	2,858	-3,258	-400	-0.7	3,831	-2,454	+1,377	2.4	976	+1.7	0	0	0	0
Mojave Desert Scrub Creosote-Bursage Mojave Mixed Scrub <i>Grasslands</i> <i>Urban</i> <i>Agricultural</i> <i>Barren Land</i>	3,465,083	29,837	-128,790	-98,953	-2.9	38,223	-4,729	+33,494	1.0	-65,459	-1.9	+121,693	-114,565	+7,128	+0.2
Pinyon-Juniper Mountain Shrub Pinyon Pine Pinyon-Juniper Juniper <i>Grassland</i>	281,519	9,083	-8,700	382	+0.1	8,235	-8,953	-718	-0.3	-336	-0.1	-1,706	-398	+1,308	+0.5
Sagebrush Sagebrush Sagebrush/Perennial Grassland <i>Grassland</i>	138,939	743	-3,195	-2,452	-1.8	2,472	-458	+2,013	1.4	-439	-0.3	+1,426	-716	+710	+0.5
Salt Desert Scrub <i>Playa</i> <i>Urban</i> Salt Desert Scrub	208,245	235	-707	-472	-0.2	773	-117	+665	0.3	184	+0.1	+496	-6,801	-6,306	-3.0

*Total ecosystem acres prior to the territory adjustment between Nye and Clark Counties (State of Nevada, 2001).

†Percentage of net change compared to total acres of vegetation type in County.

‡Italics indicate vegetation cover included in total ecosystem acreage, but not "habitat" total.



In 2001 this portion of Clark County was annexed to Nye County per Senate Bill No. 395



FIGURE 8

Ecosystems with Large Decreases in Management Categories

The ecosystem types in the former State Lands in the area of the Big Bend of the Colorado Recreation Area that were transferred to private ownership and zoned for development include 2,470 acres of desert aquatic and 6,684 acres of Mojave Desert scrub. The acreage of Mojave Desert scrub in this transferred area is less than one percent of the county-wide coverage of the ecosystem type. The acreage of desert aquatic in this transferred area is 11 percent of the county-wide coverage.

The ecosystem types within the Big Bend State Park, where this analysis correctly re-categorized land within the Park from UMA to LIMA, include 269 acres of desert aquatic, 258 acres of mesquite–catclaw, and 1,689 acres of Mojave Desert scrub. The acreages of mesquite–catclaw and Mojave Desert scrub are less than one percent of the county-wide coverages of each ecosystem type; and the acreages of desert aquatic is less than two percent of the county-wide coverage.

As shown in Figure 8, the analyzed change in desert aquatic ecosystem includes two major areas: areas adjacent to Big Bend and the Overton WMA. Desert aquatic ecosystem in former State Lands in the area adjacent to Big Bend was re-categorized from MUMA to UMA due to the transfer of these lands to the County and zoned for development; desert aquatic ecosystem within a portion of the Overton WMA changed from IMA to UMA due to updated private ownership.

4.4 Change by Covered Species

Attachment D shows the percentages of potential habitat and/or known locations in Clark County that are conserved (categorized as IMA or LIMA) based on the habitats or location data from the Individual Species Analysis of the MSHCP. The potential habitat and/or known locations of these species were compared with the old and updated management categories that are shown in Figures 1 and 2. Percentages of potential habitat and/or known locations are also summarized for MUMAs and UMAs. The MSHCP considered habitat or known locations in MUMAs to present a potential indirect impact, where habitat or known locations in UMAs presented a potential direct impact.

Table 5 summarizes the results presented in Attachment D. Based on the updated analysis; seven species with relatively large decreases in area under conservation (IMA or LIMA) are identified. The species with large decreases in conservation management (greater than five percent) are listed in Table 6. The five avian species with large decreases are associated primarily with desert aquatic ecosystem, and their decrease in potential habitat within IMA and LIMA reflects the decrease in the acreage of conserved lowland riparian vegetation communities. The two plant species with large decreases are associated primarily with the extensive Mojave Desert scrub ecosystem.

**TABLE 5
SUMMARY OF CHANGES IN CONSERVATION MANAGEMENT OF POTENTIAL HABITAT
OR KNOWN LOCATIONS OF COVERED SPECIES IN IMA AND LIMA**

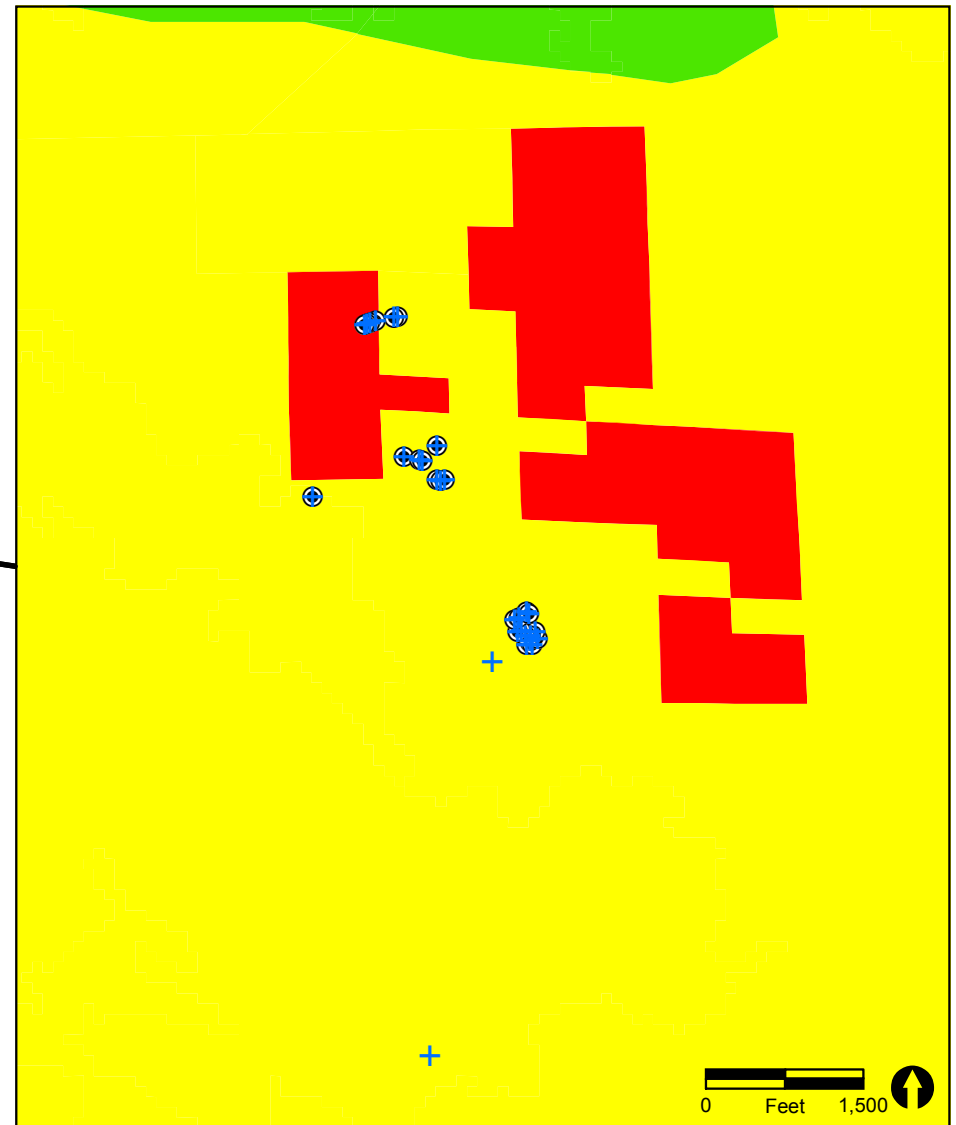
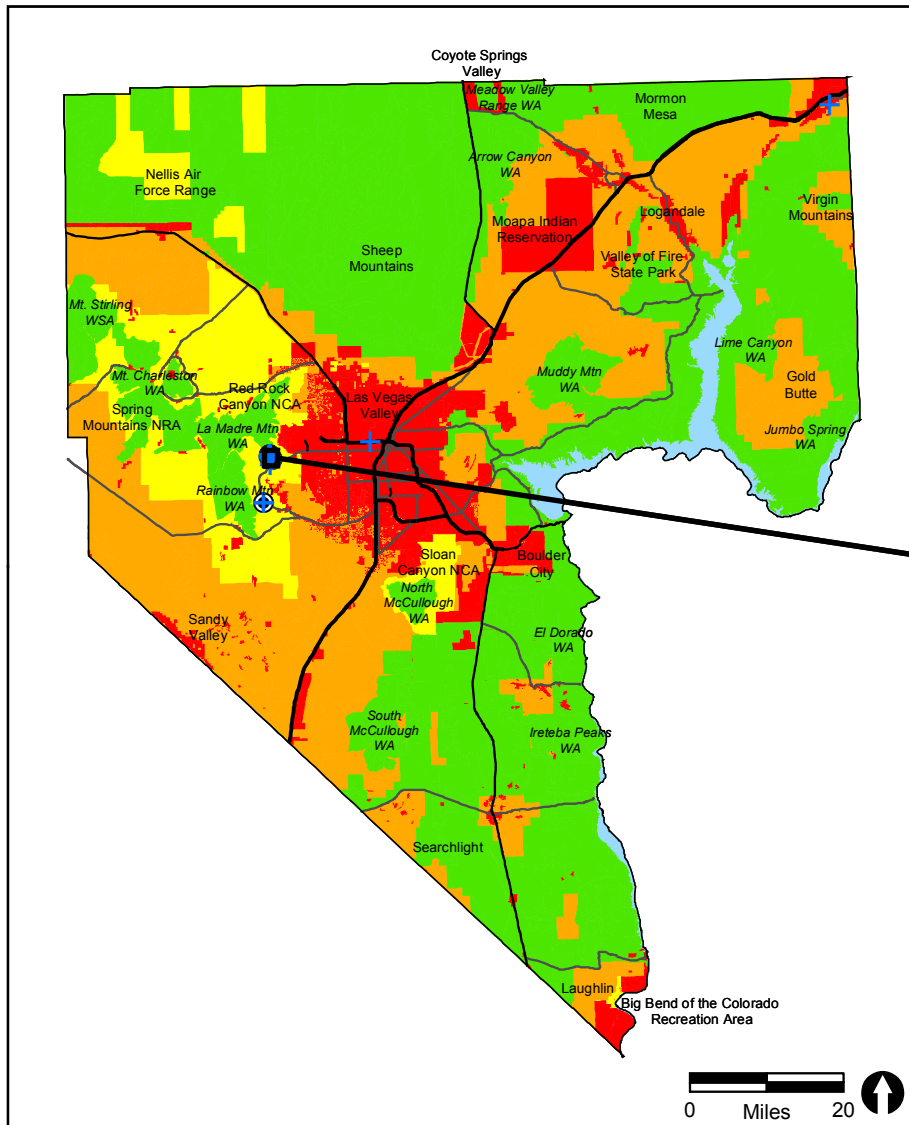
Change of Potential Habitat	Number of Species
Large increase	6
Small Increase	4
No Change	48
Small Decrease	14
Large Decrease	7
Total	79

**TABLE 6
SPECIES WITH LARGE DECREASES IN CONSERVATION MANAGEMENT**

Common Name	Scientific Name
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>
Summer tanager	<i>Piranga rubra</i>
Blue grosbeak	<i>Guiraca caerulea</i>
Arizona bell's vireo	<i>Vireo bellii arizonae</i>
Alkali mariposa lily	<i>Calochortus striatus</i>
White-margined beardtongue	<i>Penstemon albomarginatus</i>

The proportion of cited locations of the alkali mariposa lily in IMA and LIMA decreased from 88 to 82 percent, all of the changed areas becoming UMA. The proportion of cited locations for the white-margined beardtongue in IMA and LIMA decreased from 30 to 4 percent, in MUMA increased from 70 to 88 percent, and in UMA increased from <1 to 8 percent. The change from conserved to MUMA is primarily due to WSA release from the North McCullough Mountains, where a large cluster of species locations were documented.

Figure 9 shows the locations of the alkali mariposa lily that were used in the MSHCP and in this analysis. Additionally, more recent data sets for the alkali mariposa lily are also shown in Figure 9. The majority of the new and MSHCP data points are the same. Although not shown in Figure 9, there is one data point in the new set located outside of Clark County; this point is noted, but not included in this analysis. The addition of the single new point location within the County to the MSHCP data does not change the percentage of the population that is conserved (IMA+LIMA). However, looking only at the new data sets and disregarding the MSHCP data gives 84 percent of the locations conserved and 16 percent of the locations in UMA. This change is a result of one data point from the MSHCP data on lands currently categorized as UMA not occurring in the new data sets. Therefore, while the percentage of conserved locations is higher using



- + Alkali mariposa lily (Original Data)
- ⊙ Alkali mariposa lily (Updated Data)

Conservation Management Categories (Updated)

- IMA (Intensively Managed Areas)
- LIMA (Less Intensively Managed Areas)
- MUMA (Multiple Use Managed Areas)
- UMA (Unmanaged Management Areas)

FIGURE 9

Alkali Mariposa Lily Locations

only the new data sets, the total number of point locations is fewer, and does not truly indicate a higher conservation status.

