

# Appendix E: References

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## E-1 References

This appendix compiles several “references” lists or lookup tables. First is provided a listing of reference materials relevant to the REA (Table E - 1), including published papers, reports, theses, dissertations, and other documents. Many of them have URLs referenced within the citation.

Other sections of the appendix provide a short section of useful URLs for websites, but this is not comprehensive by any means. This appendix also has the project glossary (Table E - 2) and list of acronyms (Table E - 3).

One request from AMT members was for a cross-walk of the scientific names used for plant species in the terrestrial coarse-filter conceptual models; Table E - 4 provides this list, with the taxonomic standard NatureServe uses in our descriptive materials, the common name for the plants, and the name used in the NRCS PLANTS database. The sort order is alphabetical by scientific name.

The last section of this appendix is the list of management questions addressed in the REA, both those initially proposed by BLM and the AMT, and those answered by the assessments. Also provided are comments relevant to why the MQ was not answered, the original MQ, and the final MQ. These are provided in Table E - 5.

### E-1.1 Master Reference List

Below are provided full citations for many reports, published papers and gray literature that is relevant to this REA. Many of these have been cited in either the report chapters or one of the appendices. Many others have not and are provided for reference. PDFs are not necessarily provided for all of them, although many were delivered to BLM in PDF format. Many of them are copyrighted material, and hence cannot be wholesale provided. They are sorted alphabetically by the first author’s last name. In addition a “short citation” is provided for many of them which cross-references to the text citations of these references.

Table E - 1. Citations for references used in the REA.

Full Citation	Short Citation (used in text)
Abatzoglou, J. T., and C. A. Kolden. 2011. Climate change in western U.S. deserts: Potential for increased wildfire and invasive annual grasses. <i>Rangeland Ecology and Management</i> 64:471-478.	Abatzoglou and Kolden 2011
Abbott, M.L. 2005. Atmospheric Mercury Concentrations Near Salmon Falls Creek Reservoir – Phase 1. Idaho National Laboratory Report INL/EXT-05-00767, October 2005.	
Abele, S. L., editor. 2011. Nevada Springs Conservation Plan. Springs Conservation Plan Working Group, The Nature Conservancy, Reno, NV.	Abele 2011
Abella, S.R., D.J. Craig, L.P. Chiquoine, K.A. Prengaman, S.M. Schmid, and T.M. Embrey. 2011. Relationships of native desert plants with red brome ( <i>Bromus rubens</i> ): toward identifying invasion-reducing species. <i>Invasive Plant Science and Management</i> 4:115-124.	
Abella, S.R., T.M. Embrey, S.M. Schmid, and K.A. Prengaman. 2012. Biophysical correlates with the distribution of the invasive annual red brome ( <i>Bromus rubens</i> ) on a Mojave Desert landscape. <i>Invasive Plant Science and Management</i> 5:47-56.	

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Adams, J. C., and S. F. McCool. 2009. Finite recreation opportunities: The Forest Service, the Bureau of Land Management, and off-road vehicle management. <i>Natural Resources Journal</i> 49:45-116.	Adams and McCool 2009
ADoT [Arizona Department of Transportation]. 2010. Natural Resources Management Group priority weed list. [ <a href="http://www.azdot.gov/Highways/Natural_Resources/PriorityWeedList.asp">http://www.azdot.gov/Highways/Natural_Resources/PriorityWeedList.asp</a> ] (accessed 8-26-2010).	ADoT 2010
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Aldridge, C.L., S. E. Nielsen, H. L. Beyer, M. S. Boyce, J.W. Connelly, S. T. Knick, and M. A. Schroeder. 2008. Range-wide patterns of greater sage-grouse persistence. <i>Diversity and Distribution</i> 14:983-994.	Aldridge et al. 2008
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Allen, E.B. L.E. Rao, G. Tonnesen, M.E. Fenn, and A. Bytnerowicz. 2009a. Empirical and Modeling Approaches to Setting Critical Loads for N Deposition in Southern California Shrublands. Poster Presentation, American Geophysical Union, Fall 2009 Workshop: Nitrogen Deposition, Critical Loads and Biodiversity, Edinburgh, Scotland, UK - 16-18 November, 2009. Online: <a href="http://ontality.com/fileadmin/user_upload/2009_edinburgh/">http://ontality.com/fileadmin/user_upload/2009_edinburgh/</a> .	
Allen, E.B., L.E. Rao, R.J. Steers, A. Bytnerowicz, and M.E. Fenn. 2009b. Impacts of atmospheric nitrogen deposition on vegetation and soils in Joshua Tree National Park. In: R.H. Webb, L.F. Fenstermaker, J.S. Heaton, D.L. Hughson, E.V. McDonald, and D.M. Miller, editors, <i>The Mojave Desert: Ecosystem Processes and Sustainability</i> . University of Nevada Press, Las Vegas.	
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Blank R. R., J. A. Young, and F. L. Allen. 1999. Aeolian dust in a saline playa environment, Nevada, USA. <i>Journal of Arid Environments</i> 4:365-81.	Blank et al. 1999
BLM [Bureau of Land Management]. 2004. Santa Rosa and Santa Jacinto National Mountains final management plan and record of decision. [ <a href="http://www.blm.gov/ca/st/en/fo/palmsprings/santarosa/management_plan.html">http://www.blm.gov/ca/st/en/fo/palmsprings/santarosa/management_plan.html</a> ] (accessed May 2009)	BLM 2004
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BLM [Bureau of Land Management]. 2010c. Solar energy projects. USDI Bureau of Land Management California Desert District. [ <a href="http://www.blm.gov/ca/st/en/fo/cdd/alternative_energy/SolarEnergy.html">http://www.blm.gov/ca/st/en/fo/cdd/alternative_energy/SolarEnergy.html</a> ]	BLM 2010c
BLM [Bureau of Land Management]. 2010d. Renewable energy: Helping to energize California. USDI Bureau of Land Management California. [ <a href="http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/caso/publications.Par.66433.File.dat/SinglePages.pdf">http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/caso/publications.Par.66433.File.dat/SinglePages.pdf</a> ]	BLM 2010d
BLM [Bureau of Land Management]. 2010e. Record of decision for Ruby Pipeline project. News Release No. 2010-023. USDI Bureau of Land Management Nevada State Office. [ <a href="http://www.blm.gov/nv/st/en/info/newsroom/2010/july/record_of_decision.html">http://www.blm.gov/nv/st/en/info/newsroom/2010/july/record_of_decision.html</a> ]	BLM 2010e
BLM [Bureau of Land Management]. 2010f. Wind energy projects. USDI Bureau of Land Management California Desert District. [ <a href="http://www.blm.gov/ca/st/en/fo/cdd/alternative_energy/WindEnergy.html">http://www.blm.gov/ca/st/en/fo/cdd/alternative_energy/WindEnergy.html</a> ]	BLM 2010f
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Braun, C. E. 1998. Sage-grouse declines in western North America: What are the problems? <i>Proceedings of the Western Association of State Fish and Wildlife Agencies</i> 78:139-156.	Braun 1998
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Young, J. A., and F. L. Allen. 1997. Cheatgrass and range science: 1930-1950. <i>Journal of Range Management</i> 50(5):530-535.	Young and Allen 1997
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Zehner, R., M. Coolbaugh, and L. Shevenell. 2009. Preliminary geothermal potential and exploration in the Great Basin. Nevada Bureau of Mines and Geology Open-File Report 09-1, University of Nevada, Reno. 5 pp.	Zehner et al. 2009
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Zouhar, K. 2003. <i>Bromus tectorum</i> . In: <i>Fire Effects Information System</i> , [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <a href="http://www.fs.fed.us/database/feis/">http://www.fs.fed.us/database/feis/</a> [ 2009, November 20].	Zouhar 2003

## E-1.2 Other Sources: Websites

Listed here are websites cited in the reports, and some additional sites.

There are many dozens more that could be added; we have not attempted to be comprehensive; the references cited above often have URLs listed as well.

### NatureServe websites

<http://www.natureserve.org/>

<http://www.natureserve.org/explorer/>

<http://www.natureserve.org/explorer/ranking.htm>  
<http://www.natureserve.org/prodServices/heritagemethodology.jsp>

#### **Federal Agency Websites**

[http://plants.usda.gov/dl\\_all.html](http://plants.usda.gov/dl_all.html)  
<http://soils.usda.gov/>  
<http://soils.usda.gov/use/hydric/intro.html>  
<http://fishadvisories.utah.gov/advisories.htm#utah>  
<http://www.cec.org/Page.asp?PageID=122&ContentID=1329&SiteNodeID=498>  
[http://www.gap.uidaho.edu/padus/State\\_Standard2011\\_May24.pdf](http://www.gap.uidaho.edu/padus/State_Standard2011_May24.pdf)  
<http://www.mojavedata.gov/mdi.html>  
<http://www.landfire.gov/index.php>  
<http://sagemap.wr.usgs.gov/>

#### **Natural Heritage Programs and Conservation Data Centers**

[http://www.azgfd.gov/w\\_c/edits/species\\_concern.shtml](http://www.azgfd.gov/w_c/edits/species_concern.shtml)  
<http://www.dfg.ca.gov/biogeodata/>  
<http://heritage.nv.gov/index.htm>  
<http://dwrcdc.nr.utah.gov/ucdc/>

#### **Miscellaneous software, University, and NGO Websites**

<http://www.circuitscape.org>  
<http://essa.com/tools/vddt/>  
<http://www.drecp.org/about/index.html>  
<http://www.usu.edu/buglab/>  
<http://www.gbfiresci.org/>

## ***E-2 Glossaries***

### **E-2.1 Project glossary**

Table E - 2. Glossary of terms used in the REA.

Term	Definition
<b>Areas of Critical Environmental Concern (ACEC)</b>	Areas within the public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards (FLPMA 1976).
<b>Aridisols</b>	<p>The central concept of Aridisols is that of soils that are too dry for mesophytic plants to grow. They have either:</p> <p>(1) an aridic moisture regime and an ochric or anthropic epipedon and one or more of the following with an upper boundry within 100 cm of the soil surface: a calcic, cambic, gypsic, natric, petrocalcic petrogypsic, or a salic horizon or a duripan or an argillic horizon, or</p> <p>(2) A salic horizon and saturation with water within 100 cm of the soil surface for one month or more in normal years.</p> <p>An aridic moisture regime is one that in normal years has no water available for plants for more than half the cumulative time that the soil temperature at 50 cm below the surface is <math>&gt;5^{\circ}\text{C}</math>. and has no period as long as 90 consecutive days when there is water available for plants while the soil temperature at 50 cm is continuously <math>&gt;8^{\circ}\text{C}</math>.</p>
<b>Assessment Management Team (AMT)</b>	BLM's team that provides overall direction and guidance to the REA and makes decisions regarding ecoregional goals, resources of concern, conservation elements, change agents, management questions, tools, methodologies, models, and output work products. The team generally consists of State Resources Branch Managers from the ecoregion, a POC, and possibly agency partners.
<b>Attribute</b>	A defined characteristic of a geographic feature or entity.
<b>Biophysical Setting (BpS)</b>	As developed for LANDFIRE aims to depict the potential distribution of the ecosystem, given natural landscape disturbance regimes like wildfire. As used by LANDFIRE, the biophysical setting equates to the historic distribution of the ecosystem type, prior to alterations by European settlement and current human activities.
<b>Change Agent</b>	An environmental phenomenon or human activity that can alter/influence the future status of resource condition. Some change agents (e.g., roads) are the result of direct human actions or influence. Others (e.g., climate change, wildland fire, and invasive species) may involve natural phenomena or be partially or indirectly related to human activities.
<b>Coarse Filter</b>	A focus of ecoregional analysis that is based upon conserving resource elements that occur at coarse scales, such as ecosystems, rather than upon finer scale elements, such as specific species. The concept behind a coarse filter approach is that preserving coarse-scale conservation elements will preserve elements occurring at finer spatial scales.
<b>Community</b>	Interacting assemblage of species that co-occur with some degree of predictability and consistency.

