Appendix C: Places

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C-1 Places

C-1.1 Model Approach: Places I, II, III

C-1.1.1 Spatial Modeling

Datasets representing places of conservation and management interest were acquired and compiled into three derivative datasets: Sites of High Biodiversity (Places I), Specially Designated Areas of Ecological and Cultural value (Places II), and Other Managed Lands (Places III).

Places Class I: Areas of High Biodiversity were derived from source data characterizing locations with concentrated at-risk biodiversity or existing source data of a prioritization exercise that identified areas of high conservation significance (e.g. TNC Portfolio Sites).

Places Class II: Specially Designated Areas of Ecological and Cultural Value were derived from source data delineating legally protected lands/waters (e.g. ACEC). Plus a few exceptions that represented known species recovery lands (e.g. critical habitat recommended for recovery of Desert Tortoise).

Places Class III: Other Managed Lands describe the majority of federal or state managed lands characterized by management for multiple uses (e.g. DOD lands).

The *Places I class often overlaps spatially with the Places II and III classes*, but differ in that the latter categories includes established legal boundaries for land and water units (e.g., ACECs). Areas of high biodiversity significance most frequently imply a more flexible boundary definition and suggest the need for future field verification prior to settling upon new legal or management designations.

SOURCE DATA

Table C - 1. Places Class I – Source datasets for Sites of High Biodiversity

Source Dataset
California Essential Habitat Connectivity (Essential Connectivity Areas – ECA)
TNC Portfolio Sites
USFWS Critical Habitat
USGS Protected Areas of the United States (PADUS) v1.2 (all records attributed as Places I)
Nevada Important Bird Areas
Nevada Priority Conservation Areas 2006

Table C - 2. Places Class II - Source datasets for Specially Designated Areas of Ecological and Cultural Value

Source Dataset
Bighorn Sheep Management Area
Desert Tortoise Critical Habitat (areas recommended for recovery)
MDEP Mojave Fauna - CA Red Legged Frog Recovery Units
National Inventoried Roadless Areas
NLCS Historic Trails
NLCS Scenic Trails
NLCS Wild Rivers
USGS Protected Areas of the United States (PADUS) v1.2 (records attributed as Places II)

Table C - 3. Places Class III – Source datasets for Other Managed Lands

Source Dataset
USGS Protected Areas of the United States (PADUS) v1.2 (records attributed as Places III)

C-1.1.2 Non-Overlapping Raster Places Datasets

Non-overlapping Places I, Places II, and Places III raster datasets were produced for use in processing with the CBR raster CE data for calculating Gap Analysis statistics.

C-1.1.2.1 Places Class I: Sites of High Biodiversity

All Places I source datasets listed above were clipped to the REA boundary, merged and converted to a raster dataset. Line and polygon source datasets were merged/converted separately and then combined. *All Places Class II sites were then subtracted from the Places Class I raster dataset.*

Each record in the USGS PADUS 1.2 data was first attributed to one of the three Places categories, and then Places I records were subset. PADUS 1.2 Places 1 classes include: Desert Tortoise Habitat and Highland Range Crucial Bighorn Habitat Area (PADUS Places I only occur in the MBR REA). For the California Essential Habitat Connectivity only the ECA (Essential Connectivity Areas) feature class was used. For the USFWS both line and polygon critical habitat datasets were used.

C-1.1.2.2 Places Class II: Specially Designated Areas of Ecological or Cultural Value

All Places II source datasets listed above were clipped to the REA boundary, merged and converted to a raster dataset. Line and polygon source datasets were merged/converted separately and then combined.

Each record in the USGS PADUS 1.2 dataset was first attributed to one of the three Places categories, and then Places II records were subset. All Gap Status 1 and 2 were classified as Places II. PADUS 1.2 Places II include: area of critical environmental concern, ecological preserve, local land trust preserve, national conservation area, national land trust preserve, national forest, national historic site, national landmark conservation system, national monument, national park, national preserve, national recreation area, national wildlife refuge, national conservancy preserve, state land trust, state natural reserve, state park, TNC preserve, water district lands, wilderness, wilderness area, wildlife area, wilderness land trust, wilderness study area, wildlife sanctuary. This list is not exhaustive because the PADUS 1.2 dataset has multiple attributes that describe the site and it is not possible to generate a single summary list.