An important consideration in the MSHCP for the Blue Diamond cholla (*Opuntia whipplei* var. *multigeniculata*) coverage by the permit was the proposed Conservation Agreement for the Blue Diamond cholla (RECON 2000; Appendix H) in order to avoid impacts to the only documented population at the time. However, the James Hardie Gypsum Mine at Blue Diamond has not been purchased for habitat protection by any agencies, and the land associated with the mine has been sold for potential development. Therefore, the conservation agreement may no longer be valid. Furthermore, since the MSHCP was written, there have been more populations documented in other areas of Clark County (Figure 10) as well as in Arizona. At the time the MSHCP was written, only one population of Blue Diamond cholla was known to occur only within the Blue Diamond Hills. Due to recent discoveries it is now known to occur from north of Las Vegas, near Gass Peak, in the Las Vegas Range, southwest into the La Madre Mountain area, south to Blue Diamond, and then southeast into the McCullough Range (Southwest Botanical Research 2005).

Given the change in the proposed conservation agreement from the MSHCP and the recent discovered locations of the species, the most recent location data within Clark County were examined to determine the change in the species' conservation management status. No appreciable change in the level of conservation management was found (see Attachment D). It is noted though that some of the populations (especially in Gold Butte) are within or very close to the fires that occurred in 2005. Fires spread by the presence of invasive grasses may be an increasing threat.

The species with small decreases in conservation management (decreases between 1 and 5 percent; see Attachment D) are listed in Table 7. These species are associated primarily with the extensive Mojave Desert scrub ecosystem, and their small decrease in potential habitat within IMA and LIMA reflects the decrease in the acreage of conserved creosote–bursage and Mojave mixed scrub vegetation communities.

A number of the covered species are endemic only to the Spring Mountains, listed in Table 8. Figure 11 shows the baseline and updated management categories for the Spring Mountains area. The endemic species listed in Table 8 are shown in Figure 11, with the exception of the butterfly species, since electronic data was not available.

5.0 Conclusions

As a result of changes in land use, management, and ownership that have occurred since the approval and implementation of the Clark County MSHCP, the conservation status of lands, ecosystems, and covered species addressed in the Plan have been significantly affected in the following ways:

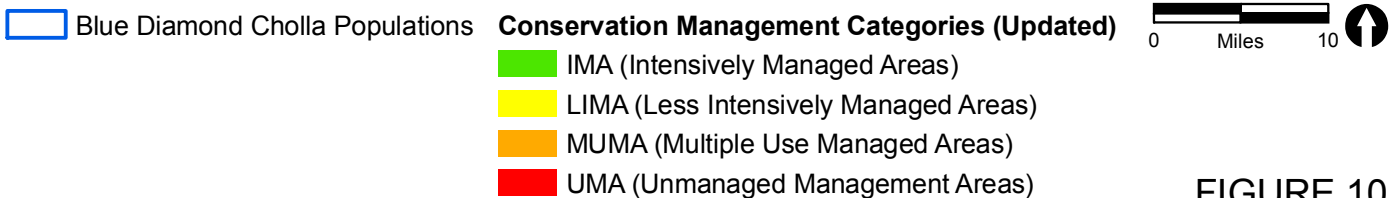
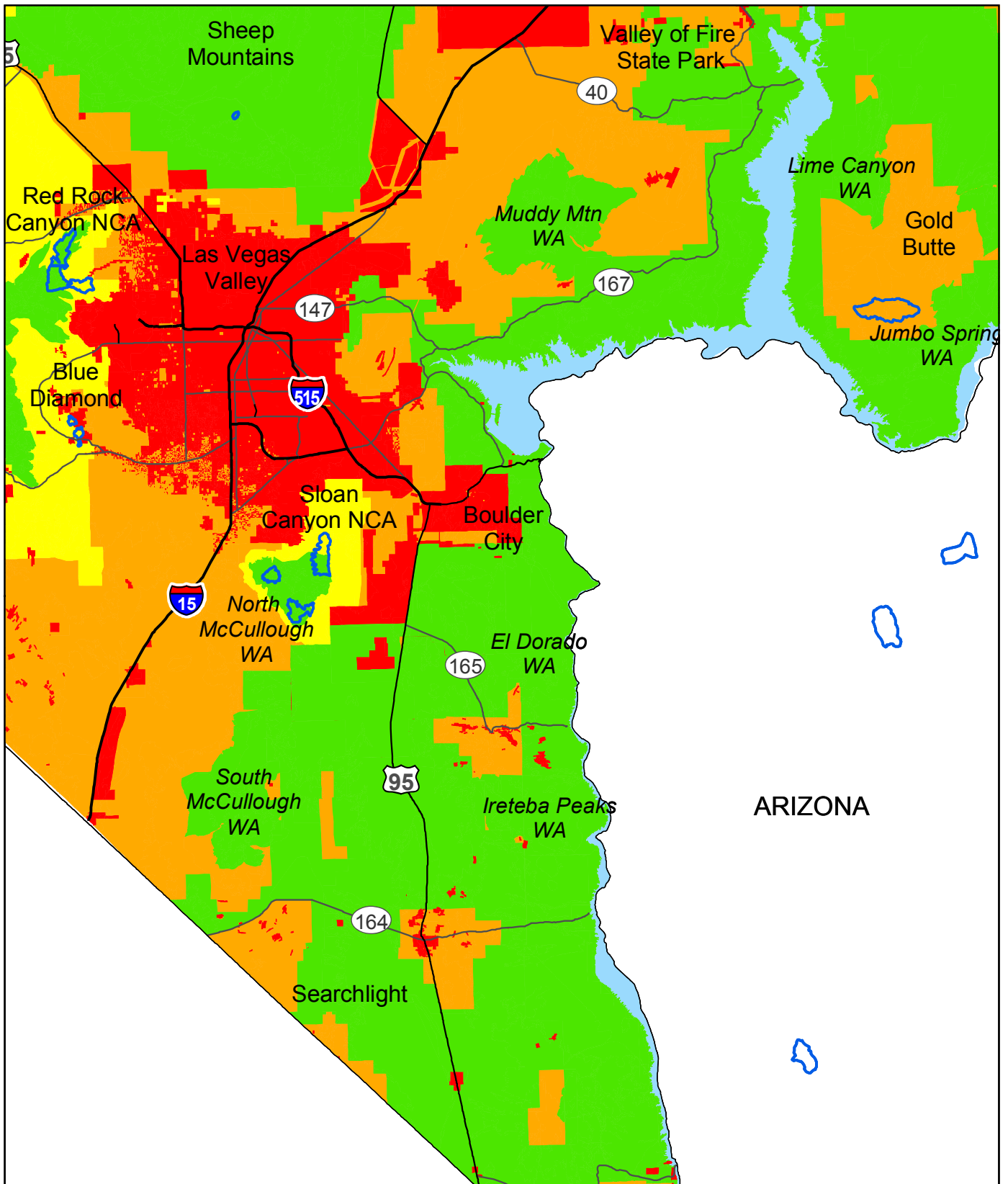


FIGURE 10

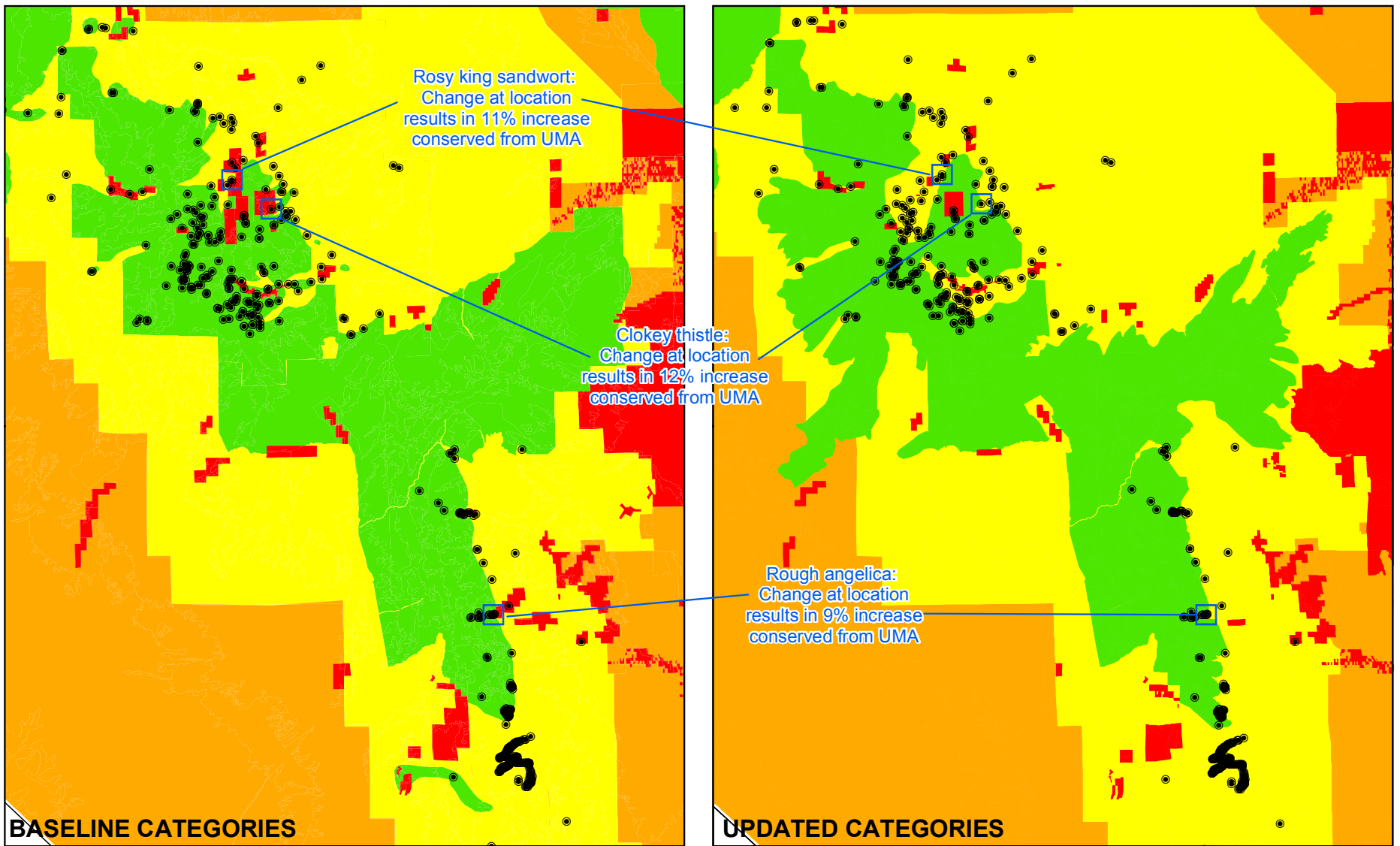
Blue Diamond Cholla Locations

**TABLE 7
SPECIES WITH SMALL DECREASES IN CONSERVATION MANAGEMENT**

Common Name	Scientific Name
Desert tortoise	<i>Gopherus agassizii</i>
Banded gecko	<i>Coleonyx variegatus</i>
Desert iguana	<i>Dipsosaurus dorsalis</i>
Large-spotted leopard lizard	<i>Gambelia wislizenii wislizenii</i>
Great Basin collared lizard	<i>Crotaphytus insularis bicinctores</i>
California (common) kingsnake	<i>Lampropeltis getulus californiae</i>
Glossy snake	<i>Arizona elegans</i>
Western long-nosed snake	<i>Rhinocheilus lecontei lecontei</i>
Western leaf-nosed snake	<i>Phyllorhynchus decurtatus</i>
Sonoran lyre snake	<i>Trimorphodon biscutatus lambda</i>
Sidewinder	<i>Crotalus cerastes</i>
Speckled rattlesnake	<i>Crotalus mitchelli</i>
Mojave green rattlesnake	<i>Crotalus scutulatus scutulatus</i>
Sticky ringstem	<i>Anulocaulis leisolenus</i>