<b>Conservation Element</b>	A renewable resource object of high conservation interest often called a conservation target by others. For purposes of this TO, conservation elements will likely be types or categories of areas and/or resources including ecological communities or larger ecological assemblages.
<b>Core Conservation Elements</b>	The set of conservation elements that has been reduced from the complete set of conservation elements identified during the assessment initiation and pre-assessment phases.
<b>Data Management Plan (DMP)</b>	The assessment's plan for managing data, provided by the BLM, describing data standards, responsibilities, security, and other requirements for data management.
<b>Dataset</b>	A collection of related data.
<b>Deductive models</b>	Using existing mapped information, and then recombine them according to a set of rules determined by the modeler; typically working within ArcGIS, ModelBuilder™ was used to describe interactions among spatial datasets.
<b>Development</b>	A type of change (change agent) resulting from urbanization, industrialization, transportation, mineral extraction, water development, or other non-agricultural/silvicultural human activities that occupy or fragment the landscape or that develops renewable or non-renewable resources.
<b>Didymo</b>	<i>Didymosphenia geminate</i> , a species of diatom considered to be a nuisance species
<b>Distribution (as in <i>species distribution</i>)</b>	In this REA the spatial methods employed was mapping of actual <b>distribution</b> as best possible, whether current known occupied habitat or predicted habitat. (see <i>Range Mapping</i> )
<b>Ecological Integrity</b>	The ability of an ecological system to support and maintain a community of organisms that have the species composition, diversity, and functional organization comparable to those of natural habitats within the ecoregion.
<b>Ecological Status</b>	The condition of a criterion (biological or socio-economic resource values or conditions) within a geographic area (e.g., watershed, grid). A rating (e.g., low, medium, or high) or ranking (numeric) is assigned to specific criteria to describe status. The rating or ranking will be relative, either to the historical range of variability for that criterion (e.g., a wildland fire regime criterion) or relative to a time period when the criterion did not exist (e.g., an external partnerships/collaboration criterion). (also see <i>Status</i> )
<b>Ecoregion</b>	An ecological region or ecoregion is defined as an area with relative homogeneity in ecosystems. Ecoregions depict areas within which the mosaic of ecosystem components (biotic and abiotic as well as terrestrial and aquatic) differs from those of adjacent regions (Omernik and Bailey 1997).
<b>Ecosystem</b>	The interactions of communities of native fish, wildlife, and plants with the abiotic or physical environment.



<b>Element Occurrence</b>	A term used by Natural Heritage Programs. An element occurrence generally delineates the location and extent of a species population or ecological community stand, and represents the geo-referenced biological feature that is of conservation or management interest. Element occurrences are documented by voucher specimens (where appropriate) or other forms of observations. A single element occurrence may be documented by multiple specimens or observations taken from different parts of the same population, or from the same population over multiple years.
<b>Extent</b>	The total area under consideration for an ecoregional assessment. For the BLM, this is a CEC Level III ecoregion or combination of several such ecoregions plus the buffer area surrounding the ecoregion. (see <i>Grain</i> ).
<b>Fine Filter</b>	A focus of ecoregional analyses that is based upon conserving resource elements that occur at fine scale, such as specific species. A fine-filter approach is often used in conjunction with a coarse-filter approach (i.e., a coarse-filter/fine-filter framework) because coarse filters do not always capture some concerns, such as when a T&E species is a conservation element.
<b>Fire Regime</b>	Description of the patterns of fire occurrences, frequency, size, severity, and sometimes vegetation and fire effects as well, in a given area or ecosystem. A fire regime is a generalization based on fire histories at individual sites. Fire regimes can often be described as cycles because some parts of the histories usually get repeated, and the repetitions can be counted and measured, such as fire return interval (NWCG 2006).
<b>Forecast; Forecasted</b>	referring to future predicted distributions or future conditions, such as climate change, future development, or future ecological status of CEs. In some places “projections” is a term used interchangeably with forecasts.
<b>Fragmentation</b>	The process of dividing habitats into smaller and smaller units until their utility as habitat is lost (BLM 1997).
<b>Geographic Information System (GIS)</b>	A computer system designed to collect, manage, manipulate, analyze, and display spatially referenced data and associated attributes.
<b>Grain</b>	Grain is the spatial unit of analysis for ecoregional assessment and is the smallest area analyzed and used for regional planning purposes. The many data and model outputs incorporated into an ecoregional analysis are usually upscaled or downscaled to grain scale. The grain for ecoregional analysis may be a regular size and shape (e.g., square, hexagon) but also may be defined by a particular level of hydrologic unit or similar geographic feature.
<b>Grid Cell</b>	When used in reference to raster data, a grid cell is equivalent to a pixel (also see <i>pixel</i> ). When a raster data layer is converted to a vector format, the pixels may instead be referred to as grid cells.
<b>Habitat</b>	A place where an animal or plant normally lives for a substantial part of its life, often characterized by dominant plant forms and/or physical characteristics (BLM 1990).

<b>Heritage</b>	See <i>Natural Heritage Program</i> .
<b>Heritage Program</b>	See <i>Natural Heritage Program</i> .
<b>Hydrologic Unit</b>	An identified area of surface drainage within the U.S. system for cataloging drainage areas, which was developed in the mid-1970s under the sponsorship of the Water Resources Council and includes drainage-basin boundaries, codes, and names. The drainage areas are delineated to nest in a multilevel, hierarchical arrangement. The hydrologic unit hierarchical system has four levels and is the theoretical basis for further subdivisions that form the <i>watershed boundary dataset</i> 5th and 6th levels. (USGS 2009).
<b>Indicator</b>	Components of a system whose characteristics (e.g., presence or absence, quantity, distribution) are used as an index of an attribute (e.g., land health) that are too difficult, inconvenient, or expensive to measure (USDA et al. 2005).
<b>Inductive models</b>	Geo-referenced observations (e.g., known observations of a given species) are combined with maps of potential explanatory variables (climate, elevation, landform, soil variables, etc.). Statistical relationships between dependent variables (observations) and independent explanatory variables are used to derive a new spatial model.
<b>Information Platform</b>	Information Technology infrastructure used to support communication and collaboration of BLM's Ecoregional Assessments. Platform includes GIS hardware and software tools to manage, store, archive, and share data within the BLM and with our partners.
<b>Invasive Species</b>	Species that are not part of (if exotic non-natives), or are a minor component of (if native), an original community that have the potential to become a dominant or co-dominant species if their future establishment and growth are not actively controlled by management interventions, or that are classified as exotic or noxious under state or federal law. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasives (Modified from BLM Handbook 1740-2, Integrated Vegetation Handbook).
<b>Key Ecological Attribute</b>	An attribute, feature, or process that defines and characterizes an ecological community or system or entity; in conjunction with other key ecological attributes, the condition or function of this attribute or process is considered critical to the integrity of the ecological community or system in question. In the BLM REAs, various analyses were conducted to calculate scores or indexes indicating the status of key ecological attributes for various Conservation Elements (CEs).
<b>Land Health</b>	Degree to which the integrity of the soil and the ecological processes of ecosystems are sustained (BLM Handbook H-4180-1).
<b>Landscape Species</b>	Biological species that use large, ecologically diverse areas and often have significant impacts on the structure and function of natural ecosystems (Redford et al. 2000).

<b>Landscape Unit</b>	Because an REA considers a variety of phenomena, there will be many phenomena and process (or intrinsic) grain sizes. These will necessarily be scaled to a uniform support unit, which herein is called a <i>landscape unit</i> . This landscape unit will be the analysis scale used for reporting and displaying ecoregional analyses.
<b>Land-Use Plan (LUP)</b>	A set of decisions that establishes management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land-use-plan-level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. The term includes both resource management plans and management framework plans (BLM 2007).
<b>Management Questions</b>	Questions from decision-makers that usually identify problems and request how to fix or solve those problems.
<b>Metadata</b>	The description and documentation of the content, quality, condition, and other characteristics of geospatial data.
<b>Model</b>	Any representation, whether verbal, diagrammatic, or mathematical, of an object or phenomenon. Natural resource models typically characterize resource systems in terms of their status and change through time. Models imbed hypotheses about resource structures and functions, and they generate predictions about the effects of management actions. (Adaptive Management: DOI Technical Guide).
<b>Mollisols</b>	The central concept of Mollisols is that of soils that have a dark colored surface horizon and are base rich; they are typically formed in grasslands. Nearly all have a mollic epipedon. Many also have an argillic or natric horizon or a calcic horizon. A few have an albic horizon. Some also have a duripan or a petrocalcic horizon.
<b>Native Plant and Animal Populations and Communities</b>	Populations and communities of all species of plants and animals naturally occurring, other than as a result of an introduction, either presently or historically in an ecosystem. (BLM Manual H-4180-1).
<b>Native Species</b>	Species that historically occurred or currently occur in a particular ecosystem and were not introduced (BLM 2007b).
<b>Natural Community</b>	An assemblage of organisms indigenous to an area that is characterized by distinct combinations of species occupying a common ecological zone and interacting with one another (BLM 2007b).
<b>Natural Heritage Program</b>	An agency or organization, usually based within a state or provincial natural resource agency, whose mission is to collect, document, and analyze data on the location and condition of biological and other natural features (such as geologic or aquatic features) of the state or province. These programs typically have particular responsibility for documenting at-risk species and threatened ecosystems. (See <a href="http://natureserve.org/">natureserve.org/</a> for additional information on these programs.)
<b>Occurrence</b>	See <i>Element Occurrence</i> .

<b>Pixel</b>	A pixel is a cell or spatial unit comprising a raster data layer; within a single raster data layer, the pixels are consistently sized; a common pixel size is 30 x 30 meters square. Pixels are usually referenced in relation to spatial data that are in raster format. In this REA, some pixels sizes included 90 x 90 m, 4 x 4 km, and 15 x 15 km (also see <i>Grid Cell</i> ).
<b>Population</b>	Individuals of the same species that live, interact, and migrate through the same niche and habitat.
<b>Projection</b>	referring to future predicted distributions or future conditions, such as climate change, future development, or future ecological status of CEs. In most places “forecast” is the term used interchangeably with projection.
<b>Range Mapping (as in <i>Species Range</i>)</b>	A spatially coarse depiction; the generalized area of possible occurrence of a species or ecosystem, such as one might find in a wildlife field guide; was not utilized in this REA.
<b>Rapid Ecoregional Assessment (REA)</b>	The methodology used by the BLM to assemble and synthesize that regional-scale resource information, which provides the fundamental knowledge base for devising regional resource goals, priorities, and focal areas, on a relatively short time frame (less than 2 years).
<b>Rapid Ecoregional Assessment Work Plan (REAWP)</b>	The work plan (scope of services) that guides the Phase II Assessment component of a REA. This document fully establishes the design of the Phase II effort, and is essentially the ‘blueprint’ for that work effort and resulting products.
<b>Regionally-Significant Resource</b>	A native plant, wildlife, or fish resource or other ecosystem resource or service that has more than locally significant qualities, which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to other similar resources. Generally, regionally-significant resources within a specific ecoregion occur in two or more field offices.
<b>Resource Value</b>	An ecological value, as opposed to a cultural value. Examples of resource values are those species, habitats, communities, features, functions, or services associated with areas with abundant native species and few non-natives, having intact, connected habitats, and that help maintain landscape hydrologic function. Resource values of concern to the BLM can be classified into three categories: native fish, wildlife, or plants of conservation concern; regionally-important terrestrial ecological features, functions, and services; and regionally-important aquatic ecological features, functions, and services.

