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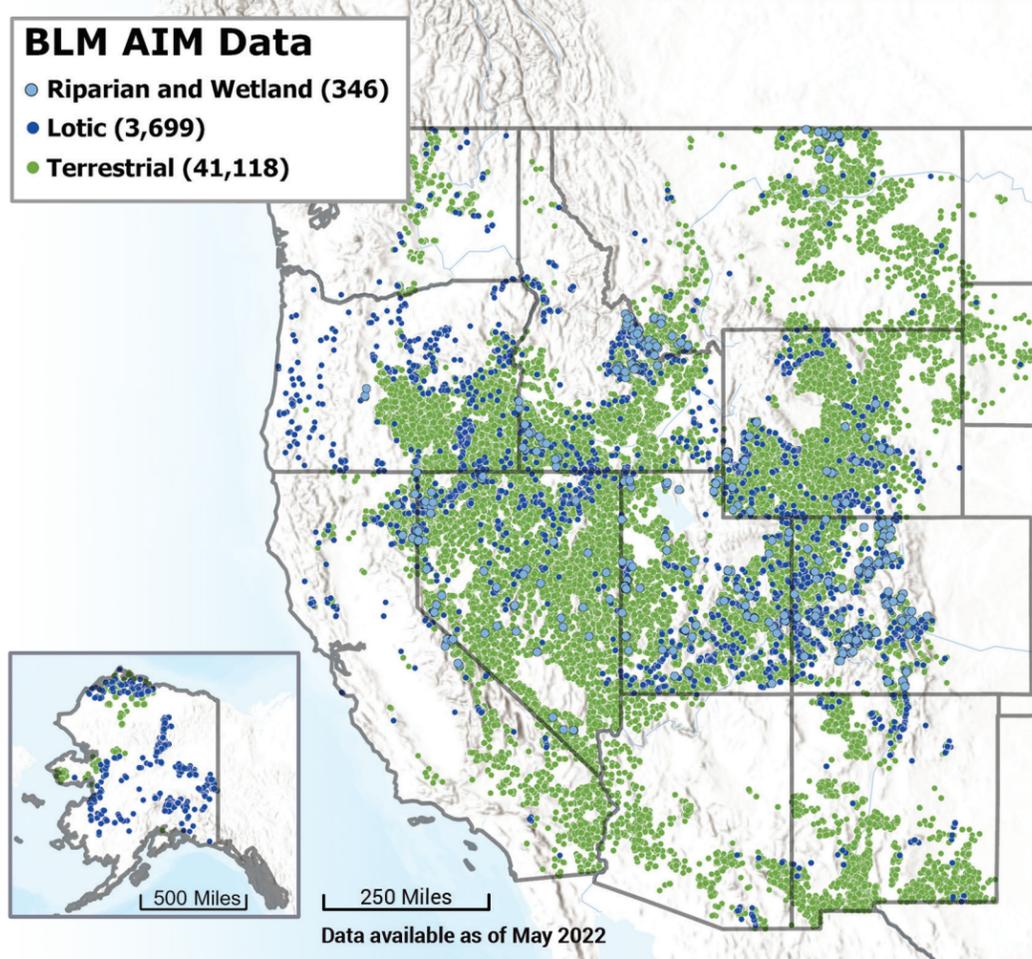Melissa Dickard
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View and access AIM data at:
https://www.blm.gov/aim

BLM AIM Data
- Riparian and Wetland (346)
- Lotic (3,699)
- Terrestrial (41,118)

500 Miles

250 Miles

Data available as of May 2022

USDA United States Department of Agriculture
Agricultural Research Service

NM STATE New Mexico State University

NATIONAL AQUATIC MONITORING CENTER

UtahStateUniversity

COLORADO NATURAL HERITAGE PROGRAM

COLORADO STATE UNIVERSITY

STATE Iowa State UNIVERSITY

UCLA

USDA Natural Resources Conservation Service

FOREST SERVICE · DEPARTMENT OF AGRICULTURE

USGS science for a changing world

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

U.S. Department of the Interior · Bureau of Land Management

BLM'S ASSESSMENT, INVENTORY, AND MONITORING STRATEGY

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

The objective of the Assessment, Inventory, and Monitoring (AIM) Strategy is to provide a standardized approach for measuring natural resource condition and trend on Bureau of Land Management (BLM) public lands. The AIM Strategy provides quantitative data and tools to guide and justify policy actions, land uses, and adaptive management decisions.

AIM is...

- **Structured implementation** to guide monitoring program development, implementation, and management decisions.
- **Standardized field methods** to allow data comparisons throughout the BLM and in collaboration with BLM partners.
- **Appropriate sample designs** to minimize bias and maximize what can be learned from collected data.
- **Data management and stewardship** to ensure data quality, accessibility, and use.
- **Integration with remote sensing** to optimize sampling and calibrate continuous map products.

Evidence-based decisions using standard workflows

- Land health standard evaluations to inform authorizations of permitted uses.
- Invasive species tracking and management.
- Restoration, reclamation, and mitigation treatment effectiveness.
- Habitat condition assessment and monitoring for species of management concern.
- Land use planning and evaluation.
- Affected environment and alternatives analyses for proposed actions (e.g., the NEPA process).
- Performance measures reporting for the Department of the Interior Strategic Plan.