**TABLE 8
SPECIES ENDEMIC ONLY TO THE SPRING MOUNTAINS**

Common Name	Scientific Name
Palmer's chipmunk	<i>Tamias palmeri</i>
Dark blue butterfly	<i>Euphilotes enoptes purpurea</i>
Spring Mountains icarioides blue	<i>Icaricia icarioides</i> ssp.
Mt. Charleston blue butterfly	<i>Icaricia shasta charlestonensis</i>
Spring Mountains acastus checkerspot	<i>Chlosyne acastus</i>
Morand's checkerspot butterfly	<i>Euphydryas anicia morandi</i>
Carole's silverspot butterfly	<i>Speyeria zerene carolae</i>
Spring Mountains comma skipper	<i>Hesperia comma</i> ssp.
Rough angelica	<i>Angelica scabrida</i>
Charleston pussytoes	<i>Antennaria soliceps</i>
Rosy king sandwort	<i>Arenaria kingii</i> ssp. <i>Rosea</i>
Clokey milkvetch	<i>Astragalus aequalis</i>
Spring Mountains milkvetch	<i>Astragalus remotus</i>
Clokey thistle	<i>Cirsium clokeyi</i>
Jaeger whitlowgrass	<i>Draba jaegeri</i>
Charleston draba	<i>Draba paucifructa</i>
Clokey greasebush	<i>Glossopetalon clokeyi</i>
Hidden ivesia	<i>Ivesia cryptocaulis</i>
Charleston beardtongue	<i>Penstemon leiophyllus</i> var. <i>keckii</i>
Clokey catchfly	<i>Silene clokeyi</i>
Charleston tansy	<i>Sphaeromeria compacta</i>
Charleston kittentails	<i>Synthyris ranunculina</i>



● Endemic Spring Mountain Species

Conservation Management Categories

- IMA (Intensively Managed Areas)
- LIMA (Less Intensively Managed Areas)
- MUMA (Multiple Use Managed Areas)
- UMA (Unmanaged Management Areas)

FIGURE 11
Spring Mountains Area:
Baseline and Updated Categories

- Decrease in IMA of 119,000 acres (-4.5 percent change or 2.4 percent of the County).
- Increase in LIMA of 53,000 acres (+13.9 percent change or 1.0 percent of the County).
- Increase in UMA of 42,000 acres (+8.1 percent change or 0.8 percent of the County).
- 6-percent decrease in conservation management of lowland riparian vegetation (IMA + LIMA), potential direct impacts to lowland riparian vegetation conservation management corresponding to a 7-percent decrease of IMA where lands were updated to UMA in the Overton WMA area, and potential direct impacts to lowland riparian vegetation conservation management corresponding to a 14-percent decrease of MUMA where lands are updated to UMA near Big Bend. Although changes in management category are identified as potential impacts to this vegetation type, actual impacts to riparian resources within waters under the jurisdiction of the United States Army Corps of Engineers (USACE) should be minimized as a result of regulations under the Clean Water Act (CWA) by the USACE. This oversight and regulation would apply to actions occurring on private as well as State and Federal lands.
- Potential direct impacts to catclaw vegetation conservation management corresponding to a 5-percent decrease of MUMA—this is predominantly acres that were lost in the territory adjustment between Nye and Clark Counties (State of Nevada 2001) and scattered acres that are currently categorized as UMA.
- Potential direct impacts to mesquite vegetation conservation management corresponding to a 6-percent decrease of MUMA—this is predominantly acres that were lost in the territory adjustment between Nye and Clark Counties (State of Nevada 2001) and scattered acres that are currently categorized as UMA.
- Potential direct impacts to desert aquatic ecosystem conservation management corresponding to a 12-percent decrease of MUMA where lands are updated to UMA. Potential direct impacts to desert aquatic ecosystem conservation management corresponding to a 6-percent decrease of IMA where lands were updated to UMA in the Overton WMA area. There is also a small (4.6-percent) decrease in conservation management (IMA + LIMA) of desert aquatic ecosystem. Although changes in management category are identified as potential impacts to this ecosystem type, actual impacts to riparian resources within waters under the jurisdiction of the USACE should be minimized as a result of regulations under the CWA by the USACE. This oversight and regulation would apply to actions occurring on private as well as State and Federal lands.

- 6-percent decrease in conservation management of the proportion of cited locations of alkali mariposa lily in IMA and LIMA (MSHCP data).
- 24-percent decrease in conservation management of the proportion of cited locations of white-margined beardtongue.
- 6-percent decrease in conservation management of potential habitat for the yellow-billed cuckoo, southwestern willow flycatcher, summer tanager, and Arizona bell's vireo; 5-percent decrease in conservation management of potential habitat for the blue grosbeak.
- Although the majority of documented locations for Blue Diamond cholla are within areas of conservation management, and only one percent is within lands classified as UMA, 32 percent are located within lands classified as MUMA, and have the potential for indirect impacts.

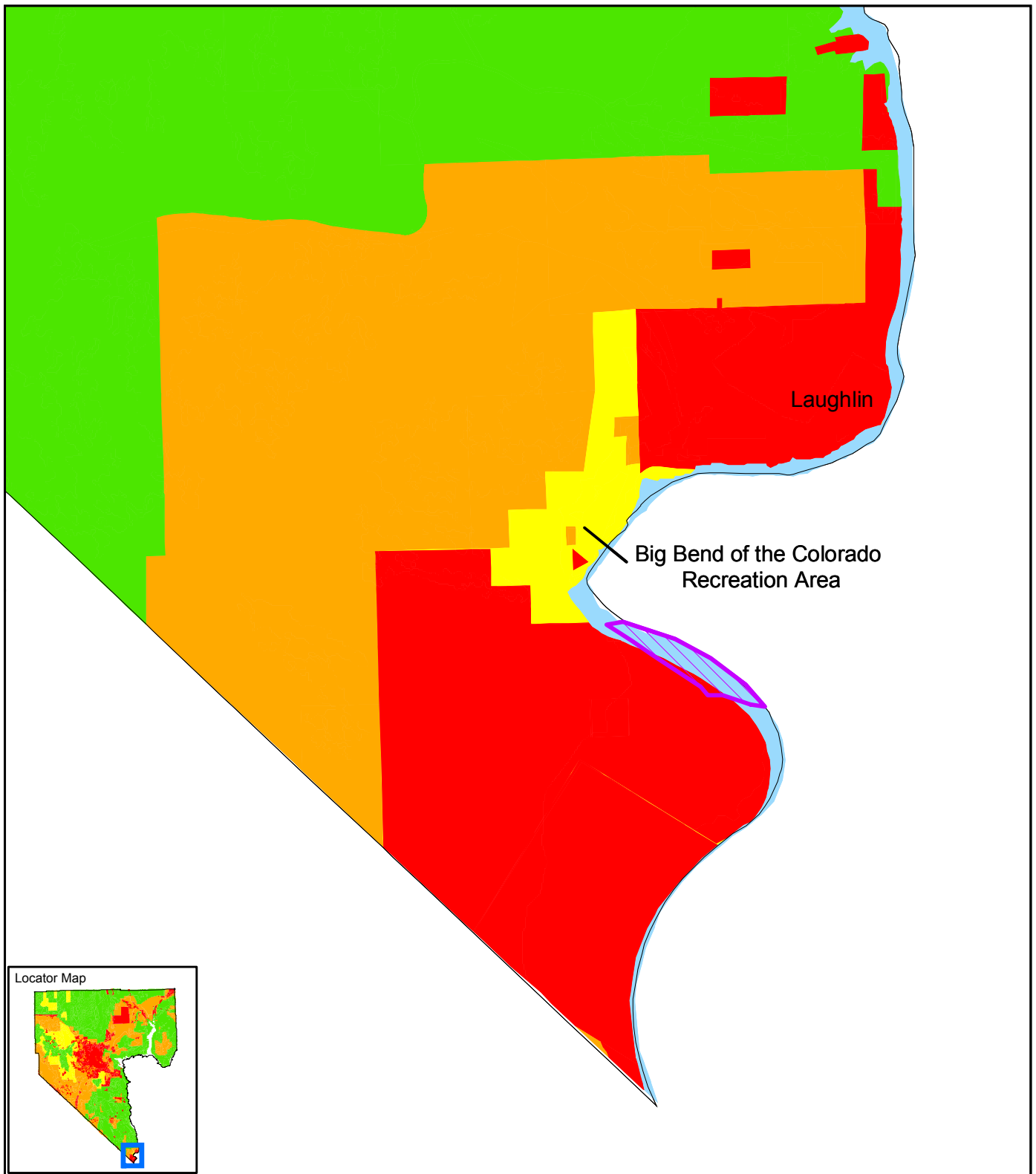
6.0 Recommendations

Measures to minimize, mitigate, and monitor impacts of take were outlined in Section 2.8 of the MSCHP (RECON 2001) and included public information and education; adaptive management; and land use policies and actions. For adaptive management, the conservation actions included research, monitoring for trends, and inventories to assess the status of habitats and species. Land use policies and actions included 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.

Although no direct impacts would occur as a result of this analysis, the potential for impacts due to changes in land status and associated conservation management category are identified in Section 5.0 above. The following are specific recommended actions to address these identified significant effects to conservation management status in the Plan. These actions would clarify and modify the strategies of the MSHCP where needed.

1. To address the decrease in IMA of 119,000 acres (-4.5 percent):
 - For vegetation and ecosystem types with small and large decreases in IMA evaluate the impacts of management actions in LIMAs with consideration of the IMA loss.
 - Require species specific assessment and consideration of the impacts of actions proposed within LIMAs and MUMAs for those species (listed in Table 7 above) with small decreases in potential habitat within IMAs and LIMAs.

2. To address the decrease in conservation management coverage for lowland riparian vegetation (-6 percent), and potential direct impacts to lowland riparian vegetation (-14 percent):
 - Specific measures to acquire or restore habitat of equivalent value to that lost should be explored and undertaken. Such measures may include, but are not limited to:
 - Updated vegetation mapping of areas where a loss in conservation management status occurred, particularly where a change to UMA occurred. Vegetation mapping should identify quantity and quality of vegetation.
 - Restoration of lowland riparian vegetation along the lowland portion of a potential 390-acre mitigation site near Big Bend, shown in Figure 12.
 - Restoration of lowland riparian vegetation along the Virgin River and/or Muddy River. Acquisitions or easements could be undertaken with willing parties.
 - Increased efforts for conservation or restoration within MUMAs.
 - Require an assessment and consideration of the impacts of actions proposed in or adjacent to lowland riparian vegetation within LIMAs and MUMAs.
3. To address potential direct impacts to catclaw and mesquite vegetation (-5 and -6 percent, respectively):
 - Specific measures to acquire or restore habitat of equivalent value to that lost should be explored and undertaken. Such measures may include, but are not limited to:
 - Updated vegetation mapping of areas where a loss to UMA occurred. Vegetation mapping should identify quantity and quality of vegetation.
 - Restoration of mesquite and catclaw vegetation along the upland portion of a potential 390-acre mitigation site near Big Bend, shown in Figure 12.
 - Restoration of mesquite and catclaw vegetation in MUMA or UMA areas. Acquisitions or easements could be undertaken with willing parties.



Potential Mitigation Area

- Conservation Management Categories (Updated)**
- IMA (Intensively Managed Areas)
 - LIMA (Less Intensively Managed Areas)
 - MUMA (Multiple Use Managed Areas)
 - UMA (Unmanaged Management Areas)

0 Miles 1.5

FIGURE 12

Potential Mitigation Site for Mesquite and Catclaw Vegetation, and Lowland Riparian Vegetation/Desert Aquatic Ecosystem

4. To address potential direct impacts to desert aquatic ecosystem (-12 percent), and the decrease in conservation management coverage for desert aquatic ecosystem (-4.6 percent)
 - o Specific measures to acquire or restore ecosystem of equivalent value to that lost should be explored and undertaken. Such measures may include, but are not limited to:
 - Updated vegetation mapping of areas where a loss in conservation management status occurred, particularly where a change to UMA occurred. Vegetation mapping should identify quantity and quality of the ecosystem.
 - Restoration of desert aquatic ecosystem along the lowland portion of a potential 390-acre mitigation site near Big Bend, shown in Figure 12.
 - Restoration of desert aquatic ecosystem along the Virgin River and/or Muddy River. Acquisitions or easements could be undertaken with willing parties.
 - Increased efforts for conservation or restoration within MUMAs.
 - o Require an assessment and consideration of the impacts of actions proposed in or adjacent to desert aquatic ecosystem within LIMAs and MUMAs.
5. For the alkali mariposa lily, develop specific management recommendations for the species in IMAs and LIMAs. Evaluate the potential for salvage, seed collection, propagation or other means to conserve plant material from populations in UMAs for incorporation in ecosystem restoration. Mitigation of impacts using salvage and propagation should only be implemented after demonstration of effectiveness for this species.
6. For the white-margined beardtongue, conduct a review of the distribution and status of the species within IMAs, LIMAs, and MUMAs and develop specific management recommendations for the species in IMAs, LIMAs, and particularly in MUMAs. Evaluate the potential for salvage, seed collection, propagation, or other means to conserve plant material from populations in UMAs for incorporation in ecosystem restoration. Mitigation of impacts using salvage and propagation should only be implemented after demonstration of effectiveness for this species.