C-1.1.2.3 Places Class III: Other Managed Lands

The Places III source dataset listed above was clipped to the REA boundary and converted to a raster. *All Places I sites were then subtracted from the Places Class III raster dataset.*

Each record in the USGS PADUS 1.2 dataset was first attributed to one of the three Places categories, and then Places III records were subset. All Gap Status 3 and 4 were classified to Places III. PADUS 1.2 Places III include: BLM lands, DOD lands, city parks, etc. This list is not exhaustive because the PADUS 1.2 dataset has multiple attributes that describe the site and it is not possible to generate a single summary list.

C-1.1.3 Overlapping Polygon Region Places Dataset

An overlapping polygon region places dataset was produced to enable users to identify the individual source data for each Places site (keeping in mind that in this version of the Places data, Places II and III sites overlap with Places I sites).

The Places I, II and III source datasets listed above were clipped to the REA boundary. Line datasets were buffered by 15 meters. All source datasets were then merged into an overlapping region polygon dataset. Two new attribute fields were added: Source_Data and PlacesCd. The Source_Data field identifies the source dataset: Bighorn_sheep_whma, CECHP_ECA, Historic_Trail, NHP_NV_site2006_v2, NV_IBAs, Scenic_Trails, TNC_Porfolio_Terr_Phase1_Sites, USDAFS_roadless_Areas, USFWS_CritHab, USFWS_CritHab_Line, USFWS_CritHab_Tortoise, USGS_PADUS 1.2, and Wild_Scenic_Rivers. The PlacesCD is a numeric value identifying the places class: 1 represents Places I, 2 represents Places II, 3 represents Places III and 4 represents records in the USGS PADUS 1.2 that were excluded from the non-overlapping raster Places datasets (e.g. prisons, swimming pools, tennis courts, etc.)

