

RECON

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

Preliminary Final
Prepared by

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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 3,883 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.

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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 2,646,728 acres; reading this row to the right shows the revised acreages of the baseline IMA category: 2,471,484 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	2,646,728	2,471,484	47,995	117,000	0	10,249	-118,932
LIMA	380,722	16,163	360,506	1,510	0	2,543	53,020
MUMA	1,505,743	23,352	16,377	1,367,468	18,920	79,624	891
UMA	519,665	16,797	8,864	20,655	3,855	469,494	42,245
Total	5,052,858	2,527,796	433,742	1,506,634	22,776	561,910	

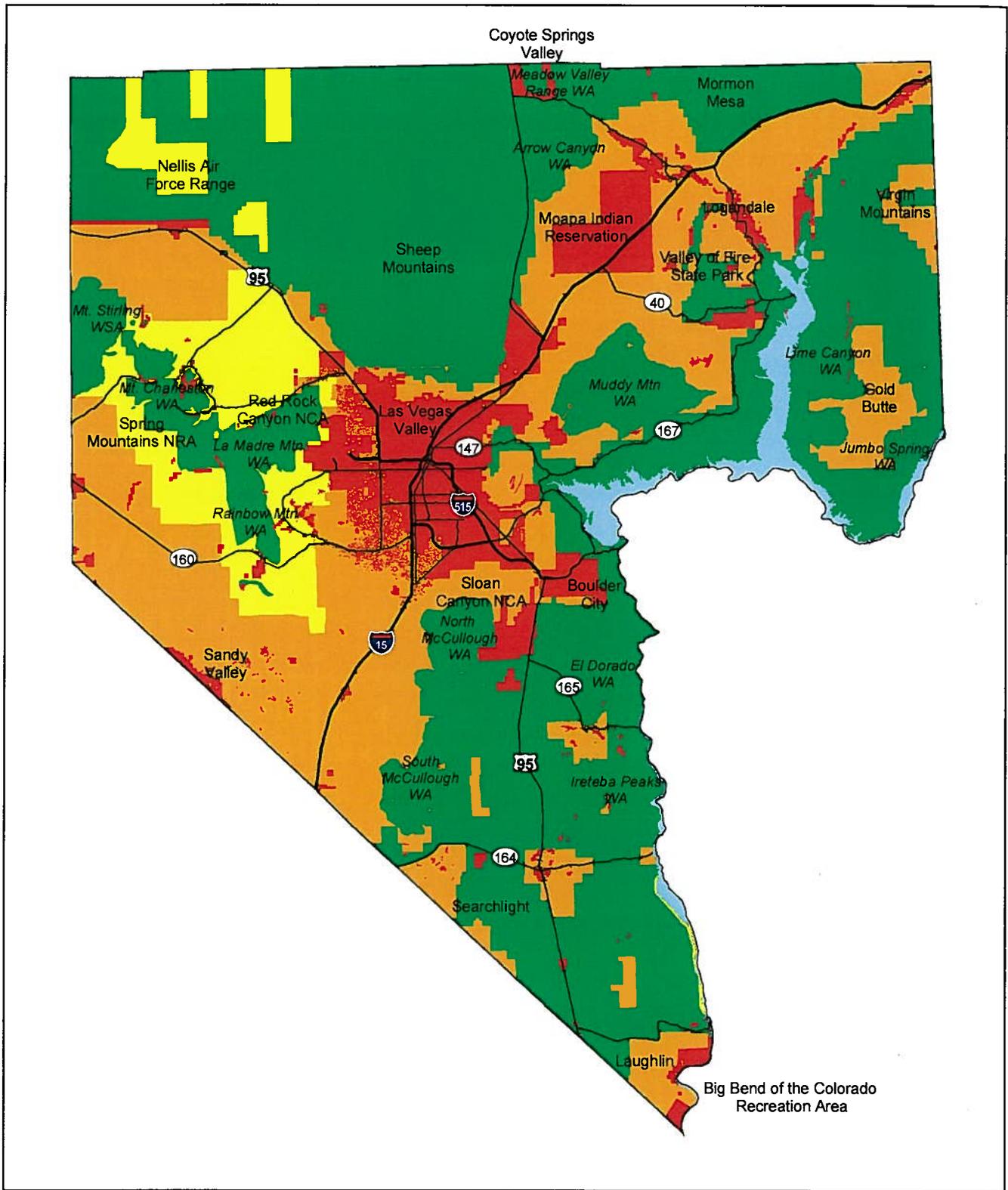
IMA = Intensively Managed Area

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).