7. For the yellow-billed cuckoo, southwestern willow flycatcher, summer tanager, blue grosbeak, and Arizona bell's vireo:
 - o Specific measures for lowland riparian vegetation and desert aquatic ecosystem, listed above, should be undertaken with consideration of these species. Vegetation mapping and monitoring of the success of restored habitat areas should include surveys for these species and a comparison between areas lost to UMA and areas restored for the habitat of these species.
8. For Blue Diamond cholla, develop a specific conservation and management plan for the species within IMAs, LIMAs, and particularly in MUMAs. The plan shall identify existing or likely threats, such as fire. Specifically, some of the populations (especially in Gold Butte) are within or very close to the fires that occurred in 2005. Fires spread by the presence of invasive grasses may be an increasing threat. If the potential to purchase the James Hardie Gypsum Mine at Blue Diamond becomes an option again in the future, acquisition of this land for conservation of the species should be revisited, as outlined in the proposed Conservation Agreement for the Blue Diamond cholla (RECON 2000; Appendix H).
9. Continue to develop adaptive management practices. Adaptive management has particular uses for MUMA lands; lands that could be disposed of, or become UMA should be reviewed as in item BLM(111) of appendix C in the MSHCP—development is anticipated in Coyote Springs Valley (the Apex Project), North Las Vegas, and the City of Las Vegas. MUMA lands should be monitored for uses that conflict with conservation goals; the current conflicts in MUMA areas that have been observed include: the conservation of species that are found in MUMA areas with increased off-highway-vehicle (OHV) use—one example is threecorner milkvetch located near Logandale Trails west of Logandale and east of Valley of Fire State Park; another is the Las Vegas buckwheat, which is a List 2 species in the MSHCP.

7.0 References Cited

RECON

- 2000 Clark County Multiple Species Habitat Conservation Plan/Environmental Impact Statement. Prepared for: Clark County Department of Comprehensive Planning and U. S. Fish and Wildlife Service. September.

Nevada, State of

- 2001 Senate Bill No. 395, Chapter 452. An ACT relating to counties; detaching certain territory from Clark County and attaching that territory to Nye County; and providing other matters properly relating thereto. Approved June 6; effective July 1.

Southwest Botanical Research

- 2005 Current Knowledge and Conservation of *Cylindropuntia multigeniculata* (Cactaceae), the Blue Diamond cholla. Prepared by Marc A. Baker for: U. S. Fish and Wildlife Service, Nevada State Office. June 15.

ATTACHMENTS

ATTACHMENT A

GIS Analysis Methods

Method Overview

RECON identified which data sources would be necessary to construct an updated version of management categories.

RECON interpreted and applied the criteria set forth in section 2.4.2.7 of the HCP document to the “latest and greatest” datasets available. (See the Special Circumstances section for details.)

RECON created a coverage of revised land management categories and unioned it with the original categories to analyze the change.

RECON analyzed the distribution of vegetation and ecosystems in the new categories using the vegetation data as the original HCP.

RECON analyzed sensitive species distribution according to the new categories using the same species data as the original HCP.

GIS Datasets Used

All data used in the analysis were provided to RECON via Carrie Ronning at the Bureau of Land Management (BLM) and by Lee Bice at Clark County; some datasets from the original HCP were also used. In order to prepare the original datasets to be used in the analysis, most data were clipped down to the new county boundary (COUNTY_BOUNDARY.shp), attributes were consolidated, and values standardized. In-holdings were accounted for, and (empty) ArcINFO coverage areas without attribute information were not included in the analysis. Table 1 identifies and describes each data source that contributed to the analysis.

All of the analysis was completed using ArcGIS ArcINFO 9.2 SP 2. All datasets were projected to NAD 1983 UTM Zone 11N Meters—the BLM’s native projection. The Boulder City coverage was in NAD 1927 UTM Zone 11N. All Data provided by Clark County was in their native projection, NAD 1983 StatePlane Nevada East FIPS 2701 Feet; the original analysis data were also in NAD 1983 StatePlane Nevada East FIPS 2701 Feet.

**TABLE 1
GIS DATASETS USED**

File Name	Description	Source and Date	Original File
General Datasets			
M:\JOBS2\4240\common_gis\PREP\COUNTY_BOUNDARY.shp	The most up-to-date boundary of Clark County	Clark County; 03/03/07	M:\JOBS2\4240\common_gis\030307_from_county\pbplace_p.shp
M:\JOBS2\4240\common_gis\PREP\STATUS.shp	Ownership layer	Nevada BLM; 02/28/07	M:\JOBS2\4240\common_gis\022807_from_BLM\Base_Layers\status
M:\JOBS2\4240\common_gis\PREP\BASELINE.shp	Original analysis: Clark County divided into management categories	Clark County; 04/06/07	M:\JOBS2\4240\common_gis\040607_from_county\exmgt.shp*
M:\JOBS2\4240\common_gis\PREP\RECONCILE.shp	Generated by RECON to address the different boundaries	RECON; 04/15/07	exmgt.shp, pbplace_p.shp, Status layer, and the Lake Mead boundary
M:\JOBS2\4240\common_gis\COMMENT_ANALYSIS\BIG_BEND_RE_ANALYSIS\0208_UPDATE.shp	The portion of the county surrounding Big Bend State Park that was re analyzed in February of 2008	Nevada BLM and Clark County	Project_loc Laughlin.shp blm_big_bend.shp
IMA Datasets			
M:\JOBS2\4240\common_gis\PREP\IMA\WILDERNESS.shp	WAs; WSAs	Nevada BLM; 02/28/07	M:\JOBS2\4240\common_gis\022807_from_BLM\Base_Layers\wildernes
M:\JOBS2\4240\common_gis\PREP\IMA\ACEC_TORT.shp	ACEC's managed for the desert tortoise	Nevada BLM; 02/28/07	M:\JOBS2\4240\common_gis\022807_from_BLM\Base_Layers\lacec
M:\JOBS2\4240\common_gis\PREP\IMA\CRIT_HAB_TORT.shp	Desert Tortoise Critical Habitat	Nevada BLM; 02/28/07	M:\JOBS2\4240\common_gis\022807_from_BLM\Resource_Data\Critical_Habitat\tort_crithab
M:\JOBS2\4240\common_gis\PREP\IMA\WMA.shp	WSA (Overton)	Nevada BLM; 02/28/07	M:\JOBS2\4240\common_gis\022807_from_BLM\WMAs\Wildlife_Management_Areas.shp
M:\JOBS2\4240\common_gis\PREP\IMA\BC_EASEMENT.shp	Boulder City Conservation Easement	Nevada BLM; 02/28/07	M:\JOBS2\4240\common_gis\022807_from_BLM\BC conserv easement

**TABLE 1
GIS DATASETS USED (CONT.)**

File Name	Description	Source and Date	Original File
LIMA Datasets			
M:\JOBS2\4240\common_gis\PREP\LIMA\NCA.shp	Sloan and Red Rock Canyon National Conservation Area	Nevada BLM; 02/28/07	M:\JOBS2\4240\common_gis\022807_from_BLM\Base_Layers\nca
M:\JOBS2\4240\common_gis\PREP\LIMA\NAFR.shp	Nellis Air Force Range (boundary from initial analysis)	Clark County; 04/06/07	M:\JOBS2\4240\common_gis\040607_from_county\exmgt.shp
TUMA Datasets			
M:\JOBS2\4240\common_gis\PREP\UMA\ISAFAR.shp	Indian Springs Air Force Auxiliary Field (boundary from initial analysis)	Clark County; 04/06/07	M:\JOBS2\4240\common_gis\040607_from_county\exmgt.shp
Biological Datasets			
M:\JOBS2\4240\common_gis\PREP\VEGECO.shp	Vegetation coverage used in the original analysis	RECON 1996 (GAP)	M:\JOBS2\4240\common_gis\from_2816\2816\ECOVEG
M:\JOBS2\4240\common_gis\PREP\SPCOVPT.shp	Point coverage of covered species locations used in the original analysis	RECON 1996	M:\JOBS2\4240\common_gis\from_2816\2816\SPCOVPT

*The baseline dataset initially provided (not exmgt.shp) by Nevada BLM called "IMA" coverage on 12/23/05 was not an accurate representation of the baseline categories, because acreages and geography were altered –however it very well may be what the BLM understood to be their management categories.

GIS Analysis Summary

In order to establish an analysis boundary that would account for actual on-the-ground change, RECON reconciled boundaries of relevant datasets, the old analysis boundary, the new county boundary, and the new status layer boundary (STATUS.shp). RECON determined its Change Analysis Boundary to be the coverage that the old analysis and the new county boundary shared as well as the land annexed to Nye County which was part of Clark County at the time of the original analysis. All acreages in this document are reflections of these criteria, except for the initial baseline acreages. Baseline acreages were calculated strictly from the initial baseline dataset (BASELINE.shp).

The new-county boundary is primarily different from the old-county boundary in that 22,775 acres of UMA and MUMA were annexed to adjacent Nye County in 2001. The old-analysis boundary is based off of the old-county boundary minus the lake area along the eastern boundary. The status-layer boundary is also different from the new-county boundary; there are 3,300 acres of the new county boundary (perimeter slivers) where there is no status data. There are also about 11,700 acres of perimeter slivers where the old analysis has no data within the current county boundary; and about 3,800 acres where old analysis data are outside of the current data coverage.

The status layer is the primary dataset of the analysis that contains underlying ownership for all Clark County land. Each record in the status layer was assigned to a management category according to the property owner. For example, all private land was attributed as UMA, all Forest Service land as LIMA, and so forth. The compilation of the revised land use categories involved stepping through a series of unions beginning with the status layer and adding each IMA dataset, each LIMA dataset, and each UMA dataset. There were no datasets specifically designating MUMA lands, as these were *everything left over* or “undesignated BLM lands.”

Once all of the contributing datasets were compiled into a single dataset, an attribute was created to hold values for the new management categories. This attribute was populated very carefully using presence and absence indicators in order to identify and reconcile all areas where data overlapped. For example, Nellis Air Force Range (NAFR), in the northwest corner of the county is represented as a large polygon in the status layer and designated as IMA; however, the NAFR impact ranges within this polygon are represented in another data source and designated as LIMA. In this case where IMA and LIMA overlap, LIMA takes precedence. Many situations like this one were addressed on a case-by-case basis. The analysis in its final form allows one to identify and understand why each area is designated as it is.

Once this portion of the analysis was complete, this dataset was used in subsequent analysis. It was unioned with the baseline data, vegetation and ecosystem data, and

spatially joined with sensitive species data to help understand the distribution of each within the revised categories.

Special Circumstances

The goal of the analysis is to capture actual on-the-ground changes in management. RECON did this by applying the criteria from the original HCP document as consistently as possible. The following explains specific issues or exceptions in the analysis.

- In February 2008 the BLM provided RECON updated ownership data in and around the Big Bend State Park and Nevada State Lands in the southern tip of the county. This data were incorporated into the existing analysis by unioning it with the previously final version and creating a new attribute called “CATS 0208” to capture the new management category values.
 - An approximate 9,000-acre polygon in the status layer was designated as MUMA in the original analysis. A change in status of this area was noted during this change analysis: this area is currently private land available for development and now updated to UMA per Section 2.4.2.7 of the HCP.
 - An approximate 2,000-acre polygon was identified under private ownership and therefore designated as UMA in the original analysis. Boundary data for the area obtained during this change analysis indicate that this area is a State Park and it is now designated as LIMA per section 2.4.2.7 of the HCP.
- “Intensive/developed recreation use areas” are lands designated as UMA according to section 2.4.2.7. However for disturbed or developed lands near Lake Mead, which are approximately 600 acres, data were not available or not included in the original analysis and were therefore not calculated as UMA. Although these data are currently available, for a consistent comparison of conditions this developed/disturbed area was also omitted from the UMA calculation in the revised analysis.