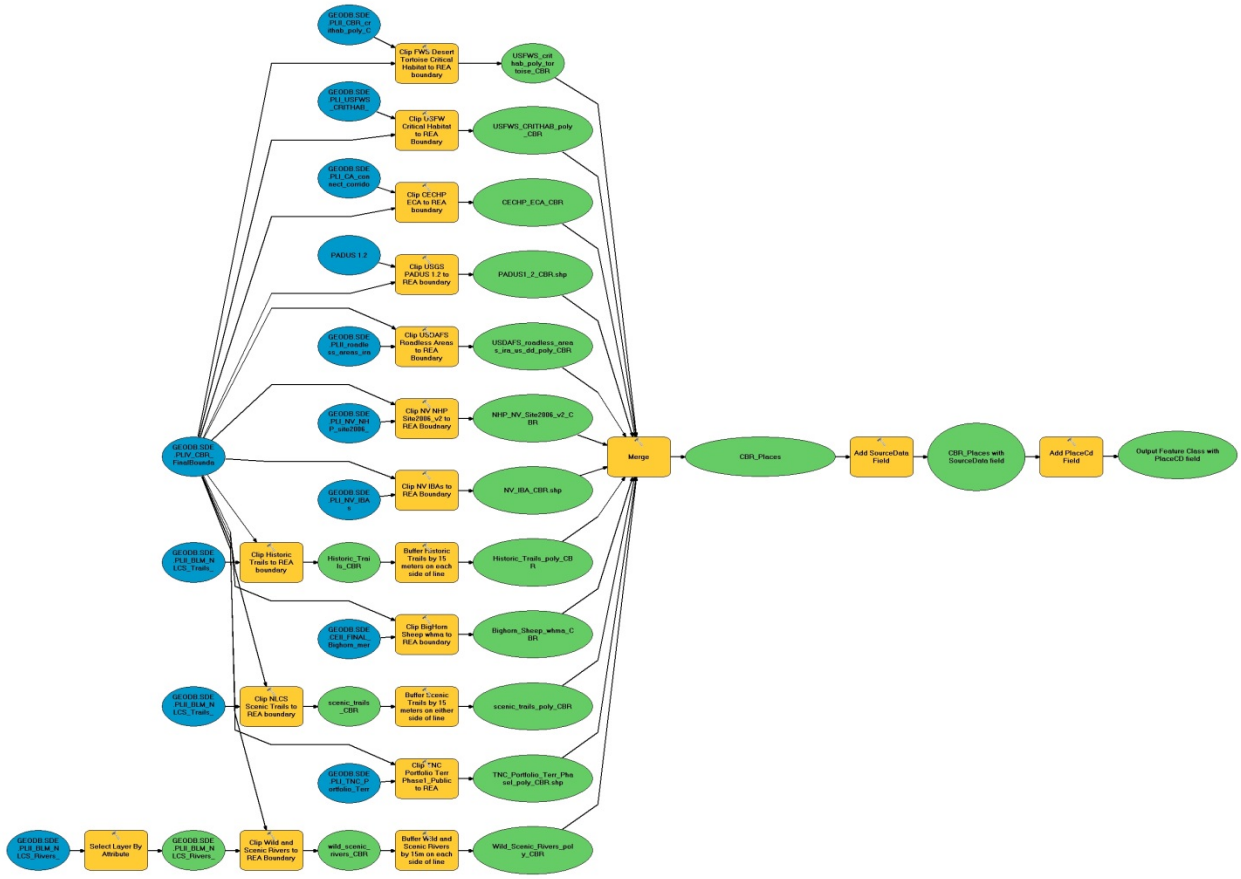

Figure C - 1. Data processing steps to create polygon datasets for Places I, II, III.

C-1.2 Findings in terms of Management Questions

C-1.2.1 Places I - Areas of High Biodiversity

MQ14 - WHERE ARE SITES IDENTIFIED (BUT NOT NECESSARILY DESIGNATED) FOR HIGH BIODIVERSITY?

Areas legally designated or otherwise identified of high significance for ecological or cultural values occur across multiple land managing agency jurisdictions throughout the ecoregion. Within this REA, **Places I** lands indicate sites that have been previously identified as priority areas for conservation, but do not necessarily have a protective designation in place. These places can include areas of high

significance identified through private conservation plans, such as The Nature Conservancy ecoregional portfolios, or similar sites.

Overall, currently BLM manages a total of 2.75 million acres of lands identified as high priority for conservation (Places I), or 7.8% of the ecoregion (Table C - 4). The total for identified priority areas, *which tend to overlap with already designated lands*, encompass 16.4% of the ecoregion.

Table C - 4. Aerial extent of lands identified, but not designated, for their ecological and cultural value (Places I).

Places I Owner/Manager	**Acres**	**% of ecoregion**
Bureau of Land Management (BLM)	2,753,999	6.79%
No data (*from PADUS – potentially various managers*)	2,008,856	4.95%
Department of Defense (DOD)	982,523	2.42%
Department of Energy (DOE)	285,153	0.70%
City Land	171,456	0.42%
Native American Land	118,044	0.29%
State Land Board	110,477	0.27%
Other State Land	61,345	0.15%
Forest Service (USFS)	60,931	0.15%
Private Unrestricted for Development/No Known Restriction	51,799	0.13%
State Park & Recreation	21,582	0.05%
Bureau of Reclamation (BOR)	18,149	0.04%
State Fish and Wildlife	9,103	0.02%
County Land	1,096	0.00%
Audubon Society	585	0.00%
Regional Agency Land	218	0.00%
Ecoregion total area	**40,561,485**	**16.41%**

