

**Establishment of the Grand Staircase-Escalante National Monument by the President of the United States of America September 18, 1996**

**A PROCLAMATION**

The Grand Staircase-Escalante National Monument's vast and austere landscape embraces a spectacular array of scientific and historic resources. This high, rugged, and remote region, where bold plateaus and multi-hued cliffs run for distances that defy human perspective, was the last place in the continental United States to be mapped. Even today, this unspoiled natural area remains a frontier, a quality that greatly enhances the monument's value for scientific study. The monument has a long and dignified human history: it is a place where one can see how nature shapes human endeavors in the American West, where distance and aridity have been pitted against our dreams and courage. The monument presents exemplary opportunities for geologists, paleontologists, archeologists, historians, and biologists.

The monument is a geologic treasure of clearly exposed stratigraphy and structures. The sedimentary rock layers are relatively undeformed and unobscured by vegetation, offering a clear view to understanding the processes of the earth's formation. A wide variety of formations, some in brilliant colors, have been exposed by millennia of erosion. The monument contains significant portions of a vast geologic stairway, named the Grand Staircase by pioneering geologist Clarence

Dutton, which rises 5,500 feet to the rim of Bryce Canyon in an unbroken sequence of great cliffs and plateaus. The monument includes the rugged canyon country of the upper Paria Canyon system, major components of the White and Vermilion Cliffs and associated benches, and the Kaiparowits Plateau. That Plateau encompasses about 1,600 square miles of sedimentary rock and consists of successive south-to-north ascending plateaus or benches, deeply cut by steep-walled canyons. Naturally burning coal seams have scorched the tops of the Burning Hills brick-red. Another prominent geological feature of the plateau is the East Kaibab Monocline, known as the Cockscomb. The monument also includes the spectacular Circle Cliffs and part of the Waterpocket Fold, the inclusion of which completes the protection of this geologic feature begun with the establishment of Capitol Reef National Monument in 1938 (Proclamation No. 2246, 50 Stat. 1856). The monument holds many arches and natural bridges, including the 130-foot-high Escalante Natural Bridge, with a 100 foot span, and Grosvenor Arch, a rare "double arch." The upper Escalante Canyons, in the northeastern reaches of the monument, are distinctive: in addition to several major arches and natural bridges, vivid geological features are laid bare in narrow, serpentine canyons, where erosion has exposed sandstone and shale deposits in shades of red, maroon, chocolate, tan, gray, and white. Such diverse objects make the monument outstanding for purposes of geologic study.

The monument includes world class paleontological sites. The Circle Cliffs reveal remarkable specimens of petrified wood, such as large unbroken logs exceeding 30 feet in length. The thickness, continuity and broad temporal distribution of the Kaiparowits Plateau's stratigraphy provide significant opportunities to study the paleontology of the late Cretaceous Era. Extremely significant fossils, including marine and brackish water mollusks, turtles, crocodylians, lizards, dinosaurs, fishes, and mammals, have been recovered from the Dakota, Tropic Shale and Wahweap Formations, and the Tibbet Canyon, Smoky Hollow and John Henry members of the Straight Cliffs Formation. Within the monument, these formations have produced the only evidence in our hemisphere of terrestrial vertebrate fauna, including mammals, of the Cenomanian-Santonian ages. This sequence of rocks, including the overlying Wahweap and Kaiparowits formations, contains one of the best and most continuous records of Late Cretaceous terrestrial life in the world.

Archeological inventories carried out to date show extensive use of places within the monument by ancient Native American cultures. The area was a contact point for the Anasazi and Fremont cultures, and the evidence of this mingling provides a significant opportunity for archeological study. The cultural resources discovered so far in the monument are outstanding in their variety of cultural affiliation, type and distribution. Hundreds of recorded sites include rock art panels, occupation sites, campsites and

granaries. Many more undocumented sites that exist within the monument are of significant scientific and historic value worthy of preservation for future study.

The monument is rich in human history. In addition to occupations by the Anasazi and Fremont cultures, the area has been used by modern tribal groups, including the Southern Paiute and Navajo. John Wesley Powell's expedition did initial mapping and scientific field work in the area in 1872. Early Mormon pioneers left many historic objects, including trails, inscriptions, ghost towns such as the Old Paria townsite, rock houses, and cowboy line camps, and built and traversed the renowned Hole-in-the-Rock Trail as part of their epic colonization efforts. Sixty miles of the Trail lie within the monument, as does Dance Hall Rock, used by intrepid Mormon pioneers and now a National Historic Site.

Spanning five life zones from low-lying desert to coniferous forest, with scarce and scattered water sources, the monument is an outstanding biological resource. Remoteness, limited travel corridors and low visitation have all helped to preserve intact the monument's important ecological values. The blending of warm and cold desert floras, along with the high number of endemic species, place this area in the heart of perhaps the richest floristic region in the Intermountain West. It contains an abundance of unique, isolated communities such as hanging gardens, tinajas, and rock crevice, canyon bottom, and dunal pocket communities, which have provided refugia for many ancient

plant species for millennia. Geologic uplift with minimal deformation and subsequent downcutting by streams have exposed large expanses of a variety of geologic strata, each with unique physical and chemical characteristics. These strata are the parent material for a spectacular array of unusual and diverse soils that support many different vegetative communities and numerous types of endemic plants and their pollinators. This presents an extraordinary opportunity to study plant speciation and community dynamics independent of climatic variables. The monument contains an extraordinary number of areas of relict vegetation, many of which have existed since the Pleistocene, where natural processes continue unaltered by man. These include relict grasslands, of which No Mans Mesa is an outstanding example, and pinon-juniper communities containing trees up to 1,400 years old. As witnesses to the past, these relict areas establish a baseline against which to measure changes in community dynamics and biogeochemical cycles in areas impacted by human activity. Most of the ecological communities contained in the monument have low resistance to, and slow recovery from, disturbance. Fragile cryptobiotic crusts, themselves of significant biological interest, play a critical role throughout the monument, stabilizing the highly erodible desert soils and providing nutrients to plants. An abundance of packrat middens provides insight into the vegetation and climate of the past 25,000 years and furnishes context for studies of evolution and climate change. The wildlife of the monument is characterized

by a diversity of species. The monument varies greatly in elevation and topography and is in a climatic zone where northern and southern habitat species intermingle. Mountain lion, bear, and desert bighorn sheep roam the monument. Over 200 species of birds, including bald eagles and peregrine falcons, are found within the area. Wildlife, including neotropical birds, concentrate around the Paria and Escalante Rivers and other riparian corridors within the monument.

Section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431) authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.

NOW, THEREFORE, I, WILLIAM J. CLINTON, President of the United States of America, by the authority vested in me by section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), do proclaim that there are hereby set apart and reserved as the Grand Staircase-Escalante National Monument, for the purpose of protecting the objects identified above, all lands and interests in lands owned or controlled by the United States within the

boundaries of the area described on the document entitled "Grand Staircase-Escalante National Monument" attached to and forming a part of this proclamation. The Federal land and interests in land reserved consist of approximately 1.7 million acres, which is the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of this monument are hereby appropriated and withdrawn from entry, location, selection, sale, leasing, or other disposition under the public land laws, other than by exchange that furthers the protective purposes of the monument. Lands and interests in lands not owned by the United States shall be reserved as a part of the monument upon acquisition of title thereto by the United States.

The establishment of this monument is subject to valid existing rights.

Nothing in this proclamation shall be deemed to diminish the responsibility and authority of the State of Utah for management of fish and wildlife, including regulation of hunting and fishing, on Federal lands within the monument.

Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the national monument shall be the dominant reservation.

The Secretary of the Interior shall manage the monument through the Bureau of Land Management, pursuant to applicable legal authorities, to implement the purposes of this proclamation. The Secretary of the Interior shall prepare, within 3 years of this date, a management plan for this monument, and shall promulgate such regulations for its management as he deems appropriate. This proclamation does not reserve water as a matter of Federal law. I direct the Secretary to address in the management plan the extent to which water is necessary for the proper care and management of the objects of this monument and the extent to which further action may be necessary pursuant to Federal or State law to assure the availability of water.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this eighteenth day of September, in the year of our Lord nineteen hundred and ninety-six, and of the Independence of the United States of America the two hundred and twenty-first.

William J. Clinton

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**Act of June 18, 1906, 16 U.S.C. 431-433  
(Popularly known as the Antiquities Act of  
1906)**

The following is the text of the Antiquities Act of 1906, under the authority of which President Clinton established Grand Staircase-Escalante National Monument.

**16 U.S.C. ' 431  
National monuments; reservation of lands;  
relinquishment of private claims:**

The President of the United States is authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected. When such objects are situated upon a tract covered by a bona fide unperfected claim or held in private ownership, the tract, or so much thereof as may be necessary for the proper care and management of the object, may be relinquished to the Government, and the Secretary of the Interior is authorized to accept the relinquishment of such tracts in behalf of the Government of the United States.

**16 U.S.C. ' 431a  
Limitation on further extension or  
establishment of national monuments in  
Wyoming:**

No further extension or establishment of national monuments in Wyoming may be undertaken except by express authorization of Congress.

**INTRODUCTION**

This appendix addresses the implementation of decisions that would be approved in the Record of Decision. Processes for implementation, monitoring, and adaptive management are included. This appendix is not intended to be a plan, but rather a framework to guide implementation of planning decisions. New objectives or standards are not proposed here, but an implementation process is described which would increase the likelihood of meeting management direction and objectives described in the Proposed 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 would be necessary as implementation proceeds. This appendix is composed of four main sections:

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

**TIME FRAMES FOR IMPLEMENTATION**

Implementation of decisions made through this planning process would occur in several phases. Although the use of the word *phase* implies sequential steps, some of the phases would 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 would 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 would be screened to ensure there are no conflicts with the decisions in the Approved Plan/Record of Decision. Existing, longer-term permitted activities would be brought into compliance with the decisions as described below under *Longer-Term Actions*.
- \$ *Immediate Actions:* Actions where implementation would 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 would 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 would 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 would 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 would 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 would need to be outlined and prioritized during the *Immediate Actions* time-frame above. In addition, the monitoring and adaptive management strategy would 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 and Framework for Monitoring, Evaluation and Adaptive Management**).

## CONSULTATION, COORDINATION, AND COLLABORATION

This Proposed Plan/Final Environmental Impact Statement (FEIS) 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 would be necessary to assure success. While the Bureau of Land Management (BLM) retains the responsibility and authority for land management decisions, these decisions would be more meaningful, effective, and longer lasting if done in a collaborative and open process. Therefore, close working relationships between management and regulatory agencies would 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.

Efforts to involve other agencies and the public in subsequent analysis, monitoring, research and adaptive management are included in the sections that follow and in the **Collaborative Management** section in Chapter 4 of this Plan. These efforts include intergovernmental participation through the GSENM Advisory Committee (see Chapter 2 for full discussion) which would make recommendations on strategies to meet management objectives. It also includes forming partnerships in efforts to complete assessments, establish baseline data, monitor, and modify management actions as a result of these processes.

## LINKING BROAD-SCALE DECISIONS AND INFORMATION TO FINER LEVELS: SUBSEQUENT ANALYSIS AND DECISION MAKING

This Plan/FEIS 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 would:

- \$ 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 would step-down from 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.

