



AIM Implementation

AIM Project Leads Training 2016

The Five Principles of AIM

AIM-Monitoring:
A Component of the
BLM Assessment,
Inventory, and
Monitoring Strategy

Technical Note 445
April 2014



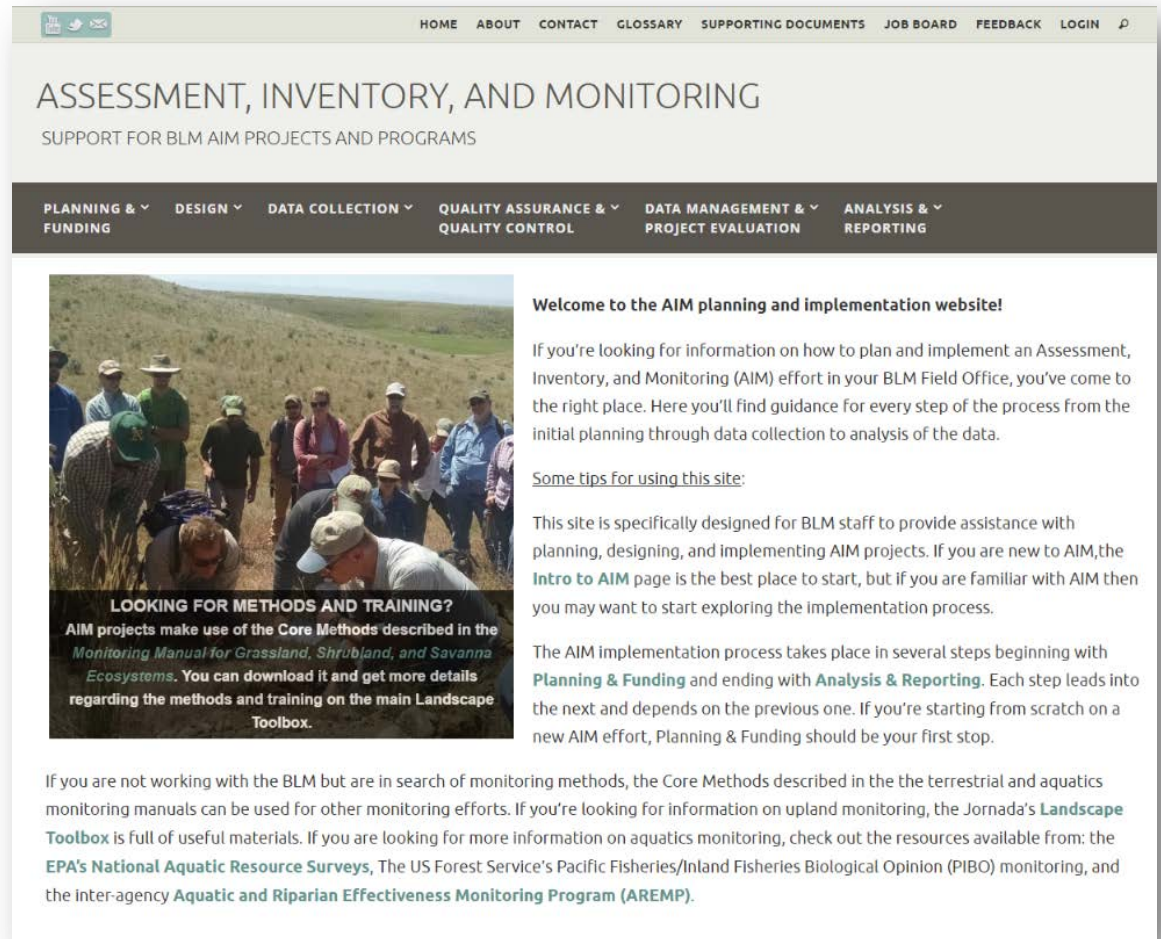
- Core indicators and methods
- Statistically valid sample design
- Integration with remote imagery
- Electronic data capture and management
- Structured Implementation
– timely information for adaptive management

Implementing AIM-based Monitoring

- Successful monitoring programs have
 - Clearly-defined objectives
 - Planning
 - Organized execution
 - Iteration/revision
- AIM Implementation Process
 - Facilitates use of data to answer original questions
 - Promotes ability to reuse monitoring data
 - Based on experience and established sources
 - Structured, but flexible

http://aim.landsapetoolbox.org

- Detailed information on AIM project implementation
- Templates, manuals, other resources
- Advice from other project leads
- Contact information



