

## Chapter 3

*Implementation and  
Adaptive Management  
Framework*

## Introduction

During the life of the Approved Plan, the Bureau of Land Management (BLM) expects that new information gathered from field inventories and assessments, research, other agency studies, and other sources will update baseline data or support new management techniques and scientific principles. Further, while this Plan contains general direction and context for the entire Monument and makes decisions on specific actions for some issues (e.g., access restrictions), many management actions necessary to achieve broad-scale objectives (e.g., achieving a natural range of native vegetation associations) may require further analysis and additional planning. To the extent that such new information or actions address issues covered in the Plan, the BLM will integrate the data through a process called plan maintenance or updating. As part of this process, the BLM will review management actions and the Plan periodically to determine whether the objectives set forth in this and other applicable planning documents are being met. Where they are not being met, the BLM will consider adjustments. Where the BLM considers taking or approving actions which will alter or not conform to overall direction of the Plan, the BLM will prepare a plan amendment and environmental analysis in making its determinations and will seek public comment.

This chapter describes the expected types and levels of analysis and planning that will “step-down” broad-scale information and decisions in this Plan to site-specific actions. It also provides a framework for developing a specific monitoring and evaluation program which will measure the conditions and trends in the Monument. The information developed through the monitoring process will be used to assess management strategies and then alter decisions, change implementation, or maintain current management direction as appropriate.

This chapter is intended to provide a framework to guide implementation of planning decisions. New objectives or standards are not proposed here, but an implementation process is described which will increase the likelihood of meeting management direction and objectives described in the Plan. This is the start of this process and is intended to provide insight into expected implementation actions. It is anticipated that further refinements of this process will be necessary as implementation proceeds. This chapter is composed of four main sections:

- Time Frames for Implementation
- Linking Broad-scale Decisions and Information to Finer Levels: Subsequent Analysis and Decision Making
- Framework for Monitoring, Evaluation, and Adaptive Management.
- Consultation, Coordination, and Collaboration

## Time Frames for Implementation

Implementation of decisions made through this planning process will occur in several phases. Although the use of the word “phase” implies sequential steps, some of the phases will be implemented concurrently to reduce the time involved in making the transition from current operations to Plan decisions and directions. The various phases involved in implementation include:

- *Pending/Ongoing Actions:* Generally, any ongoing, short-term activity will not be changed as a result of new direction. Short-term activities where National Environmental Policy Act (NEPA) analysis has been completed and decisions are pending will be screened to ensure there are no conflicts with the decisions in the Approved Plan/Record of Decision. Existing, longer-term permitted activities will be brought into compliance with the decisions as described below under *Longer-Term Actions*.
- *Immediate Actions:* Actions where implementation will begin in the immediate future (i.e., within the first year) are included in this category. These include actions such as implementing off-road vehicle closures, designating primitive camping areas, initiating a public information program, establishing criteria for new outfitters and guides, and other immediate actions to implement specific decisions in the Plan. The subsequent assessment and activity planning processes described below will also need to be developed and refined in the immediate term, including setting geographic priorities for subsequent analysis and planning. The monitoring and adaptive management process will also need to be initiated, including establishing coordination efforts and priorities for monitoring and research programs.
- *Longer-Term Actions:* This phase includes actions which are needed to implement decisions over the planning horizon

(between 1-15 years). In addition to ongoing regulatory requirements, the major part of this effort will include subsequent ecosystem analysis and integrated activity planning on a finer-scale. This step-down (or hierarchical) process is designed to ensure that actions prescribed to meet broad-scale goals and objectives in this Plan consider local conditions and vice versa. The subsequent planning involved in this process will address existing, long-term permitted activities that need to be brought into compliance with plan decisions, subject to valid existing rights. The actual time frames for compliance will need to be outlined and prioritized during the *Immediate Actions* time-frame above. In addition, the monitoring and adaptive management strategy will be implemented over this longer-term phase, which may lead to changes in the Plan through an amendment or revision process that considers information specific to finer-scale conditions. This process is discussed in more detail in the sections below.

### *Linking Broad-Scale Decisions and Information to Finer Levels*

This Plan contains general direction and context for the entire Monument and makes decisions on specific actions for some issues (e.g., access restrictions). Still, many management actions necessary to achieve broad-scale objectives (e.g., achieving a natural range of native vegetation associations) may require further analysis and additional decisions. This additional analysis will:

- Validate, refine, or add-to information concerning current and historical resource conditions;
- Address issues not appropriately addressed at the broad scale;
- Prioritize restoration efforts to maximize the likelihood of meeting management goals and objectives;
- Guide the type, location, and sequence of appropriate management activities;
- Identify monitoring and research needs.