<b>Scale</b>	<p>Refers to the characteristic time or length of a process, observation, model, or analysis. <b>Intrinsic scale</b> refers to the scale at which a pattern or process actually operates. Because nature phenomena range over at least nine orders of magnitude, the intrinsic scale has wide variation. This is significant for ecoregional assessment, where multiple resources and their phenomena are being assessed.</p> <p><b>Observation scale</b>, often referred to as sampling or measurement scale, is the scale at which sampling is undertaken. Note that once data are observed at a particular scale, that scale becomes the limit of analysis, not the phenomenon scale. <b>Analysis</b> or <b>modeling scale</b> refers to the resolution and extent in space and time of statistical analyses or simulation modeling. <b>Policy scale</b> is the scale at which policies are implemented and is influenced by social, political, and economic policies.</p>
<b>Scaling</b>	<p>The transfer of information across spatial scales. <b>Upscaling</b> is the process of transferring information from a smaller to a larger scale. <b>Downscaling</b> is the process of transferring information to a smaller scale.</p>
<b>Special Status Species (SSS)</b>	<p>Plant and animal species that are federally listed as threatened or endangered; proposed threatened or endangered; candidate species; state listed as threatened or endangered or listed by a BLM state director as sensitive (BLM 2001b).</p>
<b>Status</b>	<p>The condition of a criterion (biological or socio-economic resource values or conditions) within a geographic area (e.g., watershed, grid). A rating (e.g., low, medium, or high) or ranking (numeric) is assigned to specific criteria to describe status. The rating or ranking will be relative, either to the historical range of variability for that criterion (e.g., a wildland fire regime criterion) or relative to a time period when the criterion did not exist (e.g., an external partnerships/collaboration criterion).</p>
<b>Step-Down</b>	<p>A step-down is any action related to regionally-defined goals and priorities discussed in the REA that are acted upon through actions by specific State and/or Field Offices. These step-down actions can be additional inventory, a finer-grained analysis, or a specific management activity.</p>
<b>Stressor</b>	<p>A factor causing negative impacts to the biological health or ecological integrity of a Conservation Element. Factors causing such impacts may or may not have anthropogenic origins. In the context of the REAs, these factors are generally anthropogenic in origin.</p>
<b>Subwatershed</b>	<p>A subdivision of a <i>watershed</i>. A <i>subwatershed</i> is the 6th-level, 12-digit unit and smallest of the hydrologic unit hierarchy. Subwatersheds generally range in size from 10,000 to 40,000 acres. (USGS 2009).</p>
<b>Value</b>	<p>See <i>Resource Value</i>.</p>
<b>Watershed</b>	<p>A watershed is the 5th-level, 10-digit unit of the hydrologic unit hierarchy. Watersheds range in size from 40,000 to 250,000 acres. Also used as a generic term representing a drainage basin or combination of hydrologic units of any size (USGS 2009).</p>

<b>Watershed Boundary Dataset (WBD)</b>	A National geospatial database of drainage areas consisting of the 1st through 6th hierarchical hydrologic unit levels. The WBD is an ongoing multiagency effort to create hierarchical, and integrated hydrologic units across the Nation (USGS 2009).
<b>Wildland Fire</b>	Any non-structure fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use, and prescribed fire (NWCG 2006).



## E-2.2 Acronym List

Table E - 3. List of acronyms used in the REA.

Acronym	Definition
AADT	Annual Average Daily Traffic
ACEC	Area of Critical Environmental Concern
AFB	Air Force Base
AGI	Annual Grasses Index
AML	Appropriate Management Level
AMT	Assessment Management Team
AR4	Intergovernmental Panel on Climate Change - Fourth Assessment Report
ArcGIS	Arc Geographic Information System
ARRA	American Recovery and Reinvestment Act
AUC	Area Under the (ROC) Curve
AUM	Animal Unit Month
AWC	Available Water Capacity
AWS	Associate Weather Services
BCM	Basin Characterization Model
BLM	Bureau of Land Management
BpS	Biophysical Settings
CA	Change Agent
CA GAP	California Gap Analysis Project
CA ReGAP	California Regional Gap Analysis Project
CART	Classification and Regression Tree
CBR	Central Basin and Range
CCVI	Climate Change Vulnerability Index
CD	Compact Disc
CE	Conservation Element
CEC	Commission for Environmental Cooperation
CO	Contracting Officer
COR	Contracting Officer's Representative
CVS	Conservation Value Summary
DCMP	Desert Conservation Management Plan
DDTF	Data Delivery Tracking Form
DEM	Digital Elevation Model
DMP	Data Management Plan
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of Interior
DQE	Data Quality Evaluation
DRECP	Desert Renewable Energy Conservation Plan
DRI	Desert Research Institute

Acronym	Definition
DRS	Division of Resource Services
DSS	Decision Support System
DVD	Digital Versatile Disc
EFC	Environmental Flow Components
EIA	Ecological Integrity Assessment
EIS	Environmental Impact Statement
ENSO	El Nino Southern Oscillation
EO	Element Occurrence
EPA	Environmental Protection Agency
EPCA	Energy Policy and Conservation Act
ERA	Ecoregional Assessment
ESA	Endangered Species Act
ESD	Ecological Site Description
ESRI®	Environmental Systems Research Institute, Inc.
ET	Evapotranspiration
EVT	Existing Vegetation Type
FAO	Food and Agriculture Organization
FCC	Federal Communications Commission
FGDC	Federal Geographic Data Committee
FLPMA	Federal Land Policy and Management Act
FO	Field Office
FRCC	Fire Regime Condition Class
FRI	Fire Return Interval
FTP	File Transfer Protocol
G-1, G-3	Globally Imperiled-Globally Vulnerable
GA	Grazing Allotment
GAP	Gap Analysis Project
GBPJW	Great Basin Pinyon-Juniper Woodland
GCM	General Circulation Model
GFDL	Geophysical Fluid Dynamics Laboratory
GFF	government-furnished facilities
GFM	government-furnished material
GFP	government-furnished property
GIS	Geographic Information System
GSG	Greate
HA	Herd Area
HMA	Herd Management Area
HMAs	Herd Management Areas
HRV	Historic Range of Variation
HU	Hydrologic Unit
HUC	Hydrologic Unit Code
IBA	Important Bird Areas

Acronym	Definition
ICLUS	Integrated Climate and Land Use Scenarios
IDIQ	Indefinite Delivery/Indefinite Quantity
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
JPEG	Joint Photographic Experts Group
KEA	Key Ecological Attribute
Kw	K factor (soil erodibility)
LANDFIRE	Landscape Fire and Resource Management Planning Tools Project
LCM	Landscape Condition Model
LF	LANDFIRE
LFRDB	LANDFIRE Reference Database
LRU	Landscape Reporting Unit
LU/LC	Land Use/Land Cover
LUP	Land Use Plan
MaxEnt	Maximum Entropy (modeling software)
MBR	Mojave Basin and Range
MDI	Mojave Desert Initiative
MQ	Management Question
MRDS	USGS Mineral Resource Data System
MRLA	Multiple Resource Land Area
NADP	National Atmospheric Deposition Program
NAMC	National Aquatic Monitoring Center
NAS	USGS Nonindigenous Aquatic Species
NCAR	National Center for Atmospheric Research
NCEP	National Centers for Environmental Prediction
NED	National Elevation Dataset
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organization
NHD	National Hydrography Dataset
NHD Plus	National Hydrography Dataset Plus
NID	National Inventory of Dams
NL	Natural Landscapes
NLCD	National Land Cover Dataset
NOC	BLM National Operations Center
NPMS	National Pipeline Mapping System
NRCS	Natural Resource Conservation Service
NREL	National Renewable Energy Laboratory
NRV	Natural Range of Variability
NTAD	National Transportation Atlas Database
NVDEP	Nevada Department Environmental Protection
NWI	National Wetland Inventory
OHV	Off-Highway Vehicles

Acronym	Definition
ORV	Off-road Vehicle
PADUS	Protected Area Database of the U.S. ( <i>see USPAD</i> )
PCM	Parallel Climate Model
PEIS	Programmatic Environmental Impact Statement
PET	Potential Evapotranspiration
PJ	Pinyon-Juniper
PL	Place
PLSS	Public Land Survey System
POC	Point-of-Contact
PRISM	Parameter-elevation Regressions on Independent Slopes Model
PWS	Public Water Supply
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
RAS	Rangeland Administration System
REA	Rapid Ecoregional Assessment
REAWP	Rapid Ecoregional Assessment Work Plan
ReGAP	Regional Gap Analysis Project
RegCM	International Centre for Theoretical Physics Regional Climate Model
RETI	Renewable Energy Transmission Initiative
RMP	Resource Management Plan
ROC	Receiver Operating Characteristic
SAGEMAP	Sagebrush and Grassland Ecosystem Map Assessment Project
SAR	Sodium Adsorption Ratio
SClass	Succession Class
SDM	Species Distribution Model
SERGoM	Spatially Explicit Regional Growth Model
SMA	Surface Management Agency
SO	State Office
SOW	Statement of Work
SSURGO	Soil Survey Geographic Database
STATSGO	State Soil Geographic Database
STDV (stdv)	Standard Deviation (also <i>stdev</i> )
SUNY	State University of New York
SW ReGAP	Southwest Regional Gap Analysis Project
SWAP	State Wildlife Action Plan
SWEMP	Southwest Exotic Plant Mapping Program
SWPA	Southwest Principal Aquifer study
T&E	Threatened and Endangered
TNC	The Nature Conservancy
TO	Task Order
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture

Acronym	Definition
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USGS-CD	USGS 15km dynamically downscaled climate model outputs
USPAD	U.S. Protected Areas Database ( <i>see PADUS</i> )
VDDT	Vegetation Dynamics Development Tool
WBD	Watershed Boundary Dataset
WGA	Western Governors' Association
WHB	Wild Horse and Burro
WMC	Western Center for Monitoring and Assessment of Freshwater Ecosystems

## E-2.3 Scientific-common name master list for plants

Many hundreds of plant species are listed in the coarse filter conceptual models. At the request of AMT reviewers, the below crosswalk from the Contractor's taxonomy to the USDA Natural Resources Conservation Service (NRCS) PLANTS Database is provided (**Error! Reference source not found.**). Readers of the conceptual models can look up plant scientific names to find the common name and NRCS PLANTS scientific name (if different). The NRCS PLANTS names were downloaded from [http://plants.usda.gov/dl\\_all.html](http://plants.usda.gov/dl_all.html) in January 2011.

Table E - 4. Plant scientific names used in the coarse-filter conceptual models , with NRCS PLANTS common name and scientific name (if different) . The USDA Natural Resources Conservation Service (NRCS) PLANTS Database checklist used here was downloaded in January 2011 from [http://plants.usda.gov/dl\\_all.html](http://plants.usda.gov/dl_all.html).

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Abies concolor</i>	white fir	
<i>Abies grandis</i>	grand fir	
<i>Abies lasiocarpa</i>	subalpine fir	
<i>Acacia greggii</i>	catclaw acacia	
<i>Acacia neovernicosa</i>	viscid acacia	
<i>Acamptopappus sphaerocephalus</i>	rayless goldenhead	
<i>Acer glabrum</i>	Rocky Mountain maple	
<i>Acer grandidentatum</i>	bigtooth maple	
<i>Acer negundo</i>	boxelder	
<i>Achillea millefolium</i>	common yarrow	
<i>Achnatherum</i>	needlegrass	
<i>Achnatherum hymenoides</i>	Indian ricegrass	
<i>Achnatherum nelsonii ssp. dorei</i>	Dore's needlegrass	
<i>Achnatherum nelsonii ssp. nelsonii</i>	Columbia needlegrass	
<i>Achnatherum occidentale</i>	western needlegrass	
<i>Achnatherum speciosum</i>	desert needlegrass	
<i>Achnatherum thurberianum</i>	Thurber's needlegrass	
<i>Agrostis stolonifera</i>	creeping bentgrass	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Allenrolfea occidentalis</i>	iodinebush	
<i>Alnus incana</i>	gray alder	
<i>Alnus oblongifolia</i>	Arizona alder	
<i>Ambrosia deltoidea</i>	triangle bur ragweed	
<i>Ambrosia dumosa</i>	burrobush	
<i>Amelanchier</i>	serviceberry	
<i>Amelanchier alnifolia</i>	Saskatoon serviceberry	
<i>Amelanchier utahensis</i>	Utah serviceberry	
<i>Antennaria rosea</i>	rosy pussytoes	
<i>Aquilegia scopulorum</i>	Utah columbine	
<i>Arabis drummondii</i>	Drummond's rockcress	
<i>Arceuthobium campylopodum</i>	western dwarf mistletoe	
<i>Arctostaphylos</i>	manzanita	
<i>Arctostaphylos glauca</i>	bigberry manzanita	
<i>Arctostaphylos patula</i>	greenleaf manzanita	
<i>Arctostaphylos pringlei</i>	Pringle manzanita	
<i>Arctostaphylos pungens</i>	pointleaf manzanita	
<i>Arctostaphylos uva-ursi</i>	kinnikinnick	
<i>Arenaria</i>	sandwort	
<i>Arenaria congesta</i>	ballhead sandwort	
<i>Arenaria kingii</i>	King's sandwort	
<i>Aristida</i>	threeawn	
<i>Aristida purpurea</i>	purple threeawn	
<i>Aristida purpurea</i> var. <i>fendleriana</i>	Fendler's threeawn	
<i>Aristida ternipes</i>	spidergrass	
<i>Arnica cordifolia</i>	heartleaf arnica	
<i>Artemisia</i>	sagebrush	
<i>Artemisia arbuscula</i>	little sagebrush	
<i>Artemisia arbuscula</i> ssp. <i>arbuscula</i>	little sagebrush	
<i>Artemisia arbuscula</i> ssp. <i>longicaulis</i>	little sagebrush	
<i>Artemisia arbuscula</i> ssp. <i>longiloba</i>	little sagebrush	
<i>Artemisia arctica</i>	boreal sagebrush	
<i>Artemisia bigelovii</i>	Bigelow sage	
<i>Artemisia cana</i>	silver sagebrush	
<i>Artemisia cana</i> ssp. <i>cana</i>	silver sagebrush	
<i>Artemisia cana</i> ssp. <i>viscidula</i>	silver sagebrush	
<i>Artemisia filifolia</i>	sand sagebrush	
<i>Artemisia frigida</i>	prairie sagewort	
<i>Artemisia ludoviciana</i>	white sagebrush	
<i>Artemisia nova</i>	black sagebrush	
<i>Artemisia tridentata</i>	big sagebrush	
<i>Artemisia tridentata</i> ssp. <i>spiciformis</i>	big sagebrush	
<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	basin big sagebrush	
<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	mountain big sagebrush	
<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>	Wyoming big sagebrush	



Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Artemisia tridentata</i> ssp. <i>xericensis</i>	big sagebrush	
<i>Artemisia tripartita</i> ssp. <i>tripartita</i>	threetip sagebrush	
<i>Astragalus</i>	milkvetch	
<i>Astragalus kentrophyta</i>	spiny milkvetch	
<i>Astragalus lentiginosus</i>	freckled milkvetch	
<i>Astragalus platytropis</i>	broadkeel milkvetch	
<i>Atriplex</i>	saltbush	
<i>Atriplex canescens</i>	fourwing saltbush	
<i>Atriplex confertifolia</i>	shadscale saltbush	
<i>Atriplex gardneri</i>	Gardner's saltbush	
<i>Atriplex hymenelytra</i>	desertholly	
<i>Atriplex lentiformis</i>	big saltbush	
<i>Atriplex parryi</i>	Parry's saltbush	
<i>Atriplex polycarpa</i>	cattle saltbush	
<i>Atriplex spinifera</i>	spinescale saltbush	
<i>Baccharis salicifolia</i>	mule-fat	
<i>Baccharis sarothroides</i>	desertbroom	
<i>Balsamorhiza</i>	balsamroot	
<i>Balsamorhiza sagittata</i>	arrowleaf balsamroot	
<i>Bebbia juncea</i>	sweetbush	
<i>Betula glandulosa</i>	resin birch	
<i>Betula occidentalis</i>	water birch	
<i>Boerhavia</i>	spiderling	
<i>Bothriochloa barbinodis</i>	cane bluestem	
<i>Bouteloua breviseta</i>	gypsum grama	
<i>Bouteloua curtipendula</i>	sideoats grama	
<i>Bouteloua eriopoda</i>	black grama	
<i>Bouteloua gracilis</i>	blue grama	
<i>Bouteloua hirsuta</i>	hairy grama	
<i>Brassica tournefortii</i>	Asian mustard	
<i>Brickellia laciniata</i>	splitleaf brickellbush	
<i>Bromus carinatus</i>	California brome	
<i>Bromus inermis</i>	smooth brome	
<i>Bromus japonicus</i>	field brome	<i>Bromus arvensis</i>
<i>Bromus madritensis</i>	compact brome	
<i>Bromus rubens</i>	red brome	
<i>Bromus tectorum</i>	cheatgrass	
<i>Bursera microphylla</i>	elephant tree	
<i>Calamagrostis montanensis</i>	plains reedgrass	
<i>Calamagrostis purpurascens</i>	purple reedgrass	
<i>Calamagrostis rubescens</i>	pinegrass	
<i>Calamovilfa longifolia</i>	prairie sandreed	
<i>Canotia holacantha</i>	crucifixion thorn	
<i>Carex</i>	sedge	
<i>Carex duriuscula</i>	needleleaf sedge	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Carex elynoides</i>	blackroot sedge	
<i>Carex filifolia</i>	threadleaf sedge	
<i>Carex geyeri</i>	Geyer's sedge	
<i>Carex haydeniana</i>	cloud sedge	
<i>Carex nardina</i>	spike sedge	
<i>Carex rossii</i>	Ross' sedge	
<i>Carex rupestris</i>	curly sedge	
<i>Carex scirpoidea</i>	northern singlespike sedge	
<i>Carex siccata</i>	dryspike sedge	
<i>Carnegiea gigantea</i>	saguaro	<i>Carnegiea gigantea</i>
<i>Castilleja</i>	Indian paintbrush	
<i>Ceanothus greggii</i>	desert ceanothus	
<i>Ceanothus leucodermis</i>	chaparral whitethorn	
<i>Ceanothus martinii</i>	Martin's ceanothus	
<i>Ceanothus prostratus</i>	prostrate ceanothus	
<i>Ceanothus velutinus</i>	snowbrush ceanothus	
<i>Celtis laevigata</i> var. <i>reticulata</i>	netleaf hackberry	
<i>Cercocarpus intricatus</i>	littleleaf mountain mahogany	
<i>Cercocarpus ledifolius</i>	curl-leaf mountain mahogany	
<i>Cercocarpus ledifolius</i> var. <i>intercedens</i>	curl-leaf mountain mahogany	
<i>Cercocarpus ledifolius</i> var. <i>ledifolius</i>	curl-leaf mountain mahogany	
<i>Cercocarpus montanus</i>	alderleaf mountain mahogany	
<i>Cercocarpus montanus</i> var. <i>glaber</i>	birchleaf mountain mahogany	
<i>Chamaebatiaria millefolium</i>	desert sweet	
<i>Chamaesyce</i>	sandmat	
<i>Chilopsis linearis</i>	desert willow	
<i>Chorizanthe rigida</i>	devil's spineflower	
<i>Chrysolepis sempervirens</i>	bush chinquapin	
<i>Chrysothamnus</i>	rabbitbrush	
<i>Chrysothamnus viscidiflorus</i>	yellow rabbitbrush	
<i>Chrysothamnus viscidiflorus</i> ssp. <i>lanceolatus</i>	yellow rabbitbrush	
<i>Chrysothamnus viscidiflorus</i> ssp. <i>puberulus</i>	yellow rabbitbrush	
<i>Cirsium eatonii</i>	Eaton's thistle	
<i>Cleome isomeris</i>	bladderpod spiderflower	
<i>Coleogyne</i>	coleogyne	
<i>Coleogyne ramosissima</i>	blackbrush	
<i>Collinsia parviflora</i>	maiden blue eyed Mary	
<i>Cornus sericea</i>	redosier dogwood	
<i>Crataegus rivularis</i>	river hawthorn	
<i>Croton californicus</i>	California croton	
<i>Croton wigginsii</i>	Wiggins' croton	
<i>Cryptantha</i>	cryptantha	
<i>Cymopterus cinerarius</i>	gray springparsley	
<i>Cymopterus nivalis</i>	snowline springparsley	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Dactylis glomerata</i>	orchardgrass	
<i>Dalea</i>	prairie clover	
<i>Dalea purpurea</i>	purple prairie clover	
<i>Danthonia intermedia</i>	timber oatgrass	
<i>Danthonia parryi</i>	Parry's oatgrass	
<i>Dasyochloa pulchella</i>	low woollygrass	
<i>Delphinium</i>	larkspur	
<i>Deschampsia caespitosa</i>	tufted hairgrass	Deschampsia cespitosa
<i>Descurainia</i>	tansymustard	
<i>Dicoria canescens</i>	desert twinbugs	
<i>Digitaria californica</i>	Arizona cottontop	
<i>Distichlis spicata</i>	saltgrass	
<i>Dryas octopetala</i>	eightpetal mountain-avens	
<i>Echinocactus polycephalus</i>	cottontop cactus	
<i>Elaeagnus angustifolia</i>	Russian olive	
<i>Eleocharis palustris</i>	common spikerush	
<i>Elymus elymoides</i>	squirreltail	
<i>Elymus glaucus</i>	blue wildrye	
<i>Elymus lanceolatus</i>	thickspike wheatgrass	
<i>Elymus lanceolatus ssp. lanceolatus</i>	thickspike wheatgrass	
<i>Elymus trachycaulus</i>	slender wheatgrass	
<i>Encelia</i>	brittlebush	
<i>Encelia farinosa</i>	brittlebush	
<i>Ephedra</i>	jointfir	
<i>Ephedra californica</i>	California jointfir	
<i>Ephedra cutleri</i>	Cutler's jointfir	
<i>Ephedra funerea</i>	Death Valley jointfir	
<i>Ephedra nevadensis</i>	Nevada jointfir	
<i>Ephedra torreyana</i>	Torrey's jointfir	
<i>Ephedra viridis</i>	mormon tea	
<i>Eragrostis intermedia</i>	plains lovegrass	
<i>Ericameria</i>	goldenbush	
<i>Ericameria discoidea</i>	whitestem goldenbush	
<i>Ericameria linearifolia</i>	narrowleaf goldenbush	
<i>Ericameria nauseosa</i>	rubber rabbitbrush	
<i>Ericameria nauseosa var. hololeuca</i>	rubber rabbitbrush	
<i>Ericameria nauseosa var. salicifolia</i>	rubber rabbitbrush	
<i>Ericameria nauseosa var. speciosa</i>	rubber rabbitbrush	
<i>Ericameria parryi</i>	Parry's rabbitbrush	
<i>Ericameria teretifolia</i>	green rabbitbrush	
<i>Erigeron</i>	fleabane	
<i>Erigeron compositus</i>	cutleaf daisy	
<i>Erigeron pygmaeus</i>	pygmy fleabane	
<i>Erigeron speciosus</i>	aspen fleabane	
<i>Erigeron tener</i>	slender fleabane	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Eriogonum</i>	buckwheat	
<i>Eriogonum deserticola</i>	Colorado Desert buckwheat	
<i>Eriogonum fasciculatum</i>	Eastern Mojave buckwheat	
<i>Eriogonum gracilipes</i>	White Mountain buckwheat	
<i>Eriogonum holmgrenii</i>	Snake Range buckwheat	
<i>Eriogonum inflatum</i>	desert trumpet	
<i>Eriogonum ovalifolium</i>	cushion buckwheat	
<i>Eriogonum umbellatum</i>	sulphur-flower buckwheat	
<i>Eucephalus engelmannii</i>	Engelmann's aster	
<i>Fallugia paradoxa</i>	Apache plume	
<i>Ferocactus</i>	barrel cactus	
<i>Festuca</i>	fescue	
<i>Festuca arizonica</i>	Arizona fescue	
<i>Festuca brachyphylla</i>	alpine fescue	
<i>Festuca campestris</i>	rough fescue	
<i>Festuca idahoensis</i>	Idaho fescue	
<i>Festuca thurberi</i>	Thurber's fescue	
<i>Forestiera pubescens</i>	stretchberry	
<i>Fouquieria splendens</i>	ocotillo	
<i>Fragaria vesca</i>	woodland strawberry	
<i>Fragaria virginiana</i>	Virginia strawberry	
<i>Fraxinus velutina</i>	velvet ash	
<i>Fremontodendron californicum</i>	California flannelbush	
<i>Galium boreale</i>	northern bedstraw	
<i>Garrya flavescens</i>	ashy silktassel	
<i>Garrya wrightii</i>	Wright's silktassel	
<i>Geraea canescens</i>	hairy desertsunflower	
<i>Geranium viscosissimum</i>	sticky purple geranium	
<i>Geum</i>	avens	
<i>Geum rossii</i>	Ross' avens	
<i>Glossopetalon spinescens</i>	spiny greasebush	
<i>Glyceria striata</i>	fowl mannagrass	
<i>Grayia spinosa</i>	spiny hopsage	
<i>Gutierrezia sarothrae</i>	broom snakeweed	
<i>Halogeton glomeratus</i>	saltlover	
<i>Helianthus annuus</i>	common sunflower	
<i>Heracleum sphondylium</i>	eltrot	
<i>Hesperostipa</i>	needle and thread	
<i>Hesperostipa comata</i>	needle and thread	
<i>Heterotheca</i>	false goldenaster	
<i>Holodiscus</i>	oceanspray	
<i>Holodiscus discolor</i>	oceanspray	
<i>Hymenoclea monogyra</i>	singlewhorl burrobrush	
<i>Hymenoclea salsola</i>	burrobrush	
<i>Hymenoxys hoopesii</i>	owl's-claws	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Iris missouriensis</i>	Rocky Mountain iris	
<i>Jatropha dioica</i> var. <i>graminea</i>	leatherstem	
<i>Juglans major</i>	Arizona walnut	
<i>Juglans microcarpa</i>	little walnut	
<i>Juncus</i>	rush	
<i>Juniperus</i>	juniper	
<i>Juniperus californica</i>	California juniper	
<i>Juniperus communis</i>	common juniper	
<i>Juniperus deppeana</i>	alligator juniper	
<i>Juniperus monosperma</i>	oneseed juniper	
<i>Juniperus occidentalis</i>	western juniper	
<i>Juniperus occidentalis</i> var. <i>australis</i>	western juniper	
<i>Juniperus osteosperma</i>	Utah juniper	
<i>Juniperus scopulorum</i>	Rocky Mountain juniper	
<i>Kobresia myosuroides</i>	Bellardi bog sedge	
<i>Kochia americana</i>	green molly	<i>Bassia americana</i>
<i>Koeleria macrantha</i>	prairie Junegrass	
<i>Krameria</i>	ratany	
<i>Krameria erecta</i>	littleleaf ratany	
<i>Krameria grayi</i>	white ratany	
<i>Krascheninnikovia lanata</i>	winterfat	
<i>Lactuca serriola</i>	prickly lettuce	
<i>Larrea tridentata</i>	creosote bush	
<i>Lathyrus</i>	pea	
<i>Lepidium perfoliatum</i>	clasping pepperweed	
<i>Leptochloa dubia</i>	green sprangletop	
<i>Leptodactylon pungens</i>	granite prickly phlox	<i>Linanthus pungens</i>
<i>Leucopoa kingii</i>	spike fescue	
<i>Leymus cinereus</i>	basin wildrye	
<i>Leymus flavescens</i>	yellow wildrye	
<i>Leymus salinus</i>	saline wildrye	
<i>Liatris punctata</i>	dotted blazing star	
<i>Ligusticum filicinum</i>	fernleaf licorice-root	
<i>Lupinus</i>	lupine	
<i>Lupinus argenteus</i>	silvery lupine	
<i>Lycium</i>	desert-thorn	
<i>Lycium andersonii</i>	water jacket	
<i>Lycium shockleyi</i>	Shockley's desert-thorn	
<i>Lycurus phleoides</i>	common wolfstail	
<i>Mahonia repens</i>	creeping barberry	
<i>Maianthemum stellatum</i>	starry false lily of the valley	
<i>Menodora spinescens</i>	spiny menodora	
<i>Mertensia arizonica</i>	aspen bluebells	
<i>Mertensia lanceolata</i>	prairie bluebells	
<i>Muhlenbergia</i>	muhly	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Muhlenbergia montana</i>	mountain muhly	
<i>Muhlenbergia porteri</i>	bush muhly	
<i>Muhlenbergia pungens</i>	sandhill muhly	
<i>Muhlenbergia richardsonis</i>	mat muhly	
<i>Nama</i>	fiddleleaf	
<i>Nassella</i>	needlegrass	
<i>Nassella viridula</i>	green needlegrass	
<i>Nolina</i>	beargrass	
<i>Nolina bigelovii</i>	Bigelow's nolina	
<i>Nolina parryi</i>	Parry's beargrass	
<i>Oenothera</i>	evening primrose	
<i>Olneya tesota</i>	desert ironwood	
<i>Opuntia</i>	pricklypear	
<i>Opuntia acanthocarpa</i>	buckhorn cholla	<i>Cylindropuntia acanthocarpa</i>
<i>Opuntia basilaris</i>	beavertail pricklypear	
<i>Opuntia bigelovii</i>	teddybear cholla	<i>Cylindropuntia bigelovii</i>
<i>Opuntia schottii</i>	Big Bend pricklypear	<i>Grusonia schottii</i>
<i>Oryzopsis</i>	ricegrass	
<i>Osmorhiza berteroi</i>	sweetcicely	
<i>Packera werneriiifolia</i>	hoary groundsel	
<i>Palafoxia arida</i> var. <i>gigantea</i>	giant Spanish needle	
<i>Palafoxia arida</i> var. <i>gigantea</i>		<i>Palafoxia linearis</i>
<i>Panicum urvilleanum</i>	desert panicgrass	
<i>Parkinsonia florida</i>	blue paloverde	
<i>Parkinsonia microphylla</i>	yellow paloverde	
<i>Parthenium incanum</i>	mariola	
<i>Pascopyrum smithii</i>	western wheatgrass	
<i>Paxistima myrsinites</i>	Oregon boxleaf	
<i>Penstemon</i>	beardtongue	
<i>Penstemon caespitosus</i>	mat penstemon	
<i>Penstemon leiophyllus</i>	smoothleaf beardtongue	
<i>Penstemon thurberi</i>	Thurber's penstemon	
<i>Peraphyllum ramosissimum</i>	wild crab apple	
<i>Petalonyx thurberi</i>	Thurber's sandpaper plant	
<i>Petrophyton caespitosum</i>	mat rockspirea	<i>Petrophytum caespitosum</i>
<i>Peucephyllum schottii</i>	Schott's pygmycedar	
<i>Phacelia</i>	phacelia	
<i>Phleum pratense</i>	timothy	
<i>Phlox</i>	phlox	
<i>Phlox hoodii</i>	spiny phlox	
<i>Phlox pulvinata</i>	cushion phlox	
<i>Physocarpus malvaceus</i>	mallow ninebark	
<i>Physocarpus monogynus</i>	mountain ninebark	
<i>Picea engelmannii</i>	Engelmann spruce	
<i>Picea engelmannii</i> X <i>glauca</i>		



Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Picea pungens</i>	blue spruce	
<i>Picrothamnus desertorum</i>	bud sagebrush	
<i>Pinus</i>	pine	
<i>Pinus albicaulis</i>	whitebark pine	
<i>Pinus balfouriana</i>	foxtail pine	
<i>Pinus contorta</i>	lodgepole pine	
<i>Pinus contorta</i> var. <i>murrayana</i>	Sierra lodgepole pine	
<i>Pinus edulis</i>	twoneedle pinyon	
<i>Pinus flexilis</i>	limber pine	
<i>Pinus jeffreyi</i>	Jeffrey pine	
<i>Pinus longaeva</i>	Great Basin bristlecone pine	
<i>Pinus monophylla</i>	singleleaf pinyon	
<i>Pinus ponderosa</i>	ponderosa pine	
<i>Piptochaetium</i>	speargrass	
<i>Platanus racemosa</i>	California sycamore	
<i>Platanus wrightii</i>	Arizona sycamore	
<i>Pleuraphis jamesii</i>	James' galleta	
<i>Pleuraphis rigida</i>	big galleta	
<i>Pluchea sericea</i>	arrowweed	
<i>Poa</i>	bluegrass	
<i>Poa arctica</i>	arctic bluegrass	
<i>Poa cusickii</i>	Cusick's bluegrass	
<i>Poa fendleriana</i>	muttongrass	
<i>Poa fendleriana</i> ssp. <i>longiligula</i>	muttongrass	
<i>Poa lettermanii</i>	Letterman's bluegrass	
<i>Poa pratensis</i>	Kentucky bluegrass	
<i>Poa secunda</i>	Sandberg bluegrass	
<i>Polemonium viscosum</i>	sticky polemonium	
<i>Poliomintha incana</i>	frosted mint	
<i>Polygonum bistortoides</i>	American bistort	
<i>Populus angustifolia</i>	narrowleaf cottonwood	
<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	black cottonwood	
<i>Populus deltoides</i>	eastern cottonwood	
<i>Populus deltoides</i> ssp. <i>wislizeni</i>	Rio Grande cottonwood	
<i>Populus fremontii</i>	Fremont cottonwood	
<i>Populus tremuloides</i>	quaking aspen	
<i>Potentilla</i>	cinquefoil	
<i>Potentilla diversifolia</i>	varileaf cinquefoil	
<i>Prosopis</i>	mesquite	
<i>Prosopis glandulosa</i>	honey mesquite	
<i>Prosopis velutina</i>	velvet mesquite	
<i>Prunus</i>	plum	
<i>Prunus fasciculata</i>	desert almond	
<i>Prunus virginiana</i>	chokecherry	
<i>Pseudoroegneria spicata</i>	bluebunch wheatgrass	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Pseudotsuga menziesii</i>	Douglas-fir	
<i>Psoralidium lanceolatum</i>	lemon scurfpea	
<i>Psorothamnus arborescens</i>	Mojave indigobush	
<i>Psorothamnus emoryi</i>	dyebrush	
<i>Psorothamnus fremontii</i>	Fremont's dalea	
<i>Psorothamnus polydenius</i>	Nevada dalea	
<i>Psorothamnus spinosus</i>	smoketree	
<i>Pteridium aquilinum</i>	western brackenfern	
<i>Puccinellia lemmonii</i>	Lemmon's alkaligrass	
<i>Puccinellia nuttalliana</i>	Nuttall's alkaligrass	
<i>Purshia stansburiana</i>	Stansbury cliffrose	
<i>Purshia tridentata</i>	antelope bitterbrush	
<i>Quercus berberidifolia</i>	scrub oak	
<i>Quercus chrysolepis</i>	canyon live oak	
<i>Quercus cornelius-mulleri</i>	Muller oak	
<i>Quercus gambelii</i>	Gambel oak	
<i>Quercus john-tuckeri</i>	Tucker oak	
<i>Quercus toumeyi</i>	Toumey oak	
<i>Quercus turbinella</i>	Sonoran scrub oak	
<i>Redfieldia flexuosa</i>	blowout grass	
<i>Rhus microphylla</i>	littleleaf sumac	
<i>Rhus ovata</i>	sugar sumac	
<i>Rhus trilobata</i>	skunkbush sumac	
<i>Ribes</i>	currant	
<i>Ribes cereum</i>	wax currant	
<i>Ribes montigenum</i>	gooseberry currant	
<i>Robinia neomexicana</i>	New Mexico locust	
<i>Rosa woodsii</i>	Woods' rose	
<i>Rubus parviflorus</i>	thimbleberry	
<i>Rudbeckia occidentalis</i>	western coneflower	
<i>Salazaria mexicana</i>	Mexican bladdersage	
<i>Salicornia</i>	pickleweed	
<i>Salix amygdaloides</i>	peachleaf willow	
<i>Salix bebbiana</i>	Bebb willow	
<i>Salix boothii</i>	Booth's willow	
<i>Salix brachycarpa</i>	shortfruit willow	
<i>Salix drummondiana</i>	Drummond's willow	
<i>Salix eriocephala</i>	Missouri River willow	
<i>Salix exigua</i>	narrowleaf willow	
<i>Salix geyeriana</i>	Geyer willow	
<i>Salix gooddingii</i>	Goodding's willow	
<i>Salix irrorata</i>	dewystem willow	
<i>Salix laevigata</i>	red willow	
<i>Salix lasiolepis</i>	arroyo willow	
<i>Salix lemmonii</i>	Lemmon's willow	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Salix lucida</i>	shining willow	
<i>Salix lutea</i>	yellow willow	
<i>Salix monticola</i>	park willow	
<i>Salix planifolia</i>	diamondleaf willow	
<i>Salix scouleriana</i>	Scouler's willow	
<i>Salix wolfii</i>	Wolf's willow	
<i>Salsola tragus</i>	prickly Russian thistle	
<i>Sapindus saponaria</i>	wingleaf soapberry	
<i>Sarcobatus vermiculatus</i>	greasewood	
<i>Saxifraga</i>	saxifrage	
<i>Schismus</i>	Mediterranean grass	
<i>Scirpus</i>	bulrush	
<i>Selaginella densa</i>	lesser spikemoss	
<i>Selaginella watsonii</i>	Watson's spikemoss	
<i>Senecio</i>	ragwort	
<i>Senna armata</i>	desertsenna	
<i>Shepherdia argentea</i>	silver buffaloberry	
<i>Shepherdia canadensis</i>	russet buffaloberry	
<i>Sibbaldia procumbens</i>	creeping sibbaldia	
<i>Silene acaulis</i>	moss campion	
<i>Simmondsia chinensis</i>	jojoba	
<i>Solidago</i>	goldenrod	
<i>Sphaeralcea coccinea</i>	scarlet globemallow	
<i>Spiraea betulifolia</i>	white spirea	
<i>Sporobolus</i>	dropseed	
<i>Sporobolus airoides</i>	alkali sacaton	
<i>Sporobolus cryptandrus</i>	sand dropseed	
<i>Sporobolus flexuosus</i>	mesa dropseed	
<i>Suaeda</i>	seepweed	
<i>Symphoricarpos</i>	snowberry	
<i>Symphoricarpos albus</i>	common snowberry	
<i>Symphoricarpos oreophilus</i>	mountain snowberry	
<i>Symphyotrichum ascendens</i>	western aster	
<i>Tamarix</i>	tamarisk	
<i>Taraxacum officinale</i>	common dandelion	
<i>Tetradymia</i>	horsebrush	
<i>Tetradymia canescens</i>	spineless horsebrush	
<i>Tetradymia tetrameres</i>	fourpart horsebrush	
<i>Thalictrum fendleri</i>	Fendler's meadow-rue	
<i>Tiquilia</i>	crinklemat	
<i>Tiquilia hispidissima</i>	hairy crinklemat	
<i>Tiquilia palmeri</i>	Palmer's crinklemat	
<i>Tiquilia plicata</i>	fanleaf crinklemat	
<i>Trifolium dasyphyllum</i>	alpine clover	
<i>Trifolium gymnocarpon</i>	hollyleaf clover	

