

## Attachment 1: Implementation of Resource Management Plan (RMP) Effectiveness Monitoring for Renewable Resources

### Sample Design

The attainment of renewable resource objectives within resource management plans (RMPs) will be assessed using statistically valid sample designs on a five-year rotating panel (Figure 1). Sample designs are intended to be comprehensive across all BLM lands and ascertain the cumulative effectiveness of plan objectives as described in RMPs. Effectiveness monitoring is the process of collecting data to determine whether desired outcomes (expressed as goals and objectives in the resource management plan) are met (or progress is being made toward meeting them) as the allowable uses and management actions are being implemented. All sample designs will be cooperative efforts between the National Operations Center (NOC), state offices, and the field office(s) implementing the sample design.

Where RMP objectives correspond with state or regional standards and guides, efficiencies can be gained through development of survey designs to simultaneously assess the attainment of both RMP objectives and land health standards. The Assessment Inventory Monitoring (AIM) terrestrial and aquatic indicators will be used, with supplemental indicators as necessary, to assess the attainment of land health standards. During the development of the monitoring plan, the NOC will provide guidance on cross-walking indicators to standards. To achieve these dual monitoring and assessment purposes, intensification in target areas of high value or conflict (i.e., National Conservation Lands, mitigation sites, allotments, project areas) or to monitor habitat areas for species of concern (i.e., Desert Tortoise, Prairie Chicken, Gunnison or Greater Sage-Grouse) may be required. The required number of sample points for each reporting unit will vary, depending on many factors such as the size and variability of the reporting area, the scope of the proposed management activity, and the desired level of confidence.

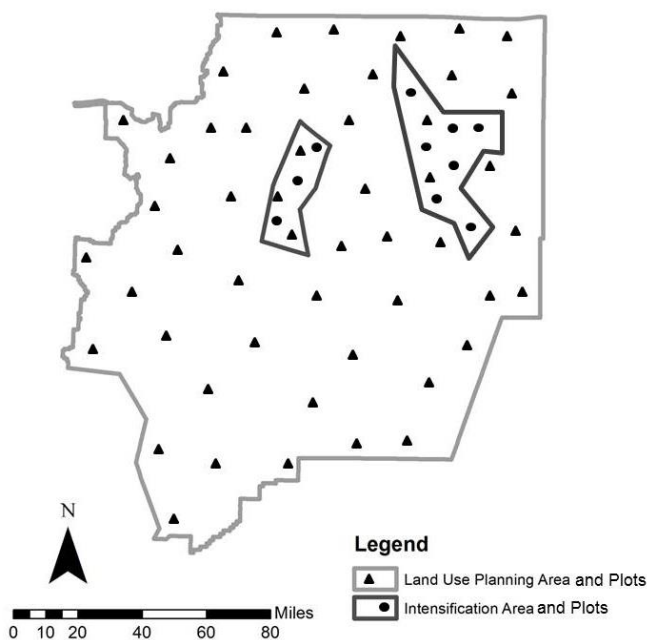


Figure 1. Example of the statistically based 5-year rotating sample design addressing RMP effectiveness. Sample points were selected randomly such that every location within the RMP area had a known chance of being sampled, enabling inferences across the entire landscape. Example inferences include the average bare soil cover in the RMP area or the percentage of the landscape with presence of non-native invasive species. A subset of these points will be sampled each year over 5 consecutive years to complete the sample design. When additional information is needed in a specific area within the planning unit, sampling can be intensified and additional indicators can be added.

### ***Data Collection***

BLM terrestrial (Technical Note 440) and aquatic indicators (Technical Reference 1785-1), will be collected using consistent methods and electronic data capture. Supplemental indicators will be identified during the development or periodic review of the monitoring plan. Other assessment protocols such as Habitat Assessment Framework (HAF), Interpreting Indicators of Rangeland Health, and Proper Functioning Condition (PFC) are effective assessment tools and should incorporate the quantitative indicators whenever possible. The use of dedicated seasonal field crews hired within the BLM or through agreements with partner organizations, especially those that engage youth, is highly recommended and has proven to be the most repeatable and least costly option for data collection efforts. Agreements should be administered by the BLM AIM State Monitoring Lead in cooperation with the field office monitoring coordinator and the NOC. These crews will receive training in data collection and stewardship protocols from the NOC or partnering office, including method calibration and quality control. District and/or field offices will serve as local experts to organize logistics, day-to-day operations, and safety of the field crews, as well as have the primary responsibility for ensuring the quality and completeness of the data and the in-season calibration requirements.