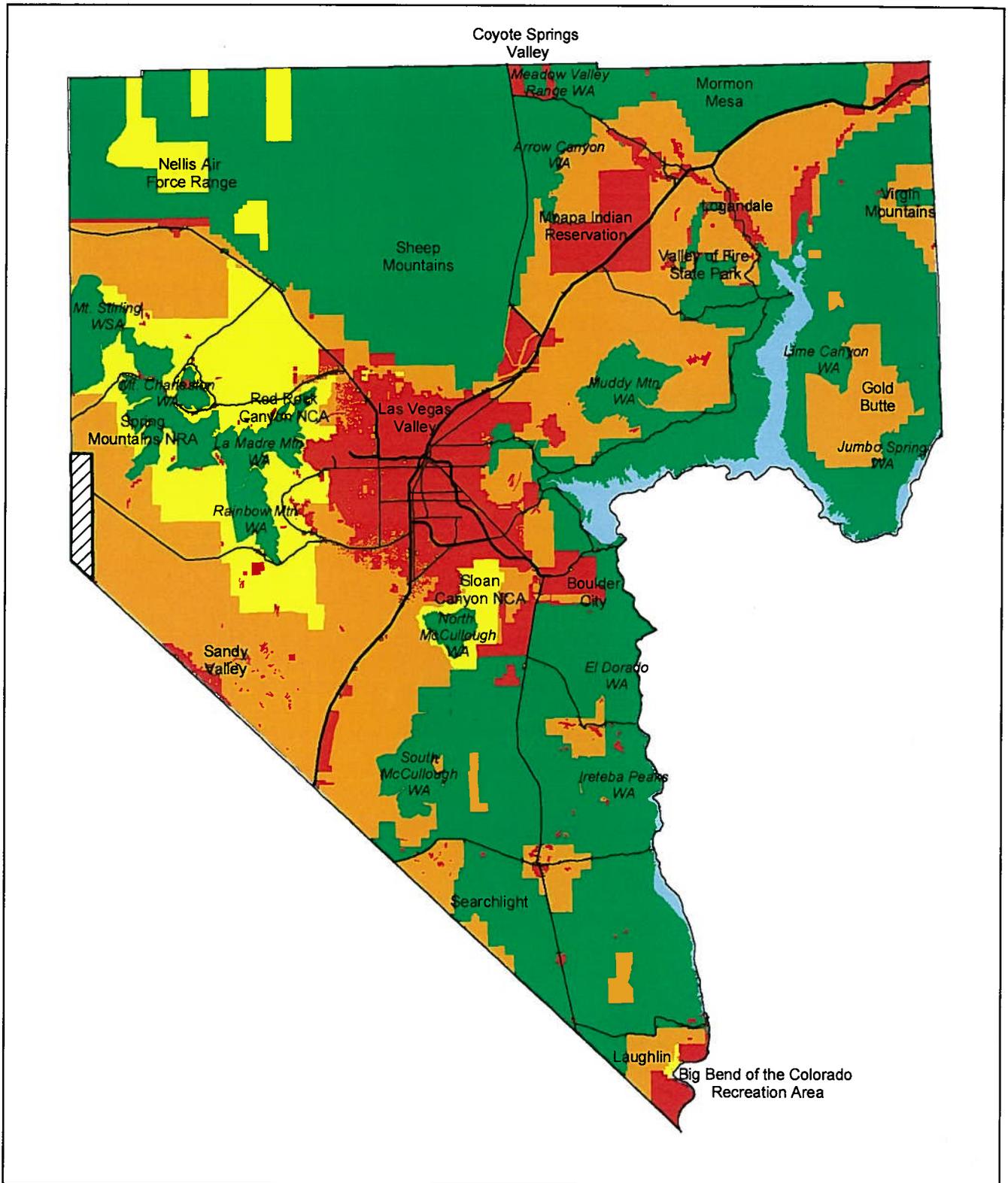


Conservation Management Categories (Baseline)

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



FIGURE 1
Baseline Categories



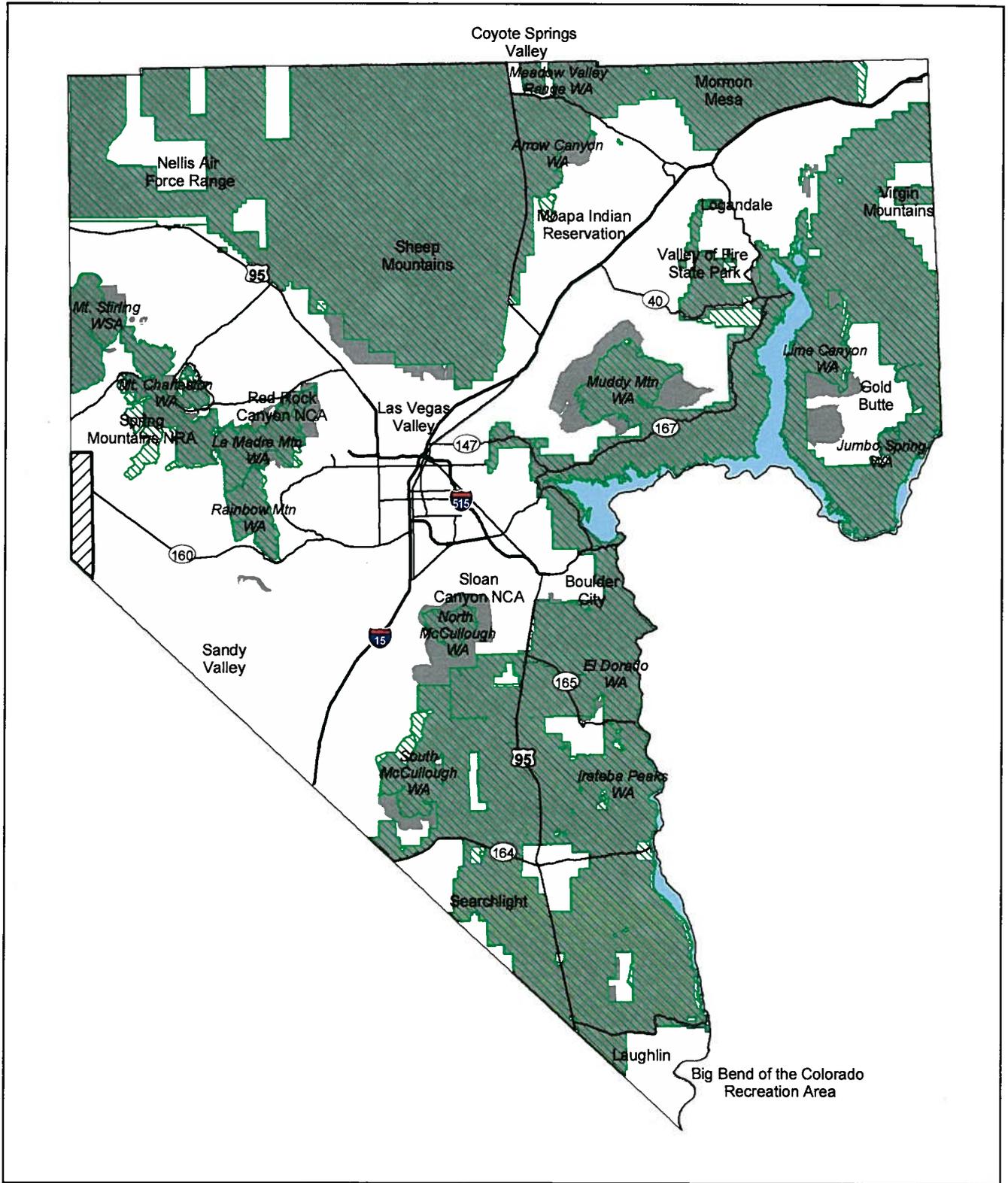
In 2001 this portion of Clark County was annexed to Nye County per Senate Bill No. 395