The screenshot shows the homepage of the AIM planning and implementation website. The header includes a navigation bar with links: HOME, ABOUT, CONTACT, GLOSSARY, SUPPORTING DOCUMENTS, JOB BOARD, FEEDBACK, LOGIN, and a user profile icon. Below the header, the main title is "ASSESSMENT, INVENTORY, AND MONITORING" with the subtitle "SUPPORT FOR BLM AIM PROJECTS AND PROGRAMS". A dark navigation bar contains several menu items: PLANNING & FUNDING, DESIGN, DATA COLLECTION, QUALITY ASSURANCE & QUALITY CONTROL, DATA MANAGEMENT & PROJECT EVALUATION, and ANALYSIS & REPORTING. The main content area features a large photo of a group of people in a field. To the right of the photo, there is a welcome message and a paragraph explaining the site's purpose. Below the photo, there is a section titled "LOOKING FOR METHODS AND TRAINING?" with text about downloading a manual. Further down, there is a paragraph about using the site for monitoring methods and a link to the "Landscape Toolbox".

HOME ABOUT CONTACT GLOSSARY SUPPORTING DOCUMENTS JOB BOARD FEEDBACK LOGIN

ASSESSMENT, INVENTORY, AND MONITORING

SUPPORT FOR BLM AIM PROJECTS AND PROGRAMS

PLANNING & FUNDING DESIGN DATA COLLECTION QUALITY ASSURANCE & QUALITY CONTROL DATA MANAGEMENT & PROJECT EVALUATION ANALYSIS & REPORTING

Welcome to the AIM planning and implementation website!

If you're looking for information on how to plan and implement an Assessment, Inventory, and Monitoring (AIM) effort in your BLM Field Office, you've come to the right place. Here you'll find guidance for every step of the process from the initial planning through data collection to analysis of the data.

Some tips for using this site:

This site is specifically designed for BLM staff to provide assistance with planning, designing, and implementing AIM projects. If you are new to AIM, the [Intro to AIM](#) page is the best place to start, but if you are familiar with AIM then you may want to start exploring the implementation process.

The AIM implementation process takes place in several steps beginning with [Planning & Funding](#) and ending with [Analysis & Reporting](#). Each step leads into the next and depends on the previous one. If you're starting from scratch on a new AIM effort, Planning & Funding should be your first stop.

LOOKING FOR METHODS AND TRAINING?
AIM projects make use of the Core Methods described in the *Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems*. You can download it and get more details regarding the methods and training on the main Landscape Toolbox.

If you are not working with the BLM but are in search of monitoring methods, the Core Methods described in the the terrestrial and aquatic monitoring manuals can be used for other monitoring efforts. If you're looking for information on upland monitoring, the Jornada's [Landscape Toolbox](#) is full of useful materials. If you are looking for more information on aquatic monitoring, check out the resources available from: the [EPA's National Aquatic Resource Surveys](#), The US Forest Service's Pacific Fisheries/Inland Fisheries Biological Opinion (PIBO) monitoring, and the Inter-agency [Aquatic and Riparian Effectiveness Monitoring Program \(AREMP\)](#).

AIM Implementation Strategy

- Planning & Funding
- Design
- Data Collection
- Quality Assurance & Quality Control
- Data Management & Project Evaluation
- Analysis & Reporting



