Rapid Ecoregional Assessment

Ecoregional assessments are geospatial landscape evaluations that are designed to identify areas of high ecological value within an ecoregion that may warrant conservation, adaptation, or restoration. An assessment identifies those areas within the ecoregion most critical to ecosystem function; that provide essential, limited habitat; where species or communities of concern are thriving or can be readily restored; and where changes in human or natural influences upon the landscape may have dramatic consequences. Conversely, ecoregional assessments also identify areas that are not critical for ecosystem function, habitat, or species preservation; which may be insensitive to change from external agents; or that have reduced ecosystem values due to past actions and which have little potential for recovery.

Ecoregional assessments assemble and organize information, especially geospatial information, needed to formulate regional conservation, restoration, and adaptation strategies. They also establish regional information platforms that facilitate landscape-scale collaboration, partnerships, and well-informed decision-making. Assessments using ecoregional boundaries as a basis will allow the BLM to efficiently and effectively address broad-scale issues that cross traditional administrative boundaries. Most important, the products that result from an ecoregional assessment will provide BLM land managers with information to make better decisions for carrying out the BLM's mission "to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations."

Rapid ecoregional assessments are, as the name indicates, rapid and should take less that about 18 months to complete. A primary reason for the short time frame for completion is that rapid ecoregional assessments are not exhaustive. They are not research projects nor do they compile and evaluate all information from a region. Instead, they are highly guided assessments that examine regionally significant ecosystem conditions and those agents that may cause changes in those conditions.

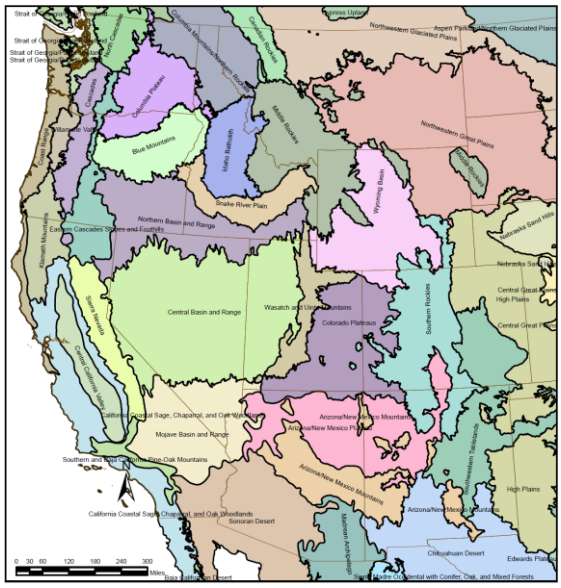
Goal and Objectives of Ecoregional Assessment

The goal of a rapid ecoregional assessment will be to provide information to facilitate the subsequent development of an ecoregional conservation strategy for native plant, wildlife, and fish communities on public lands. The assessment also will facilitate planning, environmental analysis, and decision-making for other regional resource values and uses. Specific objectives of the BLM rapid ecoregional assessment are:

- Identifying of priority areas and methods for conservation of native plant and animal communities.
- Providing guidance for adaptation and mitigation planning in response to climate change.
- Providing an improved predictive capacity for change agents and for cumulative impact assessment under NEPA.
- Establishing baseline information for long-term monitoring of regional ecological conditions.
- Providing enhanced landscape-scale information, understanding, and awareness relevant to planning and decision-making for all values and uses of public lands.
- Creating stronger, more effective, and efficient collaboration and cooperation among all parties interested in regional land and resource management.

Level III Ecoregions

The BLM is adopting its ecoregional approach for landscape assessment and management using ecoregions established by the Commission for Environmental Cooperation. The fundamental concept is that ecological regions can be identified through the analysis of the patterns and that physical and biological phenomena (i.e., physiography, geology, vegetation, climate, soils, hydrology) either affect or reflect differences in ecosystem quality and integrity. Specifically, the BLM is employing the Level III ecoregional scale for its ecoregional assessments and land management. The size of ecoregions dictates the regional-level scale for analyses to be undertaken. Level III ecoregions range in size from a few thousand square miles to well over 100,000 mi^2 with an average size of about 45,000 mi^2. A BLM Field Office, by comparison, manages an area averaging about 10,000 mi^2, so five or more Field Offices and several State Offices may frequently be included in one Level III ecoregion.



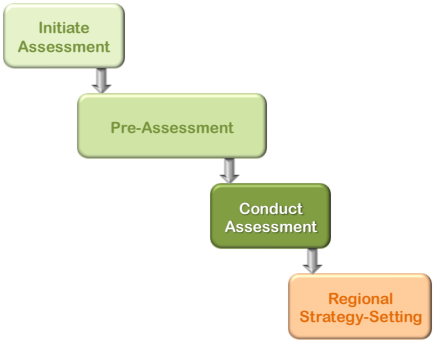
Level III Ecoregions of the Western US

Phased Approach to Rapid Ecoregional Assessment

BLM's ecoregional assessments are divided into three phases: 1) an initiation phase, 2) a pre-assessment phase, and 3) the final phase in which the assessment is conducted. The first phase—the initiation phase—is conducted mostly in-house by the BLM by bringing together the State and Field Offices that the particular ecoregion comprises. The second and third phases are expected to be contracted out after the assessment management questions, objectives, and work specifications are determined during the initiation phase.

In general terms, the work conducted during each of the ecoregional assessment phases is:

- Phase I: Initiate Assessment. This first phase includes establishing the project's management and technical teams and identifying partners and stakeholders. Perhaps the most important task during this phase is for the management and technical teams to define preliminary management questions, which, when answered by the assessment, will help guide the BLM in formulating an ecoregional management strategy. Also, based upon the work of this initial phase, a statement of work for conducting the following phases will be developed.