Scientific Name	PLANTS Common Name	PLANTS Scientific Name
<i>Trifolium nanum</i>	dwarf clover	
<i>Trifolium parryi</i>	Parry's clover	
<i>Trisetum spicatum</i>	spike trisetum	
<i>Typha</i>	cattail	
<i>Vaccinium</i>	blueberry	
<i>Valeriana occidentalis</i>	western valerian	
<i>Viguiera parishii</i>	Parish's goldeneye	
<i>Vulpia octoflora</i>	sixweeks fescue	
<i>Wyethia amplexicaulis</i>	mule-ears	
<i>Yucca</i>	yucca	
<i>Yucca baccata</i>	banana yucca	
<i>Yucca brevifolia</i>	Joshua tree	
<i>Yucca elata</i>	soaptree yucca	
<i>Yucca schidigera</i>	Mojave yucca	
<i>Zigadenus elegans</i>	mountain deathcamas	

E-3 Management Questions

The table provided here is a record of all the Management Questions proposed for this REA (discussed, revised, re-phrased, archived and answered) during the assessment. These MQs were managed for both CBR and MBR in a MS Excel workbook, and were combined into one list for both REAs after the Work Plans were completed. There are very few MQs that were answered for one but not the other REA. This table includes all the MQs that were not answered due to being out of scope, or unanswerable due to lack of data or other issues (MQ status = Inactive for dropped MQs). Only a sub-set of the columns in the workbook are presented here, however the entire workbook has been delivered to BLM separately with all of the additional information tracked by the Contractor for each MQ. Some final changes to MQs took place during Task 6, and are tracked in the “Final MQ” column with strikethrough or red font.

For each MQ, the original MQ, the final MQ and a rationale for archiving or dropping an MQ was tracked. Some MQs were duplicative with others and information is provided as to which MQ duplicates which or if 2 MQs were combined. Other fields in the workbook included (but are not provided here) discussions of feasibility, issues requiring AMT guidance, data proposed to answer the MQ, issues relating to lack of data or scientific justification for the MQ, and necessary clarifications. Most of these were provided in the Phase I Task Memoranda, and were presented at the AMT Workshops. Many of these were discussed during workshops or webinars.

The table is sorted by the final “active” MQs grouped by general subject; then the inactive or archived/dropped MQs are listed, in the same grouping by general subject.

Table E - 5. List of management questions addressed in this REA , with preliminary versions provided by BLM or the AMT, the final question; organized by general subjects. Also provided is a record of dropped management questions and reasons for dropping.

FINAL MQ Num	Which Ecoreg	MQ Status	MQ Group	Sort	Task 6 Assessment Type	Fate of Preliminary MQ	Final Management Question	Preliminary MQ Proposed by BLM	Rationale for Fate	Clarifications
ACTIVE, ANSWERED MANAGEMENT QUESTIONS										
1	CBR, MBR	Active	Species	A	1. Where Are CEs and CAs?	Rephrased	What is the current distribution of potential habitat for each species CE?	What is the current distribution of occupied habitat for each CE, including seasonal habitat, and movement corridors?		Few landscape species and species assemblage CEs have data containing current locations of occupied habitat, and therefore this question may not be possible to answer for every landscape species and species assemblage. Current location data are primarily available for local species CEs. Seasonal habitat and movement corridors addressed through habitat modeling in MQ 3; data generally not available for current known locations of seasonal habitat and corridors.
2	CBR, MBR	Active	Species	A	3. Where Do CAs Intersect CEs?	Rephrased	Where are current locations of species CEs that are potentially affected by <b>existing</b> change agents (and thus potentially at risk)?	Where are species populations at risk?		This question addresses <b>current known</b> locations of CEs and <b>existing</b> distribution of CAs. Can mainly be answered for local species CEs due to data availability on <b>known</b> locations.
3	CBR, MBR	Active	Species	A	1. Where Are CEs and CAs?	Refined	What is the current distribution of suitable habitat, including seasonal habitat and movement corridors, for each landscape species and species assemblage CE?	What is the current distribution of suitable habitat for each CE?		
4	CBR, MBR	Active	Species	A	3. Where Do CAs Intersect CEs?	Accepted as originally proposed by BLM	Where are <b>existing</b> change agents potentially affecting this current habitat and/or movement corridors, for landscape species and species	Where are change agents potentially affecting this habitat and/or movement corridors?		This question addresses <b>current</b> suitable habitats for CEs and <b>existing</b> distribution of CAs. Can mainly be answered for local species CEs due to data availability on <b>known</b> locations.

FINAL MQ Num	Which Ecoreg	MQ Status	MQ Group	Sort	Task 6 Assessment Type	Fate of Preliminary MQ	Final Management Question	Preliminary MQ Proposed by BLM	Rationale for Fate	Clarifications
							assemblage CEs?			
5	CBR, MBR	Active	Species	A	3. Where Do CAs Intersect CEs?	Reframed	Where are species CEs whose current locations or suitable habitats overlap with the potential future distribution of CAs (other than climate change)?	What/where is the potential for future change to this species?		This question addresses <b>current</b> suitable habitats and potential <b>future</b> distributions of CAs.
6	CBR, MBR	Active	Species	A	1. Where Are CEs and CAs?	Accepted as originally proposed by BLM	What is the relative survey intensity to date within the ecoregion for species CEs ?	What areas have been surveyed and what areas have not been surveyed (i.e., data gap locations)?		These will be ecoregion-level assessments of survey intensity for each CE, rather than detailed listing of specific areas that have and have not been surveyed.
7	CBR, MBR	Active	Species	A	5. Special Assessment	Reframed	Given current and anticipated future locations of change agents, which habitat areas remain as opportunities for habitat enhancement/restoration? MSR: 4/2012: will be addressed for a small subset of CEs as prototyping of possible ways to answer (GSG, DT, bighorn, one coarse-filter)	Where are potential habitat restoration areas?		For species CE habitats, ecological integrity scores will be calculated at the watershed level. The mid-level integrity ranking will be "Transitioning." Any areas for any CE identified as "Transitioning" will be considered a habitat restoration or enhancement opportunity, particularly in light of potential losses of high integrity examples due to CA expansion.
8	CBR, MBR	Active	Species	A	5. Special Assessment	Reframed; limited to Desert Tortoise and Sage Grouse	Where are potential areas to restore connectivity for landscape species and species assemblage CEs, based on current locations of change agents? MSR 4/2012- being answered for GSG and DT, rephrased to <b>"Where are potential areas to restore connectivity or intact habitat for [greater sage grouse or desert tortoise] based on current locations of change agents?"</b>	Where are potential areas to restore connectivity?		CircuitScape will identify "pinch points" in species habitat connectivity based on current CAs; these are potential areas for restoring connectivity. Forecasts for Change Agents vary in spatial resolution sufficiently to preclude use of CircuitScape in 2025 or 2060 forecast scenarios.
9	CBR, MBR	Active	Species	A	4. Relative Effects of CAs on CEs	Added	Where will landscape species <del>and species assemblage</del> CEs experience climate outside their current climate envelope? MSR 4/2012: climate envelope			addressed by Climate envelope models for species; assemblages would need intersect with climate space trends data



FINAL MQ Num	Which Ecoreg	MQ Status	MQ Group	Sort	Task 6 Assessment Type	Fate of Preliminary MQ	Final Management Question	Preliminary MQ Proposed by BLM	Rationale for Fate	Clarifications
							models for species to answer this			
10	CBR, MBR	Active	Native Plant Communities	B	2. What is the Current Condition of CEs	Accepted as originally proposed by BLM	Where are intact CE vegetative communities located?	Where are intact CE vegetative communities located?		
11	CBR, MBR	Active	Native Plant Communities	B	2. What is the Current Condition of CEs	Reframed	Where are the likeliest <b>current</b> locations for high-integrity examples of each major terrestrial ecological system?			
12	CBR, MBR	Active	Native Plant Communities	B	3. Where Do CAs Intersect CEs?	Reframed	Where are <b>existing</b> and <b>potential future</b> CAs (aside from climate change) likeliest to affect current communities?	What/where is the potential for future change to the community?		Climate change is excluded because it is addressed in a separate MQ.
13	CBR, MBR	Active	Native Plant Communities	B	4. Relative Effects of CAs on CEs	Added	Where will current locations of these communities experience significant deviations from normal climate variation?			addressed by climate envelope models
14	CBR, MBR	Active	Terrestrial Sites of High Biodiversity	C	1. Where Are CEs and CAs?	Accepted as originally proposed by BLM	Where are sites identified (but not necessarily designated) for High Biodiversity?	Where are High Biodiversity sites?		Sites of (terrestrial) high biodiversity are defined as priority sites identified through previous planning efforts, including SWAPs, TNC ecoregional portfolio sites, and other selected efforts. They may or may not have formal management or protection designations.
15	CBR, MBR	Active	Terrestrial Sites of High Biodiversity	C	3. Where Do CAs Intersect CEs?	Reframed	Where will CAs (aside from climate change) potentially affect sites of high biodiversity?	"Potential for future change" should be framed from the CA list		Climate change is excluded because it is addressed in a subsequent MQ for terrestrial high biodiversity sites. NOTE: we are treating these sites as potential reporting units for this type of analysis. Current deliverables will focus on watershed reporting units.
16	CBR, MBR	Active	Terrestrial Sites of High Biodiversity	C	4. Relative Effects of CAs on CEs	Added	Where will locations of these High Biodiversity sites experience significant deviations from normal climate variation?			Climate space trends analyses will be reported by 4th level watershed; which may be subsequently combined with these sites as needed.

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18	CBR, MBR	Active	Aquatic Sites of High Biodiversity	D	1. Where Are CEs and CAs?	Accepted as originally proposed by BLM	Where are Aquatic High Biodiversity sites?	Where are Aquatic High Biodiversity sites?		Taken from existing priority-setting efforts, same as for terrestrial.
19	CBR, MBR	Active	Aquatic Sites of High Biodiversity	D	3. Where Do CAs Intersect CEs?	Reframed	Where will these Aquatic High Biodiversity sites be potentially affected by Change Agents (aside from climate change)?	What/where is the potential for future change to these high-biodiversity sites?		Climate change is excluded because it is addressed in a subsequent MQ for aquatic high biodiversity sites.
20	CBR, MBR	Active	Aquatic Sites of High Biodiversity	D	4. Relative Effects of CAs on CEs	Added	Where will current locations of these Aquatic High Biodiversity sites experience significant deviations from normal climate variation?			
21	CBR, MBR	Active	Specially Designated Areas of Ecological Value	E	1. Where Are CEs and CAs?	Accepted as originally proposed by BLM	Where are specially designated areas of ecological or cultural value?	Where are specially designated areas of ecological value?		
28	CBR, MBR	Active	Soils	F	1. Where Are CEs and CAs?	Reframed	Where are sensitive soil types within the ecoregion?	Where are these areas within the ecoregion?		Sensitive soils are those soils that are extremely susceptible to impacts or that may be more difficult to restore or reclaim after disturbance: soils having high erosion potential, high salinity, high gypsum content, low water holding capacity, or hydric qualities
29	CBR, MBR	Active	Soils	F	3. Where Do CAs Intersect CEs?	Reframed	Where will target soil types overlap with CAs (aside from climate change) under each time scenario?	What/where is the potential for future change in conditions, such as due to climate change?		Climate change is excluded because it is addressed in a separate MQ for sensitive soils.
36	CBR, MBR	Active	Aquatic Ecological Function and Structure	G	2. What is the Current Condition of CEs	Rephrased	What is the condition (ecological integrity) of aquatic conservation elements?	What is the condition of target aquatic systems? OR What is the condition of target aquatic systems in terms of PFC?		
39	CBR, MBR	Active	Aquatic Ecological Function and Structure	G	2. What is the Current Condition of CEs	Rephrased	Where are the aquatic CE occurrences with the most degraded condition (ecological integrity)?	Where are the degraded aquatic systems (e.g., water quality)?		Rephrased to align with MBR MQ 39 [dpg 4/15/11]
23	CBR, MBR	Active	Grazing, Wild Horses and Burros	H	5. Special Assessment	Accepted as originally proposed by BLM	Where are the current Herd Management Areas (HMAs)?	Where are the current Herd Management Areas (HMAs)?		