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

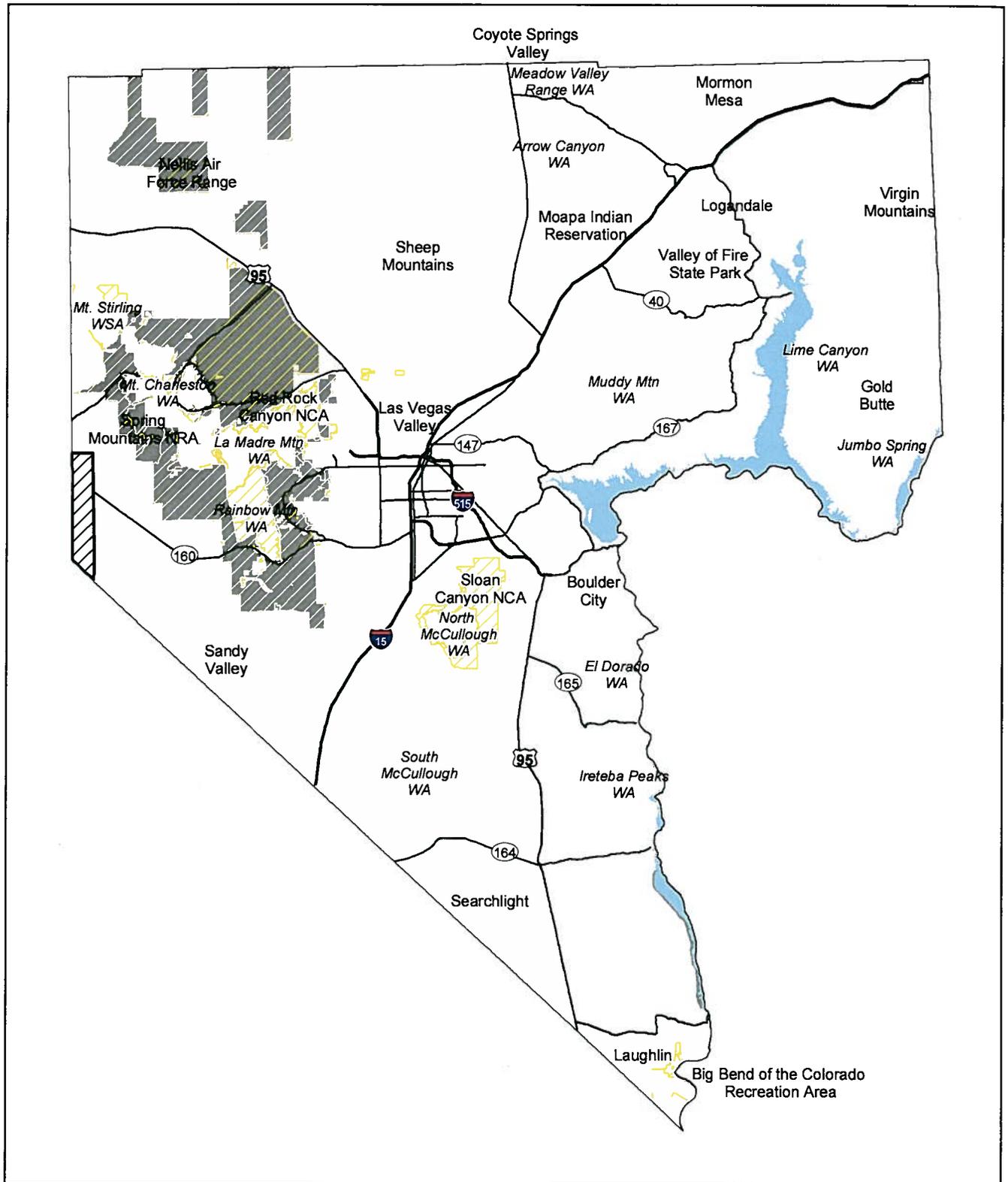


 In 2001 this portion of Clark County was annexed to Nye County per NRS 243.293

 Updated IMA
 Baseline IMA



FIGURE 3
 Changes in IMA Category

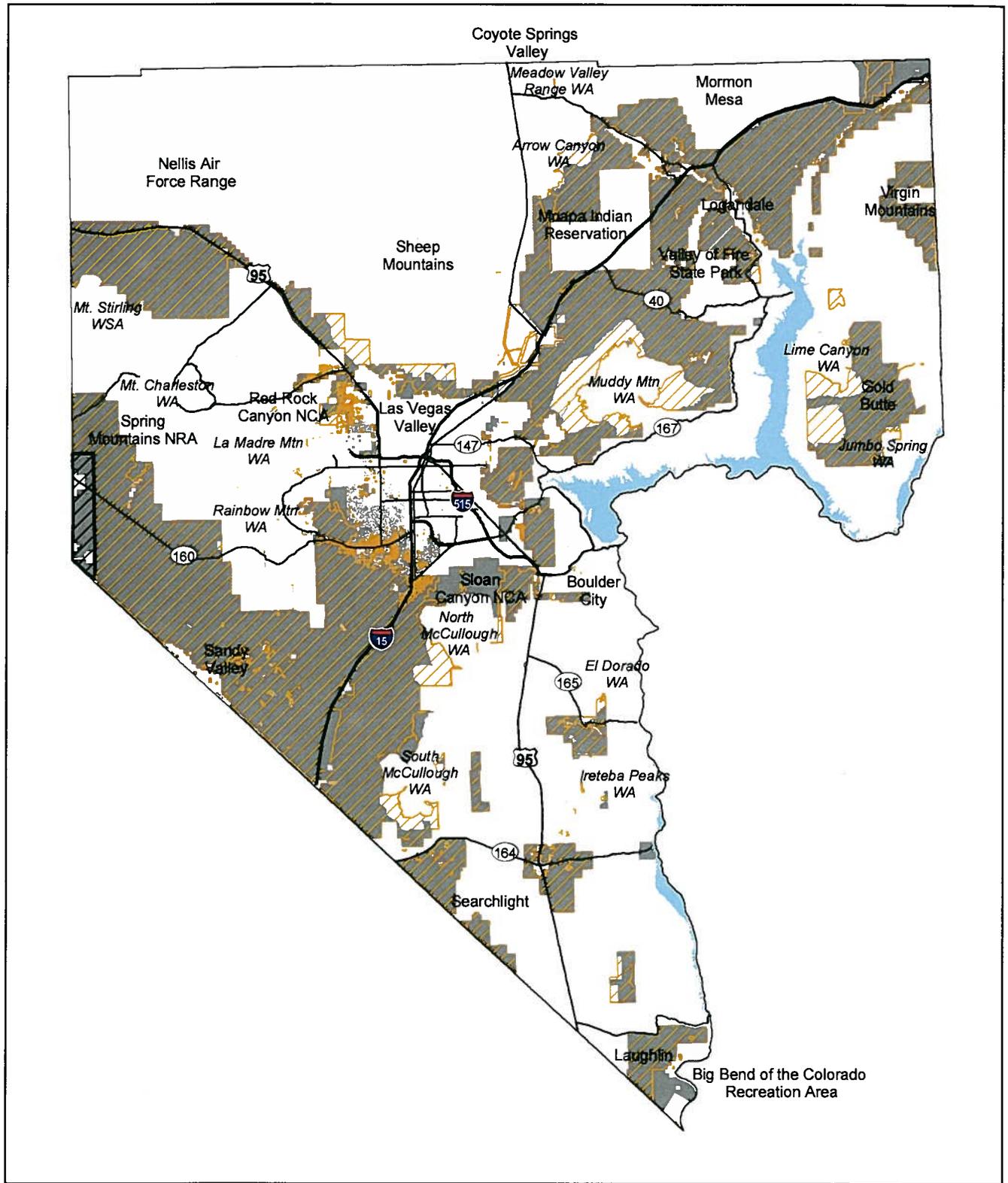


 In 2001 this portion of Clark County was annexed to Nye County per NRS 243.293

 Updated LIMA
 Baseline LIMA



FIGURE 4
 Changes in LIMA Category

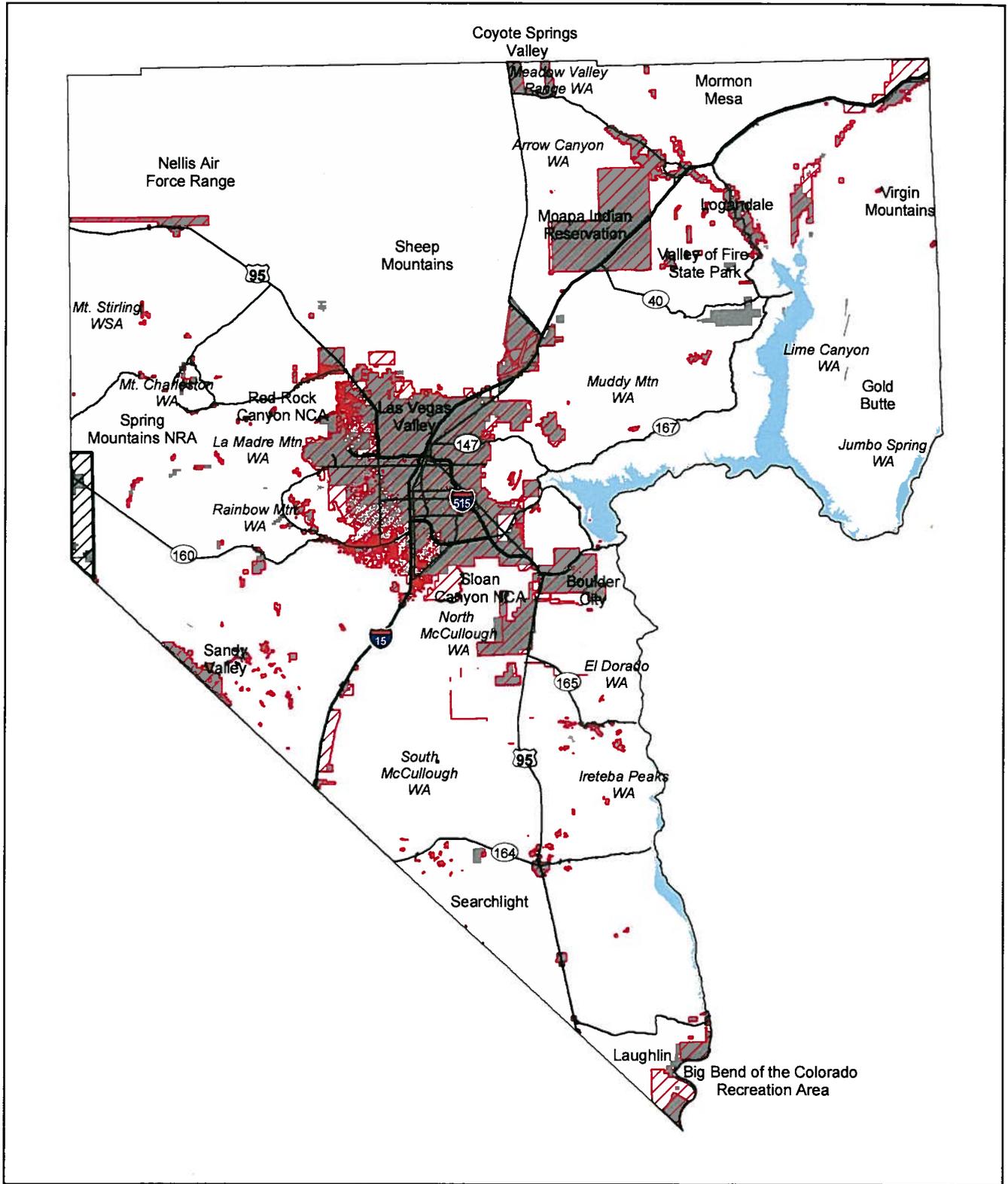


 In 2001 this portion of Clark County was annexed to Nye County per NRS 243.293

 Updated MUMA
 Baseline MUMA



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



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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. 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.

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 WSA 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.

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

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
Pinon	56,111	4,147	-744	3,402	+6.1	759	-4,155	-3,396	-6.1	+6	+0.0	+4	-1	+3	0
Pinon-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