- Phase II: Pre-Assessment. The second phase begins with identifying information, especially spatially defined information, that would be available for use by the assessment. Tasks conducted for this effort include reviewing existing assessments, literature, data, and models, identifying data gaps, and developing data standards and a data management plan.

Concurrently, management questions are refined by the BLM's Assessment Management Team (AMT) using input from stakeholders and partners in order to define the approach to be taken for assessment of significant resource values and change agents of concern. The final product of this phase will be the Assessment Work Plan, which will define the methodology, mechanisms (e.g., schedule, budget, equipment, and staff), responsibilities, and work required for the collection, management, and analysis of data to meet ecoregional objectives.

- Phase III: Conduct Assessment. In the concluding phase, resource values and change agents are geographically located (i.e., mapped). The status, risks, and trends associated with ecological resource values are identified, and the degree of potential change in these values when exposed to possible and/or expected change agents is determined. This assessment phase will depend heavily upon geographic information system (GIS) analyses and upon geospatial modeling. The work products of this phase will include the various raw and model datasets, identification of issues of potential concern or opportunity, maps, Assessment Report, other supporting documents, and facilitation assistance to present the assessment information and analyses to BLM management and staff and to stakeholders and cooperators.

The overall timeframe for most ecoregional assessments is expected to be less than 18 months, taking approximately 2-3 months for the initiation phase, 6-8 months for the pre-assessment phase, and 4-6 months for the assessment phase.

Resource Values and Change Agents of Concern

Ecoregional assessments are not open-ended, encyclopedic compilations of all resource information in an ecoregion. Rather, they are compendiums of that information necessary to guide BLM managers in developing planning and management strategies. Although an ecoregional assessment is to be limited in scope, at a minimum it must cover and should focus upon three sets of resource values and upon four major types of change agents that can affect those values.

Resource Values to Be Addressed

The focus of an ecoregional assessment should be on ecological values, not cultural values, though non-ecological values may be incorporated into the decision-making process during ecoregional strategy development. The types of ecological resource values to be addressed by an ecoregional assessment are those typical of areas of high ecological value, such as areas with abundant native species and few non-natives, having intact, connected habitats, and that help maintain landscape hydrologic function. In areas that have potential for restoration, these types of resource values would be improved. Resource values of concern to the BLM can be classified into three categories:

- Native Fish, Wildlife, or Plants of Conservation Concern. Such species of conservation concern include populations, species, or communities identified in state wildlife action plans; species listed under the Endangered Species Act; and species and communities identified through other agency or non-governmental organization (NGO) assessments.
- Regionally-Important, Terrestrial Ecological Features, Functions, and Services. Terrestrial areas and communities of importance include large areas of native vegetation that provide important cover, fiber, and forage; habitat strongholds and corridors; upland

areas important for maintaining hydrologic function, water quality, or water supply; and areas capable of significant carbon sequestration. An example of a regionally-important terrestrial ecosystem is the sagebrush steppe of the West, which provides a particular habitat type required by some species.

- Regionally-Important, Aquatic Ecological Features, Functions, and Services. Aquatic areas of importance include habitat strongholds and corridors and wetland, riparian, and other aquatic areas important for aquatic life habitat, water quality, water supply, streambank stability, flood control, and similar purposes. In drylands characteristic of much of the landscape administered by the BLM, surface water bodies themselves can be significant resources, especially if they have high-quality waters. Multistory canopy cover can also be a significant regional feature, providing habitat that this otherwise unavailable in a low-story desert shrubland or grassland.

Change Agents to Be Addressed

Change agents are environmental stressors upon the landscape that can influence the future progression of resource values. Most change agents are the result of direct human actions, such as the construction of a dam and reservoir that eliminates the connectivity for aquatic species along a river corridor. Other change agents may be the products of natural phenomena and human activities, such as climate change. Conservation and restoration strategies must be based, in part, on an understanding of past, current, and projected future influences of environmental change agents—and the interactions amongst these change agents—upon the resource values of concern. For a BLM ecoregional assessment, change agents must be spatially-explicit and minimally include agents drawn from the following four classes:

- Wildland Fire. Wildland fire, particularly changes, frequency, magnitude, and extent and their effects upon the identified resource values, should be evaluated in every ecoregional assessment. Where significant, the interactions and changes in fire regime conditions should be evaluated with respect to species change (i.e., invasive species), development (i.e., fire suppression), and climate change.
- Invasive Species. Invasive species identified by the management and technical teams to be of concern should be evaluated, including presence/absence, current extent, trend, and dominance. Similar to other change agents, invasive species should be evaluated spatially, and where possible, projected to future resource conditions.
- Development. Development is the direct modification of the landscape through activities including urbanization, road development, and industrial development, which includes extraction of traditional energy and mineral resources and the establishment of renewable energy production areas. Areas to be evaluated should include existing activities; applications; existing and planned corridors; and areas of high resource potential or expressed interest.
- Climate Change. Changes in precipitation amounts and timing, temperatures, evapotranspiration rates, storm intensity and frequency, and other meteorological characteristics can result in changes in ecosystem state and stability. Given projections for climate change during the next 50 years, the ecoregional assessment should identify areas, species, and ecological features, functions, and services that are sensitive to ecosystem instability and change, as well areas of relative insensitivity to changes in climatic conditions. Current location maps of key species, ecological features, functions and services will be compared with maps of predicted future occurrences.