STRUCTURED IMPLEMENTATION

AIM monitoring starts with identifying clear management questions to inform when, where, and how often data are collected. This and all other steps of AIM are supported by a network of subject matter experts, including state leads, monitoring coordinators, agency partners, and the BLM National Operations Center. Collectively, the AIM team provides practitioners support with:

- Contracting for field crews and other services.
- Monitoring plan development.
- Identification and implementation of appropriate sample designs.
- Field methods training.
- Data collection, storage, and access solutions.
- Data quality assurance and control procedures.
- Analysis and reporting tools and support.

STANDARDIZED FIELD METHODS

AIM field methods were developed by a network of BLM experts and partners to ensure usable and repeatable data for the BLM, while also standardizing monitoring efforts across agencies and jurisdictions throughout the Western U.S. and Alaska.

Terrestrial methods: Designed for uplands to provide information on vegetation, soil, and habitat conditions.

- Example indicators derived from field methods: bare ground, vegetation composition, vegetation height, proportion of large gaps between plant canopies, and abundance of nonnative invasive plant species.
- Protocol: "Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems," Volume 1, Second Edition (2017)

Lotic methods: Designed to provide quantitative data for wadeable streams and rivers across all BLM-managed lands.

- Example indicators derived from field methods: conductivity, temperature, bank stability and cover, floodplain connectivity, and macroinvertebrate biological integrity.
- Protocol: "AIM National Aquatic Monitoring Framework: Field Protocol for Wadeable Lotic Systems," Technical Reference 1735-2 (2021)

Riparian and wetland methods: Designed for riparian and wetland areas, these data bridge the information gap between terrestrial and lotic areas. The newest addition to the AIM program, the riparian and wetland data collection protocol was piloted from 2019-2021 with the first year of full implementation in 2022.

- Example indicators derived from field methods: bare ground, vegetation composition, soil characterization, water source, and pH.

APPROPRIATE SAMPLE DESIGNS

The BLM uses the AIM Strategy to inform management decisions at multiple spatial scales, from individual restoration projects to national-level reporting. The AIM team at the BLM National Operations Center provides technical support for the development of appropriate sample designs (Figure 1) to match monitoring objectives from targeted sampling to spatially balanced, random sampling.
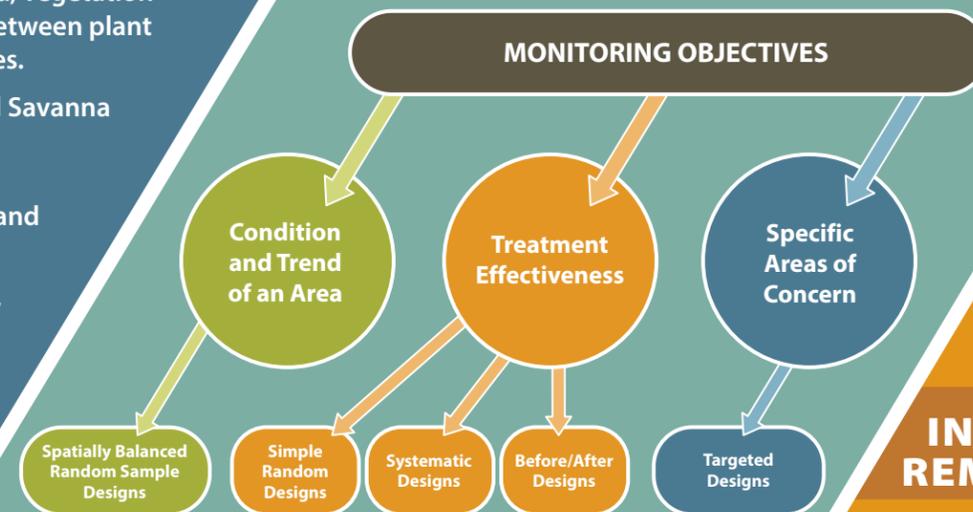
MONITORING OBJECTIVES

- Condition and Trend of an Area
- Treatment Effectiveness
- Specific Areas of Concern

- Spatially Balanced Random Sample Designs
- Simple Random Designs
- Systematic Designs
- Before/After Designs
- Targeted Designs

Figure 1. Examples of different AIM sample designs. Monitoring objectives define which design(s) is appropriate for a specific resource, area, or management question.

DATA MANAGEMENT AND STEWARDSHIP

AIM data are collected using mobile applications and stored in a centralized BLM repository that is available to users via web portals and spatial data services. Mobile applications allow for greater integration of data quality assurance and control practices while also making data available sooner. Centralized data storage gives users the ability to analyze AIM data independently or with developed tools supplied by the AIM program.

INTEGRATION WITH REMOTE SENSING

Remote sensing technology combined with on-the-ground AIM data provides land managers with multiple geospatial analysis tools that can be included in a decision-making framework:

- Fractional vegetation cover maps of AIM indicators.
- Landscape trend analysis and monitoring.
- Sagebrush distribution for sage grouse habitat mapping.
- Treatment effectiveness modeling.
- Disaster response: Emergency stabilization and rehabilitation.
- Multiple lines of evidence.

ASSESSMENT, INVENTORY, AND MONITORING

AIM TERRESTRIAL

AIM LOTIC

AIM RIPARIAN & WETLAND

TERRESTRIAL

LOTIC

RIPARIAN AND WETLAND