ATTACHMENT B

ATTACHMENT B
DEFINITIONS AND EXAMPLES OF CONSERVATION MANAGEMENT CATEGORIES (FROM MSHCP)

Category	Definition	Examples
Intensively Managed Areas	<p>IMAs consist of lands in which management is oriented toward actions that reduce or eliminate potential threats to biological resources, such as wilderness areas, biodiversity hotspots, wilderness study areas, or the conserved/critical habitat areas established for the Mojave Desert tortoise. IMAs will provide an adequate amount and quality of habitats to support viable populations of all of the species covered by the MSHCP. This MSHCP designates the following lands as IMAs:</p> <p>It should be noted that wilderness study areas are not permanent designations. It is up to the U.S. Congress, based upon the recommendations of the Federal land managers and the public, to make a final decision on the ultimate status of these lands. The potential effects that changes in WSA status could have on the conservation of species and habitats covered in this MSHCP are discussed in Chapter 3, Alternatives Considered, of this document.</p> <p>Furthermore, the Federal and state land managers will agree, through the provisions of the MSHCP and Implementation Agreement, to continue management of these lands in a manner consistent with the conservation of the species covered in this plan for the term of the 10(a) Permit.</p>	<ul style="list-style-type: none"> • BLM lands committed to conservation of the desert tortoise pursuant to the terms of the DCP • All National Park Service lands except those identified as development zone in the General Management Plan (GMP) and existing minor developments such as parking lots, trailheads, and boat ramps • Wilderness, Research Natural Areas (RNAs), WSAs, and Instant Study Areas (ISAs) managed by the BLM and the USFS • The Desert National Wildlife Range (including portions of NAFR), and other refuges, managed by the USFWS • State Wildlife Management Areas located within the plan area • State parks located within the plan area (Valley of Fire State Park) • Nellis Small Arms Range
Less Intensively Managed Areas	<p>LIMAs are lands on which management generally limits the range of uses allowed to primarily low-impact recreational uses. LIMAs will function to augment the habitat in IMAs for some species, as well as providing buffers from areas of more intensive uses and connectivity between IMAs. This MSHCP designates the following areas as LIMAs:</p>	<ul style="list-style-type: none"> • BLM lands managed as National Conservation Areas (NCAs) • USFS lands managed as the Spring Mountains National Recreation Area • Lands within NAFR and NSAR with limited Air Force use and restricted access • Target areas on NAFR • State parks other than Valley of Fire State Park

**ATTACHMENT B
DEFINITIONS AND EXAMPLES OF CONSERVATION MANAGEMENT CATEGORIES (FROM MSHCP)
(CONT.)**

Category	Definition	Examples
Multiple Use Managed Areas	MUMAs are lands on which human activities are not precluded and which may, at times, be intense but which nevertheless continue to support significant areas of undisturbed natural vegetation. MUMAs provide connectivity between the populations of species in IMAs and LIMAs, additional habitat for these species, and buffering between the IMAs, LIMAs, and areas of more intensive use. Agricultural lands may, in some situations, provide similar values. This MSHCP designates the following areas as MUMAs:	<ul style="list-style-type: none"> • Undesignated BLM lands
Unmanaged Areas	UMAs are lands on which human activities predominate and which may incidentally support populations of some species. This MSHCP designates the following areas as UMAs:	<ul style="list-style-type: none"> • Private lands • Indian reservations • Intensive/developed recreation use areas • Highways and material sites • Lands disturbed by previous land uses • Mines • Landfills • Intensive agriculture • Nellis Air Force Base and Indian Springs Air Force Auxiliary Field

ATTACHMENT C

Administrative Precedents

The Management Change Process

The following sections from the Final MSHCP describe the agreed-upon response to the redesignation of WSAs, as well as other anticipated changes. :

2.10 Changed Circumstances, Unforeseen Circumstances, No Surprises, and Other Federal Commitments

Section 10 regulations [50 CFR 17.22(b)(2)(iii)] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the Habitat Conservation Plan Assurances (“No Surprises”) Rule [50 CFR 17.2, 17.22(b)(5) and (6); 63 FR 8859] defines “unforeseen circumstances” and “changed circumstances” and describes the obligation of the permittees and the USFWS.

2.10.1 In General

The Applicants and Participants have made every effort to anticipate the minimization, monitoring, and mitigation measures (conservation measures) necessary to conserve the Covered Species and the habitats that support those species and, to that end, have relied upon the best scientific and commercial information available and have consulted the biologists who have participated in the BAC, biologists working for the USFWS and NDOW, and other experts having relevant information and data concerning the Covered Species and their habitats. In addition, the Adaptive Management Plan (AMP) and the flexible provisions regarding the expenditure of mitigation funds provided by the Applicants are intended to meet and address future exigencies and emergency situations. Thus, the MSHCP is intended to reduce the potential for adverse changed or unforeseen circumstances on the Covered Species and their habitats to a level of insignificance. However, notwithstanding the provisions of the MSHCP, should adverse changed or unforeseen circumstances result in, or threaten, a substantial change in the population of any Covered Species or the overall quality of any habitat of that species, as determined pursuant to the procedure outlined hereinafter, the Applicants and the USFWS shall cooperate to resolve the adverse impacts in accordance with this section.

The terms “changed circumstances” and “unforeseen circumstances” as defined in this MSHCP are intended to have the same meaning as defined in the Habitat Conservation Plan Assurances (“No Surprises”) Rule:

Changed Circumstances: If additional conservation and mitigation measures are deemed necessary to respond to changes in circumstances that were provided for in the HCP, the permittee(s) will be expected to implement the measures specified in the HCP, but only those measures and no others; and

2.10.4 Changed Circumstances

For the purposes of this MSHCP, “changed circumstances” include:

- Redesignation of WSAs or portions of WSAs or other mandated land management changes by Congress resulting in reversion of areas identified in the MSHCP as IMA, LIMA, or MUMA to previous management policies potentially affecting their value for conservation of habitats and species.

2.10.5 Response to Occurrence of Changed Circumstances—Adaptive Management

Clark County and the appropriate state and Federal agencies also will conduct an expedited analysis of the potential effects that WSA redesignation or other Congressionally mandated changes in land status would have on Covered Species, habitats, or key areas and recommend appropriate management responses to mitigate any significant effects.

The analysis will be commenced as soon as the requisite personnel from Clark County and the Federal and state agencies can be made available. If specific AMP management analysis has been performed previously for such species, habitat, or key areas, then the management for these affected species, habitats, or key areas will be reviewed in light of the changed circumstances. If management protocols for the species, habitats, or key areas have not been previously developed as part of the AMP established by this plan, then the affected species, habitats, or key areas will be made a priority for analysis and development of appropriate management protocols.

If multiple changed circumstances occur sufficiently close to each other in time such that the response will be significantly delayed due to lack of available personnel, Clark County will meet and confer with the applicable agencies in order to prioritize the analyses which need to be done. The purpose of the

prioritizing will be to consider first those species, habitats, or key areas which are most at risk of further impacts.

If WSAs are redesignated, Clark County, in consultation with the USFWS, will conduct an expedited review of the effects of redesignation on Covered Species and develop recommendations for appropriate management responses.

The outcome of the analysis will be the development of appropriate measures to minimize to the extent practicable the occurrence of adverse effects resulting from the changed circumstances on species, habitats, or key areas. The measures developed will be implemented. Ongoing management activities may continue until new measures resulting from the analyses are developed. However, as the agencies deem necessary, in consultation with Clark County, measures will be promptly implemented to minimize adverse effects prior to completion of the analysis to the extent feasible.

Definitions of Land Management Categories

Definitions and examples of the land management categories as approved in the final MSHCP are summarized in Attachment B.

Implementation Measures

The following measures were agreed to by BLM in the implementation section of the Final MSHCP. Measures in red are WSA specific measures. Other measures may have changed as the result of changes in land designations and will be identified as part of the analysis.

2.8.6 Bureau of Land Management

Actions that require an amendment to the RMP or Red Rock General Management Plan before they can be implemented are identified by ¹. Actions affecting OHV activities in Areas of Critical Environmental Concern (ACECs) will also require an amendment to the RMP.

2.8.6.1 Public Information and Education

BLM(1) Provide environmental information and educational materials to the public from the Red Rock Canyon NCA (RRCNCA) visitor center.

BLM(5) Develop brochures, pamphlets, and interpretive signs for covered species and the habitats of which they depend as determined to be appropriate by BLM in coordination with the HCP I & M Committee.

BLM(6) On a case by case basis, BLM will install signs at springs explaining the need for their protection and to reiterate State law that prohibits camping within 100 yards of water sources.

BLM(4) Promote awareness among users and managers of caves on public lands through development of informational and educational materials concerning conservation methods and potential hazards.

2.8.6.2 Research

BLM(9) BLM will cooperate with the I & M Committee and through the Adaptive Management Plan participate in the identification, development, and implementation of research projects located on Public Lands. Emphasis shall be placed on research that addresses management concerns and the conservation of covered and evaluation species.

BLM(8) Manage the Desert Tortoise Conservation Center Management Area (CCMA) (this includes the Desert Tortoise Conservation Center and the surrounding basin consisting of 11,014 acres) to support desert tortoise research and other research associated with the Mojave Desert Ecosystem. When feasible, expand the function of the center to include an environmental education/awareness program in close coordination with other Federal agencies and State and local governments.

BLM(7) Encourage the obtainment and dissemination of knowledge regarding the Mojave Desert ecosystem including desert tortoise biology.

2.8.6.3 Inventory (Status)

BLM(13) Continue to conduct inventories as determined by the BLM and I & M Committee on special status plant species to determine their distribution, abundance, and potential threats and take appropriate actions to protect the habitat of these plant and animal species.

BLM(15) BLM will cooperate with the Nevada Division of Wildlife and Clark County I & M Committee to implement surveys to determine the distribution, abundance, and potential threats on the southwestern willow flycatcher, phainopepla, summer tanager, Arizona Bell's vireo, yellow-billed cuckoo, and blue grosbeak and other species as necessary.

BLM(17) BLM will develop and maintain a digital data base for all inventory data collected and cooperate with other participants in establishing and maintaining a repository for digital biological data covering Clark County.

BLM(19) Inventory and monitor mesquite and acacia habitats in Amargosa Valley Area, Stump Springs, Pahrump Valley, Hiko Wash, Piute Wash, Meadow Valley Wash and other areas determined to be important as resting and/or nesting habitat for resident and neo-tropical migrants.

2.8.6.4 Monitoring (Trends)

BLM(32) Develop and implement a monitoring program for the Las Vegas bearpoppy in cooperation with the Lake Mead National Recreation Area. The presence or absence of known pollinators will be documented as a part of the monitoring study

BLM(35) Monitor water table levels at the Pahrump, Moapa, Stewart Valley, and Stump Springs mesquite woodlands.

BLM(36) Monitor water sources including springs, seeps, and streams to assess condition and trend.

BLM(38) Continue to establish and read vegetation trend monitoring plots in desert tortoise Critical Habitat (and/or in desert tortoise ACECs once established) and in active grazing allotments to determine vegetation trend over time.

BLM(33) Develop and implement a monitoring program for BLM Special Status Plants such as the alkali mariposa lily, Blue Diamond cholla and covered and evaluation moss species in the Red Rock Canyon NCA.

BLM(34) Monitor road and trail proliferation in desert tortoise ACECs, Las Vegas bearpoppy management areas, and WSAs.

2.8.6.5 Protective Measures

BLM(39) Prohibit collection of plants, animals, and mineral materials in Red Rock Canyon NCA without a permit.

BLM(57) Allow backcountry camping only in designated areas of Red Rock Canyon NCA.

BLM(97) Restrict mountain bikes and other mechanized non-motorized vehicles to designated trails within the RRCNCA and only allow new trails consistent with

the conservation of BLM sensitive species, including the Spring Mountain milkvetch.

BLM(71) Limit motorized uses in the Piute/Eldorado “Conserved Habitat” to designated roads and trails.

BLM(44) Close portions of the Red Rock Canyon NCA to vehicle use or limit use to designated roads and trails.

BLM(71) Limit motorized vehicles in WSAs to existing roads and trails as listed in inventory maps, or as otherwise authorized. Close unauthorized roads in WSAs.

BLM(76) Prohibit OHV competitions within Red Rock Canyon NCA.

BLM(102) Do not allow OHV speed events within ¼ mile of key mesquite woodlands from February 1 to August 1.

BLM(108) Maintain the existing closure of 3,360 acres in the Muddy Mountains to all motorized and mechanized vehicles.

BLM(118) Do not allow competitive off-road vehicle events within ¼ mile of natural water sources and associated riparian areas.

BLM(48) Manage fires occurring in the WSAs to the lowest suppression intensity possible.

BLM(54) Require the use of a resource advisor for all fires within important habitats for covered and evaluation species.

BLM(51) Prohibit commercial collection of vegetative specimens within WSAs. Hobby collection may be allowed for personal use but not for commercial use, as long as the collection activity method meets the non-impairment criteria.

BLM(41) Prohibit commercial collection of cactus/yucca skeletons except in designated areas such as disposal areas, gravel pits, and sites associated with Federally approved projects that will result in the loss of surface vegetation. Casual collection of cactus/yucca skeletons is prohibited in tortoise ACECs. Casual collection outside these areas will be discouraged.

BLM(95) Prohibit the cutting of firewood in Red Rock Canyon NCA. Elsewhere permits are required on a discretionary basis consistent with the protection of sensitive species.

BLM(101) Protect snags as important habitat features.

BLM(91) Harvesting mesquite will require a permit (for green or dead and down) consistent with sustaining the plant communities in a healthy and vigorous state, and also consistent with sustaining viable wildlife populations.

BLM(79) Close WSAs to authorization/renewal of material site rights-of-way and mineral materials disposal until a decision is reached on their status.

BLM(86) Whenever possible, avoid surface occupancy in riparian zones.

BLM(89) Where feasible, proposals for saleable materials in essential habitats for special status species will be avoided.

BLM(96) Work with the Nevada Power Company and other utilities to modify existing powerline towers or poles to meet BLM standards for the prevention of raptor mortality (Olendorff et al. 1981 Raptor Research Report #4).