## 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 would occur simultaneously since 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 would 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 would help identify appropriate subunits (e.g., physiographic provinces or watersheds) and establish priorities for taking closer looks within them. Priorities would 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 would develop a place based analysis that provides context for site-scale planning and actions to implement decisions (see *Subsequent Planning* below). Assessments would focus on interpreting existing information and trends and identifying information gaps. Such analysis would also help refine overall objectives or desired future conditions to the specific conditions in the sub-unit and would characterize the situation and trends in relation to the desired future condition. If the situation or trend is negative, the assessment would set the stage for identifying the management necessary to move towards desired future conditions. The *Subsequent Planning* processes described below would 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 would 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 would 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

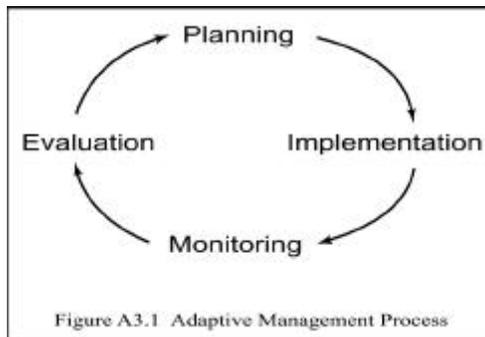
excluded at broader scales, and provides site-specific information for determining effects. This level of analysis has been used extensively since the inception of NEPA, and has been proven successful at identifying and addressing local issues and concerns. However, as a stand-alone assessment process, it has often been ineffective at addressing broad-scale issues. The site-specific analysis process would 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 FEIS for the Monument Plan provides the compliance with NEPA for the broad-scale decisions that would be made in the Record of Decision. It does not replace the requirement to comply with NEPA for implementation actions. The BLM would 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 to modify implementation of plans. The process generally includes four phases: planning, implementation, monitoring, and evaluation (see Figure A3.1). The planning and implementation phases are discussed above. This section focuses on monitoring and evaluation, which would lead to changes in planning and implementation activities.



This section provides a framework to develop a specific monitoring and evaluation program which would measure the conditions and trends in the Monument. The information developed through the monitoring process would be used to assess management strategies, alter decisions, 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 would 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 would 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 would 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 would be determined because of the essential need for consistency.

Where possible, monitoring protocols would be designed to integrate existing monitoring efforts, and would address multiple questions. Also, the design would 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 would 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 would 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 a bi-annual implementation evaluation comparing expected outcomes of projects to actual results and to 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 would be carried out by the Monument Science Team, in consultation with the GSENM Advisory Committee (discussed below).

### **Adaptive Management**

The evaluation process discussed above would generate new information that needs to be incorporated into management actions. Ongoing sub-unit assessments and integrated activity planning would 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.

### **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) would 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 would 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 would be used in this role to evaluate compiled monitoring data in the evaluation phases discussed above, and would make recommendations to management regarding changes to projects, strategies or objectives. The majority of the committee members would be scientists, reflecting the Advisory Committee's science focus. There would be eight scientists representing the areas of archaeology, paleontology, geology, botany, wildlife biology, history, social science, and systems ecology. In addition, there would be seven members representing other agencies, local communities, interest groups, and users of the Monument.

## INTRODUCTION

This appendix is a compilation of the standard procedures for mitigating surface disturbing activities that have been described throughout this Plan. It is designed to provide an understanding of how proposed mitigation in this Plan would apply to specific projects or proposals. These standards are not intended to describe the criteria used to determine whether projects would be approved. Instead, they discuss standard procedures for locating, designing, and stipulating projects where they could be allowed. These standards are general in nature, and do not necessarily cover all concerns or issues that may need to be addressed in specific National Environmental Policy Act (NEPA) documents. Site-specific stipulations would be developed as part of the permitting process for any project authorization or land use/restoration activity.

## PROJECT-LEVEL NEPA DOCUMENTATION AND INVENTORIES

All proposed surface disturbing activities will be evaluated using NEPA and associated Bureau of Land Management/Monument Management guidance. This process requires that the project site be surveyed for potential impacts to resources (discussed below) and that an interdisciplinary approach be used to analyze and document such impacts. Monument staff with primary NEPA compliance responsibilities will review the project with managers, and document NEPA compliance prior to initiating or approving any surface disturbance.

The Monument Plan calls for an on-going inventory, assessment, and monitoring process which would continue to identify and document the presence of sensitive resources. The results of these processes would be employed during project-level NEPA documentation.

## MAJOR RESOURCES OF CONCERN

This section includes a listing of major resources within the Monument that should be given careful attention through a site inventory at any proposed project or activity site. Site inventories would be conducted by qualified resource specialists for each resource. If such resources are found at a site, actions would be taken as described below for each resource. Additional actions to protect resources could be identified through the NEPA process.

**Geology:** If geologic hazards or sensitive geomorphologic features (e.g., arches, natural bridges) are identified during site inventories, the project would be moved or modified to prevent conflicts or damage.

**Paleontology:** Areas found to have unique paleontological resources would be avoided. In other cases where ubiquitous fossils are present, samples may be taken to record their presence and the proposed activity may be allowed. Measures would be taken to minimize impacts on the remaining paleontological resources.

## **Cultural (Archaeological and Historic)**

**resources:** In the event that archaeological or historic artifacts are identified during site inventories, the location of the proposed project would be moved to avoid impacts. Where avoidance is not possible, other measures to protect the sensitive resource (e.g., construction of barriers, interpretation) would be used. Efforts to excavate and curate the resource could be taken as a last resort. Consultation with appropriate Native American Indian communities, and/or the State Historic Preservation Officer will be required. Consultation with local communities will also be a priority.

**Riparian:** Specific restrictions on projects in riparian areas include:

- C New recreation facilities would be prohibited in riparian areas, except for small signs for resource protection.
- C Trails would be kept out of riparian areas wherever possible. Where this is not possible, or where a trail is necessary to prevent the proliferation of social trails, trails would be designed to minimize impacts by placing them away from streams, using soil stabilization structures to prevent erosion, and planting native plants in areas where vegetation has been removed.
- C All other projects would need to avoid riparian areas wherever possible.
- C Vegetation restoration treatments would not be allowed in these areas, unless needed for removal of noxious weed species or restoration of disturbed sites.

**Soils (including biological soil crusts):** If sensitive soil resources are identified, project locations or design would be modified to minimize impacts to sensitive soil crusts.

**Fish and Wildlife:** If sensitive wildlife or wildlife habitat is identified, the location of the proposed project may be moved or the project modified to reduce impacts. Seasonal closures or restrictions may be required. Non-electrocution standards for raptors on all new and reconstructed powerlines would be required. Standards for protection of special status species (discussed below) would be required.

**Vegetation (including hanging gardens and relict plant communities):** If sensitive vegetation is identified, sites may be moved to avoid impacts, or project design modified to reduce impacts. Standards for protection of special status plant species (discussed below) would be required. Specific restrictions on projects include:

- C No facilities and surface disturbance would be allowed in hanging garden or relict plant areas.
- C No vegetation restoration methods would be allowed in hanging gardens or relict plant areas unless needed for noxious weed removal.
- C Use of certain types of machinery is prohibited in the Primitive Zone as described in the Vegetation Restoration Methods section of Chapter 2.
- C Chaining and pushing would only be allowed in limited circumstances after wildfires (not for management ignited fires) as described in the **Vegetation Restoration Methods** section of Chapter 2.

**Special Status Animal and Plant Species:** In cases where special status species may be affected by a project, the project would be relocated or modified to avoid species or their habitat in consultation with the United States Fish and Wildlife Service (USFWS). Specific restrictions include:

- C Surface disturbing projects or activities (such as designated fuelwood cutting areas) would not be allowed in identified special status plant populations.
- C Surface disturbing research would generally not be allowed in special status species habitat, except where deemed appropriate in consultation with the USFWS.
- C Surface disturbing projects or activities would not be allowed within 2 mile of Mexican spotted owl nests or within 1 mile of peregrine falcon nests unless USFWS consultation shows no impacts would occur.
- C Surface disturbing projects or activities would not be allowed in areas of known bald eagle roost sites unless consultation with the USFWS shows no impacts would occur.
- C No designated climbing areas would be allowed within known sensitive species nesting areas.
- C Use of chemical substances that may affect the Colorado pikeminnow or the razorback sucker downstream may not be used.

**Water Resources:** Impacts to water resources would need to be assessed for all projects. Specific restrictions include:

- C Water developments could only be used when beneficial to Monument resources.
- C Water developments could not jeopardize or de-water springs or streams.
- C Water could not be diverted out of the Monument (exceptions could be made for local community culinary needs if the applicant demonstrates no effect on Monument resources).
- C Water quality protection measures would be required for all projects, including subsequent monitoring.

**Air Quality:** All specific proposals would be reviewed for compliance with existing laws and policies regarding air quality and would be designed not to degrade existing quality. Specific procedures include:

- C Coordinating with the Utah Department of Environmental Quality if an emission permit is required.
- C Management ignited fires must comply with the State of Utah Interagency Memorandum of Understanding requirements to minimize air quality impacts from resulting particulates. This procedure requires obtaining an open burning permit from the State prior to conducting a management ignited fire.

**OTHER CONSIDERATIONS**

**Commercial Filming:** Permits for commercial filming must meet **A** minimum impact standards listed in the **Commercial Filming** section of Chapter 2.

**Floodplains:** No projects or activities resulting in permanent fills or diversions would be allowed in Federal Emergency Management Agency designated special flood hazard areas.

**Monument Facilities Master Plan:** All projects, facilities, and signs must be consistent with the Monument Interpretive Plan, the Monument Facilities Master Plan, and the Monument Architectural and Landscape Theme (all in the process of development). The Monument Facilities Master Plan would address compliance with the Americans with Disabilities Act of 1973, the Rehabilitation Act of 1973, and the Architectural Barriers Act of 1968.

**Native Plant Policy:** Native plants would be used as a priority for all projects in the Monument. There are limited, emergency situations where it may be necessary to use non-native plants in order to protect Monument resources (i.e., to stabilize soils and displace noxious weeds). This use could be allowed in the following circumstances:

- C The use complies with vegetation objectives, Executive Order 11312, and the Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah.
- C Short-lived species (i.e., nurse crop species) used in combination with native species to

facilitate the ultimate establishment of native species

- C Non-natives would not be used to increase forage for livestock or wildlife.
- C Monitoring plots must be established to document changes in vegetation structure and composition.

**Reseeding After Fires:** Each fire would be evaluated on a case-by-case basis to determine the appropriate actions to meet the established vegetation management objectives, including the following considerations:

- C Areas that had little diversity and little potential for noxious weed invasions would be seeded exclusively with native species.
- C Areas of low diversity and high potential for noxious weed invasion would most likely be seeded, and non-native/native seed mixes could be used if consistent with the non-native plant policy.
- C The use of aircraft in reseeded operations could be allowed in areas as appropriate (timing would be evaluated to eliminate conflicts with raptor species).

**Restoration/Revegetation:** Each project and area must be evaluated to determine appropriate restoration or revegetation strategies. General guidelines include:

- C Restoration would be the goal wherever possible.
- C Species used in both restoration and revegetation must comply with the non-native plant policy described above.
- C Revegetation strategies would be used in areas of heavy visitation, where site stabilization is desired.

- C Restoration/revegetation provisions would be included in all surface disturbing projects including provisions for post restoration monitoring of the area. Costs for these activities would be included in the overall cost of the project.
- C Priority for restoration and revegetation would be given to projects where Monument resources are being affected.

**Rights-of-Way:** The following criteria apply to the management of all rights-of way in the Monument where they are allowed:

- C All new and reconstructed utility lines (including powerlines up to 34.5 kilovolts) would be buried unless: visual quality objectives can be met without burying; geologic conditions make burying infeasible; or burying would produce greater long-term site disturbance.
- C All reconstructed and future powerlines must meet non-electrocution standards for raptors. If problems with existing powerlines occur, corrective measures would be taken.
- C All new powerlines would be constructed using non-reflective wire. Steel towers would be constructed using galvanized steel. Powerlines would not be high-lined unless no other location exists.
- C Strobe lights would not be allowed at any communication site. Other methods would be used to meet aircraft safety requirements.
- C Communication site plans would be prepared for all existing sites before any new uses or changes in use occur.
- C A Monument-wide feasibility study would be prepared to determine the most appropriate location(s) for new communication sites.

- C Only one access route to private land parcels would be authorized unless public safety or local ordinances warrant additional routes.
- C Private land owners would be required to coordinate the development of access routes across public lands in order to prevent a proliferation of routes.

**Route Maintenance:** Most routes would be maintained within the existing disturbance, except as provided for in the **Transportation and Access** section of Chapter 2. Erosion control structures may be necessary during or after maintenance activities.