This section provides an outline of the expected types and levels of analysis and planning that will “step-down” broad-scale information and decisions in the Plan to site-specific actions. This step-down process is designed to ensure that broad-scale decisions are viewed within the context of site-specific conditions, and that site-specific decisions are made within the context of broad-scale goals and objectives.



*Pinyon (photo by Jerry Sintz)*

### Hierarchy of Analysis

Several steps are envisioned to implement the broad-level decisions made in this Plan. While these steps may occur sequentially, it is likely that they will occur simultaneously because the need for further assessment before project implementation varies in different areas. Many actions can take place immediately (as described in **Time Frames for Implementation**), while others will be considered and scheduled through subsequent assessments and planning efforts. The process envisioned includes the following steps:

- *Monument-Wide Review:* The first step toward linking decisions to finer scales is to review existing information for the Monument to help set the context and priorities for subsequent analysis and decision making. The broad overview of existing information will help identify appropriate subunits (e.g., physiographic provinces or watersheds) and establish priorities for “taking closer looks” within them. Priorities will be based on a combination of ecological priorities (i.e., considering biophysical and socio-economic resource conditions, risks to key resources, and opportunities to protect areas with, or restore them to, properly functioning condition) and collaborative priorities (i.e., existing deadlines, court mandated actions, collaborator availability to participate in subsequent analyses or actions).
- *Sub-unit Ecosystem Assessments:* The review discussed above should identify priority areas where finer-scale assessments are

considered necessary for scheduling and designing activities to achieve overall Plan objectives. Such assessments will develop a “place based” analysis that provides context for site-scale planning and actions to implement decisions (see *Subsequent Planning* below). Assessments will focus on interpreting existing information and trends and identifying information gaps. Such analysis will also help refine overall objectives or desired future conditions to the specific conditions in the sub-unit and will characterize the situation and trends in relation to the desired future condition. If the situation or trend is negative, the assessment will set the stage for identifying the management necessary to move towards desired future conditions. The *Subsequent Planning* processes described below will be significantly enhanced by the context provided in these assessments.

- *Subsequent Planning*: Based on the broad-scale objectives in the Plan, and in some cases the assessments discussed above, finer-scale planning may need to be completed in order to implement decisions. Such planning could come in the form of Landscape Plans, Activity Plans, and/or Project-level Plans.

Where the sub-unit ecosystem assessments indicate a need (e.g., an assemblage of issues throughout the sub-unit that could be most efficiently resolved at this scale), landscape-level planning (i.e., integrated activity plans corresponding to the sub-unit assessments) may be done. The purpose of operational planning at the landscape (e.g., watershed, physiographic province, or other ecosystem unit) level is to determine the mix of activities and projects needed to resolve local issues while meeting the broad-scale objectives in this Plan. This planning level is important in these situations because it provides for the development of projects and activities for different programs in conjunction with one another, allowing more effective consideration of cumulative effects. For example, planning for recreation, restoration, and grazing (i.e., incorporating allotment management plans into the integrated activity plans) can be done for a sub-unit to implement integrated decisions and projects. Planning at this level can be a key component of the adaptive management process (described below), because it will incorporate new information as applied across the Monument and could be modified as monitoring and evaluation suggest changes.

Where planning at the broader sub-unit level is not feasible or necessary, activity plans (i.e., planning specific to a particular resource program, such as a Fee Management Plan or a Special Recreation Management Plan) and site-specific project planning will also be used to implement decisions. Under the hierarchy of analysis and planning outlined above, the site-specific scale of analysis acts as a safety net for those issues overlooked or appropriately excluded at broader scales, and provides site-specific information for determining effects. This level of analysis has been used extensively since the inception of NEPA, and has been proven successful at identifying and addressing local issues and concerns. However, as a stand-alone assessment process, it has often been ineffective at addressing broad-scale issues. The site-specific analysis process will be significantly enhanced where context from broader scales (e.g., watershed or other ecosystem unit) of analysis can be brought to bear for cumulative effects.