BLM(100) Manage caves to ensure that important bat roosting sites and hibernacula are not negatively impacted by recreational use. If gating is necessary to protect cave resources, ensure that the gates will allow for bat ingress and egress.

BLM(115) Manage all cave resources as wild systems, free from commercial or show cave type developments. Special Recreation Permits for commercially guided trips by qualified cave experts may be considered if environmental studies show that cave resources will not be impacted.

BLM(117) Protect key nesting areas, migration routes, important prey base areas, and concentration areas for birds of prey on public lands through mitigation of activities during National Environmental Policy Act compliance.

BLM(114) Manage public lands adjacent to the Ash Meadows ACEC and Moapa National Wildlife Refuge to compliment spring and aquatic habitat for special status species, including projects that may affect ground water levels or spring flows.

BLM(120) Determine water needs to meet management objectives. File for appropriate water rights on public and acquired lands in accordance with the State of Nevada water laws for those water sources that are not Federally reserved.

BLM(93) Using “best management practices” as identified by the Sate of Nevada, minimize contributions from both point and non-point sources of pollution (including salts) resulting from public land management actions. Where applicable, proposed management actions would comply with local, state, tribal

and Federal air quality laws, regulations, and standards (Conformity; per 40 CFR 93.100 et seq.).

BLM(99) Enter into conservation agreements with the U.S. Fish and Wildlife Service and the State of Nevada, that if implemented, could reduce the necessity of future listings of the species in question. Conservation agreements may include, but not be limited to, the following: Las Vegas bearpoppy, white-margined penstemon, and phainopepla.

BLM(111) Prior to the disposal of identified public lands, an analysis will be conducted to determine their resource values, including the occurrence of Special Status Species and sensitive habitats such as riparian and aquatic habitats. Land disposal will be consistent with conservation of special status species unless there is an overriding public benefit.

BLM(119) Close the Sunrise Mountain and Nellis Dunes Special Recreation Management Areas to casual recreational shooting in accordance with Clark County's designated no shooting zone.

BLM(107) Allow no net loss of Las Vegas bearpoppy habitat on Public Land from Federally approved projects through mitigative actions including avoidance and rehabilitation.

BLM(87) Limit casual use to the extent possible on Blue Diamond Hill for the protection of the Blue Diamond cholla (covered species) by enforcing existing access restrictions.

BLM(81) Investigate the development, feasibility, and benefits of pre-treating Blue Diamond Cholla habitat for fire prevention (e.g., fuel breaks on exposed slopes) per the proposed conservation agreement.

BLM(300) Fifty acres in Jean Lake Valley and thirty acres in Hidden Valley are being fenced to conserve white-margined penstemon habitat.

BLM(301) Limit the construction of new roads for the development of utility lines within special status species habitat.

BLM(20) Improve aquatic, riparian and mesquite woodland habitats including Meadow Valley Wash.

BLM(90) Provide protection (such as fencing) around springs and riparian habitats to prevent habitat degradation from excessive use by grazing animals.

BLM(12) Identify, evaluate, manage and protect cave resources on public lands for the purpose of maintaining the unique, non-renewable, and fragile biological, scientific, and recreational values for present and future uses.

BLM(103) Livestock grazing will be managed consistent with riparian objectives of reaching or maintaining proper functioning condition (PFC).

BLM(125) As grazing systems are developed for each allotment, ensure the system is consistent with the conservation of BLM special status species. Where conflicts occur, encourage Clark County to obtain grazing privileges on a willing seller basis.

BLM(59) Manage wild horses and burros as necessary to maintain thriving ecological balance and consistent with the protection of special status species in important habitat areas.

BLM(58,60) Wild horses and burros will be removed when herds have expanded beyond designated herd area boundaries or Appropriate Management Level is exceeded.

BLM(81) Implement actions in the Blue Diamond Cholla Conservation Agreement [see Appendix H] to ensure the long-term viability of the species.

BLM(98) Provide adequate law enforcement presence to ensure that management actions and restrictions are implemented for the conservation of covered and/or evaluation species.

BLM(302) Protect important resting/nesting habitat such as riparian areas and mesquite/acacia woodlands. Do not allow projects that may adversely impact the water table supporting these plant communities.

BLM(127,128) The livestock grazing program shall be managed to meet the Bureau's Standards and Guidelines as developed by the Southern Great Basin/Mojave Resource Advisory Committee. The standards are listed below:

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 (watershed function).

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.

2.8.6.6 Restoration and Enhancement Measures

BLM(123) Within desert tortoise critical habitat/ACECs, Las Vegas bearpoppy habitat, and other important habitats for covered and evaluation species, require reclamation of activities which result in loss or degradation of habitat, with habitat to be reclaimed so that pre-disturbance condition can be reached within a reasonable time frame. Reclamation may include salvage and transplant of cactus and yucca, recontouring the area, scarification of compacted soil, soil amendments, seeding, and transplant of seedling shrubs. If necessary subsequent seeding or transplanting efforts may be required, should monitoring indicate that the original effort was not successful.

BLM(143) Rehabilitate, reclaim or revegetate areas subjected to surface-disturbing activities where feasible. When rehabilitating disturbed areas, first manage for optimum species diversity by seeding native species, except where non-native species are appropriate.

BLM(303) Implement a program to rehab surface disturbances including the first hundred feet or so of "closed" roads and trails within proposed desert tortoise ACECs, Las Vegas bear poppy habitat, and other areas important for special status species.

BLM(135) Implement reseeding with native plant species and other soil stabilization and habitat restoration actions following wildfires within areas important for the conservation of covered species and where the feasibility of success is reasonably certain.

BLM(137) Cooperate with National Park Service (NPS), Forest Service (FS), USFWS, Clark County and others on a reclamation program which will include maintaining a seed bank and live plants for rehabilitation of disturbed or burned areas if necessary.

BLM(304) Maintain and/or improve 45,750 acres of Las Vegas bearpoppy habitat in four bearpoppy management areas: Sunrise, Lovell Wash, Bitter

Spring, and Gold Butte. Protect Las Vegas bearpoppy habitat within the Apex land sale area in cooperation with Clark County.

BLM(109) In cooperation with NDOW, the USFWS, and ADC, monitor brown-headed cowbird and raven populations and implement population controls of these species where necessary for the conservation of covered species.

BLM(142) Control and/or eradicate tamarisk. Rehabilitate the area with native species to help reduce the potential for tamarisk reestablishment and improve ecosystem health.

BLM(121) Determine instream flow requirements and apply for necessary water rights on the Virgin River and Meadow Valley.

BLM(138) Cooperate with the U.S. Fish and Wildlife Service and others in the implementation of the Virgin River Fishes Recovery Plan and the Recovery Plan for the Rare Aquatic Species of the Muddy River Ecosystem.

BLM(106) Take appropriate protective actions to maintain or improve springsnail habitat, including the reestablishment of populations of springsnails.

BLM(140) Improve riparian areas, giving priority to areas Functioning at Risk with a downward trend. Implement measures to protect riparian areas, such as fencing and/or alternate water sources away from the riparian area. Insure that the minimum requirement of Proper Functioning Condition on all riparian areas is maintained or achieved.

BLM(141) Improve approximately 400 acres of aquatic and riparian habitat on the Virgin River, Muddy River, and Meadow Valley Wash from its existing poor to fair condition to good or better condition by replacing tamarisk with native species.

BLM(136) In cooperation and coordination with the Nevada Division of Wildlife, the U.S. Fish and Wildlife Service, and others, assist with the elimination of exotic fish and invertebrates from springs and streams where necessary for the conservation of covered species.

2.8.6.7 Land Use Policies and Actions

BLM(80) Red Rock Canyon NCA is closed to mining laws, subject to valid and existing rights (83% of Blue Diamond cholla population is protected).

BLM(162) In accordance with the BLM/Clark County Interlocal Agreement approved July 1, 1997, BLM will regulate and manage organized recreational

activities on County RS2477 roads in accordance with 43 CFR subpart 8372 within proposed or designated desert tortoise ACECs.

BLM(163) BLM will review their special status species list annually and update it as appropriate to include the MSHCP “covered” species , and where appropriate, “evaluation” species.

BLM(11) Survey abandoned mines for the presence of bats before authorization of mine closures. If use of the mine by bats is documented, consider installing bat gates to ensure that the habitat continues to be suitable for bats, while promoting public safety. Total closure of abandoned mines known to support bats should be considered only as a last resort.

BLM(306) Approximately 11,014 acres of the Desert Tortoise Conservation Center Management Area are available for withdrawal by other Federal agencies when such transfer would further objective SS-4 (Manage the CCMA [11,013acres] to support desert tortoise research and other research associated with the Mojave Desert Ecosystem. When feasible, expand the function of the center to include an environmental education/awareness program in close coordination with other Federal agencies and State and local governments.)

BLM(145) During development of all activity plans, give special attention to protecting riparian zones as wildlife habitat and to protect associated native floral and fauna.

BLM(164) The following are land acquisition priorities on a willing seller basis:

- 1) Private lands required to meet management objectives within designated ACECs, WSAs, threatened and endangered (T&E) habitat and areas containing special status species.
- 2) Private lands along the Virgin River south of Riverside bridge.
- 3) Lands not specifically identified for acquisition could be acquired on a case-by-case basis for the following reasons: a) protection of T&E and special status species; b) to provide resource protection; c) to facilitate implementation of the Resource Management Plan; d) to provide a more manageable land ownership pattern; or e) to maintain or enhance public uses and values.

BLM(200) Withdraw from entry under locatable mineral laws 11,014 acres comprising the Desert Tortoise Conservation Center Management Area. Also do not authorize (or renew) material sites rights-of-way, mineral material disposal, and solid and fluid mineral leasing within the CCMA.

BLM(201) Withdraw from locatable mineral entry and close to all solid mineral leasing within ¼ mile of natural springs, the floodplain of the Virgin and Muddy Rivers, and all ACECs.

BLM(202) Allow fluid mineral leasing, subject to No Surface Occupancy stipulations within areas having important cultural, geological, and riparian resources; special status species plant and animal habitat; Areas of Critical Environmental Concern; administrative sites; and Special Recreation Management Areas. (See the RMP ROD [Record of Decision] for a list of ACECs and acreages which includes 866,000 acres.)

BLM(203) Allow fluid mineral leasing subject to timing and surface use constraints in the following ACECs: Amargosa Mesquite (Crystal), Gold Butte (Parts B and C).

BLM(204) Do not allow saleable mineral disposal in ACECs with the following exception: 1) allow saleable mineral disposal within ½ mile of Federal and State highways and county roads identified by the RMP. These will only be allowed as extensions to existing material site rights-of-way and free use permits for State and local governmental entities, and 2) allow existing free-use and community pit authorization at one site in the Rainbow Gardens ACEC to be reauthorized or renewed but do not allow expansion of the sites.

BLM(206) Designate the following areas as ACECs for the conservation of Federally listed and special status species of wildlife and plants:

Piute/Eldorado	329,440 acres
Coyote Springs	75,500 acres
Mormon Mesa	151,360 acres
Gold Butte (Parts A, B, & C)	344,437 acres
Rainbow Garden	37,620 acres
River Mountains	5,617 acres
Virgin River	6,411 acres

BLM(207) Implement the following management actions in desert tortoise ACECs (743,209 acres):

- 1) Minimize impacts to tortoise habitat during fire suppression by minimizing the use of mechanized equipment and where possible, staying on existing roads and trails. However, the priority shall be in keeping the wildfire to an absolute minimum.
- 2) Manage for zero wild horses and burros within desert tortoise areas of critical environmental concern.

- 3) Implement inventory, monitoring and research projects dealing with management issues within desert tortoise areas of critical environmental concern.
- 4) Limit utility corridors to 3,000 feet or less in width.
- 5) Do not allow new landfills.
- 6) Do not authorize military maneuvers.
- 7) Allow development of campgrounds only if consistent with the objectives of the Tortoise Recovery Plan.
- 8) On a case-by-case basis, 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.
- 9) Commercial activities may be permitted on a case-by-case basis if not in conflict with the recovery of the desert tortoise.
- 10) Designate as "Limited to designated roads and trails" for all motorized and mechanized vehicles.
- 11) Allow non-speed off-highway vehicle events subject to the restrictions identified elsewhere.
- 12) Campers may pull their vehicles off the edge of the road but must stay within 15 feet of the edge of the road, except in Wilderness Study Areas where the vehicle must remain within the berm of the road.

BLM(208) Within desert tortoise ACECs, do not allow commercial collection of flora. Only allow commercial collection of wildlife upon completion of either a credible study or investigation that demonstrates commercial collection does not adversely impact affected species or their habitat, as determined by Nevada Division of Wildlife (NDOW). This action will not affect hunting, trapping, or casual collection as permitted by the State. Limit collection or sale of desert vegetation and other vegetative resources for public use to approved areas including disposal areas, rights-of-way and gravel pits.