**Visual Resources:** All proposed actions must consider the importance of the visual values and must minimize the impacts the project may have on these values. All projects must be designed to be unobtrusive and follow these procedures:

- C The visual resource contrast rating system would be used as a guide to analyze potential visual impacts of all proposed actions. Projects must be designed to mitigate impacts and conform to the assigned Visual Resource Management (VRM) class.
- C Natural or natural appearing materials would be used as a priority
- C Restoration and revegetation objectives must be met.
- C The Monument manager may allow temporary projects, such as research projects, to exceed VRM standards if the project terminates within two years of initiation. Phased mitigation may be required during the project to better conform with prescribed VRM standards.
- C Existing facilities would be brought into VRM class conformance to the extent

practicable when the need or opportunity arises, such as during reconstruction.

**Wild and Scenic Rivers:** All proposed actions must be evaluated to determine potential impacts on outstandingly remarkable values for suitable river segments. Projects would be relocated or modified to avoid impacts to identified outstandingly remarkable values.

**Wilderness Concerns (including Wilderness Study Areas (WSAs) and areas with Wilderness Character):** Existing WSAs would be managed under the BLM's Interim Management Policy and Guidelines for Lands Under Wilderness Review.

Areas that were found to have wilderness characteristics during the BLM's 1999 reinventory would not be managed as WSAs, unless designated as WSAs under the Section 202 Planning Process. In the meantime, the BLM would continue to give careful consideration before acting affirmatively on any proposals for activities within these areas. In NEPA processes, BLM would continue to evaluate the potential for harm to wilderness characteristics, and proposed actions may be modified or the No action alternative would be considered if actions were deemed to have the potential to negate the areas's eligibility for wilderness designation by Congress.

**Weeds:** Control of noxious weeds is a priority in order to achieve the overall vegetation management objectives. Implications for weed management must be considered in all projects. Specific considerations include:

- C Chemical treatment methods, including aerial spraying (see below), would generally be

restricted to control of noxious weed species. BLM employees or contractors with appropriate certification would be responsible for use of chemicals and would take precautions to prevent possible effects to non-target plant species. Use of such chemicals would not be allowed near special status plant populations.

- C Biological control methods would be used only for the control of noxious or exotic weed species.
- C Aerial chemical applications could only be used in limited circumstances where: accessibility is so restricted that no other alternative means is available; it can be demonstrated that non-target sensitive species or other Monument resources would not be detrimentally affected; and noxious weeds are presenting a significant threat to Monument resources.
- C All hay used on BLM lands must be certified weed free.
- C All machinery that has been used outside of the Monument must be cleaned prior to use within the Monument.
- C All projects would contain restoration/revegetation protocols to minimize re-colonization of treated areas by noxious weed species.

## INTRODUCTION

The following policies, practices, and procedures will be implemented in order to ensure that Bureau of Land Management (BLM) lands are healthy. The concept of healthy rangelands expresses the BLM's desire to maintain or improve productivity of plant, animal (including livestock), soil, and water resources at a level consistent with the ecosystem's capability.

In order to meet society's needs and expectations for *sustained* production and conservation of natural resources from BLM rangelands, use of these lands must be kept in balance with the land's ability to sustain those uses. Identifying that balance requires an understanding and application of ecological principles that determine how living and non-living components of rangelands interact. Recognition of the interdependence of soil, water, plants, and animals (including livestock) is basic to maintaining healthy rangelands and is the key element in BLM's proposed Standards and Guidelines.

The policies, practices, and procedures contained in this document are referred to as Standards and Guidelines. Standards and Guidelines will apply to all uses of BLM land for forage, including livestock, wildlife, wild horses, and burros.

Standards describe desired ecological conditions that the BLM intends to attain in managing BLM lands, whereas Guidelines define practices and

procedures that will be applied to achieve Standards. While Standards will initially be applied to grazing, it is the BLM's intent to eventually apply these Standards to all rangeland uses that have the ability to affect or be affected by the ecological characteristics of rangelands.

## FUNDAMENTALS OF RANGELAND HEALTH

The BLM has defined four Fundamentals of Rangeland Health, which are the basic ecological principles underlying sustainable production of rangeland resources. These Fundamentals are embodied in the BLM's new Grazing Regulations (43 CFR, Part 4100), which became effective in August of 1995. These four Fundamentals of Rangeland Health, which also serve as the basis for Standards and Guidelines for Grazing Management, are as follows:

1. Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian/wetland, and aquatic components; soil and plant conditions support water infiltration, soil moisture storage, and release of water that are in balance with climate and landform, and maintain or improve water quality, water quantity, and timing and duration of flow.
2. Ecological processes, including the hydrologic cycle, nutrient cycles, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.
3. Water quality complies with state water quality standards and achieves, or is making

progress toward achieving, established BLM management objectives, such as meeting wildlife needs.

4. Habitats are, or are making significant progress towards being, restored or maintained for Federal threatened and endangered species, Federal proposed, Federal candidate, other special status species, native species, and for economically valuable game species and livestock.

By developing Standards and Guidelines based on the Fundamentals listed above, and by applying those Standards and Guidelines to BLM land management, it is the BLM's intent to achieve the following:

1. Promote healthy, sustainable rangeland ecosystems that produce a wide range of public values such as wildlife habitat, livestock forage, recreation opportunities, wild horse and burro habitat, clean water, clean air, etc.
2. Accelerate restoration and improvement of public rangelands to properly functioning condition, where appropriate.
3. Provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy rangelands.

4. Ensure that BLM land users and stakeholders have a meaningful voice in establishing policy and managing BLM rangelands.

below may need to be developed for some rangelands depending upon local conditions.

- C are developed and applied consistent with the desired condition and within site capability; and
- C may be adjusted over time.

**STANDARDS AND GUIDELINES**

**Standards** are descriptions of the desired condition of the biological and physical components and characteristics of rangelands. Standards:

- C are measurable and attainable;
- C comply with various Federal and state statutes, policies, and directives applicable to BLM rangelands; and
- C establish goals for resource condition and parameters for management decisions.

Indicators are features of an ecosystem that can be measured or observed in order to gain an understanding of the relative condition of a particular landscape or portion of a landscape. Indicators will be used by the rangeland manager to determine if Standards are being met. The indicators proposed for use are commonly accepted and used by members of the rangeland management profession in monitoring rangelands. Methods and techniques for evaluating these indicators are also commonly available. In using these terms, it should be recognized that not every indicator applies equally to every acre of land or to every ecological site. Additional indicators not listed

Similarly, because of natural variability, extreme degradation, or unusual management objectives, discretion will be used in applying Standards. Judgements about whether a site is meeting or failing to meet a Standard must be tempered by a knowledge of the site's potential. Examples of this are thousands of acres of the Great Basin in western Utah where native perennial grass species have been replaced by cheatgrass, an annual exotic species. It will be difficult and expensive to return all those areas to their natural potential because they have been greatly altered. It may not even be feasible to restore such areas from such an altered state to a state similar to natural conditions.

Site potential is determined by soil, geology, geomorphology, climate, and landform. Standards must be applied with an understanding of the potential of the particular site in question, as different sites have differing potentials.

**Guidelines** are management approaches, methods, and practices that are intended to achieve a Standard. Guidelines:

- C typically identify and prescribe methods of influencing or controlling specific public land uses;

**Standard 1.** Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform. This is indicated by:

It should be understood that these Standards and Guidelines are to be applied in making specific grazing management decisions. However, it should also be understood that they are considered the minimum conditions to be achieved. Flexibility must be used in applying these policy statements because ecosystem components vary from place to place and ecological interactions may be different.

Standards and Guidelines for use on BLM Land in Utah are described in the following pages. Standards and Guidelines, once approved by the Secretary of the Interior, will be implemented through subsequent Resource Management Plans (RMPs) and other decisions by BLM officials involving matters related to management of grazing. Where applicable, the statewide Guidelines may be adopted as terms and conditions for grazing permits and leases. Additional Guidelines may be identified and implemented through subsequent RMPs and activity plans to address local situations not dealt with by the statewide Guidelines.

- a. Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface

- flow, and retard soil moisture loss by evaporation;
- b. The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies; and
  - c. The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community (DPC), where identified in a land use plan conforming to these Standards, or (2) where the DPC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological processes.

**Standard 2.** Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform. This is indicated by:

- a. Streambank vegetation consisting of, or showing a trend toward, species with root masses capable of withstanding high streamflow events, vegetative cover adequate to protect stream banks and dissipate streamflow energy associated with high-water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge;

- b. Vegetation reflecting: DPC, maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover, and other habitat needs for dependent animal species;
- c. Re-vegetating point bars, lateral stream movement associated with natural sinuosity, channel width, depth, pool frequency, and roughness appropriate to landscape position; and
- d. Active floodplain.

**Standard 3.** Desired species, including native, threatened, endangered, and special-status species, are maintained at a level appropriate for the site and species involved. This is indicated by:

- a. Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival;
- b. Habitats connected at a level to enhance species survival;
- c. Native species re-occupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of non-native species;
- d. Habitats for threatened, endangered, and special-status species managed to provide for recovery and move species toward de-listing; and

- e. Appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the DPC, where identified in a land use plan conforming to these Standards, or (2) where the DPC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological processes.

**Standard 4.** The BLM will apply and comply with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM lands will fully support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for Surface and Groundwater. This is indicated by:

- a. Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters; and
- b. Macro invertebrate communities that indicate water quality meets aquatic objectives.

#### **GUIDELINES FOR GRAZING MANAGEMENT**

1. Grazing management practices will be implemented which:
  - a. Maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and support ecological functions;

- b. Promote attainment or maintenance of proper functioning condition riparian/wetland areas, appropriate stream channel morphology, desired soil permeability and infiltration, and appropriate soil conditions and kinds and amounts of plants and animals to support the hydrologic cycle, nutrient cycle and energy flow;
  - c. Meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to the extent natural conditions allow;
  - d. Maintain viable and diverse populations of plants and animals appropriate for the site;
  - e. Provide or improve, within the limits of site potentials, habitat for threatened or endangered species;
  - f. Avoid grazing management conflicts with other species that have the potential of becoming protected or special status species;
  - g. Encourage innovation, experimentation and the ultimate development of alternatives to improve rangeland management practices; and
  - h. Give priority to rangeland improvement projects and land treatments that offer the best opportunity for achieving the Standards.
2. Any spring and seep developments will be designed and constructed to protect ecological process and functions and improve livestock, wild horse, and wildlife distribution.
  3. New rangeland projects for grazing will be constructed in a manner consistent with the Standards. Considering economic circumstances and site limitations, existing rangeland projects and facilities that conflict with the achievement or maintenance of the Standards will be relocated and/or modified.
  4. Livestock salt blocks and other nutritional supplements will be located away from riparian/wetland areas, other permanently located, or other natural water sources. It is recommended that the locations of these supplements be moved every year.
  5. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, (c) cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species.
  6. When rangeland manipulations are necessary, the best management practices, including biological processes, fire, and intensive grazing will be utilized prior to the use of chemical or mechanical manipulations.
  7. When establishing grazing practices and rangeland improvements, the quality of the outdoor recreation experience is to be considered. Aesthetic and scenic values, water, campsites, and opportunities for solitude are among those considerations.
  8. Feeding of hay and other harvested forage (which does not refer to miscellaneous salt, protein, and other supplements), for the purpose of substituting inadequate natural forage, will not be conducted on BLM lands other than in (a) emergency situations where no other resource exists and animal survival is in jeopardy, or (b) situations where the Authorized Officer determines such a practice will assist in meeting a Standard or attaining a management objective.
  9. In order to eliminate, minimize, or limit the spread of noxious weeds, (a) only hay cubes, hay pellets, or certified weed-free hay will be fed on BLM lands, and (b) reasonable adjustments in grazing methods, methods of transport, and animal husbandry practices will be applied.
  10. To avoid contamination of water sources and inadvertent damage to non-target species, aerial application of pesticides will not be allowed within 100 feet of a riparian/wetland area unless the product is registered for such use with the Environmental Protection Agency.
  11. On rangelands where a Standard is not being met, and conditions are moving toward meeting the Standard, grazing may be allowed to continue. On lands where a Standard is not being met, conditions are not improving toward meeting the Standard

or other management objectives, and livestock grazing is deemed responsible, administrative action with regard to livestock will be taken by the Authorized Officer pursuant to CFR 4180.2(c).