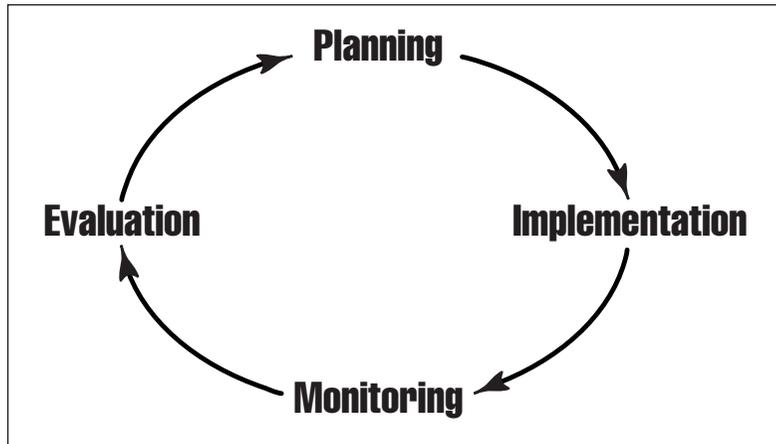
### Compliance with the National Environmental Policy Act

The Approved Monument Management Plan/Record of Decision provides the compliance with NEPA for the broad-scale decisions in this Plan, although some implementation actions may require additional NEPA analysis. The BLM will continue to prepare Environmental Assessments (EAs) and Environmental Impact Statements (EISs) where appropriate as part of the planning and decision making processes described above.

### *Framework for Monitoring, Evaluation, and Adaptive Management*

Adaptive management, as defined here, is a formal process for continually improving management policies and practices by learning from the outcomes of operational programs and new scientific information. Under adaptive management, plans and activities are treated as working hypotheses rather than final solutions to complex problems.

This approach builds on common sense, experimentation, and learning from experience, which is then used in the implementation of plans. The process generally includes four phases: planning,



*Adaptive Management Process*

implementation, monitoring, and evaluation. The planning and implementation phases are discussed above. This section focuses on monitoring and evaluation, which will lead to changes in planning and implementation activities.

This section provides a framework to develop a specific monitoring and evaluation program which will measure the conditions and trends in the Monument. The information developed through the monitoring process will be used to assess management strategies, alter decisions (which may require a plan amendment), change implementation, or maintain current management direction.

## Monitoring

An initial step in developing a monitoring strategy is to define the questions which need to be answered in order to evaluate the attainment of broad-scale management goals and objectives in the Plan. These questions can be used to focus the monitoring strategy on appropriate issues and avoid gathering information which has limited value in answering pertinent questions. The questions will also be used to help design a system that can be implemented within agency budgets.

Technical and scientific staffs, in consultation with managers, need to play a key role in designing a monitoring strategy. The first step will be to select key monitoring elements and indicators that can be statistically sampled and can provide desired data at a reasonable cost. A standard core set of data elements will be collected. Core

data, including data necessary to evaluate achievement of Utah's Standards and Guides for Rangeland Health, are the minimum set of variables to be collected at all scales. Standardized measurement and reporting protocols will be determined because of the essential need for consistency. Where possible, monitoring protocols will be designed to integrate existing monitoring efforts, and will address multiple questions. Also, the design will allow flexibility to add data elements in order to answer new questions/objectives raised in subsequent sub-unit or site-specific planning.

Determining the specific monitoring approach for any question depends on knowledge of detailed information on existing conditions. For example, trend assessment requires first gathering baseline or status information. Projects for collection of baseline information are being conducted in the Monument currently. Landscape scale vegetation assessments, overviews for paleontology, history and archaeology, Monument-wide surveys for special status species, collection of meteorological data at weather stations, and visitor use inventories are just a few of the multi-year projects that have occurred or are continuing. Data from these projects are integral to monitoring trends. A monitoring strategy must also identify other techniques (remote sensing, sample-based studies, modeling) that may be necessary to get a complete picture of structure and pattern of Monument resources. Successful implementation of large-scale monitoring may require a combination of approaches.

As mentioned above, the design of the monitoring program will allow flexibility to add data collection needs identified through the ecosystem assessments and planning processes. Ecosystem assessments and planning, however, should also incorporate monitoring and evaluation information to ensure that the latest information is used in management actions.

## Evaluation

Evaluation is the next key component of the adaptive management process. Evaluation is the process in which the plan and monitoring data are reviewed to see if management goals and objectives are being met and if management direction is sound. This portion of the adaptive management strategy examines the monitoring data and uses it to draw conclusions on whether management actions are meeting stated goals and objectives and, if not, why. The conclusions are used to make recommendations on

whether to continue current management strategies or to make changes in management practices to meet Plan goals and objectives.