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26	CBR, MBR	Active	Grazing, Wild Horses and Burros	H	5. Special Assessment	Added/ reframed	Where will CAs (excluding climate change) overlap HAs, HMAs, and GAs under each time scenario?			Climate change is excluded because it is addressed in a separate MQ for HAs, etc.
27	CBR, MBR	Active	Grazing, Wild Horses and Burros	H	5. Special Assessment	Added	Which HA's, HMA's and GA's will experience climate outside their current climate envelope?			Climate space trends analyses will be reported by 4th level watershed; which may be subsequently combined with these sites as needed.
40	CBR, MBR	Active	Fire History	I	1. Where Are CEs and CAs?	Reframed	Where have fires greater than 1000 acres occurred?	Where are the areas that have been changed from wildfire?		
42	CBR, MBR	Active	Fire Potential	J	1. Where Are CEs and CAs?	Reframed	What areas now have unprecedented fuels composition (invasive plants), and are therefore at high potential for fire?	Where are the areas of potential future change from predicted wildfire? ( <i>BLM amendment</i> )		
43	CBR, MBR	Active	Fire Potential	J	4. Relative Effects of CAs on CEs	Deferred	Where are areas that in the future will have high potential for fire?	Where are the areas of potential future change from predicted wildfire? ( <i>BLM amendment</i> )		
44	CBR, MBR	Active	Invasive Species	K	1. Where Are CEs and CAs?	Reframed	What is the current distribution of invasive species included as CAs?	Where are areas dominated by these invasive species?		
45	CBR, MBR	Active	Invasive Species	K	2. What is the Current Condition of CEs	Reframed	What areas are significantly ecologically affected by invasive species?	Where are areas dominated by these invasive species?		
47	CBR, MBR	Active	Invasive Species	K	1. Where Are CEs and CAs?	Reframed	Given current patterns of occurrence and expansion of the invasive species included as CAs, what is the potential future distribution of these invasive species?	Where are the areas of potential future encroachment from this invasive species?		bradley models for invasive plants will be clipped and used for this MQ
48	CBR, MBR	Active	Development	L	1. Where Are CEs and CAs?	Reframed	Where are current locations of development CAs?	Where are current locations of relevant development types?		
49	CBR, MBR	Active	Development	L	1. Where Are CEs and CAs?	Reframed	Where are areas of planned or potential development CAs?	Where are areas of planned or potential development (outside of current urban areas) (e.g., under lease, plans of operation, governmental planning), including transmission corridors?		

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50	CBR, MBR	Active	Development	L	4. Relative Effects of CAs on CEs	Reframed	Where do development CAs cause significant loss of ecological integrity?	Where are the areas of significant ecological change from these anthropogenic activities?		In CBR, phrased as "Where are the areas of CEs that fall below their EI threshold due to development CAs?"
51	CBR, MBR	Active	Development	L	3. Where Do CAs Intersect CEs?	Added/ reframed	Where do current locations of CEs overlap with development CAs?			This development CA-specific MQ will be coordinated with previous MQs that address the intersection of multiple types of CAs with CEs (e.g., MQs 2, 4, 5, and 12).
52	CBR, MBR	Active	Development	L	3. Where Do CAs Intersect CEs?	Added; then rephrased (dropped "ecological areas" & "significant")	Where is recreational use? <del>Where are ecological areas with significant recreational use?</del>			3 proposed CEs from AMT5 workshop summary (desert tortoise, GSG, erodable soils); 3 days time to do
83	CBR, MBR	Active	Oil, Gas, and Mining Development	M	1. Where Are CEs and CAs?	Reframed	Where are the current locations of oil, gas, and mineral extraction?	Where are the current locations of Oil, Gas, and Mining (including gypsum) development?		
81	CBR, MBR	Active	Renewable Energy Development	N			Where will locations of renewable energy [development] potentially exist by 2025?			
87	CBR, MBR	Active	Renewable Energy Development	N	1. Where Are CEs and CAs?	Added	Where are the current locations of renewable energy development (solar, wind, geothermal, transmission)?			
88	CBR, MBR	Active	Renewable Energy Development	N	1. Where Are CEs and CAs?	Accepted as originally proposed by BLM	Where are the areas identified by NREL as potential locations for renewable energy development?	Where are the areas identified by NREL as potential and physically possible locations for renewable energy development?		
89	CBR, MBR	Active	Renewable Energy Development	N	1. Where Are CEs and CAs?	Added	Where are the areas of low renewable and non-renewable energy development that could potentially mitigate impacts to CEs from potential energy development?		answered	BLM to give direction on how to address this question.

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90	CBR, MBR	Active	Renewable Energy Development	N	3. Where Do CAs Intersect CEs?	Added	Where do current locations of CEs overlap with areas of potential future locations of renewable energy development (MQ 65)?			
30	CBR, MBR	Active	Surface and Subsurface Water Availability	O	1. Where Are CEs and CAs?	Reframed	Where are current natural and man-made surface water resources?	Where are these aquatic areas?		
31	CBR, MBR	Active	Surface and Subsurface Water Availability	O	1. Where Are CEs and CAs?	Reframed	Of the current surface water resources (both natural and man-made), which are perennial, ephemeral, etc?	What is the persistence of the flow (e.g., perennial, ephemeral) of these systems?		
34	CBR, MBR	Active	Surface and Subsurface Water Availability	O	1. Where Are CEs and CAs?	Reframed	Where are the likely recharge areas within a HUC?	Where are the aquifers and their recharge areas?		
35	CBR, MBR	Active	Surface and Subsurface Water Availability	O	3. Where Do CAs Intersect CEs?	Reframed	Where will the likely recharge areas (relating to aquatic CEs) identified in MQ 37 potentially be affected by Change Agents? (rephrased 1/24/12)	What/where is the potential for future change in extent and flows from change agents?		Although this MQ will address both aquifers and recharge areas as identified in previous MQs, this MQ does not attempt to identify the linkages between aquifers and recharge areas because that is frequently unknown.
54	CBR, MBR	Active	Groundwater Extraction and Transportation	P	4. Relative Effects of CAs on CEs	Reframed	Where will change agents potentially impact groundwater-dependent aquatic CEs? [springs and seeps only]	Where are the areas of potential future change from groundwater extraction?		
56	CBR, MBR	Active	Groundwater Extraction and Transportation	P	1. Where Are CEs and CAs?	Reframed	What is the present distribution of municipal and agricultural water use of groundwater resources in relation to the distribution of aquatic CEs?			
57	CBR, MBR	Active	Groundwater Extraction and Transportation	P	1. Where Are CEs and CAs?	Reframed	Where are the aquatic CEs showing degraded ecological integrity from existing groundwater extraction? [only partially spatial otherwise narrative review]	Where are the areas showing effects from existing groundwater extraction?		We cannot go beyond the information generated for MQ# 33.
58	CBR, MBR	Active	Surface Water Consumption and Diversion	Q	1. Where Are CEs and CAs?	Accepted as originally proposed by BLM	Where are artificial water bodies including evaporation ponds, etc.? [duplicative with MQ31]	Where are artificial water bodies including evaporation ponds, etc.?		This is a subset of the information that will be generated to answer MQ 31. (Duplicative MQ 77 was removed.)
60	CBR, MBR	Active	Surface Water Consumption and Diversion	Q	1. Where Are CEs and CAs?	Added	Where are the areas of potential future change in surface water consumption and diversion?			This is a parallel question to MQ 69, the former focused on groundwater and this one (MQ 74) focused on surface water

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62	CBR, MBR	Active	Surface Water Consumption and Diversion	Q	2. What is the Current Condition of CEs	Added	Where are the CEs showing degraded ecological integrity from existing surface water diversion?			
80	CBR, MBR	Active	Atmospheric Deposition	R	1. Where Are CEs and CAs?	Added	Where are areas affected by atmospheric deposition of pollutants, as represented specifically by nitrogen deposition, acid deposition, and mercury deposition?			
65	CBR, MBR	Active	Climate Change: Terrestrial Resource Issues	S	4. Relative Effects of CAs on CEs	Reframed	Where will changes in climate be greatest relative to normal climate variability?	Where are the areas of potential future change from climate change?		
66	CBR, MBR	Active	Climate Change: Terrestrial Resource Issues	S	5. Special Assessment	Reframed	Given anticipated climate shifts and the direction shifts in climate envelopes for CEs, where are potential areas of significant change in extent?	Where are the areas of potential for fragmentation?		Climate envelopes for selected terrestrial coarse filter CEs and landscape species CEs will be addressed. Climate envelope shift models may show increased patchiness of a CE if its extent is reduced in an area due to climate change. But given the relative spatial resolution of forecasts, results should be interpreted as approximate change in extent, rather than as indications of habitat fragmentation.
67	CBR, MBR	Active	Climate Change: Terrestrial Resource Issues	S	4. Relative Effects of CAs on CEs	Reframed	Which native plant communities will experience climate completely outside their normal range?	How will the distributions of native plant communities change with climate change?		
68	CBR, MBR	Active	Climate Change: Terrestrial Resource Issues	S	4. Relative Effects of CAs on CEs	Reframed	Where will current wildlife habitats experience climate completely outside its normal range?	Where are the areas of potential of change of wildlife habitat?		
69	CBR, MBR	Active	Climate Change: Terrestrial Resource Issues	S	4. Relative Effects of CAs on CEs	Added	Where are wildlife species ranges (on the list of species CEs) that will experience significant deviations from normal climate variation?			



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71	CBR, MBR	Active	Climate Change: Aquatic Resource Issues	T	4. Relative Effects of CAs on CEs	Reframed	Where will aquatic CEs experience significant deviations from historic climate variation that potentially could affect the hydrologic and temperature regimes of these aquatic CEs?	Where are the areas of potential future change from climate change?		This question was reframed to address climate-related drivers of hydrology, rather than changes in climate generically. Incorporates concerns of deleted MQs 86, 87, and 88 (CBR #s 72, 73, 74), to extent they can be addressed at REA scale.
76	MBR	Active	Military Constrained Areas	U	1. Where Are CEs and CAs?	Reframed	Where are areas of planned expansion of military use?	Where might these areas change in the future?	msr 4/12: added back, they want the 29 Palms expansion boundaries. We delivered 3 options	lack of data
<b>INACTIVE, DROPPED, MERGED MANAGEMENT QUESTIONS</b>										
78	CBR	Inactive	Species	A	1. Where Are CEs and CAs?	Integrated with other MQ	Where are active Bald Eagle nests?	Where are they?	Bald eagles will be addressed as part of Landscape Species CE MQs	
79	CBR	Inactive	Species	A	1. Where Are CEs and CAs?	Integrated with other MQ	Where are active Golden Eagle nests?	Where are they?	Golden eagles will be addressed as part of Landscape Species CE MQs	
XX	CBR, MBR	Inactive	Species	A		Research that is out of scope		Where are habitats that may be limiting species sustainability?  Clarify "sustainability", but this concept is difficult and is a research question beyond the scope of the REA. Clarify the meaning of "habitats that limit"		
17	CBR	Inactive	Aquatic Sites of High Biodiversity	D	1. Where Are CEs and CAs?	Merged	What has been the general level of survey effort (ecoregion-wide, not site-specific) for spring snails and other species of concern?	What areas have been (and have not been) surveyed for spring snails and other species of concern?		merged with #6; we are not able to provide site-specific review of survey effort.
29.5	CBR, MBR	Inactive	Soils	F	4. Relative Effects of CAs on CEs	Added	Where will current sensitive soil types experience significant deviations from normal climate variation?		dropped, 4/12	Climate space trends analyses will be reported by 4th level watershed; which may be subsequently combined with these sites as needed.