12. Where it can be determined that more than one kind of grazing animal is responsible for failure to achieve a Standard, and adjustments in management are required, those adjustments will be made to each kind of animal, based on interagency cooperation as needed, in proportion to their degree of responsibility.
13. Rangelands that have been burned, reseeded, or otherwise treated to alter vegetative composition will be closed to livestock grazing as follows: (a) burned rangelands, whether by wildfire or prescribed burning, will be ungrazed for a minimum of one complete growing season following the burn; (b) rangelands that have been reseeded or otherwise chemically or mechanically treated will be ungrazed for a minimum of two complete growing seasons following treatment.
14. Conversions in kind of livestock (such as from sheep to cattle) will be analyzed in light of Rangeland Health Standards. Where such conversions are not adverse to achieving a Standard, or they are not in conflict with land BLM use plans, the conversion will be allowed.

### MONITORING AND ASSESSMENT

The determination of whether or not a particular grazing unit, pasture or allotment is meeting a Standard will be made by the Authorized Officer based on rangeland assessments and monitoring.

Monitoring the indicators will be in the form of recorded data from study sites or transects. It may be supplemented by visual observations and other data by BLM or other agency personnel, ranchers, interested public, wildlife agency personnel, or other resource data.

Assessments are the interpretation of data, observations, and related research findings. Assessments are the usual basis for prescribing grazing adjustments or practices. In some cases, such as with threatened or endangered species, Section 7 consultation with the U. S. Fish and Wildlife Service under the Endangered Species Act will occur. In all cases, conformance with Standards and Guidelines is a local decision based on local circumstances involving a collaborative process with affected interests

Should an assessment determine that an allotment is not meeting a Standard and/or significant progress toward meeting a Standard is not occurring, the next step is to determine the cause of failing to meet the Standard. If that determination reveals that grazing is involved or

partially responsible, the Authorized Officer, with involvement of the interested parties, will prescribe actions that ensure progress toward meeting the Standard. Those actions may be a part of an activity plan, a coordinated management plan, or an administrative decision. Corrective management actions will be based on actual on-the-ground data and conditions.

(Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah, USDI, BLM, May 1997)

**Table A6.1**  
**Grazing Allotments**

| Allotment         | Map Number <sub>1</sub> | Allotment Management Plan (AMP) | Grazing Period <sub>2</sub> | Active Preference (Number of animal unit months) | Allotment Category <sub>3</sub> |
|-------------------|-------------------------|---------------------------------|-----------------------------|--|---------------------------------|
| Alvey Wash        | 1                       | 1990                            | 05/15 through 09/23         | 1,276  | I                               |
| Big Bowns Bench   | 2                       | 1984                            | 10/16 through 04/15         | 1,275  | M                               |
| Big Horn          | 3                       | 1983                            | 11/10 through 06/15         | 4,392  | I                               |
| Blackridge        | 4                       | No AMP                          | 10/15 through 04/15         | 848  | I                               |
| Black Rock        | 5                       | No AMP                          | Year-long                   | 408  | I                               |
| Boot              | 6                       | No AMP                          | 08/01 through 10/31         | 45   | C                               |
| Boulder Creek     | 7                       | No AMP                          | 10/16 through 11/29         | 80   | C                               |
| Bunting Well      | 8                       | 1981                            | Year-long                   | 3,307  | M                               |
| Calf Pasture      | 9                       | 1991                            | 08/10 - 10/15 odd years     | 176  | M                               |
|                   |                         | 1991                            | 06/10 - 08/15 even years    |  |                                 |
|                   |                         |                                 |                             |  |                                 |
| Cedar Wash        | 10                      | 1984                            | 06/15 through 10/31         | 898  | M                               |
| Circle Cliffs     | 11                      | 1996                            | 11/01 through 03/31         | 1,050  | I                               |
| Clark Bench       | 12                      | 1982                            | 08/01 through 04/30         | 1,200  | I                               |
| Cockscomb         | 13                      | No AMP                          | 03/01 through 05/31         | 36   | C                               |
| Collet            | 14                      | No AMP                          | 09/15 through 10/15         | 92   | C                               |
| Cottonwood        | 15                      | 1981                            | 11/10 through 05/31         | 2,233  | I                               |
| Coyote            | 16                      | 1978                            | 11/01 through 05/31         | 2,044  | M                               |
| Death Hollow      | 17                      | No AMP                          | 11/01 through 05/15         | 1,002  | C                               |
| Deer Creek        | 18                      | No AMP                          | 11/01 through 04/30         | 587  | M                               |
| Deer Range        | 19                      | No AMP                          | 08/01 through 10/15         | 213  | M                               |
| Deer Spring Point | 20                      | 1988                            | 06/10 through 10/07         | 503  | I                               |
| Dry Valley        | 21                      | No AMP                          | 07/01 through 10/31         | 531  | M                               |
| First Point       | 22                      | 1979                            | Summer Use                  | 396  | M                               |
| Five Mile Canyon  | 23                      | No AMP                          | 11/01 through 04/30         | 385  | C                               |
| Flood Canyon      | 24                      | 1989                            | 07/01 through 10/31         | 148  | I                               |
| Fordwell          | 25                      | No AMP                          | 06/10 through 10/09         | 291  | C                               |
| Fortymile Ridge   | 26                      | 1987                            | 11/01 through 06/15         | 4,155  | I                               |
| Granary Ranch     | 27                      | No AMP                          | 07/01 through 11/30         | 70   | C                               |
| Haymaker Bench    | 28                      | No AMP                          | 11/10 through 12/31         | 100  | C                               |
| Headwaters        | 29                      | 1982                            | 11/01 through 03/15         | 3,607  | M                               |

**Table A6.1**  
**Grazing Allotments**

| Allotment           | Map Number <sub>1</sub> | Allotment Management Plan (AMP) | Grazing Period <sub>2</sub> | Active Preference (Number of animal unit months) | Allotment Category <sub>3</sub> |
|---------------------|-------------------------|---------------------------------|-----------------------------|--|---------------------------------|
| Hells Bellows       | 30                      | No AMP                          | 05/01 through 10/15         | 44   | C                               |
| Johnson Canyon      | 31                      | No AMP                          | 06/10 through 11/15         | 174  | C                               |
| Johnson Lakes       | 32                      | 1986                            | 06/01 through 11/30         | 319  | I                               |
| Johnson Point       | 33                      | No AMP                          | 11/01 through 03/31         | 135  | C                               |
| King Bench          | 34                      | 1983                            | 11/01 through 03/31         | 2,414  | I                               |
| Lake                | 35                      | 1989                            | 09/01 through 05/01         | 1,308  | I                               |
| Last Chance         | 36                      | 1982                            | Year-long                   | 3,708  | I                               |
| Little Bowns Bench  | 37                      | No AMP                          | 11/01 through 02/28         | 130  | M                               |
| Little Desert       | 38                      | No AMP                          | 09/24 through 10/08         | 107  | C                               |
| Locke Ridge         | 39                      | 1986                            | 12/01 through 04/30         | 145  | I                               |
| Lower Cattle        | 40                      | 1967                            | 10/01 through 04/15         | 6,875  | I                               |
| Lower Hackberry     | 41                      | 1981                            | 11/01 through 03/31         | 435  | I                               |
| McGath Point        | 42                      | No AMP                          | 10/01 through 02/28         | 60   | M                               |
| Meadow Canyon       | 43                      | 1986                            | 09/01 through 11/30         | 144  | I                               |
| Mill Creek          | 44                      | No AMP                          | 06/01 through 09/30         | 300  | C                               |
| Mollie's Nipple     | 45                      | 1976                            | Year-long                   | 3,436  | M                               |
| Moody               | 46                      | No AMP                          | 11/01 through 03/31         | 1,600  | C                               |
| Mud Springs         | 47                      | No AMP                          | 07/15 through 10/15         | 195  | M                               |
| Neaf                | 48                      | No AMP                          | 03/01 through 11/30         | 9  | C                               |
| Nipple Bench        | 49                      | 1981                            | 12/01 through 04/30         | 885  | I                               |
| Phipps              | 50                      | No AMP                          | 09/01 through 03/31         | 280  | M                               |
| Pine Creek          | 51                      | No AMP                          | 06/15 - 06/22, 10/01 - 10/7 | 78   | C                               |
| Pine Point          | 52                      | 1988                            | 06/16 through 10/15         | 365  | I                               |
| Rock Creek-Mudholes | 53                      | 1982                            | Year-long                   | 2,100  | M                               |
| Round Valley        | 54                      | 1983                            | 11/01 through 03/31         | 495  | I                               |
| Roy Willis          | 55                      | No AMP                          | 11/01 through 04/30         | 10   | C                               |
| Rush Beds           | 56                      | 1982                            | 11/01 through 05/31         | 247  | M                               |
| Salt Water Creek    | 57                      | No AMP                          | 10/16 through 03/15         | 120  | C                               |
| School Section      | 58                      | No AMP                          | 06/01 through 07/31         | 2  | C                               |
| Second Point        | 59                      | No AMP                          | 07/01 through 03/31         | 21   | C                               |

**Table A6.1**  
**Grazing Allotments**

| Allotment        | Map Number <sub>1</sub> | Allotment Management Plan (AMP) | Grazing Period <sub>2</sub> | Active Preference (Number of animal unit months) | Allotment Category <sub>3</sub> |
|------------------|-------------------------|---------------------------------|-----------------------------|--|---------------------------------|
| Sink Holes       | 60                      | 1982                            | 10/15 through 03/31         | 154  | I                               |
| Soda             | 61                      | No AMP                          | 10/01 through 06/01         | 2,755  | I                               |
| State Block      | 62                      | 1984                            | 03/01 through 02/28         | 60   | C                               |
| Steep Creek      | 63                      | 1969                            | 05/15-06/16 ,11/10-03/31    | 318  | C                               |
| Swallow Park     | 64                      | 1992                            | 05/10 through 11/10         | 734  | I                               |
| Timber Mountain  | 65                      | No AMP                          | 06/15 through 10/15         | 375  | M                               |
| Upper Cattle     | 66                      | 1984                            | 11/01 through 06/15         | 6,297  | I                               |
| Upper Hackberry  | 67                      | 1981                            | 11/01 through 06/15         | 605  | I                               |
| Upper Paria      | 68                      | 1976                            | 05/01 through 09/30         | 2,525  | M                               |
| Upper Warm Creek | 69                      | 1981                            | 11/01 through 05/31         | 1,477  | I                               |
| Vermillion       | 70                      | 1974                            | Year-long                   | 2,556  | M                               |
| Wagon Box Mesa   | 71                      | No AMP                          | 11/01 through 03/31         | 633  | C                               |
| Wahweap          | 72                      | No AMP                          | 12/01 through 04/30         | 400  | M                               |
| White Rocks      | 73                      | 1981                            | 12/01 through 01/31         | 60   | C                               |
| White Sage       | 74                      | No AMP                          | 05/06 through 06/05         | 75   | C                               |
| Willow Gulch     | 75                      | 1983                            | 11/01 through 03/31         | 404  | M                               |
| Wiregrass        | 76                      | No AMP                          | 11/01 through 03/31         | 600  | M                               |

1 Allotments managed by the Bureau of Land Management Arizona Strip Field Office and un-grazed allotments are not listed here, but are shown on Map A6.1.

2 Grazing season-of-use schedules may vary slightly due to yearly climatic conditions, vegetative growth, and availability of livestock water.

3 There are three categories in which allotments are placed. These categories assist in prioritizing the levels and type of resource management applied on each allotment. The **I** (Intensive) category receives the highest management priority due to identified resource conflicts or multiple resource issues. The **M** (Maintain) category describes allotments in which the current level of management is satisfactory in order to maintain resource conditions. The **C** (Custodial) allotments are usually small parcels of public land within larger blocks of private land. The level of management needed is low, provided that resources are not being negatively impacted.