An evaluation schedule needs to be set in advance to ensure that: evaluations are conducted at intervals that allow for corrections in management direction before crises develop; monitoring data is gathered in advance to be used in the evaluation process; and the appropriate evaluation team is assembled to conduct the evaluation. Management evaluations made too frequently will not detect changes in ecosystems because cost-effective monitoring systems cannot detect changes at this scale. On the other hand, if ecosystem management evaluations are not conducted, or are delayed for too long, irreversible changes may take place without detection. To avoid this problem, two periodic management evaluations are proposed. The first is an implementation evaluation, conducted every two years, that will compare expected outcomes of projects to actual results. This evaluation will ensure that monitoring results are incorporated into ongoing assessments and planning. The second is an evaluation conducted approximately every five to ten years comparing the overall rate and degree of movement towards broad-scale objectives and desired future conditions. These evaluation steps will be carried out by the Monument Science Team, in consultation with the Grand Staircase-Escalante National Monument (GSENM) Advisory Committee.

### Adaptive Management

The evaluation process will generate new information that needs to be incorporated into management actions. Ongoing sub-unit assessments and integrated activity planning will also uncover new information that can be used to make changes to projects, strategies, objectives, and monitoring elements. New information may result in any of the following:

- Concluding that management actions are moving the landscape towards the broad-scale objectives in the Plan. In this case, management actions are affirmed and may not need to be adjusted.
- Concluding that further research needs to be initiated or that actions must be adjusted to more efficiently achieve broad-scale objectives of the Plan. If new information or research demonstrates better ways to achieve plan objectives, changes in activity planning and project implementation can be made (i.e., plan maintenance). NEPA analysis may be required depending

- upon the nature of the management changes.
- Concluding that broad-scale objectives should be altered based on new information. If the new information indicates reconsideration of Plan objectives, a plan amendment could be considered to reexamine targeted future conditions and pathways to reach those conditions.



*Hackberry Canyon (photo by Jerry Sintz)*

### Role of the Management Science Team and the GSENM Advisory Committee

The Management Science Team (comprised of the Assistant Monument Managers for Biological Sciences, Cultural and Earth Sciences, and Visitor Services) will be responsible for developing monitoring and adaptive management protocols and ensuring that

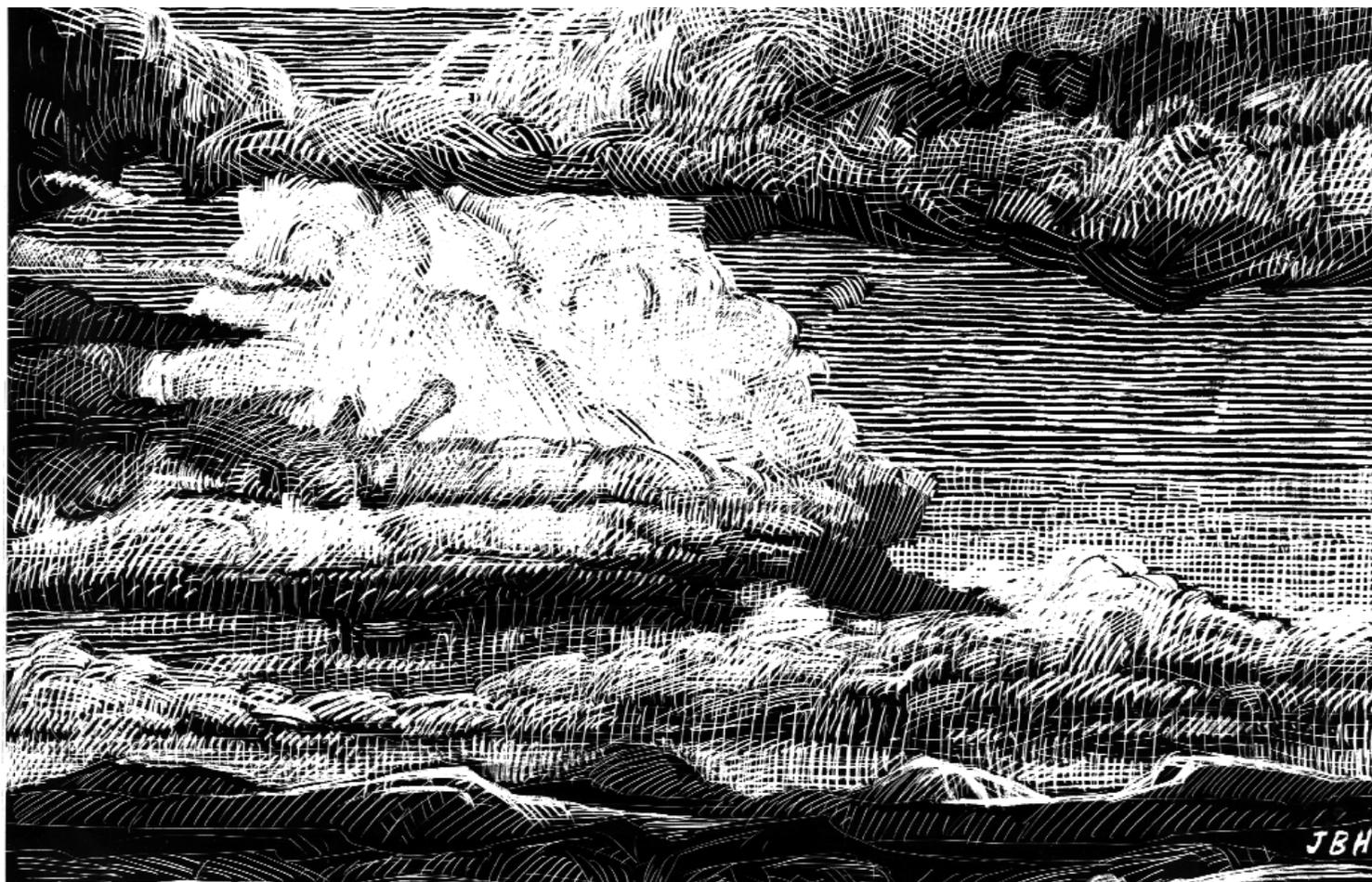
documentation is sufficient to facilitate feedback into the adaptive management process. This team will also be responsible for ensuring that monitoring results and other new information (based on sub-unit assessments) are compiled and evaluated according to the two evaluation phases discussed above.