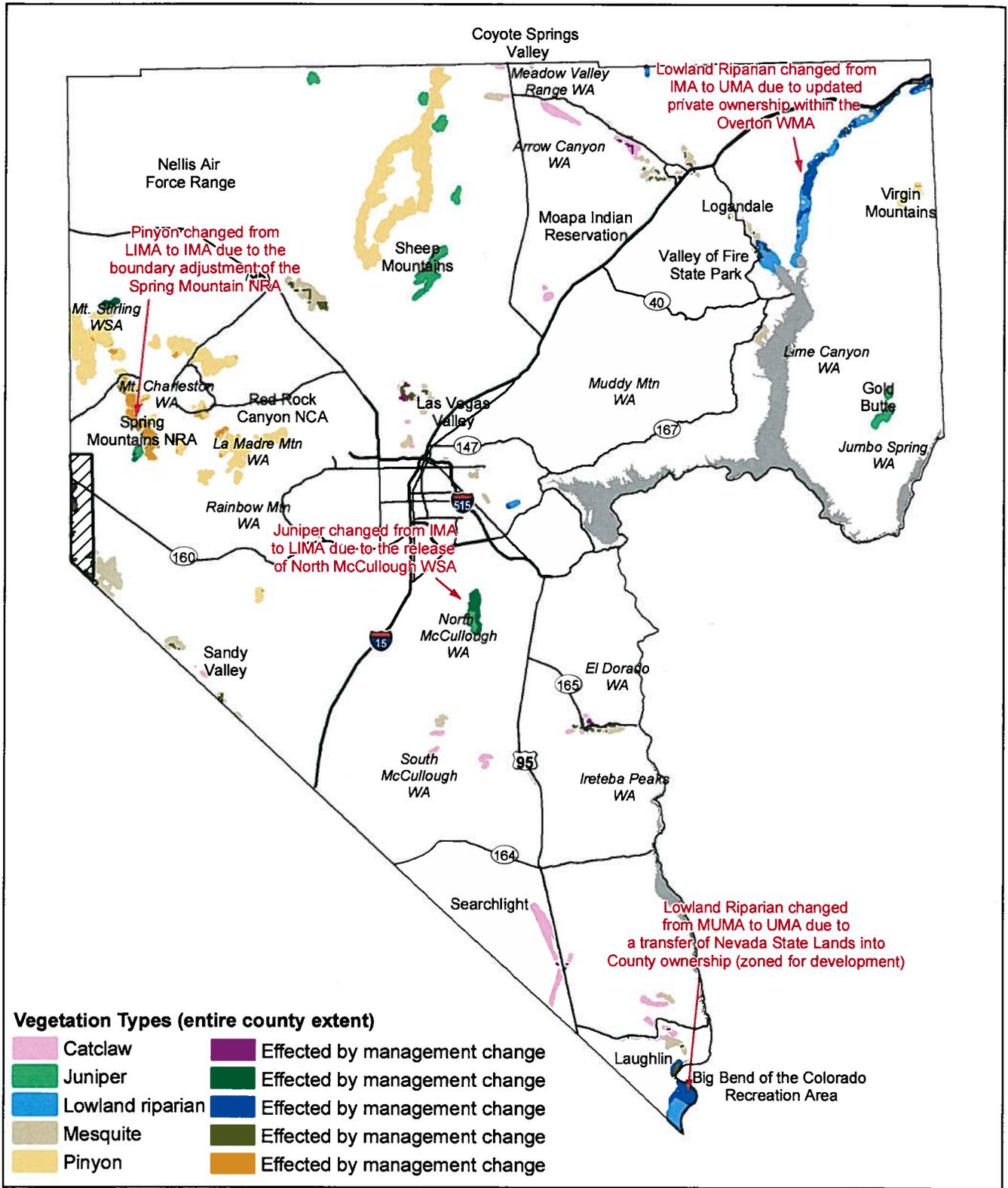
LIMA = Less Intensively Managed Area

†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.

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



FIGURE 7

Vegetation Types with Large Decreases in Management Categories

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

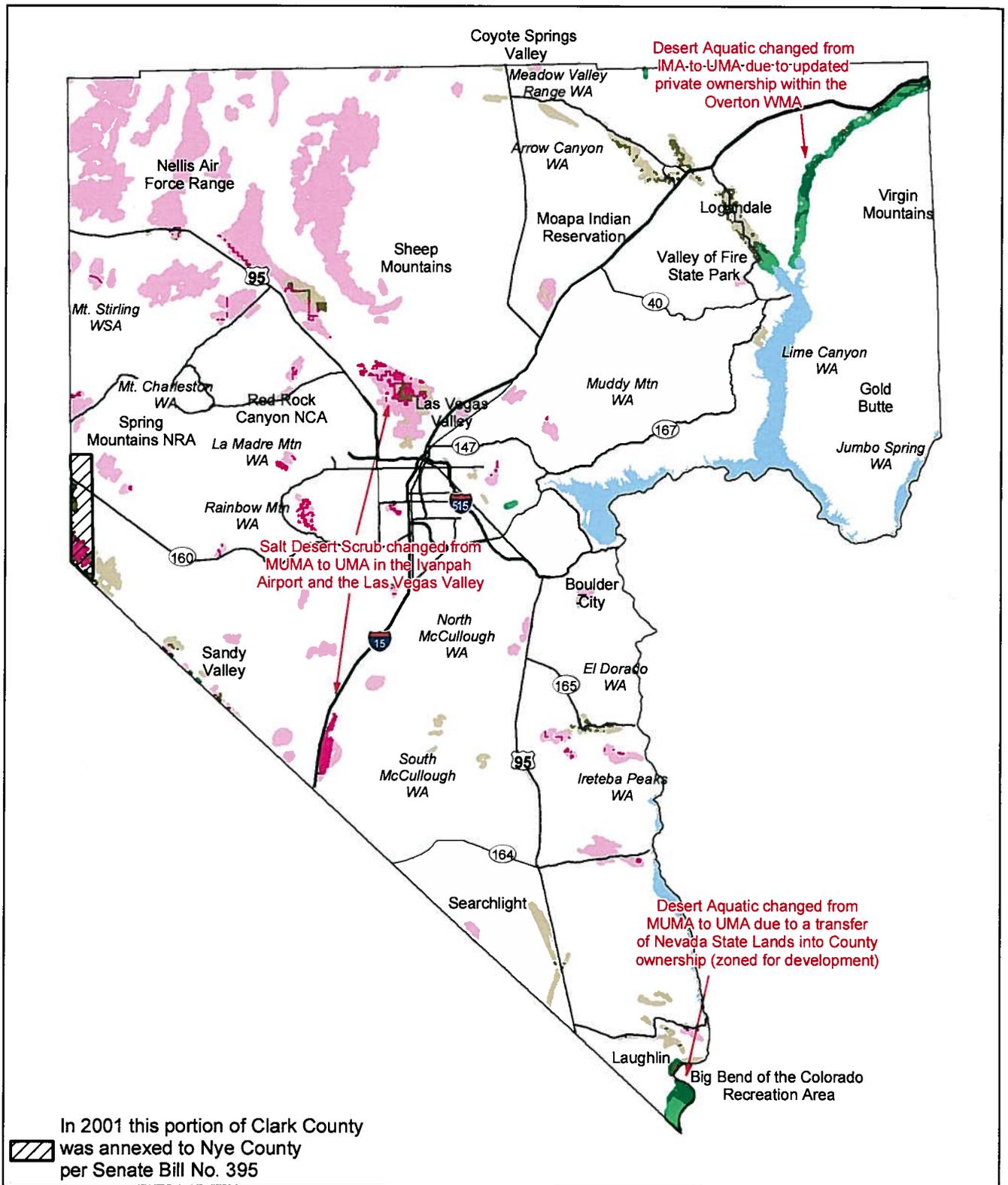
Table 4 shows the acres gained and lost from IMA, LIMA, and MUMA categorization by ecosystem type. These changes are compared with the total acreage of each ecosystem type. This comparison is based on baseline ecosystem data from the MSHCP. To be consistent with the ecosystem analysis in the MSHCP, Table 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.

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



Ecosystems (entire county extent)

 Desert aquatic	 Effected by management change
 Mesquite/Catclaw	 Effected by management change
 Salt desert scrub	 Effected by management change

FIGURE 8

Ecosystems with Large Decreases in Management Categories

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.

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.