Livestock grazing allotments that are totally or partially within the Monument, and administered by Monument personnel, were placed in an I, M, or C category by analyzing each allotment using the following categories: range condition; resource potential; present productivity; resource use conflicts; controversy; and present management situation. A number of criteria were used to further define both resource conflicts and level of controversy. These include: recreation concerns; deer herd management; multiple wildlife species concerns; watershed values; riparian resources; multiple resource concerns within the allotment; adjacent Federal management within the allotment (Glen Canyon National Recreation Area, Capitol Reef National Park, and Dixie National Forest); vegetation; and archaeological resources. An interdisciplinary team approach was used to categorize each allotment.

# Map A6.1: Grazing Allotments

-  Principal Communities
-  Monument Boundary
-  Highways 89 & 12
-  BLM Administered Allotment
-  Arizona Strip Administered Allotment
-  Ungrazed (Unallotted)

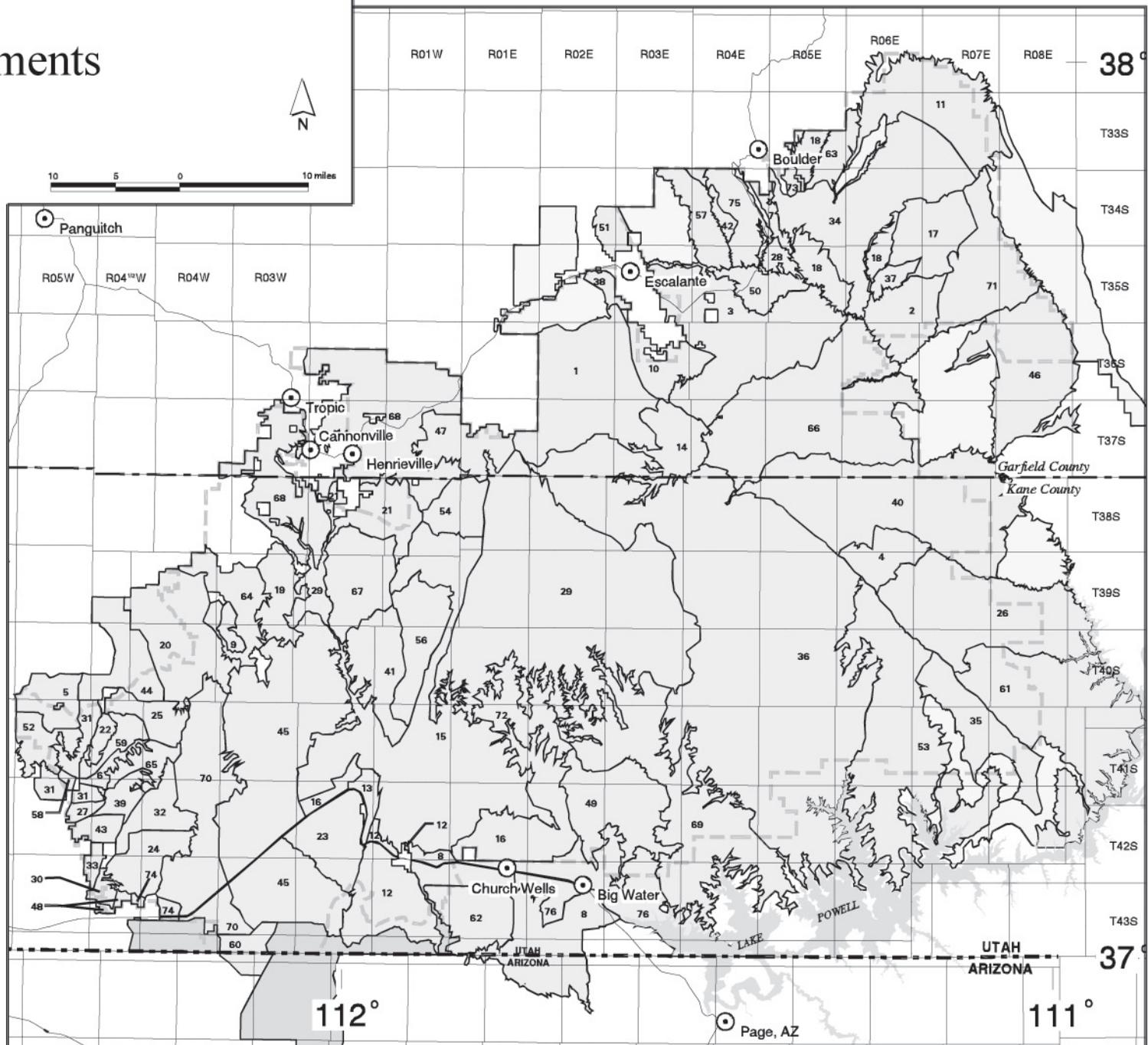


**Location Map**

Data has been gathered from a variety of sources and has been integrated to provide a planning context. The data shown outside the Monument may not have been verified. This map represents available information, and should not be interpreted to alter existing authorities or management responsibilities.



Produced by  
Grand Staircase-Escalante  
National Monument  
1999





## United States Department of the Interior

## FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE  
LINCOLN PLAZA  
145 EAST 1300 SOUTH, SUITE 404  
SALT LAKE CITY, UTAH 84115

In Reply Refer To

(CO/KS/NE/UT)

April 30, 1998



A. Jerry Meredith, Monument Manager  
Bureau of Land Management  
Grand Staircase-Escalante National Monument  
337 South Main Street, Suite 010  
Cedar City, Utah 84720

Subject: Endangered and Threatened Species Consultation for the Grand Staircase-Escalante National Monument, Garfield and Kane Counties, Utah

Dear Mr. Meredith:

The U.S. Fish and Wildlife Service (Service) received your letter on April 6, 1998 requesting a list of threatened and endangered species which may occur in the area of influence of the subject proposed action. The following species occur in Garfield and/or Kane Counties, and may occur in the subject project's area of influence:

| <u>Common Name</u>             | <u>Scientific Name</u>                        | <u>Status</u>           |
|--------------------------------|---|-------------------------|
| Bald Eagle                     | <i>Haliaeetus leucocephalus</i>               | Threatened              |
| California Condor              | <i>Gymnogyps californicus</i>                 | Endangered <sup>1</sup> |
| Colorado Squawfish             | <i>Ptychocheilus lucius</i>                   | Endangered              |
| Jones Cycladenia               | <i>Cycladenia humilis</i> var. <i>jonesii</i> | Threatened              |
| Kodachrome Bladder Pod         | <i>Lesquerella tumulosa</i>                   | Endangered              |
| Mexican Spotted Owl            | <i>Strix occidentalis lucida</i>              | Threatened              |
| Peregrine Falcon               | <i>Falco peregrinus</i>                       | Endangered              |
| Razorback Sucker               | <i>Xyrauchen texanus</i>                      | Endangered              |
| Southwestern Willow Flycatcher | <i>Empidonax traillii extimus</i>             | Endangered              |
| Ute Ladies'-tresses            | <i>Spiranthes diluvialis</i>                  | Threatened              |

In addition, the Service requests that you survey for Kanab ambersnail (*Oxyloma haydeni kanabensis*) where suitable habitat conditions exist within the Monument. Although this species has not been documented within the boundaries of what is now the Grand Staircase-Escalante National Monument, it may occur there.

<sup>1</sup>Experimental, Nonessential Population

Only a Federal agency can enter into formal Endangered Species Act (ESA) section 7 consultation with the Service. A Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment by giving written notice to the Service of such a designation. The ultimate responsibility for compliance with ESA section 7, however, remains with the Federal agency.

The draft Environmental Impact Statement should be reviewed and a determination made if the proposed alternative may affect any listed species or its critical habitat. A determination also should be made if the proposed alternative is likely to jeopardize a proposed species or result in the destruction or adverse modification of any proposed critical habitat. If the determination is "may affect" for listed species, formal ESA section 7 consultation should be requested by the Federal agency to the Field Supervisor at the address given above. In addition, if a determination is made that the proposed alternative may jeopardize proposed species or result in the destruction or adverse modification of proposed critical habitat, the Federal agency must confer with this office. At that time, the Federal agency should provide this office with a copy of a biological assessment or any other relevant information that was used in reaching its conclusion.

Your attention is also directed to section 7(d) of the ESA, which underscores the requirement that the Federal agency or the applicant shall not make any irreversible or irretrievable commitment of resources during the consultation period which, in effect, would deny the formulation or implementation of reasonable and prudent alternatives regarding their actions on any endangered or threatened species.

The Service looks forward to working with you to further recovery of threatened and endangered species of plants and wildlife found within the Monument. If further assistance is needed, please contact Ted Owens, Wildlife Biologist, of this office at telephone (801) 524-5001.

Sincerely,

  
for Reed E. Harris  
Field Supervisor



United States Department of the Interior  
**FISH AND WILDLIFE SERVICE**  
 UTAB FIELD OFFICE  
 LINCOLN PLAZA  
 145 EAST 1300 SOUTH, SUITE 404  
 SALT LAKE CITY, UTAH 84115



In Reply Refer To  
 (CO/KS/NE/UT) May 19, 1999  
 (6-UT-99-F-002)

**Memorandum**

To: Monument Manager, Bureau of Land Management, Cedar City, Utah  
 From: *JM* Field Supervisor, Fish and Wildlife Service, Salt Lake City, Utah  
 Subject: Biological Opinion for the Draft Management Plan for the Grand Staircase-Escalante National Monument

This memorandum constitutes our biological opinion on the subject action in response to your March 11, 1999 letter with attached biological assessment requesting initiation of formal interagency consultation under Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) and the Interagency Cooperation Regulations (50 CFR 402).

Your biological assessment states that Alternatives B (the preferred alternative), C, D, and E (Alternative A is the no action or no management change alternative) are not likely to adversely affect the bald eagle, peregrine falcon, Mexican spotted owl, southwestern willow flycatcher, California condor, Kanab ambersnail, Jones' cycladenia, and Kodachrome bladderpod. Furthermore, the actions described for each species would likely be beneficial to the recovery and conservation of these species. The endangered fish endemic to the Colorado River, the Colorado pikeminnow and razorback sucker are not known from waters within the Monument nor are any actions covered by the Draft Management Plan expected to affect these species or their critical habitat. The Ute ladies'-tresses may be affected by alternatives B, C, D and E but would not be adversely affected. To ensure that Ute ladies'-tresses is not adversely affected the Bureau will implement several conservation measures to provide protection to the species.

**BIOLOGICAL OPINION**

Based upon the best scientific and commercial information that is currently available, it is the Service's biological opinion that the implementation of alternatives B, C, D, and E of the Draft Grand Staircase - Escalante Management Plan (Plan) are not likely to jeopardize the continued existence and will likely enhance the conservation and recovery of the following species:

- bald eagle (*Haliaeetus leucocephalus*)
- peregrine falcon (*Falco peregrinus*)

- Mexican spotted owl (*Strix occidentalis lucida*)
- southwestern willow flycatcher (*Epidonax traillii extimus*)
- California condor (*Gymnogyps californianus*)
- Kanab ambersnail (*Oxyloma haydeni kanabensis*)
- Jones' cycladenia (*Cycladenia humilis jonesi*)
- Kodachrome bladderpod (*Lesquerella tumidosa*).

The implementation of the Plan will not affect the following species:

- Colorado pikeminnow (*Ptychocheilus luctus*)
- razorback sucker (*Xyrauchen texanus*)

The implementation of the Plan will affect the following species but is not likely to jeopardize the continued existence of the following species provided that the Conservation Measures described in this document are implemented. These Conservation Measures will contribute to the conservation and recovery of the species and eliminate any adverse impacts to the species and its habitat. These Conservation Measures are, also, included in the biological assessment.

- Ute ladies'-tresses (*Spiranthes diluvialis*)

**PROJECT DESCRIPTION**

The Draft Management Plan for the Grand Staircase Escalante National Monument (Monument) identifies those criteria which will guide management direction of the natural resources of the Monument including: vegetation management, livestock grazing management, off-highway vehicle use management, water use management, and recreation management.

**Basis for Opinion - Ute Ladies'-tresses Orchid**

The Ute ladies'-tresses orchid (*Spiranthes diluvialis*) was listed as a threatened species on January 17, 1992 under the authority of the Endangered Species Act.