Planning & Funding

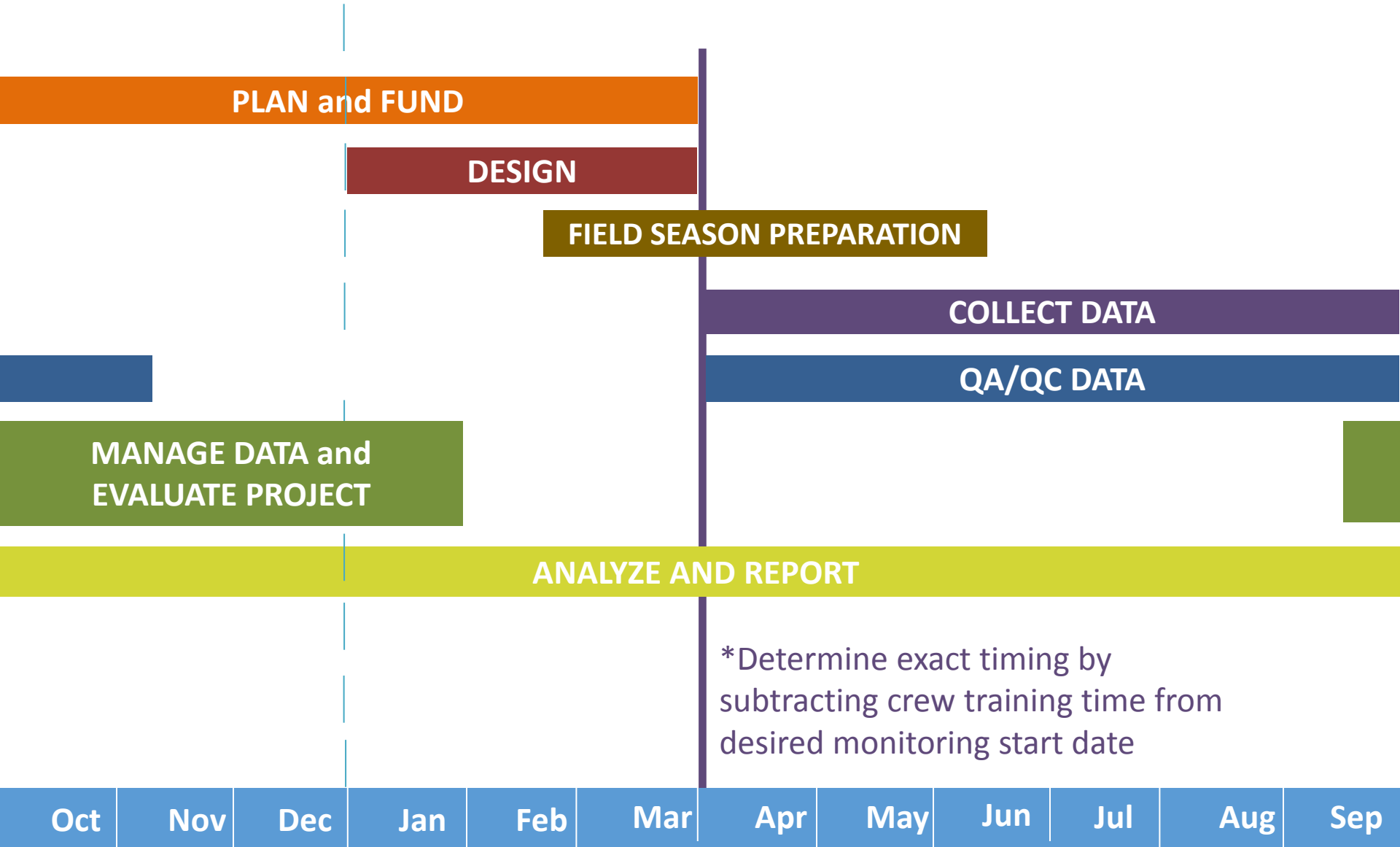
<http://aim.landscapetoolbox.org/planning-funding/>



- Coordinate with AIM state lead
- Develop a monitoring timeline
- Consider monitoring capacity needs
 - Seasonal employees, partnerships, interns
- Begin forming your ID Team and discuss
 - Management information needs
 - Monitoring efforts across land uses/programs
 - Monitoring goals, objectives
 - Potential workload, funding, cooperation
- Define roles and responsibilities

Resource: Implementation Timeline Template

Yearly AIM Implementation Calendar



BLM Roles and Responsibilities w/ AIM Strategy

	Washington Office	National Operations Center	State Office	District Office	Field Office	USDA-ARS Jornada + USU/NAMC	Partners*
Policy	●						
Funding + Capacity	◆		●	●	●		
Sample Design		●	◆	◆	◆	●	
Data collection		◆	◆	●	●	◆	◆
Data QA/QC	◆	■	■	■	●	■	◆
Data Storage		●	◆			◆	
Analysis & Reporting	●	■	●	■	■	■	◆
Training & Support		●	◆	◆	◆	●	

●: Lead

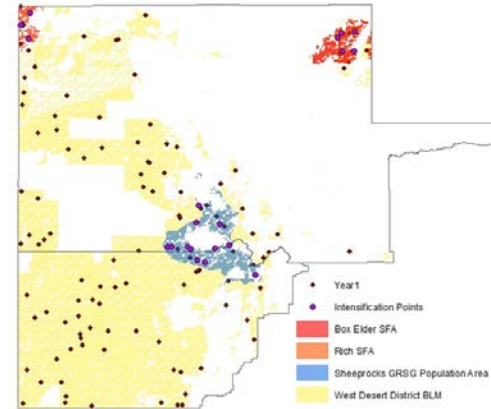
◆: Support

■: Coordinated Effort

*Roles will vary by individual partner organization.