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

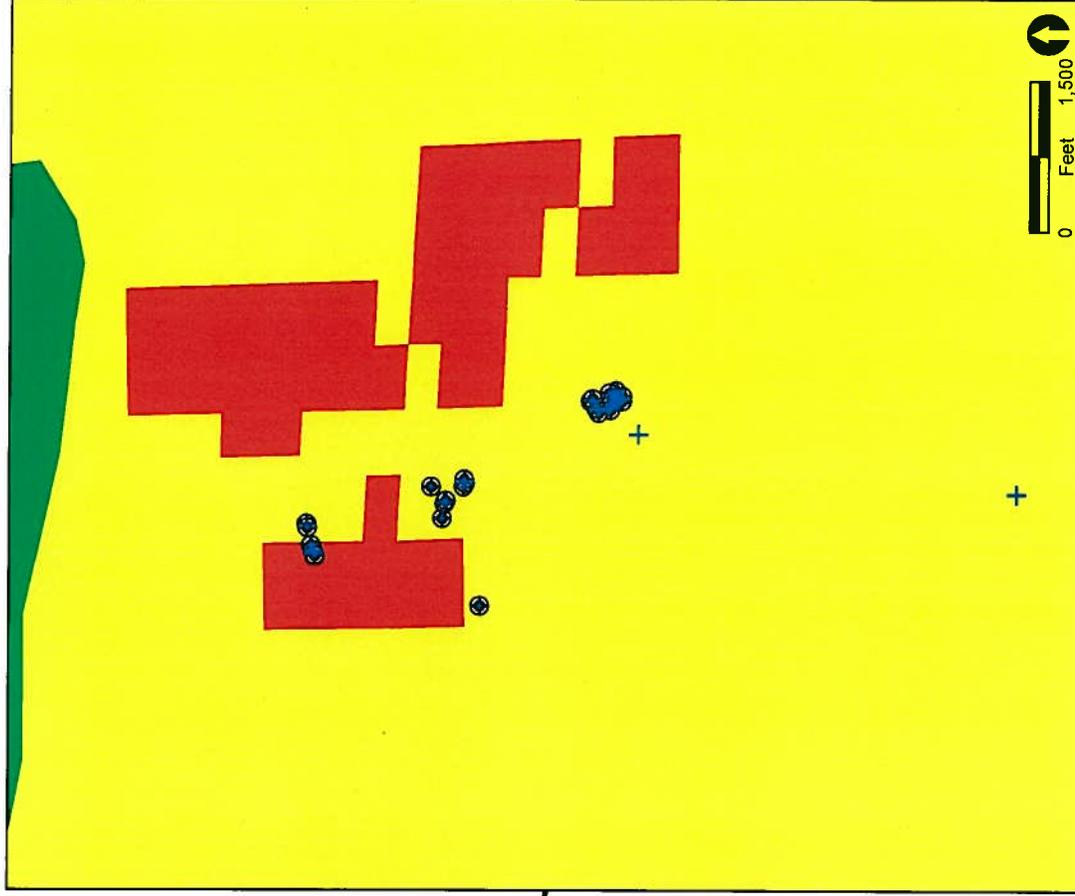
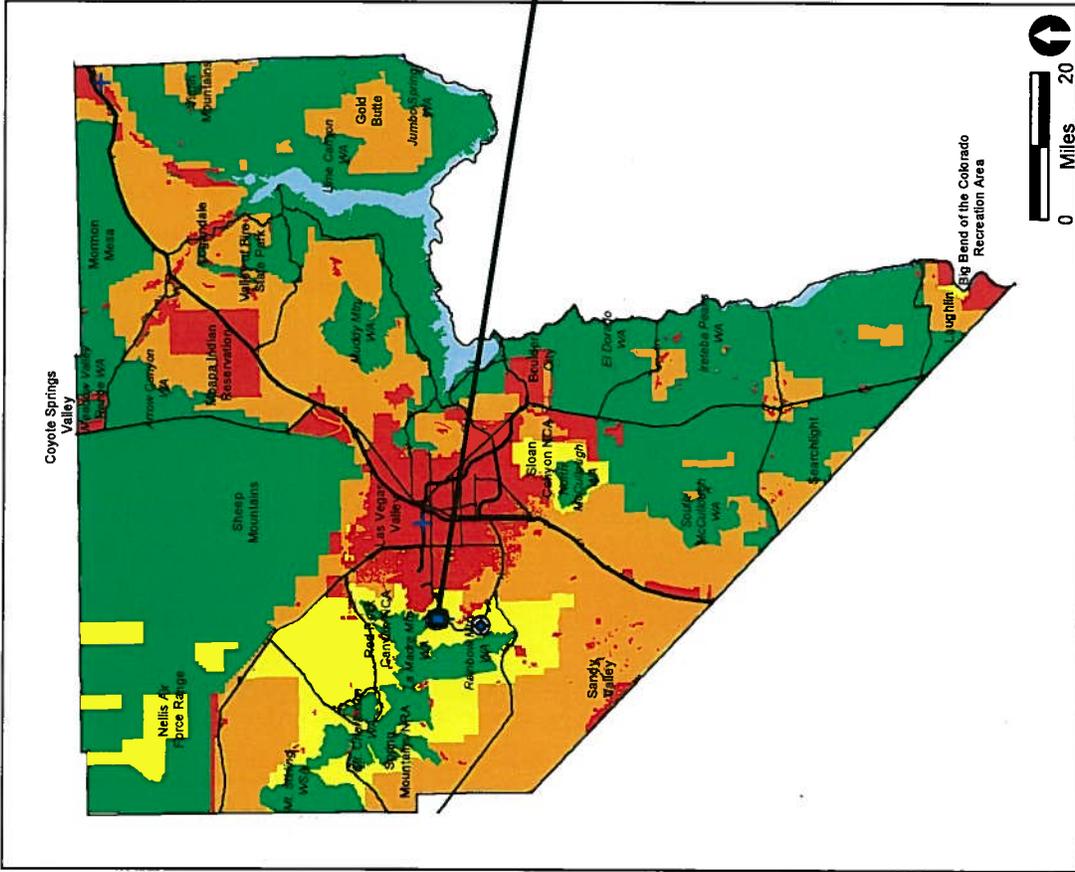
Change of Potential Habitat	Number of Species
Large increase	6
Small Increase	4
No Change	48
Small Decrease	14
Large Decrease	7
Total	79

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>

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 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



Conservation Management Categories (Updated)