*Spiranthes diluvialis* is a perennial, terrestrial orchid that typically grows in relatively low elevation riparian, spring, and lake side wetland meadows. Populations of *S. diluvialis* are known from three general areas of the interior western United States: near the base of the eastern slope of the Rocky Mountains in southeastern Wyoming and north-central and central Colorado; in the upper Colorado River basin; and in the Bonneville Basin along the Wasatch Front and westward in the eastern Great Basin.

The Colorado River Basin populations of *S. diluvialis* occur almost exclusively in riparian meadows. The principal populations of the species in this area are in the Uinta Basin and along the Green and Yampa Rivers in adjacent Daggett County Utah and Moffat County Colorado. As described in the biological assessment Ute ladies'-tresses populations occur within the riparian meadows along Deer Creek. The population at Deer Creek within the Escalante - Grand

Staircase National Monument is a significant outlier population and the only viable population within the Colorado Plateau outside of the immediate vicinity of the Uinta Basin.

*Spiranthes diluvialis* is endemic to moist soils or wet meadows near springs, lakes, or perennial streams. The range in elevation of known *S. diluvialis* occurrences is from 1311 to 2134 meters (4,300 to 7,000 feet) (Stone 1993). Most of the western occurrences are along riparian edges, gravel bars, old oxbows, high flow channels and backwater areas, and moist to wet meadows along perennial streams. Jennings (1990) and Coyner (1989, 1990) observed that *S. diluvialis* seems to require "permanent sub-irrigation", indicating a close affinity with floodplain areas where the water table is near the surface throughout the growing season and into the late summer or early autumn. Soils in occupied habitat are always damp to the surface during the flowering period. This observation has been corroborated by ground water monitoring research conducted in Dinosaur National Monument (Martin & Wagner 1992) and in Boulder, Colorado (T. Naumann, City of Boulder Open Space Department, pers. comm., 1993).

*Spiranthes diluvialis* occurs primarily in areas where the vegetation is relatively open and not overly dense or overgrown (Coyner 1989, 1990 and Jennings 1989, 1990). A few populations in eastern Utah and Colorado are found in riparian woodlands, but *S. diluvialis* seems generally intolerant of shade, preferring open, grass, sedge, and forb-dominated sites instead. Typically, the vegetation is composed of a mixture of obligate-wetland and facultative-wetland species. Plants usually occur as small scattered groups and occupy relatively small areas within the riparian system (Stone 1993).

*Spiranthes diluvialis* appears to be well adapted to disturbances caused by water movement through flood plains over time (T. Naumann, City of Boulder Open Space Department, pers. comm., 1992, L. Riedel, National Park Service, pers. comm., 1994). The species often grows on point bars and stream edges where sediment deposition and re-vegetation is occurring following recent scour events. *Spiranthes diluvialis* is tolerant of flooding and flood disturbance. For example, point bars and backwater areas (old oxbows, side channels, etc.) are often flooded for several months in the spring during snowmelt.

Very little is known about the life history and demography of *S. diluvialis*. Many orchid species remain below ground for several years in a symbiotic relationship with a mycorrhizal fungus. When mature, they may not emerge aboveground every year. *Spiranthes diluvialis* first appears aboveground as a rosette of thickened grasslike leaves that is very difficult to distinguish from other vegetation. A distinctive flower stalk appears in late summer (July through September), and location, identification, and population size estimates are typically determined then. Some individuals remain under ground or do not flower each year. Thus, fluctuations in numbers of observed flowering individuals do not necessarily correspond to population fluctuations or indicate habitat alterations.

#### CONSERVATION MEASURES

The following conservation measures are stated, in the Grand Staircase - Escalante National Monument Planning Office's "BIOLOGICAL ASSESSMENT FOR THREATENED AND

#### ENDANGERED SPECIES FOR GRAND STAIRCASE - ESCALANTE NATIONAL MONUMENT DRAFT ENVIRONMENTAL IMPACT STATEMENT AND DRAFT MANAGEMENT PLAN"

1. The Bureau will implement an active noxious weed program in the Monument. Areas with threatened or endangered plants will be targeted for this activity as a first priority.
2. Priorities for grazing evaluation will be given to allotments with sensitive riparian and listed species.
3. Grazing as it relates to all endangered species will be addressed during this process and will incorporate the latest research and information in the protection of species. Monitoring plots will be installed and read monthly to determine density and presence of Ute ladies'-tresses as well as impacts in this area.
4. If impacts are documented from grazing uses, fences and/or barriers will be established to prevent entry by people or cattle.
5. Water management priority in Deer Creek will be to maintain natural flows and flood events
6. Surveys for *S. diluvialis* will be completed during this next growing season (1999) and results of this survey will be used to determine recreation management actions.
7. If plants are found to be growing in the campground, appropriate actions will be taken to prevent trampling of the plants by visitors to the campground area. These actions may include replanting native vegetation or construction of barriers.
8. Individual campground sites may be closed if necessary to protect these plants in the campground. Barriers will be constructed and restoration work initiated to stabilize the soil and banks in the campground area and provide the best possible habitat for this plant.
9. No expansion that proposes further impact to the riparian area will be considered, as it would increase the potential for impacts to this population.
10. The existing trail in Deer Creek will be relocated out of the riparian area for a length of 1.5 miles below the crossing with the Burr Trail when possible.
11. Barriers will be placed on the creek side of the trail to ensure compliance.
12. Interpretive signs and brochures will be provided along the trail and at the parking area to educate the public about the species and the actions that are being implemented to protect it.
13. Restoration of the current social trail will be initiated, including obliteration of the trail by planting native species, and moving soil to return the area to its natural grade. Group numbers

and allocations may be initiated along this trail if continued monitoring indicates that impacts from visitor use in the area is still causing impacts.

CONCLUSION

This concludes our biological opinion on the impacts of proposed project. This opinion was based upon the information described herein. If new information becomes available, new species listed, or any project change which alters the implementation and operation of the project from that which is described in the biological assessment and which may affect any endangered or threatened species in a manner or to an extent not considered in this biological opinion (see 50 CFR 402.16), formal Section 7 consultation should be re-initiated.

**INTRODUCTION**

The Purpose of the Utah Sensitive Species list is to identify those species in the State that are the most vulnerable to population or habitat loss. This list provides land managers, wildlife managers, and concerned citizens with a brief overview of the conservation status of listed species. By developing and implementing timely and sufficient conservation measures for sensitive species, Federal listing of these species under the Endangered Species Act may be precluded.

**DEFINITIONS**

- A. **Wildlife:** for the purposes of this list, includes the following groups animals in Utah that are found in nature: all vertebrates, crustaceans (including brine shrimp and crayfish), and mollusks.
- B. **Extinct Species:** any wildlife species that has disappeared in the world.
- C. **Extirpated Species:** any wildlife species that has disappeared from Utah since 1800.
- D. **State Endangered Species (E):** any wildlife species or subspecies which is threatened with extirpation from Utah or with extinction resulting from very low or declining numbers, alteration and/or reduction of habitat, detrimental environmental changes, or any combination of the above. Continued long-term survival is unlikely without implementation of special measures. A management program is needed for these species if a Recovery Plan has not been developed.
- E. **State Threatened Species (T):** any wildlife species or subspecies which is likely to become an endangered species within the foreseeable future throughout all or a significant part of its range in Utah or the world. A management program is needed for these species if a Recovery Plan has not been developed.
- F. **Species of Special Concern:** any wildlife species or subspecies that: has experienced a substantial decrease in population, distribution and/or habitat availability (**SP**), or occurs in limited areas and/or numbers due to a restricted or specialized habitat (**SD**), or has both a declining population and a limited range (**SP/SD**). A management program, including protection or enhancement, is needed for these species.
- G. **Conservation Species (CS):** any wildlife species or subspecies, except those species currently listed under the Endangered Species Act as threatened or endangered, that meets the State criteria of endangered, threatened or of special concern, but is currently receiving sufficient special management under a Conservation Agreement developed and/or implemented by the State to preclude its listing above. In the event that the conservation agreement is not implemented, the species will be elevated to the appropriate category.

**Table A8.1**  
**Sensitive Bird Species Found Within The Monument**

| Bird Species  | Agency Listing                      |   |                               |                           |
|---|-------------------------------------|---|-------------------------------|---------------------------|
|   | Utah Division of Wildlife Resources | United States Fish and Wildlife Service | Utah Natural Heritage Program | Bureau of Land Management |
| Condor, California ( <i>Gymnogyps californianus</i> )                 | SD                                  | E/NE                                    | SR                            | S                         |
| Curlew, Long-billed ( <i>Numenius americanus</i> )                    | SP/SD                               |   | S3B                           | S                         |
| Eagle, Bald ( <i>Haliaeetus leucocephalus</i> )                       | T                                   | T                                       | S1B, S3N                      | T                         |
| Falcon, Peregrine ( <i>Falco peregrinus anatum</i> )                  | E                                   | E                                       | S2                            | E                         |
| Flycatcher, Southwestern Willow ( <i>Empidonax traillii extimus</i> ) | E                                   | E                                       | S1B                           | E                         |
| Goshawk, Northern ( <i>Accipiter gentilis atricapillus</i> )          | SP                                  |   | S3                            | S                         |
| Grosbeak, Blue ( <i>Guiraca caerulea</i> )                            | SP/SD                               |   | S3S4B                         | S                         |
| Grouse, Sage ( <i>Centrocercus urophasianus</i> )                     | SP/SD                               |   | S2S3                          | S                         |
| Hawk, Ferruginous ( <i>Buteo regalis</i> )                            | T                                   |   | S2N, S2S3B                    | S                         |
| Hawk, Swainson's ( <i>Buteo swainsoni</i> )                           | SP                                  |   | S3B, SRN                      | S                         |
| Osprey ( <i>Pandion haliaetus</i> )                                   | SD                                  |   | S1S2B                         | S                         |
| Owl, Burrowing ( <i>Athene cunicularia hypugaea</i> )                 | SP                                  |   | S3B                           | S                         |
| Owl, Short-eared ( <i>Asio flammeus flammeus</i> )                    | SP                                  |   | S2S3                          | S                         |
| Owl, Mexican Spotted ( <i>Strix occidentalis lucida</i> )             | T                                   | T                                       | S1                            | T                         |
| Pelican, American White ( <i>Pelecanus erythrorhynchos</i> )          | SD                                  |   | S2B                           | S                         |
| Sapsucker, Williamson's ( <i>Sphyrapicus thyroideus</i> )             | SD                                  |   | S2S3B, SAN                    | S                         |
| Tern, Black ( <i>Chlidonias niger</i> )                               | SP                                  |   | S2S3B                         | S                         |
| Tern, Caspian ( <i>Sterna caspia</i> )                                | SP                                  |   | S1B                           | S                         |
| Woodpecker, Lewis' ( <i>Melanerpes lewis</i> )                        | SP/SD                               |   | S2S3                          | S                         |
| Yellowthroat, Common ( <i>Geothlypis trichas</i> )                    | SP                                  |   | S3B                           | S                         |

**Table A8.2**  
**Sensitive Mammal Species Found Within the Monument**

| Mammal Species   | Agency Listing                      |   |                               |                           |
|--|-------------------------------------|---|-------------------------------|---------------------------|
|  | Utah Division of Wildlife Resources | United States Fish and Wildlife Service | Utah Natural Heritage Program | Bureau of Land Management |
| Bat, Allen's Big-eared ( <i>Idionycteris phyllotis</i> )             | SD                                  |   | S1                            | S                         |
| Bat, Big Free-tailed ( <i>Nyctinomops macrotis</i> )                 | SP/SD                               |   | S2                            | S                         |
| Bat, Brazilian Free-tailed ( <i>Tadarida brasiliensis mexicana</i> ) | SP/SD                               |   | S3S4                          | S                         |
| Bat, Spotted ( <i>Euderma maculatum</i> )                            | SP                                  |   | S2                            | S                         |
| Bat, Townsend's Big-eared ( <i>Plecotus townsendii</i> )             | SP/SD                               |   | S2                            | S                         |
| Bat, Western Red ( <i>Lasiurus blossevillii</i> )                    | SP/SD                               |   | S1                            | S                         |
| Myotis, Fringed ( <i>Myotis thysanodes</i> )                         | SD                                  |   | S3                            | S                         |
| Myotis, Western Small-footed ( <i>Myotis ciliolabrum</i> )           | SD                                  |   | S3S4                          | S                         |
| Ringtail ( <i>Bassariscus astutus</i> )                              | SD                                  |   | S4                            | S                         |
| Vole, Virgin River Montane ( <i>Microtus montanus rivularis</i> )    | SP/SD                               |   | S2                            | S                         |