The credibility of an adaptive management process rests in part on the routine application of an outside check on the use of technical and scientific information, including monitoring. Independent reviews can provide verification that plans, evaluation, and changes in management strategy are consistent with current scientific concepts. The GSENM Advisory Committee discussed in Chapter 2 of this Plan will be used in this role to evaluate compiled monitoring data in the evaluation phases discussed above, and will make recommendations to management regarding changes to projects, strategies or objectives. The majority of the committee

members will be scientists, reflecting the Advisory Committee's science focus. There will be eight scientists representing the areas of archaeology, paleontology, geology, botany, wildlife biology, history, social science, and systems ecology. In addition, there will be seven members representing other agencies, local communities, interest groups, and users of the Monument.

### *Consultation, Coordination, and Collaboration*

This Plan has been prepared with close coordination and collaboration with other Federal agencies; state, local and tribal governments; and other interested parties. Collaborative approaches to implementation are necessary to assure success. While the BLM retains the responsibility and authority for land



### Implementation and Adaptive Management Framework

management decisions, these decisions are more meaningful, effective, and longer lasting if done in a collaborative and open process. Therefore, close working relationships between management and regulatory agencies need to be developed and maintained. In addition, others outside of the BLM (e.g., state and local agencies, universities, volunteers) should be involved in subsequent analysis, monitoring, evaluation, research, and adaptive management processes.

A major component that will be used to involve other agencies and the public in subsequent analysis, monitoring, research and adaptive management is the GSENM Advisory Committee described above. Other efforts will include forming partnerships to complete assessments, establish baseline data, monitor, and modify management actions as a result of these processes.

#### *Relationship to Other Agency Plans*

Local, State, other Federal agencies, and Indian tribes in the immediate region routinely prepare plans that establish goals and direction for land use, economic development, or resource management within their jurisdictions. Many of

these plans bear directly on or are significantly affected by BLM plans for managing public lands. Under this Plan, BLM will collaborate with such agencies and tribes on planning implementation and achieving consistency with other approved plans to the extent that they are determined consistent with federal laws, regulations, and policies. The principles of community-based planning will be employed where timing, mutual interest, and the availability of resources are appropriate to address economic, ecologic, and land use issues of concern. The following list of plans relates to the management of lands in or around the Monument and will be given consideration as implementation proceeds.

- Bryce Canyon National Park General Management Plan
- Capitol Reef National Park General Management Plan
- Glen Canyon National Recreation Area General Management Plan
- Dixie National Forest Land and Resource Management Plan
- Garfield County General Plan
- Kane County General Plan
- Kane County Water Conservancy Master Plan