### ***Data Storage***

The data will be captured and managed electronically by the field crew, the field office, and the state office such that they can be uploaded and stored in the terrestrial and aquatic monitoring databases at the NOC. After quality control at the field and district level, data will be aggregated at the state level by the AIM State Monitoring Lead. The AIM State Monitoring Lead will then submit the data to the NOC for final quality control, central storage, and management.

### ***Analysis and Reporting***

Indicator values from the data will be made available annually by the NOC through the EGIS web portal and geospatial gateway. These indicator values, and the underlying sample design, will inform estimates of the status of renewable resources at the RMP scale as well as broader (e.g., ecoregional) and finer (e.g., intensification areas, treatment areas, habitat areas, watersheds) scales. Field offices and state offices will be responsible for reporting at the RMP scale and finer units. NOC will provide analytical tools, indicator estimates, and other support as needed. Regional and national monitoring results will be analyzed and reported by the NOC. Baseline data collected during the first five years of monitoring can be used to assess status. Trend estimates will be possible thereafter and can be reported along with the annual estimates. Additional BLM monitoring data such as those collected for the national BLM Landscape Monitoring Framework and the Western Rivers and Streams Assessment will be available to supplement the data collected through the field office sample design.

The Land Use Planning Handbook describes the analysis and reporting requirements for assessing the effectiveness of RMP objectives for renewable resources. Effectiveness monitoring is the process of collecting data to determine whether desired outcomes (expressed as goals and objectives in the land use plan) are met (or progress is being made toward meeting them) as the allowable uses and management actions are being implemented. A monitoring

strategy must be developed as part of the land use plan that identifies monitoring indicators, acceptable thresholds of departure from potential natural conditions, protocols, and timeframes that will be used to evaluate and determine whether or not desired outcomes are being achieved. RMP reporting will occur on a 5-year basis, as documented in the evaluation schedule. Plan evaluations should also be completed prior to any plan revisions and for major plan amendments. Where appropriate, state and field offices identify resource management plans that can be grouped/ batched in a geographic region or planning area to look at issues that cut across boundaries (broad and mid-scale reporting). Each plan should have its own evaluation documentation as well as a combined (grouped/batched) evaluation for all RMPs identified in the geographical region or planning area. The AIM terrestrial and aquatic data will provide the baseline and the trend data for renewable resource objectives and thresholds related to uplands, riparian-wetlands, water quality, and upland and in-stream habitats. Supplemental indicators should be added, as necessary, for resource objective and thresholds where the AIM data does not provide adequate information.

For those plans amended, revised, or replaced by the Greater Sage-Grouse Planning Effort, more specific management questions have been added to the LUP effectiveness evaluation. The additional effectiveness questions are: 1) is the plan effective in achieving (or making progress toward achieving) desired outcomes based on the sage-grouse habitat objectives; 2) is the plan effective in meeting, or making progress toward meeting, land health standards, including Special Status Species/wildlife habitat standard; 3) is the plan meeting the disturbance objective(s) within the RMP area, and 4) are the populations within this plan boundary increasing, stable, or declining?

***Training***

Monitoring protocol trainings required for this activity will include the terrestrial and aquatic core indicators (Technical Note 440 and Technical Reference 1785-1, respectively), as well as trainings to complete assessments such as HAF, Interpreting Indicators of Rangeland Health, and PFC. Additional training for BLM resource staff in the use and interpretation of data will be available via webinars. Trainings will be coordinated through the BLM NOC with the NTC and partnering offices or regional training facilities.

***Roles and Responsibilities***

Step	Activity	Responsible Entity
Planning/Funding	Secure/Manage Funding Maintain Agreements Coordinate multi-scale objectives	State Office (SO) (State AIM Monitoring Coordinator)
Study Design	Broad- and mid-scale statistical design Fine and site scale densifications Identify sample points	NOC, with substantial input from Field (FO) and State Office (SO) (Partner with USDA-Jornada & USU-NAMC)
Data Collection	Hire/oversee field crews Logistical support Ensure training of field crews Collect indicator data	District/Field Office with oversight in coordination from the State AIM Monitoring Coordinator

Quality Control	Field data-entry validation Completeness of data collection Data aggregation	FO/DO SO Final quality control by NOC
Data Storage	Upload field data to central database Make data available on BLM network	NOC
Analysis and Reporting	Evaluate land health standards RMP Effectiveness	Broad- and mid-scale reporting by the NOC; Resource management plan area, fine and site scale reporting by SO and FO (Partner with USDA-Jornada & USU-NAMC)