**Table A8.3**  
**Sensitive Fish Species Found Within the Monument**

| Fish Species   | Agency Listing                      |   |                               |                           |
|--|-------------------------------------|---|-------------------------------|---------------------------|
|  | Utah Division of Wildlife Resources | United States Fish and Wildlife Service | Utah Natural Heritage Program | Bureau of Land Management |
| Chub, Roundtail ( <i>Gila robusta</i> )                                    | T                                   |   | S2                            | S                         |
| Pikeminnow, Colorado ( <i>Ptychocheilus lucius</i> )                       | E                                   | E                                       | S1                            | E                         |
| Sucker, Bluehead ( <i>Catostomus discobolus</i> )                          | SP                                  |   | S4                            | S                         |
| Sucker, Flannelmouth ( <i>Catostomus latipinnis</i> )                      | SP                                  |   | S3S4                          | S                         |
| Sucker, Razorback ( <i>Xyrauchen texanus</i> )                             | E                                   | E                                       | S1                            | E                         |
| Trout, Colorado River Cutthroat ( <i>Oncorhynchus clarki pleuriticus</i> ) | CS                                  |   | S2                            | S                         |

**Table A8.4**  
**Sensitive Amphibian Species Found Within The Monument**

| Amphibian Species                                       | Agency Listing                      |   |                               |                           |
|---|-------------------------------------|---|-------------------------------|---------------------------|
|   | Utah Division of Wildlife Resources | United States Fish and Wildlife Service | Utah Natural Heritage Program | Bureau of Land Management |
| Toad, Arizona ( <i>Bufo microscaphus microscaphus</i> ) | SP                                  |   | S2                            | S                         |

**Table A8.5**  
**Sensitive Reptile Species Found Within the Monument**

| Reptile Species   | Agency Listing                      |   |                               |                           |
|---|-------------------------------------|---|-------------------------------|---------------------------|
|   | Utah Division of Wildlife Resources | United States Fish and Wildlife Service | Utah Natural Heritage Program | Bureau of Land Management |
| Chuckwalla, Glen Canyon ( <i>Sauromalus obesus multiforamminatus</i> )    | SP/SD                               |   | S2                            | S                         |
| Kingsnake, California ( <i>Lampropeltis getula californiae</i> )          | SD                                  |   | S3                            | S                         |
| Kingsnake, Utah Mountain ( <i>Lampropeltis pyromelana infralabialis</i> ) | SP                                  |   | S2S3                          | S                         |
| Lizard, Desert Night ( <i>Xantusia vigilis vigilis</i> )                  | SD                                  |   | S2S3                          | S                         |
| Lizard, Utah Night ( <i>Xantusia vigilis utahensis</i> )                  | SD                                  |   | S2S3                          | S                         |
| Snake, Mojave Patch-nosed ( <i>Salvadora hexalepis mojavenensis</i> )     | SD                                  |   | S2S3                          | S                         |
| Snake, Painted Desert Glossy ( <i>Arizona elegans philipi</i> )           | SD                                  |   | S2                            | S                         |
| Snake, Southwestern Black-headed ( <i>Tantilla hobartsmithi</i> )         | SD                                  |   | S2                            | S                         |
| Whiptail, Plateau Striped ( <i>Cnemidophorus velox</i> )                  | SP/SD                               |   | S3                            | S                         |

**S** = Utah BLM sensitive species (IM UT 97-66, 1997) **E** = Federally listed endangered species **T** = Federally listed threatened species

Utah Natural Heritage Program definition of ranks:

- S1 critically imperiled
- S2 imperiled
- S3 rare or uncommon
- S4 common
- S5 abundant and secure
- SA accidental
- SR reported
- B breeding rank
- N non-breeding rank

As defined in the Natural Heritage Program Operations Manual, a numeric rank (1 through 5) is assigned to indicate the status of a species at the State level. These ranks are based primarily on the number of occurrences of the species, along with other factors such as overall abundance, extent of geographic range, population trends, and threats. The range in number of occurrences suggested for each numeric rank below is not an absolute guideline, but only the starting point in the ranking process.

- 
- S1** Indicates extreme rarity or other factor(s), making the species especially vulnerable to extinction or extirpation (typically 5 or fewer occurrences or very few remaining individuals or acres).
  - S2** Indicates rarity or other factor(s), making the species very vulnerable to extinction or extirpation (6 to 20 occurrences or few remaining individuals or acres).
  - S3** Indicates a species that is either very rare and local throughout its range or found locally (even abundantly at some of its locations) within a restricted range, or vulnerable to extinction or extirpation because of other factors (21 to 100 occurrences).
  - S4** Indicates a species that is widespread, abundant, and apparently secure, though it may be quite rare in parts of its range, especially at the periphery (usually more than 100 occurrences).
  - S5** Indicates a species that is demonstrably widespread, abundant, and secure, though it may be quite rare in parts of its range.

A range spanning two (or even three) of the numeric ranks denotes a range of uncertainty about the exact status of the species (e.g., **S1S2**); ranges cannot skip more than one rank (e.g., **S1S4** is not allowed).

As more information is gathered, some species are added to the tracking list and some are dropped from the list. Our increasing understanding allows the ranks to be reevaluated and adjusted periodically.

**Table A9.1**  
**Special Status Plant Species**

| Common Name                     | Scientific Name                                 | Status           |                      |                   |
|---------------------------------|---|------------------|----------------------|-------------------|
|                                 |   | BLM <sup>1</sup> | Federal <sup>1</sup> | UNHP <sup>2</sup> |
| Atwood's camissonia             | <i>Camissonia atwoodii</i>                      | S                |                      | G1/S1             |
| Slender camissonia              | <i>Camissonia exilis</i>                        | S                |                      | G1/S1             |
| Jones' cycladenia               | <i>Cycladenia humilis</i> var. <i>jonesii</i>   | T                | T                    | G3G4T2/S2         |
| Higgins biscuitroot             | <i>Cymopterus acualis</i> var. <i>higginsii</i> | S                |                      | G5T1/S1           |
| Hole-in-the-rock prairie clover | <i>Dalea flavescens</i> var. <i>epica</i>       | S                |                      | G5T1Q/S1          |
| Zion daisy                      | <i>Erigeron sionis</i> var. <i>sionis</i>       | S                |                      | G2G3/S2S3         |
| Alcove daisy                    | <i>Erigeron zothecinus</i>                      | S                |                      | G1Q/S1            |
| Spiny gilia                     | <i>Gilia latifolia</i> var. <i>imperialis</i>   | S                |                      | G4T2/S2           |
| Alcove bog-orchid               | <i>Habenaria zothecina</i>                      | S                |                      | G2S2              |
| Kodachrome bladderpod           | <i>Lesquerella tumulosa</i>                     | E                | E                    | G1Q/S1            |
| Kane breadroot                  | <i>Pediomelum epipsilum</i>                     | S                |                      | G1/S1             |
| Sandloving penstemon            | <i>Penstemon ammophilus</i>                     | S                |                      | G2G3/S2S3         |
| Ute ladies'-tresses             | <i>Spiranthes diluvialis</i>                    | T                | T                    | G2/S1             |
| Cronquist's woody aster         | <i>Xylorhiza cronquistii</i>                    | S                |                      | G1QS1             |

1. **S** = Utah BLM sensitive species (1996) **E** = Federally listed endangered species **T** = Federally listed threatened species
2. **Utah Natural Heritage Program (UNHP) Status Rank** (Utah Reclamation Mitigation and Conservation Commission, U.S. Department of the Interior, Utah Division of Wildlife Resources. 1997. Inventory of Sensitive Species and Ecosystems in Utah - Endemic and Rare Plants of Utah: An Overview of Their Distribution and Status)

A numeric rank (1 through 5) is assigned to indicate the status of a species at both the Global or rangewide level (**G**) and at the State level (**S**). Where appropriate, a Trinomial rank (**T**) is also assigned to indicate the rangewide distribution and abundance at the infraspecific (variety or subspecies) level. These ranks are based primarily on the number of occurrences of the species, along with other factors such as overall abundance, extent of geographic range, population trends, and threats. The range in number of occurrences suggested for each numeric rank is not an absolute guideline, but only the starting point in the ranking process:

|                       |   |
|-----------------------|---|
| <b>G1 or T1 or S1</b> | Indicates extreme rarity or other factor(s), making the species especially vulnerable to extinction or extirpation (typically 5 or fewer occurrences or very few remaining individuals or acres).   |
| <b>G2 or T2 or S2</b> | Indicates rarity or other factor(s), making the species very vulnerable to extinction or extirpation (6 to 20 occurrences or few remaining individuals or acres).   |
| <b>G3 or T3 or S3</b> | Indicates a species that is either very rare and local throughout its range or found locally (even abundantly at some of its locations) within a restricted range, or vulnerable to extinction or extirpation because of other factors (21 to 100 occurrences). |
| <b>G4 or T4 or S4</b> | Indicates a species that is widespread, abundant, and apparently secure, though it may be quite rare in parts of its range, especially at the periphery (usually more than 100 occurrences).  |
| <b>G5 or T5 or S5</b> | Indicates a species that is demonstrably widespread, abundant, and secure, though it may be quite rare in parts of its range.   |

A range spanning two (or even three) of the numeric ranks denotes a range of uncertainty about the exact status of the species (e.g., **SIS2**); ranges cannot skip more than one rank (e.g., **SIS4** is not allowed). A qualifier of "**Q**" is added to a rank to denote a taxonomic question.

**Introduction**

Nominations for Areas of Critical Environmental Concern (ACEC) were considered by an evaluation team to see if they met the designation criteria. Nominations were also considered in light of the special management attention they would receive through the establishment of the Monument. The Monument is unique in the realm of Bureau of Land Management (BLM) public lands administration in regards to the need for ACECs. After careful evaluation of the resources recognized in each of the nominations, it was determined that the protection of these resources would be substantially equivalent under either Monument authority or ACEC designation. Therefore, it was concluded that no ACECs would be designated under the Monument Management Plan.

Existing special management areas such as Outstanding Natural Areas (ONAs) and Research Natural Areas (RNAs) were also considered for ACEC protection. The original designations are recommended to be preserved because of the historical context of these units to Monument lands and to Glen Canyon National Recreation Area, and also due to public recognition through time.

**Evaluation Criteria:**

To be considered for designation as an ACEC, an area must meet the requirements of relevance and importance as described in the Code of Federal Regulations (43 CFR 1610.7.2). The definitions for the criteria of relevance and importance are as follows:

**Relevance**

An area is considered relevant if it contains one or more of the following:

1. A significant historic, cultural, or scenic value (for example: rare or sensitive archeological resources and religious or cultural resources important to Native American Indians).
2. A fish and wildlife resource (for example: habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity).
3. A natural process or system (for example: endangered, sensitive, or threatened plant species; rare, endemic, or relict plants or plant communities; rare geologic features).
4. A natural hazard (for example: areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the resource management planning process that it has become part of a natural process.

**Importance**

The value, resource, system, process, or hazard described above must have substantial significance to satisfy the importance criteria. This generally means it is characterized by one or more of the following:

1. Has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
2. Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
3. Has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of the Federal Land Policy and Management Act.
4. Has qualities which warrant highlighting in order to satisfy public or management concerns about safety and public welfare.
5. Poses a significant threat to human life and safety or to property.