Monitoring Project Design

aim.landscapetoolbox.org/design/



- Technical decisions necessary to address objectives, including:
 - Specific monitoring objectives
 - Supplemental monitoring indicators/methods
 - Study area, reporting units and stratification
 - Benchmarks for analyzing data
 - Determining sample size, sampling frequency
 - Selecting monitoring locations
- No “one size fits all” approach to design
 - Iterative process
- Design topics covered in other workshop presentations

Resource: Monitoring Design Worksheet

Design Example: Land-use Plan Effectiveness

Study Area & Reporting Units

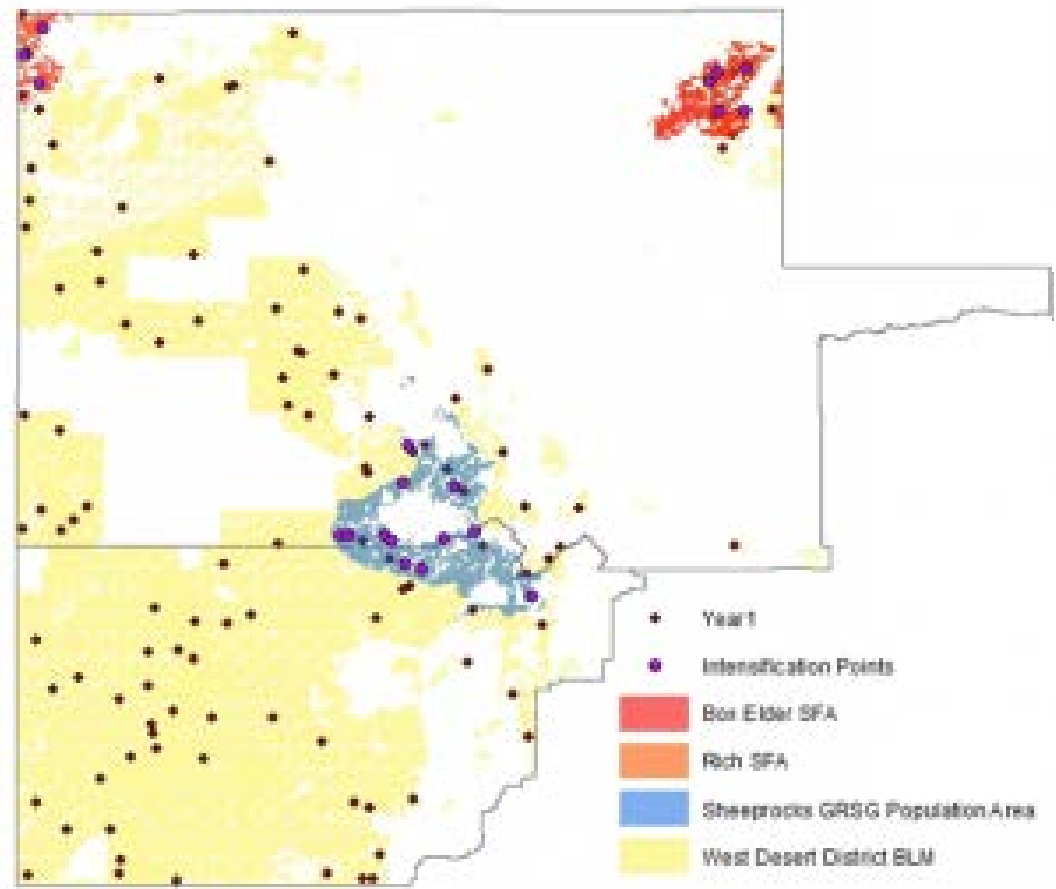
Stratification

Design – Five Years

Design Year 1

Oversample

Intensification



Data Collection

<http://aim.landscapetoolbox.org/data-collection/>

- Crew hiring and Equipment
- Training
- Sample point evaluation
- Hitch planning
- Field sampling
- Communications and emergency response planning



