



Madrean Archipelago Rapid Ecoregional Assessment



Issued January 2013

Rapid Ecoregional Assessments

Working with agency partners, BLM is conducting rapid ecoregional assessments (REAs) covering much of the American West. The goal of REAs is to characterize 1) the status of ecological resources, 2) their potential to change at a landscape scale in response to increasing development, changing climate, the spread of invasives, and altered fire regimes, and 3) potential priority areas for conservation, restoration, and development. REAs are a first step in BLM's Landscape Approach, which considers larger geographic areas to more fully recognize natural resource conditions, processes, and trends, natural and human influences, and opportunities for resource conservation, restoration, and development. The landscape approach seeks to identify important ecological values and patterns of environmental change that may not be evident when managing smaller, local land areas.

A landscape approach informs and enhances local management. The BLM field offices maintain their central role in management of public lands. They continue to prepare land-use plans, authorize land uses, conduct monitoring, and work with partners and stakeholders to develop and implement local strategies. The broader perspective provided through a landscape approach will help focus and integrate these local management efforts. A landscape approach also provides an important foundation for developing coordinated management strategies with partner agencies, stakeholders, and American Indian Tribes.

REAs are grounded in **management questions (MQs)** that specify the key information needs managers have identified around natural resources management. REAs describe and map **conservation elements (CEs)**, which are generally features of high ecological value or sensitivity. REAs look across *all* lands in an ecoregion, regardless of ownership, to identify regionally important habitats for fish, wildlife, species of concern, and other features of management interest. REAs then evaluate the potential impacts on CEs from four broad categories of environmental **change agents (CAs)**: climate change, wildfire, invasive species, and development (such as land use, energy development, infrastructure, or hydrologic alterations).

REAs

- Document key resource values (conservation elements), such as species of concern and regionally significant terrestrial and aquatic habitats
- Describe influences and projected effects from four categories of environmental change agents:
 - Climate Change
 - Wildfire
 - Invasive Species
 - Development
- Identify and characterize important natural resource issues and provide a baseline to guide future management actions
- Provide tools and data to identify areas suitable for resource conservation and restoration, as well as development
- Identify science gaps and data needs

A Useful Resource

REAs are rapid, landscape-scale assessments of the resource values of an ecoregion, their distribution and status, their interactions with major change agents, and their projected future status. REAs include:

- Assessment of current and forecasted trends in change agents and their effects on conservation elements
- Characterization of overall ecoregion integrity
- A baseline on resource and change agent status to evaluate and guide future management actions
- Conceptual models that characterize valuable natural resources and describe their key ecological attributes and indicators of ecological status
- An ecoregion-wide geospatial data library that can be used to inform local scale activities, actions, and projects and place them into a more ecologically meaningful context
- Information that may be used for cumulative impacts analyses
- Context for existing land use plan decisions

REAs are not decision documents; they do not specify management decisions or resource uses. REAs provide information and tools that can inform planning or decision-making processes at landscape scales, by BLM or other natural resource management agencies or organizations. They do not replace site level information or provide fine scale data/information.

How Are REAs Prepared?

REAs are conducted by contractors, with oversight by BLM and guidance and input from BLM and partners. BLM engages partners and stakeholders to obtain input in order to provide a set of products that can be used by any interested agency or organization. An Assessment Management Team (AMT) and a Technical Team - comprised of decision makers and technical experts from state and federal agencies - provide guidance, direction, and input throughout the REA process.

The Madrean Archipelago REA was initiated in October 2012 and is scheduled for completion in September 2014. It is in the pre-assessment phase, with BLM and the contractor coordinating development of partnerships with federal and local agencies, establishment of the AMT and Technical Team, the identification of stakeholders in the ecoregion, and initial engagement.

REA Phases and Tasks

PHASE I: PRE-ASSESSMENT

Task 1: Initiate Project

- Engage with REA participants, partners, stakeholders
- Develop team charters and communication plan
- Develop work plan for pre-assessment



Task 2: Conduct Pre-Assessment

- Characterize the ecoregion
- Identify and finalize Conservation Elements, Change Agents, and Management Questions
- Develop conceptual models for Conservation Elements