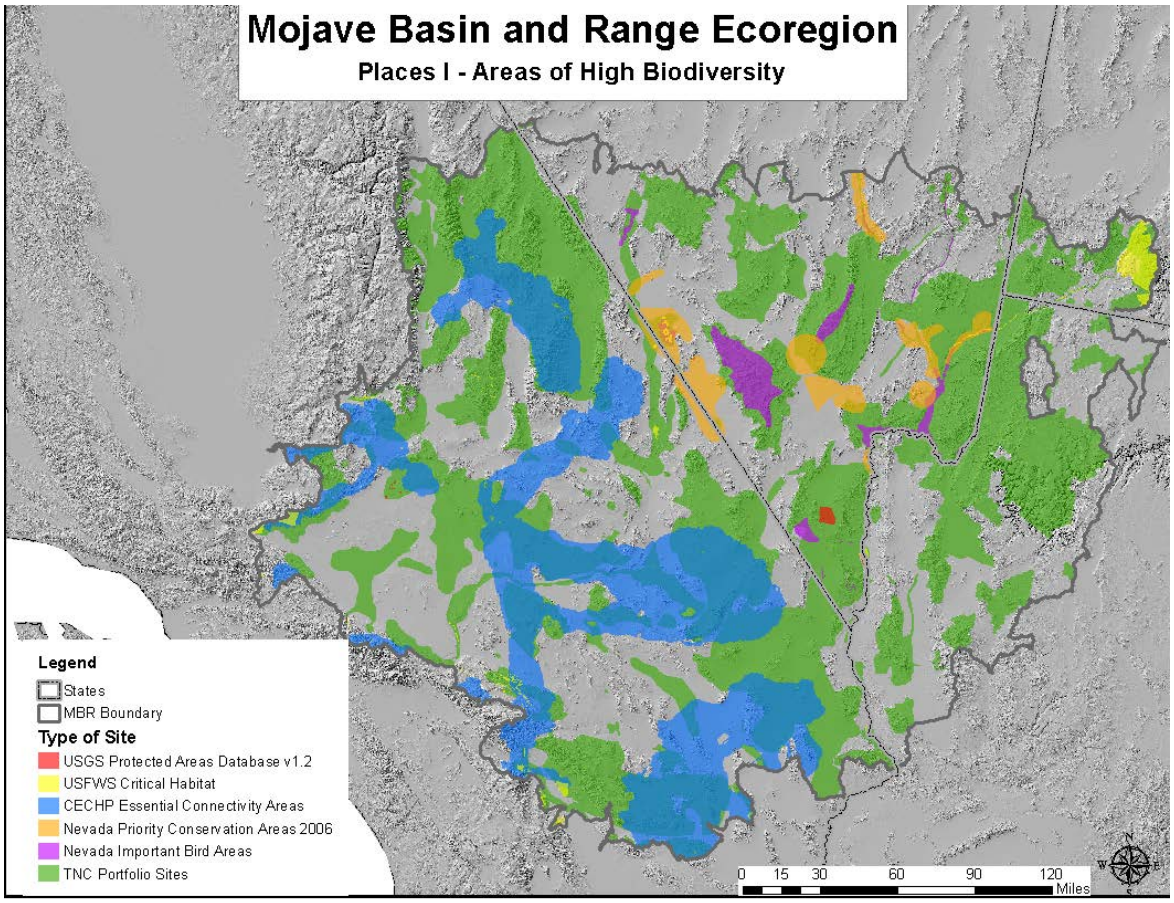

Figure C - 2. Areas identified of probable high biodiversity in the MBR ecoregion. For clarity of this map, only polygons of at least 10 acres (46469 sq meters) were included.

C-1.2.1.1 Places I – Aquatic sites

MQ18 - WHERE ARE AQUATIC HIGH BIODIVERSITY SITES?

Aquatic CEs could occur in virtually all of the Places (designated or high priority) across the ecoregion; the total acreage of Places that have aquatic CEs in them encompasses some 2.6 million acres. Nearly half of that distribution (1.05 million acres) occurs on BLM lands (Table C - 5). Of the ecoregional extent, 52% is located within designated (Places II); with the National Park Service being the largest proportional land manager and BLM being a close second. High priority sites (Places I) identify another 24.6% of the total distribution of sites with these CEs throughout the ecoregion. Table C - 5 includes a summary of total area occupied by lands within these designations, sorted by land owner/manager for the MBR ecoregion.

Table C - 5. Summary of areal extent of designated (Places II) and priority (Places I) sites that include aquatic/wetland/riparian CEs, by owner/manager.

Land Owner Class	Area Extent (Acres)	Percent	% Places I: Sites of High Biodiversity	% Places II: Designated Areas of Ecological or Cultural Value	% in Other Managed Land
Bureau of Land Management (BLM)	1,054,592	39.81	9.69	18.56	11.57
National Park Service (NPS)	617,862	23.33	0.00	23.33	0.00
Unknown - No PADUS record	372,808	14.07	5.35	3.67	5.05
Department of Defense (DOD)	223,826	8.45	3.49	1.82	3.14
Fish and Wildlife Service (FWS)	120,505	4.55	0.00	4.55	0.00
City Land	78,746	2.97	2.88	0.02	0.07
Department of Energy (DOE)	52,955	2.00	0.45	0.00	1.54
Forest Service (USFS)	36,229	1.37	0.09	1.19	0.09
Native American Land	35,285	1.33	0.29	0.13	0.91
State Land Board	16,866	0.64	0.15	0.04	0.45
No data (*from PADUS – potentially various managers*)	11,265	0.43	0.15	0.08	0.19
Other State Land	9,025	0.34	0.12	0.16	0.06
State Park & Recreation	5,224	0.20	0.06	0.10	0.03
Private Unrestricted for Development/No Known Restriction	4,014	0.15	0.08	0.05	0.02
State Fish and Wildlife	3,448	0.13	0.01	0.12	0.00
Bureau of Reclamation (BOR)	1,667	0.06	0.01	0.02	0.04
Local Land Trust	1,618	0.06	0.00	0.06	0.00
Other Federal Land	934	0.04	0.00	0.04	0.00
Regional Agency Land	680	0.03	0.00	0.02	0.00
The Nature Conservancy (TNC)	554	0.02	0.00	0.02	0.00
County Land	530	0.02	0.00	0.01	0.01
Audubon Society	152	0.01	0.00	0.00	0.00
Total	**2,648,787**		**22.84**	**54.01**	**23.16**

C-1.2.2 Places II – Designated Sites of Ecological and Cultural Value

MQ21- WHERE ARE SPECIALLY DESIGNATED AREAS OF ECOLOGICAL OR CULTURAL VALUE?