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

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

FIGURE 9
Alkali Mariposa Lily Locations

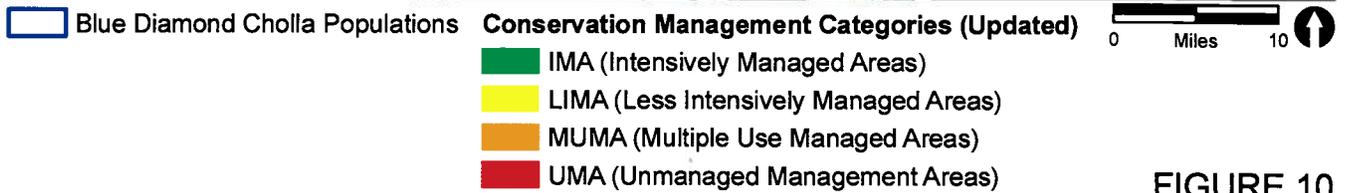
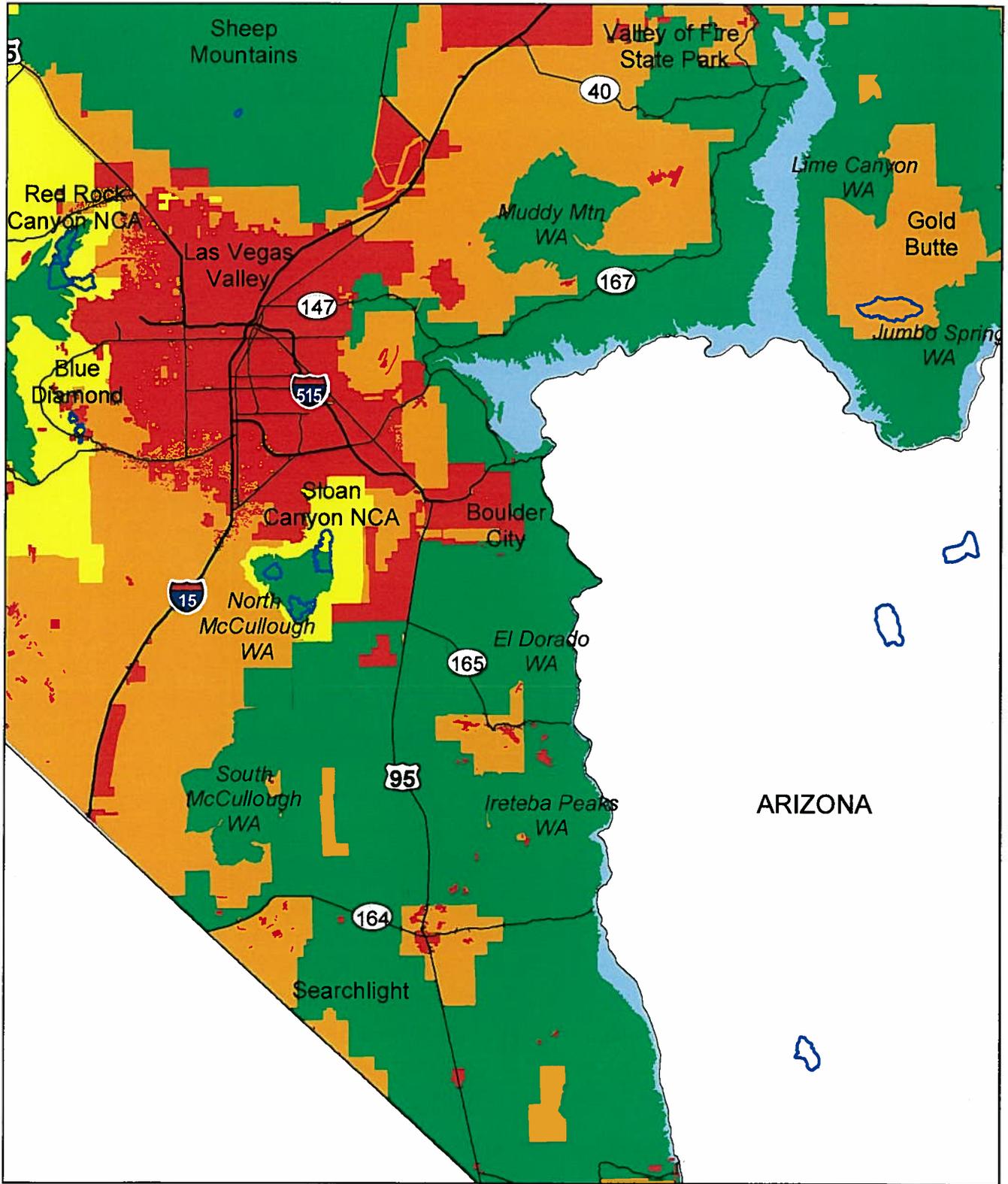
Blue Diamond has not been purchased for habitat protection by any agencies, and the land associated with the mine has been sold for potential development. Therefore, the conservation agreement may no longer be valid. Furthermore, since the MSHCP was written, there have been more populations documented 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.

**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>



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FIGURE 10
 Blue Diamond Cholla Locations

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.