PHASE II: ASSESSMENT

Task 1

Develop Assessment Work Plan



Task 2

- Inventory, Acquire, and Evaluate Datasets
- Develop Process Models



Task 3

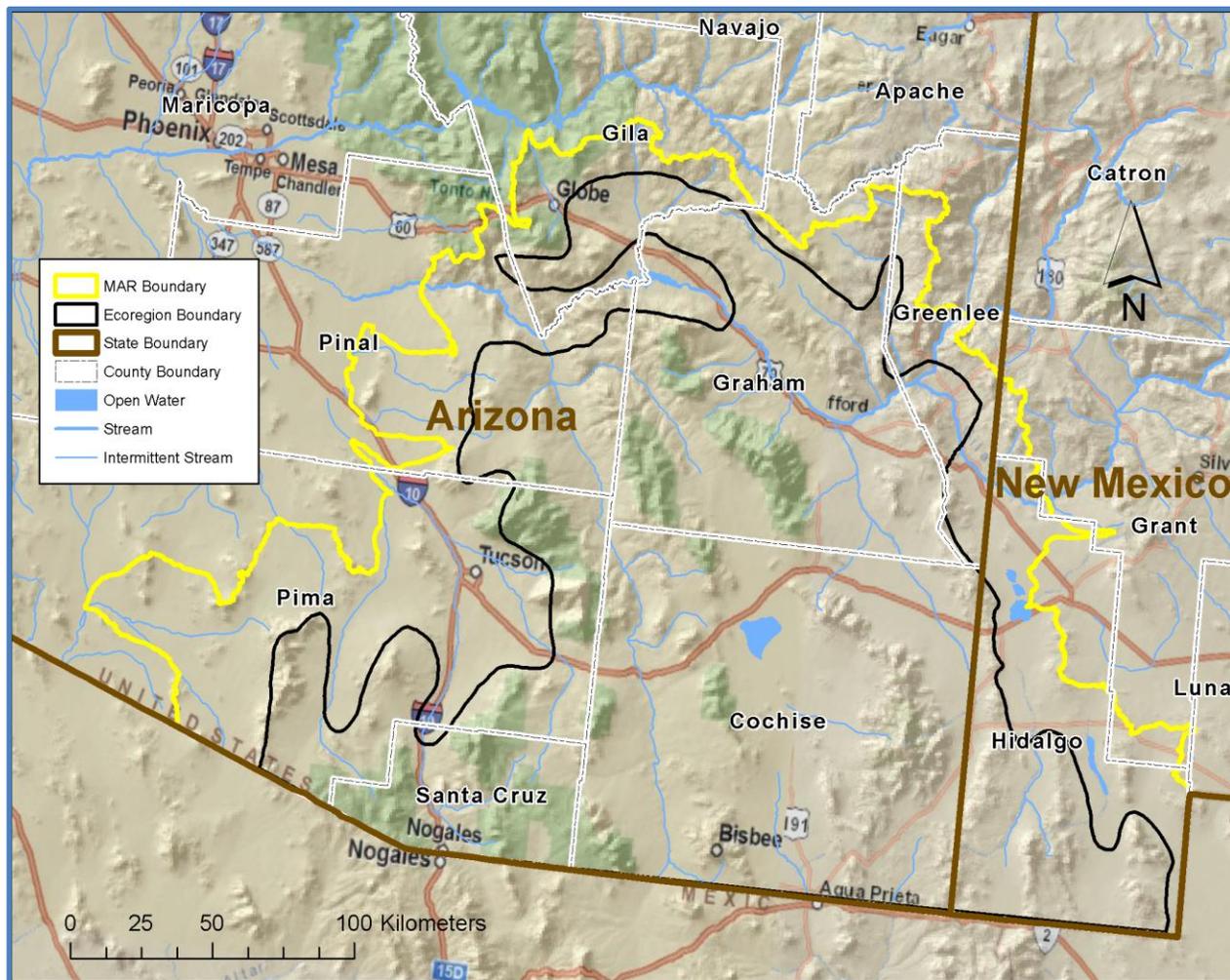
- Conduct Analyses
- Generate Findings



Task 4

Prepare Final REA Report and Documents

Madrean Archipelago Ecoregion



The Madrean Archipelago ecoregion is located in southeastern Arizona and southwestern New Mexico; the yellow boundary outlines the area to be assessed in this REA. It is characterized by isolated forested mountain ranges that are surrounded by a virtual sea of intervening deserts and grasslands; thus the mountains in this area is also known as the “Sky Islands.” The ecoregion is located within the Madrean Pine – Oak Woodlands, a globally significant biodiversity hot spot, and harbors the highest diversity of mammals, birds, bees, ants of anywhere in the contiguous United States. Large elevation gradients (ranging from 600m at the base to 3,000m at the summits) and topographic roughness contribute to the high diversity of species and biotic communities. The ecoregion is located at the intersection of the temperate zone to the north and sub-tropics to the south where several major desert and forest biotic influences converge, including the Rocky Mountains, Sierra Madre, the piedmont and plains of the western Sierra Madre, Sonoran Desert, and Chihuahuan Desert.

Subtropical desert near the Galiuro Mountains



Thick-Billed Parrot, New Mexico



Warm temperatures are a defining characteristic of the region and during dry summer months can climb above 100 degrees F in lower elevations. Annually, the region receives around 12 inches of rain in valley bottoms and up to 30 inches at mountain tops. Precipitation occurs primarily during the summer monsoon and the winter season. The Madrean Archipelago is home to numerous endemic species such as the Mt Graham red squirrel and Atascosa gemmed grasshopper, species at the edges of their ranges such as the elegant trogon and ocelot, and neotropical species such as coati and coral bean. Biotic communities include montane coniferous forests, oak-pine woodlands, tropical deciduous forest, oak savanna, short-grass prairie, subtropical thornscrub, and subtropical desert. The ecoregion also contains critical riparian and wetland habitats (cienegas, springs) that encompass a very small portion of the land areas but are keystone ecosystems in this arid environment.

Three **conservation elements** have been selected so far for this assessment: *pronghorn*, *Apacherian-Chihuahuan Semi-Desert Grassland and Steppe*, and *North American Warm Desert Riparian Woodland and Shrubland*. With partner input, the REA team will identify additional ecological systems and landscape species that are of management concern to be assessed in this REA.

Input and Review Opportunities

Update Webinars will be held at the end of each REA task to update stakeholders on the completion of the previous task and provide an opportunity for input on the next task. In addition, because REAs are scientific assessments and not decision documents, they undergo a USGS-led scientific peer review process rather than a public comment process.

Green Rat Snake in Santa Cruz County



The Ferruginous Pygmy-Owl is in the northern part of its range in the Madrean Ecoregion



Montane coniferous forest on Mount Graham, one of the region's "sky islands"



Mescal Creek, a Warm Desert Riparian Woodland in S. Arizona



Semi-Desert Grassland near Elgin, AZ



Pronghorn at Las Cienegas National Conservation Area



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