Resources: Equipment lists, sample point rejection criteria

Training/Calibration



- Proper training for data collectors essential for gathering high-quality data and thus for storing data in national databases
- Calibration also important for ensuring data collected consistently
- Multiple AIM core-methods trainings offered each year
- Don't neglect other necessary trainings
 - Supplemental methods
 - Other (e.g., first aid, UTV, four-wheel driving)

Quality Assurance/ Quality Control

<http://aim.landscapetoolbox.org/quality-assurance-quality-control/>



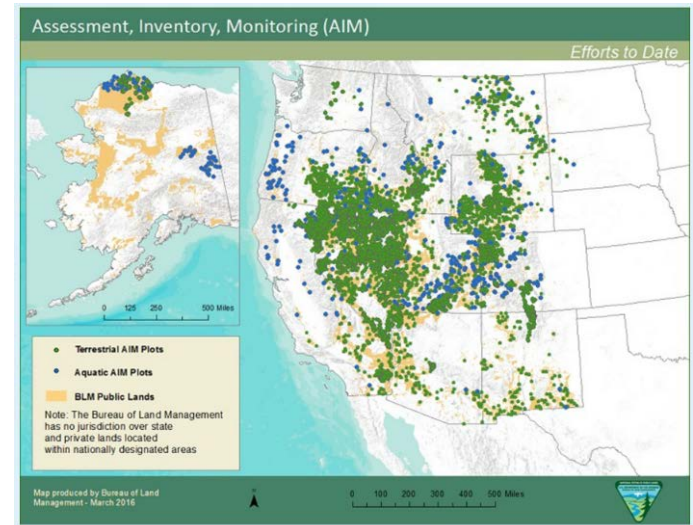
- Goal is to generate high quality information!
- Quality assurance (QA) and quality control (QC) are processes that ensure data integrity and minimize errors.
- QA/QC practices include
 - Receiving proper training in monitoring methods
 - Crew calibration
 - Using electronic data capture tools that have built-in checks for errors
 - Reviewing data before leaving a plot and throughout the season.
- QA/QC occur throughout the monitoring process.
- Everyone involved in monitoring is responsible for some portion of QA/QC.

Resource: AIM Data Management Protocol

Data Management

<http://aim.landscapetoolbox.org/data-management-project-evaluation/databases/>

- Data management – organizing/storing data so that they can be accessed and used to create information for management decisions
- Monitoring data stored locally! (e.g., DIMA)
- End of season – data also rolled up to national databases
 - TerrADat, LMF = Terrestrial Monitoring Data
 - AquADat = Aquatic Monitoring Data (pending)



Resources: AIM Data Management Protocol, Accessing AIM Data Manual, BLM Landscape Approach Data Portal

Data Management

- Data management includes more than just the monitoring data!

Data Type	Data Management Tool
Terrestrial AIM Data (field data and calibration data)	DIMA (Project and Calibration)
Plot Status (sample design and plot rejection)	Plot Tracking excel
Missing data (errors in dataset)	Missing Data/Known Errors template
Photos	-----
Description of the season, issues/concerns, successes, etc.	Implementation Summary Template

Project Evaluation

<http://aim.landscapetoolbox.org/data-management-project-evaluation/project-evaluation-revision/>