Areas legally designated or otherwise identified of high significance for ecological or cultural values occur across multiple land managing agency jurisdictions throughout the ecoregion. Within the REA, **Places II** lands have been formally designated for management to conserve significant ecological or cultural values. These can include land attributed by the USGS Gap Analysis Program as "Gap Status 1-2" which tend to include protected areas such as ACECs, National Parks, designated Wilderness lands, and Research Natural Areas, etc. Several additional lands, primarily including National Monuments and

National Conservation Areas, originally labeled "Gap 3," and areas designated as 'critical habitat' (e.g., for desert tortoise or red-legged frog) or other management area (bighorn sheep), were included in the Places II layer for analysis.

Overall, current designated lands (in Places II) encompass nearly 60% of the ecoregion (Table C - 6 and Figure C - 3). These include nearly 1.4 million acres where the PADUS does not include clear information on land ownership ("no data' or 'unknown'). The BLM and the National Park Service manage designated lands encompassing some 45% of the ecoregion, with a combined total of nearly 18.3 million acres. The BLM share of these lands accounts for 11.1 million acres, or 27.44% of the ecoregion. The U.S. Fish and Wildlife Service is third, managing 1.6 million acres in this category. According to these data, some 23,000 acres in private lands have been included under some protective designation within the ecoregion; e.g., including designated critical habitat.

Table C - 6. Aerial extent of lands designated for significant ecological and cultural value (Places II).

Place II Owner/Manager	**Acres**	**% of ecoregion**
Bureau of Land Management (BLM)	11,130,019	27.44%
National Park Service (NPS)	7,193,947	17.74%
Fish and Wildlife Service (FWS)	1,616,605	3.99%
No data (from PADUS – potentially various managers)	1,513,835	3.70%
Forest Service (USFS)	1,175,130	2.90%
Department of Defense (DOD)	1,116,442	2.75%
Native American Land	57,253	0.14%
Other State Land	56,981	0.14%
State Park & Recreation	53,746	0.13%
State Fish and Wildlife	40,709	0.10%
Local Land Trust	33,165	0.08%
Private (from overlapping critical habitat designations)	22,786	0.06%
State Land Board	19,871	0.05%
City Land	10,710	0.03%
Bureau of Reclamation (BOR)	6,725	0.02%
Other Federal Land	5,314	0.01%
The Nature Conservancy (TNC)	4,870	0.01%
Regional Agency Land	3,682	0.01%
County Land	2,489	0.01%
Department of Energy (DOE)	1,869	0.00%
Audubon Society	151	0.00%
Ecoregion total area	**40,561,485**	**59.33%**