BLM(209) Commercial collection of decorative rock and other saleable minerals is prohibited in all ACECs and RRCNCA (already prohibited in RRCNCA). Commercial collection in other areas will be considered on a case-by-case basis consistent with the conservation of special status species.

BLM(210) Do not allow OHV speed events, mountain bike races, horse endurance rides, four-wheel drive hill climbs, mini events, publicity rides, high speed testing, and other similar speed based events within tortoise ACECs. These restrictions apply to other ACECs except that horse endurance rides and mountain bike events may be allowed on a case-by-case basis.

BLM(211) Designate 1,107,800 acres as limited to designated roads and trails for all motorized and mechanized vehicles within desert tortoise ACECs, Rainbow Garden ACEC, and areas adjacent to Red Rock Canyon NCA and Spring Mountain NRA.

BLM(215) Close all allotments, to livestock grazing, within the planning unit except for Hidden Valley, Mount Stirling, Lower Mormon Mesa, Roach Lake, White Basin, Muddy River, Wheeler Wash, Mesa Cliff, Arrow Canyon in Battleship Wash, Flat Top Mesa, Jean Lake and Arizona administered allotments. That portion of the Jean Lake allotment within the desert tortoise ACEC would be closed to grazing.

BLM(216) Additional allotment closures could be approved based on voluntary relinquishment of grazing privileges, permits or leases.

BLM(217) Establish an Appropriate Management Level (AML) of zero burros in the Eldorado herd management area and Gold Butte (Part A) ACEC.

BLM(218) Close WSAs and ACECs to land use leases and permits under Sec. 302 of FLPMA, and airport leases.

BLM(219) Designate 158,800 acres of utility corridors. All ACECs exclusive of designated corridors are designated as right-of-way avoidance area.

BLM(220)¹ Designate important bearpoppy habitat in Lovell Wash (Muddy Mountains) and the Bitter Springs as ACECs for the protection of Las Vegas bearpoppy and sticky ringstem. These areas should be limited to designated roads and trails, closed to OHV competitive events and all forms of mineral entry. (Land Use Amendment Required).

BLM(221)¹ Limit vehicular use to designated roads and trails in and around mesquite woodlands.

BLM(222)¹ Designate significant mesquite woodlands as ACECs. The management of multiple uses within mesquite woodlands will be consistent with managing for the long-term viability of these habitats and the wildlife they support.

BLM(212) Bureau of Land Management shall consider with respect to rural roads the following measures which have been proposed by the I & M Committee and specifically those members of the I & M Committee who represent the interests of the environmental groups, the rural communities, and the OHV community:

Relax permitting restrictions on non-speed OHV events, to the extent that such relaxation does not threaten other resource values and is consistent with law, policy, and procedures as hereinafter provided.

Impose the conditions described below for organized OHV events during the first three years of the MSHCP or until the recommendation of the rural roads component of the AMP has been completed, whichever last occurs. Members of the OHV community and the environmental community recognize and agree that after completion of the rural roads component of the AMP, these rules and regulations may be modified to reflect the results of the AMP process, including the scientific component as well the socioeconomic and sociopolitical elements, and that conditions within Conserved Areas may be either more or less restrictive than those set forth herein:

Utilizing a streamlined permit process as described below a permit shall be required for all non-speed OHV events with 26 or more vehicles within desert tortoise ACECs and 50 vehicles outside desert tortoise ACECs.

Within desert tortoise ACECs:

A maximum of five permitted non-speed events and non-speed portions of speed-based events are permitted in each desert tortoise ACEC during the period of March 1 through March 15 and June 15 through August 31. No OHV non-speed events, or non-speed portions of speed-based events, will be permitted from March 16 through June 14 and from September 1 through October 15. (The September through October dates may vary up to three days to allow a full weekend [i.e., Saturday and Sunday] for an event. A maximum of 60 permitted non-speed events and non-speed portions of speed-based events are permitted cumulatively in desert tortoise ACECs during the period of October 16 through February 28 (29 in leap year) subject to additional restrictions described below [see Appendix I, 3 maps]:

- a. events with 76 to 150 vehicles shall count as two events. Events with 151 to 225 vehicles will count as three events, and events with 226 to 300 vehicles will count as four events.

- b. no OHV events are permitted in the Piute/Eldorado ACEC west of US 95 during any part of the year.
- c. events within the Gold Butte ACEC shall only be permitted on and east of the existing paved road between the Riverside Bridge and Whitney Pockets and on and north of the unpaved road between Whitney Pockets and the Arizona State line.
- d. events within the Mormon Mesa ACEC shall only be allowed on the Carp/Elgin Road, Halfway Wash Road and the East Halfway Wash Road.
- e. no OHV events are permitted in the Coyote Springs ACEC.
- f. up to six non-speed OHV events are permitted in that area east of US 95 and south of SR164 during the tortoise inactive season only (October 16 through February 28).
- g. vehicles shall not exceed the legal speed limit (posted or unposted) of the roads used during events. Clark County speed limit for unposted roads is 25 miles per hour. If the speed limit is not posted, the speed limit shall be 25 miles per hour

Outside ACECs:

BLM agrees to pre-approve 10 non-speed OHV events annually outside of desert tortoise ACECs where there are more than 49 entries or vehicles (thus requiring a permit) by January 1, 2000. The BLM also agrees to waive all insurance requirements and the County agrees to pay the permit fee (\$80.00 per event). The OHV promoter shall ensure that all permissions necessary from private landowners or rights-of-way grant holders are obtained prior to the BLM approving the particular courses in question. Once the applicant has provided to the BLM the appropriate permissions and proposed course, the BLM will approve or deny the permit within 45 days. These permits shall then be granted to non-speed OHV event organizers on a first come basis.

Other Terms and Conditions:

The BLM will develop a pamphlet or similar product for distribution to the public, suggesting places to go outside ACECs and other environmentally sensitive areas. A potential target for this type of information may include rental car agencies that rent four-wheel-drive vehicles. Maps of desert tortoise ACECs should be included.

Outside desert tortoise ACECs and Rainbow Garden ACEC non-speed events and non-speed portions of speed-based events may occur on existing roads, trails, and dry washes. For the purposes of this proposal, dry washes are defined as: the channel of a flat-floored ephemeral stream, commonly with very steep to vertical banks cut in unconsolidated material. It is usually dry but can be transformed into a temporary watercourse or short-lived torrent after heavy rain within the watershed.

ATTACHMENT D

**ATTACHMENT D
COVERED SPECIES CONSERVATION**

Species	2001 MSHCP Categorization Conserved (IMAs, LIMAs)	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	2007 Updated Categorization Conserved (IMAs, LIMAs)	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	Change in Conserved	Degree of Change
Silver-haired bat <i>Lasiorycteris noctivagans</i>	93% of potential habitat	6% of potential habitat	2% of potential habitat	93% of potential habitat	6% of potential habitat	1% of potential habitat	0%	none
Long-eared myotis <i>Myotis evotis</i>	82% of potential habitat	13% of potential habitat	5% of potential habitat	82% of potential habitat	11% of potential habitat	6% of potential habitat	0%	none
Long-legged myotis <i>Myotis volans</i>	93% of potential habitat	6% of potential habitat	2% of potential habitat	93% of potential habitat	6% of potential habitat	1% of potential habitat	0%	none
Palmer's chipmunk <i>Tamias palmeri</i>	93% of potential habitat	5% of potential habitat	2% of potential habitat	93% of potential habitat	6% of potential habitat	1% of potential habitat	0%	none
American peregrine falcon <i>Falco peregrinus anatum</i>	63% of potential habitat	9% of potential habitat	28% of potential habitat	63% of potential habitat	7% of potential habitat	30% of potential habitat	0%	none
Endangered (delisted 8/99)								
Yellow-billed cuckoo <i>Coccyzus americanus</i>	31% of potential habitat	34% of potential habitat	36% of potential habitat	25% of potential habitat	20% of potential habitat	56% of potential habitat	-6%	-large
Vermilion flycatcher <i>Pyrocephalus rubinus</i>	36% of potential habitat	36% of potential habitat	29% of potential habitat	35% of potential habitat	26% of potential habitat	35% of potential habitat [†]	-1%	none
Phainopepla <i>Phainopepla nitens</i>	36% of potential habitat	36% of potential habitat	29% of potential habitat	35% of potential habitat	26% of potential habitat	35% of potential habitat [†]	-1%	none

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Southwestern willow flycatcher <i>Empidonax traillii extimus</i> Federal Endangered	31% of potential habitat	34% of potential habitat	36% of potential habitat	25% of potential habitat	20% of potential habitat	56% of potential habitat	-6%	-large
Summer tanager <i>Piranga rubra</i>	31% of potential habitat	34% of potential habitat	36% of potential habitat	25% of potential habitat	20% of potential habitat	56% of potential habitat	-6%	-large
Blue grosbeak <i>Guiraca caerulea</i>	24% of potential habitat ¹	30% of potential habitat	47% of potential habitat	19% of potential habitat	18% of potential habitat	63% of potential habitat	-5	-large
Arizona bell's vireo <i>Vireo bellii arizonae</i>	31% of potential habitat	34% of potential habitat	36% of potential habitat	25% of potential habitat	20% of potential habitat	56% of potential habitat	-6%	-large
Desert tortoise <i>Gopherus agassizii</i> Federal Threatened	60% of potential habitat	33% of potential habitat	7% of potential habitat	58% of potential habitat	34% of potential habitat	8% of potential habitat [†]	-2%	-small
Banded gecko <i>Coleonyx variegatus</i>	62% of potential habitat; 34% of cited locations	32% of potential habitat; 50% of cited locations	7% of potential habitat; 16% of cited locations	60% of potential habitat; 36% of cited locations	32% of potential habitat; 53% of cited locations	7% of potential habitat [†] ; 11% of cited locations	-2%	-small

¹ Although grassland is called out in the MSHCP as potential habitat, this was not included in the calculations for the MSHCP percentages or the update change analysis since this is not primary habitat. The riparian, agricultural, and urban lands considered in this percentage calculation are those included in the total desert riparian ecosystem.

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Species	2001 MSHCP Categorization Conserved (IMAs, LIMAs)	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	2007 Updated Categorization Conserved (IMAs, LIMAs)	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	Change in Conserved	Degree of Change
Desert iguana <i>Dipsosaurus dorsalis</i>	58% of potential habitat; 28% of cited locations	33% of potential habitat; 44% of cited locations	9% of potential habitat; 28% of cited locations	56% of potential habitat; 29% of cited locations	34% of potential habitat; 37% of cited locations	10% of potential habitat; 34% of cited locations	-2%	-small
Western chuckwalla <i>Sauromalus obesus</i>	59% of potential habitat; 23% of cited locations	33% of potential habitat; 69% of cited locations	7% of potential habitat; 9% of cited locations	58% of potential habitat; 28% of cited locations	34% of potential habitat; 65% of cited locations	8% of potential habitat; 6% of cited locations	-1%	none
Western red-tailed skink <i>Eumeces gilberti rubricaudatus</i>	92% of potential habitat ²	7% of potential habitat	2% of potential habitat	92% of potential habitat	7% of potential habitat	1% of potential habitat	0%	none
Large-spotted leopard lizard <i>Gambelia wislizenii wislizenii</i>	57% of potential habitat; 34% of cited locations	34% of potential habitat; 58% of cited locations	9% of potential habitat; 8% of cited locations	55% of potential habitat; 53% of cited locations	35% of potential habitat; 37% of cited locations	10% of potential habitat [†] ; 10% of cited locations	-2%	-small
Great Basin collared lizard <i>Crotaphytus insularis bicinctores</i>	62% of potential habitat; 30% of cited locations	31% of potential habitat; 58% of cited locations	7% of potential habitat; 12% of cited locations	60% of potential habitat; 34% of cited locations	32% of potential habitat; 59% of cited locations	8% of potential habitat [†] ; 7% of cited locations	-2%	-small

² Modeled based on primary habitat of pinyon-juniper, although the MSHCP calls out other less common habitats. The percentage calculations include the habitat total of the pinyon-juniper ecosystem.