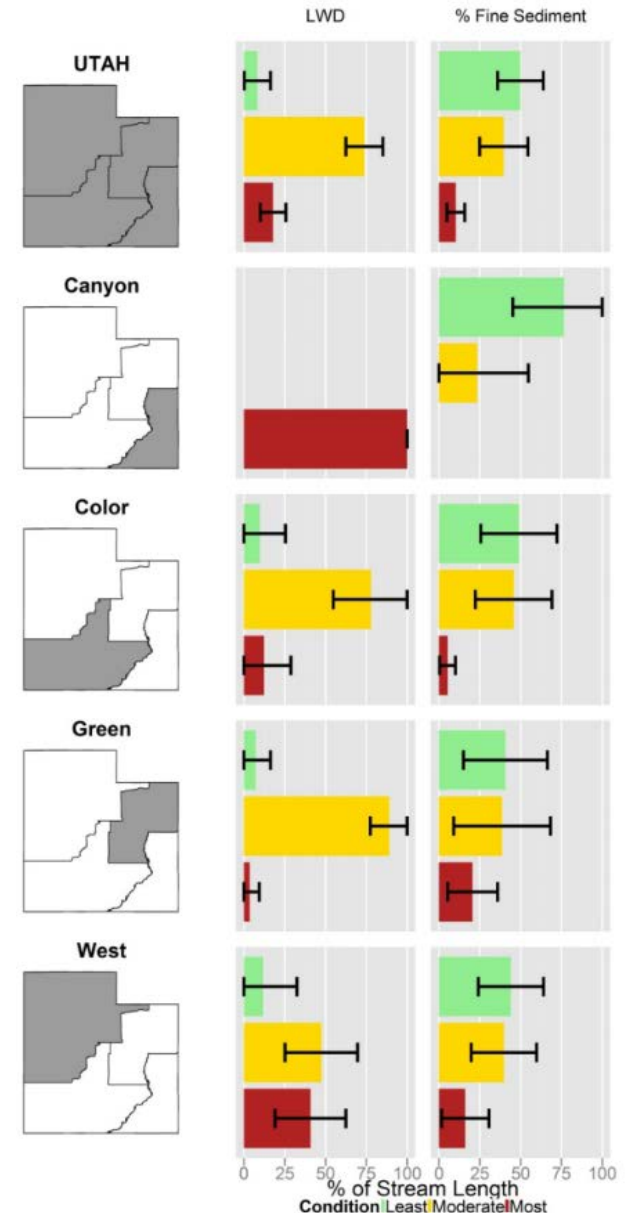
- Monitoring needs change, and monitoring efforts should too
- Evaluate monitoring program at least annually to identify issues and make necessary changes
 - Complete an annual **Implementation Summary**
 - Consult with State AIM Coordinator, NOC, Jornada, USU if issues/concerns arise
 - It is better to make changes early in the process
- Begin planning for next year!



Analysis & Reporting

<http://aim.landscapetoolbox.org/analysis-reporting/>

- Monitoring data are worthless if they're not used!
- **Analysis** is process of turning monitoring data into information to answer a question.
- **Reporting** is communicating the results of monitoring data analysis in a manner that it can be used.
- Examples/discussion throughout the workshop



Resource: Monitoring Design Worksheet

About AIM

aim.landscapetoolbox.org/learn-3/about/

- Resources to help you communicate about your AIM efforts
- AIM principles and benefits
- AIM Strategy
- Related policy
- Monitoring efforts to date

Introduction to the
ASSESSMENT, INVENTORY, and MONITORING
STRATEGY

The goal of the Assessment, Inventory, and Monitoring Strategy is to reach across programs, jurisdictions, stakeholders, and agencies to provide key information for decisionmakers that can be collected once and used many times.

IMPORTANCE OF INFORMATION

Healthy, sustainable ecosystems support the diverse multiple uses and benefits of public lands. Thus, to fulfill its multiple-use mission, it is essential for the Bureau of Land Management (BLM) to gather information to determine ecosystem conditions and how they are changing over time. This knowledge (or monitoring information) is necessary to guide and justify land uses, policy actions, and adaptive management decisions.

Consistent data that can serve many monitoring objectives and can also be aggregated for use across multiple scales of management is a valuable asset for the BLM. The BLM's Assessment, Inventory, and Monitoring (AIM) Strategy, which was completed in 2011 in coordination with other agencies, is designed to provide this information.

NEW for 2016:
aim.landscapetoolbox.org provides guidance for every step of the AIM process, from the initial planning through data collection to data analysis.

BENEFITS OF USING AIM

AIM Element	Benefits
Standardized set of core quantitative indicators and methods	Standardized measurements allow easy comparison of data collected in different places and over time. By collecting the same core data across the BLM, the data can be used for many different purposes at many different scales.
Statistically valid sampling design	Statistically valid methods used to study lands enable data to inform land management decisions at many different scales, from individual grazing allotments to ecoregion and national levels. This also allows the BLM to combine data with other agencies that use statistically valid methods.
Integration with remote sensing	Remotely capturing information (for example, using satellite imagery) gives us a bird's-eye view of conditions across the landscape. Using this information increases the efficiency of BLM data collection.
Electronic data capture and management	Once monitoring data is collected for an area, it is stored in a central database and can be easily accessed and used, saving the BLM time and money.
Implementation process	A monitoring program built on management questions and an understanding of ecosystems will provide relevant and timely information to the decisionmaker.



Resources: Video, Factsheet, many more

Concluding thoughts:

- Visit <http://aim.landscapetoolbox.org>
 - In-depth information on the implementation steps
 - Templates, Worksheets, Resources to help
 - Contact information for AIM program staff
 - Lessons learned from other AIM projects
- Start early in designing/implementing a monitoring project!