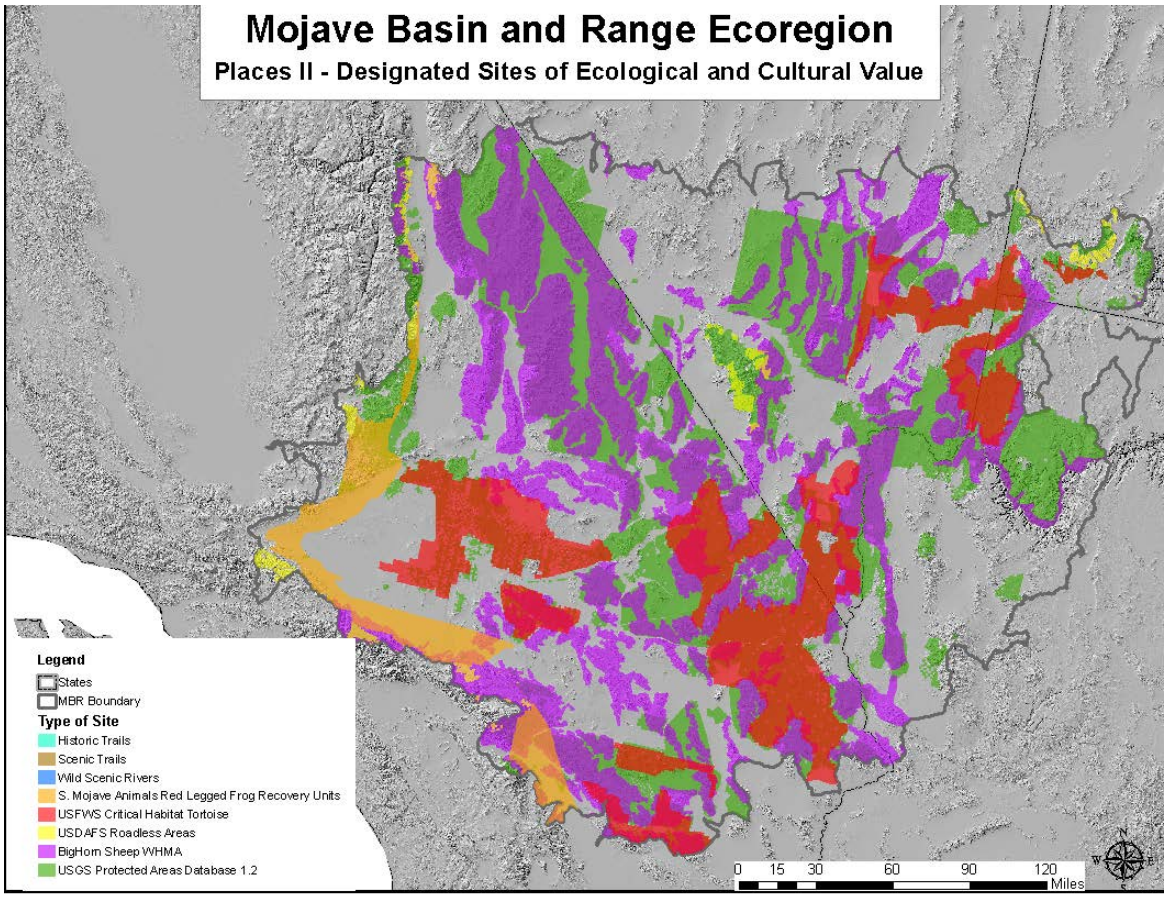

Figure C - 3. Designated sites of ecological or cultural value (Places II) in the MBR. For clarity, many kinds of designated areas are included in the USGS Protected Areas Database category in this map (such as wlderness areas, national parks, ACECs, and wildlife refuges).

Figure C - 4 shows a non-overlapping view of Places II and Places I lands in the MBR. Identified priority areas (Places I), which tend to overlap and include most already-designated lands, encompass *an additional* 16.4% of the ecoregion (Table C - 4). This analysis indicates that more specific land conservation measures have been recommended for approximately 6.6 million acres within the ecoregion. For clarity, the right image in Figure C - 4 highlights additional lands mentioned above that were added to the existing "Gap Status 1-2" lands to the Places II layer from the current National Protected Areas Database (PADUS).