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N/A	MBR	Inactive	Soils	F		Deleted	Where are areas of nitrogen deposition beyond "normal" levels?	Where are areas of nitrogen deposition?	Duplicate	Can be addressed with MQ 92. [dpb 4/15/11]
21	CBR, MBR	Inactive	Grazing, Wild Horses and Burros	H		Deferred	Where are the current herds of wild horses?	Where are the current Herds of Wild Horses?	Data availability	
22	CBR, MBR	Inactive	Grazing, Wild Horses and Burros	H		Deferred	Where are the current herds of burros?	Where are the current Herds of Burros?	Data availability	
24	CBR, MBR	Inactive	Grazing, Wild Horses and Burros	H		Deferred	Which HMAs are exceeding AML?	Which HMAs are exceeding AML?	No data	
XX	CBR, MBR	Inactive	Grazing, Wild Horses and Burros	H		Deferred	Which current HMA will overlap with the distribution of Change Agents?		Duplicate of MQ 26	Duplicative with #26
XX	CBR, MBR	Inactive	Grazing, Wild Horses and Burros	H		Research that is out of scope		Are there sufficient forage, unrestricted space, and available surface water to sustain wild horse and burro herds for the long term in existing Herd Management Areas and Herd Areas?		
XX	CBR, MBR	Inactive	Grazing, Wild Horses and Burros	H		Research that is out of scope		Can the habitat sustain these populations across the landscape, while providing for both rangeland and herd health?		
41	CBR, MBR	Inactive	Fire History	I	3. Where Do CAs Intersect CEs?	Deferred	In places that have experienced fire, which sites have shifted to a vegetative state dominated by invasive plants and, without active restoration, will be unlikely to return to the previously occurring vegetative state?	What is the current status of these habitats?	Outside of scope	
46	CBR, MBR	Inactive	Invasive Species	K	2. What is the Current Condition of CEs	Reframed	Focusing on the distributions of terrestrial and aquatic CEs that are significantly affected by invasives, which areas have restoration potential?	Where are areas with restoration potential?	answered as part of MQ#7, using invasives along with climate & development	See notes in Data Sources

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50	CBR	Inactive	Development	L	2. Where Do CAs Intersect CEs?	Deleted	Where are the areas of CEs that fall below their EI threshold due to development CAs?	Where will these developments have the potential to affect water resources?	Duplicate with MBR 54	Incorporated into MBR 54. Original BLM MQs appeared to have a terrestrial / aquatic split
84	CBR, MBR	Inactive	Oil, Gas, and Mining Development	M	1. Where Are CEs and CAs?	Reframed and consolidated	Where will locations of oil, gas, and mineral extraction potentially exist by 2025?	Where are areas under plans of operation?	MSR 4/12: no future data available to answer this	only available data is in the Copeland dataset; email exchanges with Karl in ____ revealed no other future oil& gas data are available; Copeland shows very few minor areas in CBR and none in MBR
85	CBR, MBR	Inactive	Oil, Gas, and Mining Development	M	1. Where Are CEs and CAs?	Accepted as originally proposed by BLM	Where are the areas of potential future locations of Oil, Gas, and Mining (including gypsum) development (locatable, salable, and fluid and solid leasable minerals)?	Where are the areas of potential future locations of Oil, Gas, and Mining (including gypsum) development (locatable, salable, and fluid and solid leasable minerals)?	MSR 4/12: no future data available to answer this	lack of data for future extractive energy & mineral deposits.
86	CBR, MBR	Inactive	Oil, Gas, and Mining Development	M	3. Where Do CAs Intersect CEs?	Added	Where do locations of current CEs overlap with areas of potential future locations of non-renewable energy development?		MSR 4/12: no future data available to answer this	lack of data for the future energy development cannot intersect with CEs.
N/A	MBR	Inactive	Oil, Gas, and Mining Development	M	1. Where Are CEs and CAs?	Deleted	Where are areas under lease?	Where are areas under lease?	Integrated with MQ 58	
N/A	MBR	Inactive	Oil, Gas, and Mining Development	M	1. Where Are CEs and CAs?	Deleted	Where are areas with mineral deposits, free use permits, or community pits?	N/A	Integrated with MQ 57	
N/A	MBR	Inactive	Oil, Gas, and Mining Development	M	5. Special assessment	Deleted	Where are the areas of low non-renewable energy development that could potentially mitigate impacts to CEs from potential energy development?		Integrated with MQ 66	This is duplicated in MQ #66; MQ 66 was broadened to include both non-renewable and renewable energy.
N/A	MBR	Inactive	Oil, Gas, and Mining Development	M		Added, then Deleted	ADD: Prioritizing ecoregional sustainability. How many additional oil, gas, and mineral leases are feasible in the ecoregion?		No data	
N/A	MBR	Inactive	Renewable Energy Development	N		Deleted	BLM ADD: Prioritizing ecoregional sustainability. How many acres of renewable energy development are feasible in the ecoregion?		Duplicate	Redundant with MQ 65
N/A	MBR	Inactive	Renewable Energy Development	N		Out of scope	Where are areas suitable for development outside of study areas?			

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32	CBR, MBR	Inactive	Surface and Subsurface Water Availability	O	1. Where Are CEs and CAs?	Deferred	Of the current perennial surface water resources (both natural and man-made) contributing to aquatic CEs, which are likely supported by groundwater discharges and what aquifers most likely provide this groundwater support?	Of these water resources, what is their surface water/groundwater connectivity?		
33	CBR, MBR	Inactive	Surface and Subsurface Water Availability	O	1. Where Are CEs and CAs?	Deleted	What is the natural range of variation in high and low water levels or flows (e.g., frequency, timing, duration of high and low water levels or flows)?	What are the frequencies & magnitudes of flows?	Replaced with MQ 36	Deleted this in favor of MQ 36 [dpb 4/15/11]
82	CBR, MBR	Inactive	Surface and Subsurface Water Availability	O	1. Where Are CEs and CAs?	Reframed	What is the natural variation of monthly discharge and monthly base flow for streams and rivers? [made inactive 1/24/12]			Reframed from MBR MQ 35, CBR MQ 33
53	CBR, MBR	Inactive	Groundwater Extraction and Transportation	P		Deleted	Where are aquifers and their recharge zones?	Where are aquifers and their recharge zones?	Duplicate of MBR 37	
55	CBR, MBR	Inactive	Groundwater Extraction and Transportation	P		Deleted	Where are <b>groundwater</b> resources capable of meeting sustained water demand for renewable energy projects without degrading aquatic ecosystems that also depend on these <b>groundwater</b> resources?	Where are the areas of high and low groundwater potential in relation to supporting solar power, sustaining species, etc.?	Not feasible with REA-scale data	<p>We cannot go beyond the information generated for MQ# 33.</p> <p>[MQ 33 is "Of the current water resources (both natural and man-made), what is their surface water/groundwater connectivity?"]</p> <p>There are two versions of this question: One for groundwater (MQ 70) and one for surface water (MQ 75)</p>
59	CBR, MBR	Inactive	Groundwater Extraction and Transportation	P		Deleted	Where are the areas with groundwater basins in an overdraft condition?		Duplicate of MQ 71/57	<p>Technically this is not the same as MQ 71, but MQ 71 is the one we need to answer. "Overdraft" means that withdrawals exceed recharge over the long-term. Such overdrafting is irrelevant for our REAs unless it affects or could affect a CE, which is why MQ 71 is the only question we need to answer w/r/t current conditions. Our CA assessment will address the "future" version of same. [dpb 4/15/11]</p>

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58	CBR, MBR	Inactive	Surface Water Consumption and Diversion	Q	1. Where Are CEs and CAs?	Deleted	Where are artificial water bodies including evaporation ponds, etc.?		Duplicate	Same as MQ 72. [Question had been listed once under Surface Water Consumption and Diversion and once for Groundwater Extraction and Transportation.]  MQ 72 really is just a subset of MQ 31, as noted above for MQ 72 [dpb 4/15/11]
61	CBR, MBR	Inactive	Surface Water Consumption and Diversion	Q		Deleted	Where are the areas with <b>surface water</b> resources available to sustain solar power, and other forms of development without degrading aquatic ecosystems that also depend on these <b>surface water</b> resources? <b>DPB 4-15-11 If retained, this should be reframed as,</b> "Where are the areas with surface water resources available to sustain solar power, and other forms of development without degrading aquatic ecosystems that also depend on these surface water resources?" However, best to delete it.		Out of scope or no data	There are two versions of this question: One for groundwater (MQ 70) and one for surface water (MQ 75)
64	CBR, MBR	Inactive	Surface Water Consumption and Diversion	Q		Deleted	Where are the areas with existing surface water extraction that has caused natural aquatic communities to become entirely dry, either seasonally or perennially?		Duplicate	See MQ 76. This is essentially the same question as the one about "areas showing effects from existing surface water exploitation." [MQ 71 is parallel question for groundwater resources.] Deleted because this is merely a rephrasing of MQ #76, except that it asks about where we have lost surface flow entirely, and that is not aswerable with regional data at present. [dpb 4/15/11]
70	CBR, MBR	Inactive	Climate Change: Terrestrial Resource Issues	S		Deferred	Based on recent distributions and expansion patterns of insect pests and disease, what are expected distributions in the future?	How might climate change impact disease agents and vectors [strategy, future data/research need]?	Beyond scope	

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72	CBR, MBR	Inactive	Climate Change: Aquatic Resource Issues	T		Deleted	Where are aquatic resources that will experience significant deviations from normal flow regime or mean water levels?	Where are the areas of potential of flow change?	Out of scope or no data	This is not a matter of "merging" with MQ 85. The old MQ 86 contained the irrelevant term "abrupt," referred to "aquatic resources" instead of to "aquatic CEs," and asked to assess changes in stream hydrology rather than the climate drivers of that hydrology. We need to reframe MQ 85 so that it specifically addresses changes in climate drivers of hydrology rather than changes in climate generically.
73	CBR, MBR	Inactive	Climate Change: Aquatic Resource Issues	T		Deleted	Where will aquatic resources experience significant deviations from normal temperature regime?	Where are the areas of potential of temperature change?	Out of scope or no data	See MQ 85  And see comments for MQ 86 as well [dpb 4/15/11]
74	CBR, MBR	Inactive	Climate Change: Aquatic Resource Issues	T		Deleted	Where are aquatic resources that will experience additional effects on physical habitat such as channel morphology due to significant deviations in climate and hydrologic regimes?	Where are the areas of potential of change of aquatic habitat?	Out of scope or no data	Deleted because question is impossible to answer with REA-scale data and assessments. The proposed rephrasing of MQ 85 takes care of that. [dpb 4/15/11]
N/A	MBR	Inactive	Climate Change: Aquatic Resource Issues	T		Deleted; redundant with MQ others in this section	How will water availability change with climate change?			
75	CBR, MBR	Inactive	Military Constrained Areas	U	1. Where Are CEs and CAs?	Deferred	Where are military constrained areas?	Where are military constrained areas?		Data for this are inaccessible.







# Data Request Method

Rapid Ecoregional Assessments (REAs)—National Operations Center, CO

Individual REA data layers and some other products are still available but are no longer being published.

If you would like to obtain more information, including data and model zip files\* (containing Esri ModelBuilder files for ArcGIS 10.x and relevant Python scripts), please email [BLM\\_OC\\_REA\\_Data\\_Portal\\_Feedback\\_Team@blm.gov](mailto:BLM_OC_REA_Data_Portal_Feedback_Team@blm.gov).

\*Note that a few models require software that BLM does not provide such as R, Maxent, and TauDEM.

Models associated with individual REAs may require data links to be updated to function properly. REA reports, technical appendices, and model overviews (for some REAs) contain detailed information to determine what products are available and what datasets are necessary to run a certain model.

Please include the report name and any specific data information that you can provide with your request.

Other BLM data can be found on the [Geospatial Business Platform Hub](https://gbp-blm-egis.hub.arcgis.com) (<https://gbp-blm-egis.hub.arcgis.com>).