**ATTACHMENT D
COVERED SPECIES CONSERVATION**

Species	2001 MSHCP Categorization	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	2007 Updated Categorization	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	Change in Conserved	Degree of Change
	Conserved (IMAs, LIMAs)			Conserved (IMAs, LIMAs)				
California (common) kingsnake <i>Lampropeltis getulus californiae</i>	58% of potential habitat; 38% of cited locations	33% of potential habitat; 57% of cited locations	9% of potential habitat; 5% of cited locations	56% of potential habitat; 33% of cited locations	34% of potential habitat; 57% of cited locations	10% of potential habitat; 10% of cited locations	-2%	-small
Glossy snake <i>Arizona elegans</i>	58% of potential habitat; 57% of cited locations	33% of potential habitat; 23% of cited locations	9% of potential habitat; 20% of cited locations	56% of potential habitat; 66% of cited locations	34% of potential habitat; 23% of cited locations	10% of potential habitat; 11% of cited locations	-2%	-small
Western long-nosed snake <i>Rhinocheilus lecontei lecontei</i>	58% of potential habitat; 25% of cited locations	33% of potential habitat; 63% of cited locations	9% of potential habitat; 12% of cited locations	56% of potential habitat; 28% of cited locations	34% of potential habitat; 67% of cited locations	10% of potential habitat; 5% of cited locations	-2%	-small
Western leaf-nosed snake <i>Phyllorhynchus decurtatus</i>	58% of potential habitat	33% of potential habitat	9% of potential habitat	56% of potential habitat	34% of potential habitat	10% of potential habitat	-2%	-small
Sonoran lyre snake <i>Trimorphodon biscutatus lambda</i>	61% of potential habitat	31% of potential habitat	8% of potential habitat	59% of potential habitat	32% of potential habitat	9% of potential habitat	-2%	-small
Sidewinder <i>Crotalus cerastes</i>	58% of potential habitat; 34% of cited locations	33% of potential habitat; 46% of cited locations	9% of potential habitat; 20% of cited locations	56% of potential habitat; 39% of cited locations	34% of potential habitat; 41% of cited locations	10% of potential habitat; 20% of cited locations	-2%	-small
Speckled rattlesnake <i>Crotalus mitchelli</i>	62% of potential habitat; 25% of cited locations	32% of potential habitat; 75% of cited locations	7% of potential habitat	60% of potential habitat; 25% of cited locations	32% of potential habitat; 75% of cited locations	7% of potential habitat	-2%	-small

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Species	2001 MSHCP Categorization Conserved (IMAs, LIMAs)	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	2007 Updated Categorization Conserved (IMAs, LIMAs)	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	Change in Conserved	Degree of Change
Mojave green rattlesnake <i>Crotalus scutulatus</i> <i>scutulatus</i>	59% of potential habitat; 64% of cited locations	34% of potential habitat; 21% of cited locations	7% of potential habitat; 14% of cited locations	57% of potential habitat; 64% of cited locations	35% of potential habitat; 21% of cited locations	8% of potential habitat; 14% of cited locations	-2%	-small
Relict leopard frog <i>Rana onca</i>	Both extant populations; 76% of cited locations	19% of cited locations	5% of cited locations	Unknown location of extant populations; 78% of cited locations	17% of cited locations	5% of cited locations	+2%	+small
Dark blue butterfly <i>Euphilotes enoptes</i> ssp.	All known population and cited locations	none	none	All known population and cited locations	none	none	0%	none
Spring Mountains icarioides blue <i>Icaricia icarioides</i> ssp.	All known populations	none	none	All known populations	none	none	0%	none
Mt. Charleston blue butterfly <i>Icaricia shasta</i> <i>charlestonensis</i>	All known population and cited locations	none	none	All known population and cited locations	none	none	0%	none
Spring Mountains acastus checkerspot <i>Chlosyne acastus</i>	All known population and cited locations	none	none	All known population and cited locations	none	none	0%	none
Morand's checkerspot butterfly <i>Euphydryas anicia</i> <i>morandi</i>	All known population and cited locations	none	none	All known population and cited locations	none	none	0%	none
Carole's silverspot butterfly <i>Speyeria zerene carolae</i>	All known population and cited locations	none	none	All known population and cited locations	none	none	0%	none

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Nevada admiral <i>Limenitis weidemeyerii nevadae</i>	All known population and cited locations	none	none	All known population and cited locations	none	none	0%	none
Spring Mountains comma skipper <i>Hesperia comma ssp.</i>	All known populations	none	none	All known populations	none	none	0%	none
Spring Mountains springsnail <i>Pyrgulopsis deaconi</i>	2 extant and 1 extirpated population	none	none	2 extant and 1 extirpated population	none	none	0%	none
Southeast Nevada springsnail <i>Pyrgulopsis turbatrix</i>	5 extant and 1 extirpated population	none	none	5 extant and 1 extirpated population	none	none	0%	none
Clokey eggvetch <i>Astragalus oophorus var. clokeyanus</i>	93% of potential habitat; 12 of 13 cited locations	6% of potential habitat	2% of potential habitat; 1 of 13 cited locations	93% of potential habitat; all cited locations	6% of potential habitat	1% of potential habitat	0%	none
Blue Diamond cholla <i>Opuntia whipplei var. multigeniculata</i>	95% of known habitat ³	None	5% of known habitat	67% of cited area locations	32% of cited area locations	1% of cited area locations	-1%	none
State of Nevada Critically Endangered, Federal Candidate	68% of cited area locations ⁴	32% of cited area locations	<1% of cited area locations					
Rough angelica <i>Angelica scabrida</i>	91% of cited locations	None	9% of cited locations	100% of cited locations	none	none	+9%	+large

³ Percentages from MSHCP based on limited locations in the Blue Diamond Hills.

⁴ Includes most recent locations within Clark County. See discussion in the document regarding changes to conservation and known locations of this species.

**ATTACHMENT D
COVERED SPECIES CONSERVATION**

Species	2001 MSHCP	Potential	Potential	2007 Updated	Potential	Potential	Change in Conserved	Degree of Change
	Categorization Conserved (IMAs, LIMAs)	Indirect Impacts (MUMAs)	Direct Impacts (UMAs)	Categorization Conserved (IMAs, LIMAs)	Indirect Impacts (MUMAs)	Direct Impacts (UMAs)		
Sticky ringstem <i>Anulocaulis leisolenus</i>	58% of potential habitat	33% of potential habitat	9% of potential habitat	56% of potential habitat	34% of potential habitat	10% of potential habitat	-2%	-small
Charleston pussytoes <i>Antennaria soliceps</i>	96% of cited locations	none	4% of cited locations	96% of cited locations	none	4% of cited locations	0%	none
Las Vegas bearpoppy <i>Arctomecon californica</i>	22% of cited locations	60% of cited locations	17% of cited locations	22% of cited locations	61% of cited locations	17% of cited locations	0%	none
State of Nevada Critically Endangered								
White bearpoppy <i>Arctomecon merriamii</i>	84% of cited locations	3% of cited locations	13% of cited locations	84% of cited locations	3% of cited locations	13% of cited locations	0%	none
Rosy king sandwort <i>Arenaria kingii</i> ssp. <i>rosea</i>	67% of known locations	none	33% of known locations	78% of known locations	none	22% of known locations	+11%	+large
Clokey milkvetch <i>Astragalus aequalis</i>	96% of cited locations	none	4% of cited locations	98% of cited locations	none	2% of cited locations	+2%	+small
Threecorner milkvetch <i>Astragalus geyeri</i> var. <i>triquetrus</i>	18% of cited locations	82% of cited locations	<1% of cited locations	18% of cited locations	82% of cited locations	<1% of cited locations	0%	none
State of Nevada Critically Endangered								
Spring Mountain milkvetch <i>Astragalus remotus</i>	98% of cited locations	none	2% of cited locations	99% of cited locations	none	1% of cited locations	+1%	none
Alkali mariposa lily <i>Calochortus striatus</i>	88% of cited locations	none	12% of cited locations	82% of cited locations	none	18% of cited locations	-6%	-large
Clokey paintbrush <i>Castilleja martinii</i> var. <i>clokeyi</i>	88% of cited locations	none	13% of cited locations	94% of cited locations	none	6% of cited locations	+6%	+large
Clokey thistle <i>Cirsium clokeyi</i>	88% of cited locations	none	13% of cited locations	All cited locations	none	none	+12%	+large

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	Categorization Conserved (IMAs, LIMAs)	Indirect Impacts (MUMAs)	Direct Impacts (UMAs)	Categorization Conserved (IMAs, LIMAs)	Indirect Impacts (MUMAs)	Direct Impacts (UMAs)		
Jaeger whitlowgrass <i>Draba jaegeri</i>	All cited locations	none	none	All cited locations	none	none	0%	none
Charleston draba <i>Draba paucifructa</i>	All cited locations	none	none	All cited locations	none	none	0%	none
Inch high fleabane <i>Erigeron uncialis</i> ssp. <i>Conjugans</i>	All cited locations	none	none	All cited locations	none	none	0%	none
Forked buckwheat <i>Eriogonum bifurcatum</i>	none	Unknown proportion of habitat	Unknown proportion of habitat	none	Unknown proportion of habitat	Unknown proportion of habitat ⁵	0%	none
Sticky buckwheat <i>Eriogonum viscidulum</i>	30% of cited locations	67% of cited locations	4% of cited locations	29% of cited locations	68% of cited locations	4% of cited locations	-1%	none
State of Nevada Critically Endangered								
Clokey greasebush <i>Glossopetalon clokeyi</i>	All cited locations	none	none	All cited locations	none	none	0%	none
Smooth pungent greasebush <i>Glossopetalon pungens</i> var. <i>glabra</i>	67% of cited locations	none	33% of cited locations	67% of cited locations	none	33% of cited locations	0%	none
Pungent dwarf greasebush <i>Glossopetalon pungens</i> var. <i>pungens</i>	67% of cited locations	none	33% of cited locations	67% of cited locations	none	33% of cited locations	0%	none
Red Rock Canyon aster <i>Ionactis caelestis</i>	All cited locations	none	none	All cited locations	none	none	0%	none
Hidden ivesia <i>Ivesia cryptocaulis</i>	All cited locations	none	none	All cited locations	none	none	0%	none

⁵ A portion of this population was likely lost from management in the territory adjustment between Nye and Clark Counties (State of Nevada, 2001).

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COVERED SPECIES CONSERVATION**

Species	2001 MSHCP	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	2007 Updated	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	Change in Conserved	Degree of Change
	Categorization Conserved (IMAs, LIMAs)			Categorization Conserved (IMAs, LIMAs)				
Jaeger ivesia <i>Ivesia jaegeri</i>	95% of cited locations	none	5% of cited locations	95% of cited locations	none	5% of cited locations	0%	none
Hitchcock bladderpod <i>Lesquerella hitchcockii</i>	93% of cited locations	none	7% of cited locations	All cited locations	none	none	+7%	+large
Charleston pinewood lousewort <i>Pedicularis semibarbata</i> var. <i>charlestonensis</i>	96% of potential habitat	None	4% of potential habitat	98% of potential habitat	None	2% of potential habitat	+2%	+small
White-margined beardtongue <i>Penstemon</i> <i>albomarginatus</i>	30% of cited locations	70% of cited locations	<1% of cited locations	4% of cited locations	88% of cited locations	8% of cited locations	-26%	-large
Charleston beardtongue <i>Penstemon leiophyllus</i> var. <i>keckii</i>	91% of cited locations	none	9% of cited locations	91% of cited locations	none	9% of cited locations	0%	none
Jaeger beardtongue <i>Penstemon</i> <i>thompsonae</i> var. <i>jaegeri</i>	All cited locations	none	none	All cited locations	none	none	0%	none
Parish's phacelia <i>Phacelia parishii</i>	67% of cited locations	none	33% of cited locations	67% of cited locations	none	33% of cited locations	0%	none
Clokey mountain sage <i>Salvia dorrii</i> var. <i>clokeyi</i>	All cited locations	none	none	All cited locations	none	none	0%	none
Clokey catchfly <i>Silene clokeyi</i>	96% of cited locations	none	4% of cited locations	All cited locations	none	none	+4%	+small
Charleston tansy <i>Sphaeromeria</i> <i>compacta</i>	92% of cited locations	none	8% of cited locations	92% of cited locations	none	8% of cited locations	0%	none
Charleston kittentails <i>Synthyris ranunculina</i>	All cited locations	none	none	All cited locations	none	none	0%	none

**ATTACHMENT D
COVERED SPECIES CONSERVATION**

Species	2001 MSHCP Categorization Conserved (IMAs, LIMAs)	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	2007 Updated Categorization Conserved (IMAs, LIMAs)	Potential Indirect Impacts (MUMAs)	Potential Direct Impacts (UMAs)	Change in Conserved	Degree of Change
Charleston grounddaisy <i>Townsendia jonesii</i> var. <i>tumulosa</i>	91% of cited locations	none	9% of cited locations	91% of cited locations	none	9% of cited locations	0%	none
Limestone violet <i>Viola purpurea</i> var. <i>charlestonensis</i>	59% of cited locations	24% of cited locations	18% of cited locations	71% of cited locations	29% of cited locations	none	+12%	+large
<i>Anacolia menziesii</i>	Only cited locations	none	none	Only cited locations	none	none	0%	none
<i>Claopodium whippleanum</i>	Only cited locations	none	none	Only cited locations	none	none	0%	none
<i>Dicranoweisia crispula</i>	Only cited locations	none	none	Only cited locations	none	none	0%	none
<i>Syntrichia princeps</i>	Both cited locations	none	none	Both cited locations	none	none	0%	none

Notes: Bold indicates a Federal and/or State Threatened or Endangered Species.

Percentages may not add to 100 due to rounding, with the exception that percentages noted by † are short by land that was lost in the territory adjustment between Nye and Clark Counties (State of Nevada 2001).