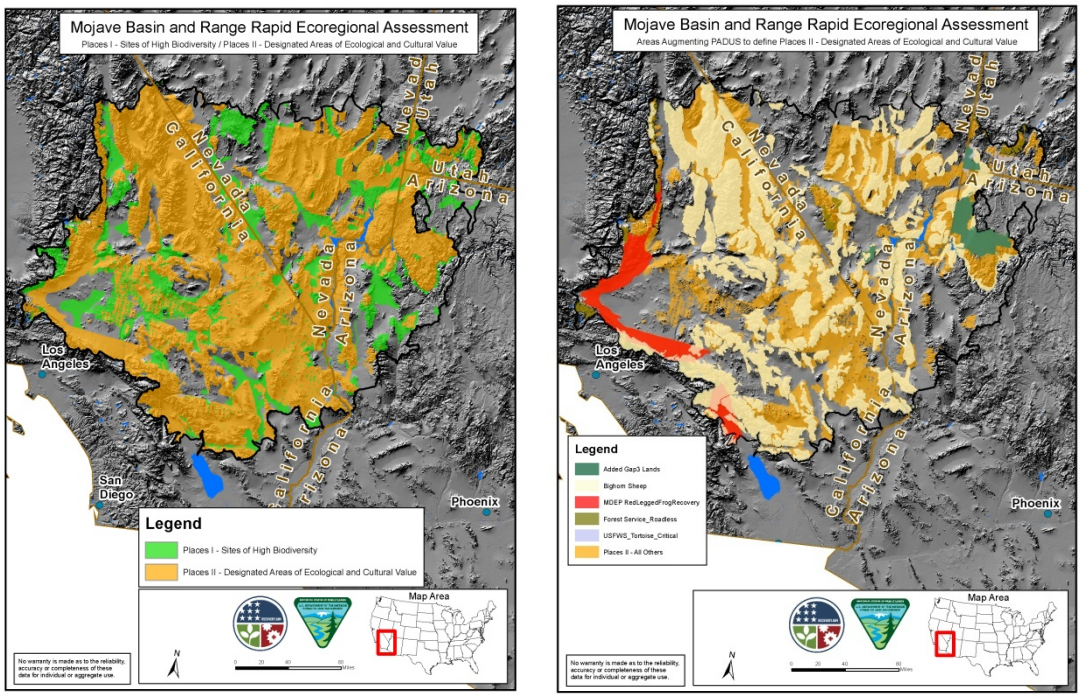

Figure C - 4. Places II designated lands overlapping Places I high-priority conservation lands in the Mojave Basin and Range ecoregion. Right-hand figure highlights additions made to Places II layer.

C-1.2.3 HMAs, HAs, GAs

MQ23 -WHERE ARE THE CURRENT HERD MANAGEMENT AREAS (HMAS)?

Herd management areas area located throughout the ecoregion (Figure C - 5). Located almost exclusively on federal land, HMAs tend to located in the most remote and least densely populated areas. This information was received directly from BLM and was not verified by the contractor.

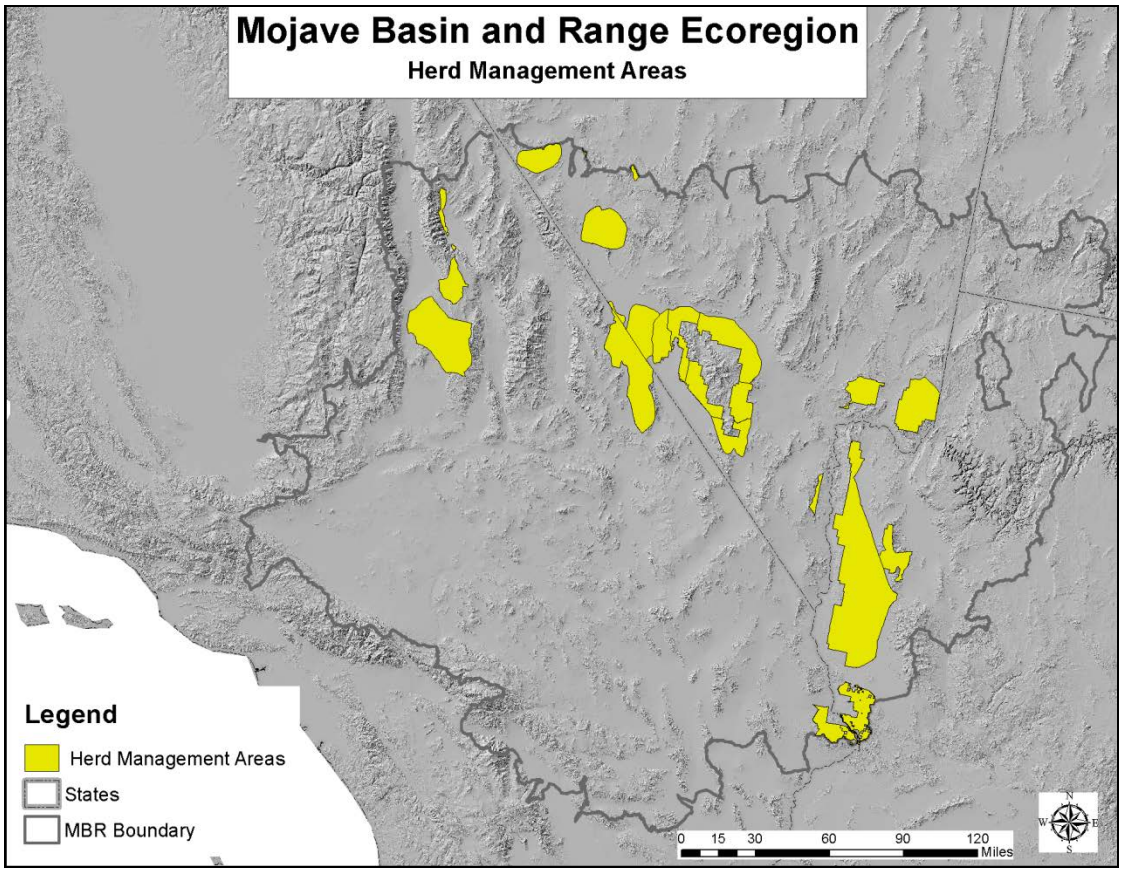

Figure C - 5. Herd management areas in the MBR.