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

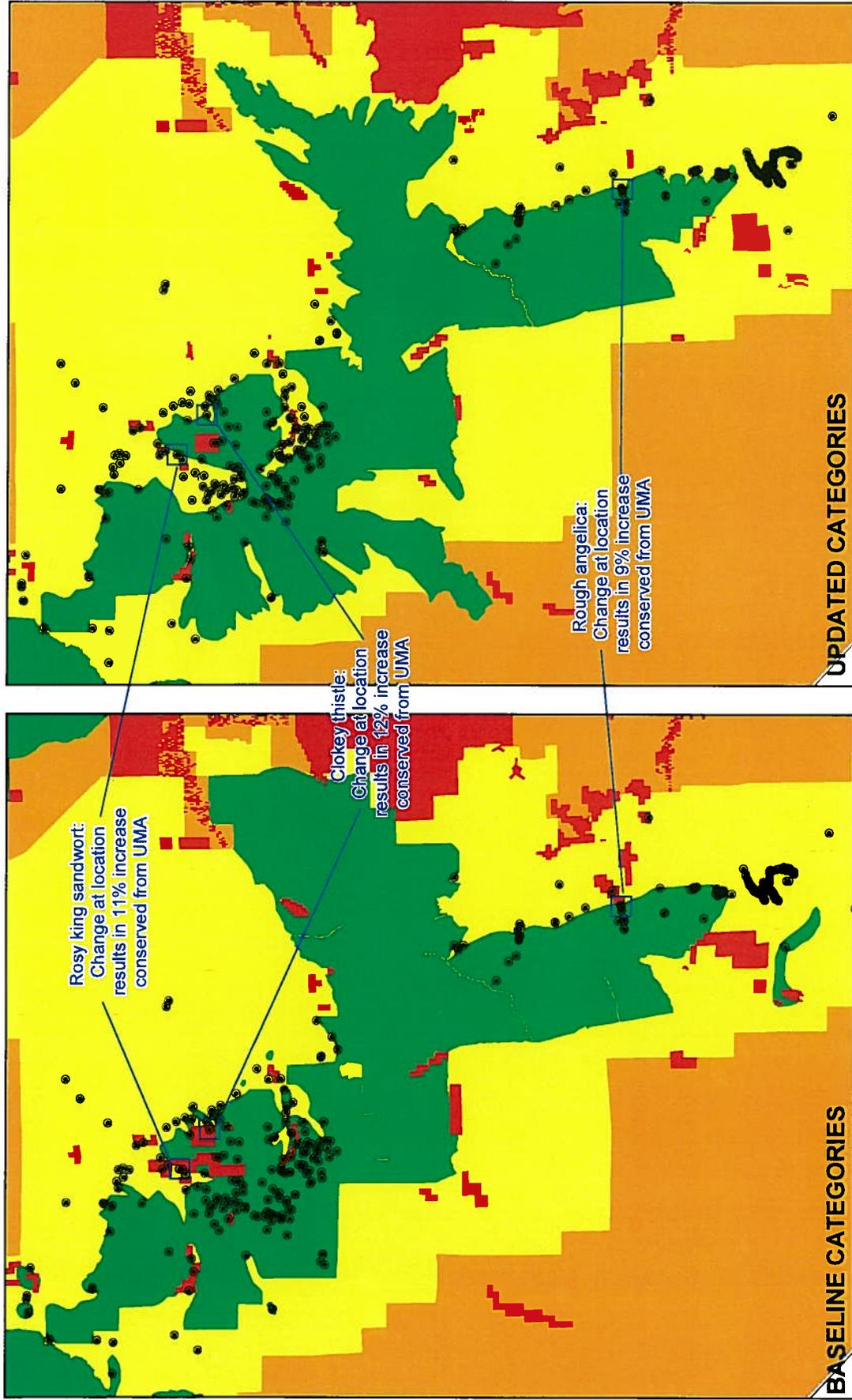
Common Name	Scientific Name
Palmer's chipmunk	<i>Tamias palmeri</i>
Dark blue butterfly	<i>Euphilotes enoptes purpurea</i>
Spring Mountains icarioides blue	<i>Icaricia icarioides</i> ssp.
Mt. Charleston blue butterfly	<i>Icaricia shasta charlestonensis</i>
Spring Mountains acastus checkerspot	<i>Chlosyne 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 pauciflucta</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>

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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:

- 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).



- 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

- 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 IMA 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 riparian 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. For the desert aquatic ecosystem, potential direct impacts to desert aquatic ecosystem conservation management corresponding to a 6-percent decrease of IMA where lands were updated to IMA in the Overton WMA area, and there is also a small (4.6-percent) decrease in conservation management 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.

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Restoration of lowland riparian vegetation along the Virgin River and/o 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.

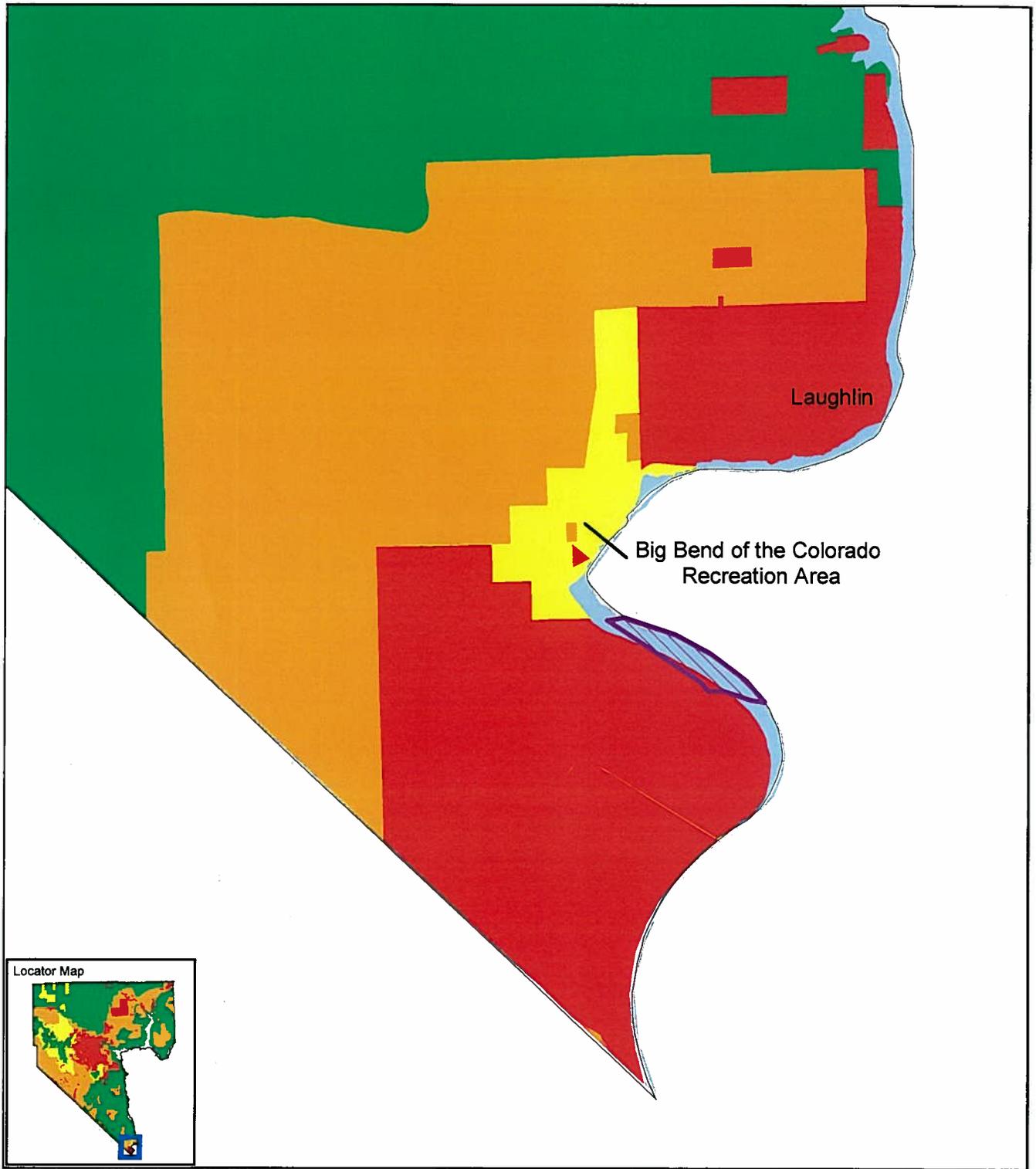
3. To address potential direct impacts to catclaw and mesquite vegetation (-5 and -6 percent, respectively):

- 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)

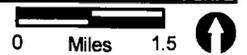


FIGURE 12

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.

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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

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Preliminary Final