C-1.2.4 Planned Military use areas

MQ76 - WHERE ARE AREAS OF PLANNED EXPANSION OF MILITARY USE?

The only area planned for military expansion is at the Twentynine Palms Marine Corps Air Ground Combat Center. The Marine Corps has developed various alternatives for base expansion and as of June, 2012, their preferred alternative will encompass much of the Johnson Valley Off-Road Recreational Vehicle Area. The Army's Ft Irwin base expanded in 2004 but besides Twentynine Palms, no other bases in the ecoregion have announced new expansion plans.

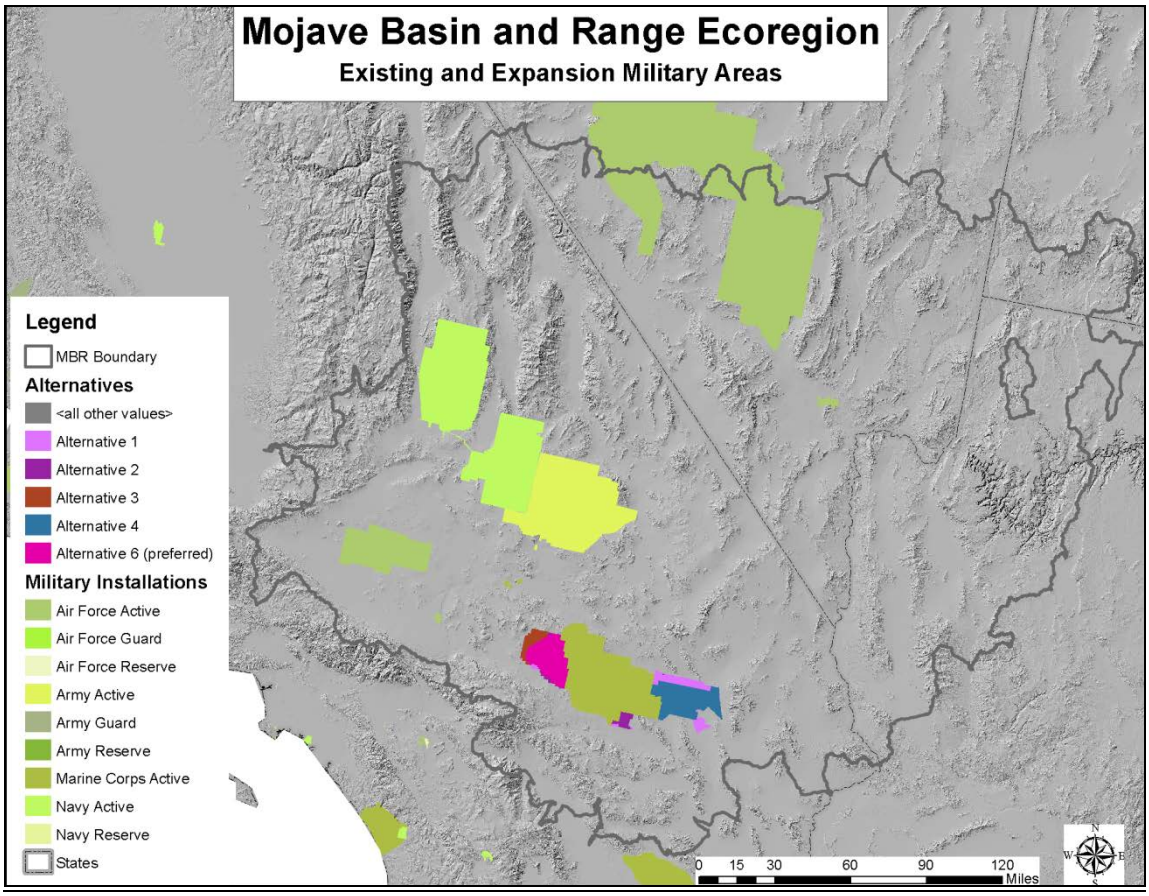

Figure C - 6 Existing military (DoD) lands and alternative expansion areas proposed by Twentynine Palms Marine Corps Air Ground Combat Center (MCAGCC). Alternative six is the Marine Corps' preferred option as of June, 2012.

C-1.3 References Cited in Appendix C

Protected Areas Database of the United States (PADUS) version 1.2, April 2011.
http://gapanalysis.usgs.gov/padus/

The Nature Conservancy Ecoregional Portfolio Sites, 1990s-2000.
http://maps.tnc.org/files/metadata/ERA_STEWARD_TNC_Portfolio_Terr_Phase1.xml