**ACEC Nominations**

The following nominations were received as of June 23, 1998:

- C Owen Severance - Scenic Routes (received December 22, 1993)
- C Owen Severance - Fourmile Bench Old Tree Area (Received March 2, 1998)

- C Utah Farm Bureau (John B. Keeler) - 48 Grazing Allotments (received March 3, 1998). A second letter received April 15, 1998 from John B. Keeler stated that the Farm Bureau felt that Monument designation provides adequate protection without ACECs.
- C The Nature Conservancy of Utah (Joel S. Tuhy) - Nomination that the existing No Mans Mesa Research Natural Area (RNA) be formally designated as an ACEC through the Monument planning process that is now underway. (1994 nomination, received again March 16, 1998)
- C Southern Utah Wilderness Alliance - A nomination requesting that the HR1500 areas within the Monument (see discussion below under **HR 1500 Areas**) become ACECs to protect wilderness values. (1994 nomination, received again March 19, 1998)
- C Southern Utah Wilderness Alliance - Nominated the entire Monument for protection under the ACEC category. They asked that previous SUWA correspondence on this issue be disregarded. (received March 23, 1998) Another letter, received April 9, 1998, discussed the use of ACECs in protecting Wilderness Values in the Monument
- C The Wilderness Society - Nomination incorporated by reference the ACEC nominations made in 1994 by SUWA, plus Fortymile Gulch and Hurricane Wash (see **HR 1500 Areas** below for a discussion of these nominations) (received March 23, 1998)
- C Grand Canyon Wildlands Council (Kelly Burke) - They maintain that ACEC criteria applies to, and is met by, the Grand Staircase-

Escalante National Monument as an ecological whole. The Grand Canyon Wildlands considers the entire Monument an Area of Critical Environmental Concern. When applied to smaller units, it seems problematic whether ACEC status would provide an additional meaningful layer of protection, and such designations may prove counterproductive in protecting the Monument. (received March 20, 1998)

C John R. Swanson - Urges that the entire Grand Staircase-Escalante National Monument become an ACEC. (received March 23, 1998)

Table A10.1 provides an evaluation of the nominations received.

**HR 1500 Areas**

Nominations for HR 1500 areas were received from Southern Utah Wilderness Alliance (SUWA) during the earlier 1994 planning process for the Escalante/Kanab Resource Management Plan (RMP) and from more recent 1998 correspondence from both SUWA (nomination subsequently withdrawn) and from the Wilderness Society. In their correspondence, these organizations requested the protection of areas being proposed in legislation for wilderness designation. Specifically noted were the protection of wilderness values. It is explicit in the current BLM Planning Manual (1613.06) that ACECs are not to be designated to protect areas for wilderness values:

The FLPMA requires that priority shall be given to the designation and protection of ACECs. The

ACECs are identified, evaluated, and designated through BLM's resource management planning process. An ACEC designation is the principal BLM designation for public lands where special management is required to protect important natural, cultural and scenic resources, or to identify natural hazards. Therefore, BLM managers will give precedence to the identification, evaluation, and designation of areas which require special management attention during resource management planning. *An ACEC designation will not be used as a substitute for wilderness suitability recommendations.* (Italics added)

In compliance with this policy, nominations of HR1500 areas were not considered since the values to be protected were wilderness values. Wilderness suitability is being considered outside this Plan.

**Table A10.1**  
**Areas of Critical Environmental Concern (ACECS)**

| <b>Resource Value</b>        | <b>Location</b>  | <b>Evaluation/Comments</b>   |
|------------------------------|--|--|
| Entire Monument              | Area within Monument   | The entire Monument was found to qualify under both relevance and importance. Monument designation already gives authority to provide special management emphasis. Designating the entire Monument as an ACEC would be duplicative.  |
| Grazing Allotments           | All allotments within the Monument   | Grazing allotments may have historical relevance, but do not qualify under the criteria for importance. Consensus by evaluators that they do not need special management. Nominations subsequently withdrawn by nominee.   |
| Scenic Access Routes         | US-89; Utah 12, 9, and 143; Cottonwood Wash Road from Utah 12 to US 89; the road to Pahreah Townsite from US 89; the Burr Trail from Boulder to Capitol Reef; and the Hole-in-the-Rock Road from Utah 12 to Glen Canyon NRA. | Scenic Access Routes are historically relevant. U-12, Cottonwood, Old Pahreah, Burr Trail, and Hole-in-the-Rock Trail have more than local significance. Historic and scenic significance would be protected under the provisions of the Monument Management Plan. (See the <b>History</b> and <b>Visual Resource Management</b> sections in Chapter 2.) |
| Fourmile Bench Old Tree Area | Fourmile Bench   | The Old Tree area is relevant as a natural system and is of more than local significance. It is also irreplaceable, and vulnerable to adverse change. The significance of these trees would be managed and protected under the Monument Management Plan.   |
| No Mans Mesa                 | About 30 miles northwest of Kanab.   | No Mans Mesa is an historically relevant natural system, and relict plant community. It is also irreplaceable and vulnerable to adverse change. The designation as a Research Natural Area. Further protection is provided through the decisions in this Plan, thus ACEC designations is not necessary.  |

## INTRODUCTION

This Proposed Plan makes Wild and Scenic River (WSR) suitability recommendations pursuant to section 5(d)(1) of the WSR Act. WSR designations are made by Congress, or the Secretary of the Interior upon application of a State Governor. As described in the Draft Management Plan/Draft Environmental Impact Statement (DEIS), representatives from Grand Staircase-Escalante National Monument (GSENM), Bryce Canyon National Park, Glen Canyon National Recreation Area, and Dixie National Forest worked together to discuss suitability recommendations made in this document. Land managers responsible for managing the various segments came to consensus on segments which overlapped jurisdictions. They also made decisions for segments that were under their own jurisdictions. Due to differing agency mandates and stages in the study process, those segments lying within GSENM, as well as river segments found eligible between the Monument boundary and the Arizona State line, are assessed in this report. Glen Canyon National Recreation Area, Dixie National Forest, and Bryce Canyon National Park are currently working on suitability assessments for the segments within their jurisdictions.

Input was given by Kane County Water Conservancy District, the office of the Governor of Utah, Utah Division of Natural Resources, and Utah Division of Water Resources, pursuant to the statewide Memorandum of Understanding (MOU) described in the DEIS. All meetings held in regards to the MOU were open and announced to the public.

The suitability assessment is divided into two parts for GSENM. The first part assesses the Escalante River system, which includes the main stem of the Escalante River and many of its tributaries. The second part assesses the Paria River system and several of its tributaries.

### Interim Management

Until a Record of Decision is signed for the Approved Plan, protection of segments found eligible (regardless of suitability finding) would be addressed on a case-by-case

basis. This means that whenever any proposed action would affect these values, impacts would be analyzed through the NEPA process, mitigation and alternatives would be considered to avoid such impacts.

Once a Record of Decision is signed, segments recommended as non-suitable would be dropped from special management, and would be managed under the provisions of the Monument Management Plan. Segments recommended as suitable would be managed for the preservation of outstandingly remarkable values, the tentative classifications, and their free-flowing status.

### Escalante River System

The Escalante River System begins on the Aquarius Plateau. The river system extends from the top of Boulder Mountain south into the Colorado River (Lake Powell). The river system lies within the Colorado Plateau Physiographic Province, Canyonlands, and Southern High Plateaus subprovinces. Dominant vegetation zones change with elevation and precipitation levels. Headwaters begin in the Montane Zone, which contains forests of ponderosa pine, Douglas fir, Englemann spruce, and blue spruce. The Piñon and Juniper Zone follows, blending eventually with the Sagebrush Zone, and ending in the lower Shadscale Zone. It flows through the Plateau Uplands water province and is in the Escalante River Drainage Basin.

Although the main stem of the Escalante begins northwest of the town of Escalante, most of the flow comes from its side tributaries such as Boulder Creek, Pine Creek, Death Hollow, Sand Creek, The Gulch, and Calf Creek. These tributaries are located downstream from the town of Escalante. Boulder Creek and Deer Creek flow through or near the town of Boulder.

The headwaters of the Escalante River are composed of several tributaries in the Escalante Ranger District of Dixie National Forest. From there, the river flows through the BLM-managed GSENM, and then enters Glen Canyon National Recreation Area. It ends at Coyote Gulch, near Lake Powell. The Escalante River System within GSENM contains 215 river miles, 211 miles (or 99 percent) of which are on public lands managed by the Bureau of Land Management (BLM). This suitability assessment covers

that portion of the river and its major tributaries within the boundaries of GSENM.

The Escalante River was first identified by the Departments of Interior and Agriculture as a candidate for river to be studied as a possible addition to the National Wild and Scenic River System on September 11, 1970. It was later identified as part of the Nationwide Rivers Inventory by the National Park Service.

As prescribed in the WSR Act and by BLM policy, the area included in this evaluation is the river area and its adjoining tributaries within the river corridor. Generally, the corridor width cannot exceed an average of 320 acres per mile, which is usually measured approximately 1/4 mile from the mean high-water mark on both sides of the channel. Few designated WSR have a boundary that is exactly 1/4 of a mile from the ordinary high water mark along their entire length. Corridor boundaries for Federally designated and administered WSRs may vary based on a number of conditions, but are usually delineated by legally identifiable lines (survey or property lines). They may also be identified by some form of on-the-ground physical features (i.e., topography, natural or man-made features such as canyon rims, roads, etc.), which provide the basis for protecting the rivers' identified values and practicality in managing those values.

### Suitability Recommendations for the Proposed Plan

About 143 miles would be considered suitable for inclusion into the National Wild and Scenic Rivers System (NWSRS).

The following segments are recommended as non-suitable and would be released from further WSR consideration: the upper part of Harris Wash, Dry Hollow Creek, Cottonwood Canyon, Blackwater Canyon, Lamanite Arch Canyon, Water Canyon, west fork of Steep Creek, Lower Horse Canyon, Wolverine Creek, Little Death Hollow, unnamed tributary west of Calf Creek, Phipps Wash and tributaries, and the upper part of Twentyfive Mile Wash and north tributary.

Cottonwood Canyon, Wolverine Creek, Little Death Hollow, Phipps Wash, Cottonwood Creek, parts of Harris Wash (the parts that do not have known southwestern willow flycatchers), side canyons into the Gulch, Water Canyon, Blackwater Canyon, Lamanite Arch Canyon, Dry Hollow Creek, and the unnamed tributary west of Calf Creek were determined non-suitable because the quality of river characteristics in these segments would not significantly enhance nor contribute to the NWSRS. Nevertheless, the outstandingly remarkable riparian, scenic, geologic, recreational, cultural, and habitat values identified for these rivers will be protected under the Monument Plan.

Lower Horse Canyon, while eligible, was determined to be non-suitable because of management conflicts (one of the suitability criteria identified in BLM Manual Section 8351). An existing water diversion in that segment of the river could be used in the future to remove livestock grazing from the riparian area, which would conflict with WSR status.

The following factors (which are outlined in the WSR Act) were analyzed for the Escalante River System as a whole. Specific facts and concerns pertaining to individual segments are presented in Table A11.1 and A11.2.

**Characteristics which do or do not make the area a worthy addition to the NWSRS:**

The segments identified in this report are on the Colorado Plateau Physiographic Province, Canyonlands and High Plateaus subprovinces. Currently, there are no designated components of the NWSRS within this province. The Escalante River and Calf Creek Falls were specifically listed as objects of historic or scientific interest when the Monument was designated.

The Escalante River System is considered a worthy addition to the NWSRS based on the following outstandingly remarkable values:

**C Scenic** - Throughout the spectacular Escalante River system, rugged canyons, colorful outcroppings, and imposing cliff faces provide unique opportunities for

sightseeing and photography. The river has carved a sheer-walled canyon that reaches depths of 1,100 feet.

**C Recreational** - The Escalante River and major tributaries provide outstanding opportunities for hiking, backpacking, boating, visiting cultural sites, photography and nature viewing. The canyons and colorful sandstone outcroppings, known as slickrock, attract visitors from throughout the United States and other countries. Water sources are plentiful in the Escalante Canyons, allowing easier travel. Canyons with similar geology are difficult to experience in other parts of the Colorado Plateau due to lack of water.

**C Geological** - Colorful canyon walls composed of layers of sandstone, siltstone, and limestone record the geologic past, including extensive sand dunes, invasions by seaways, and deposits made by broad river systems. Tens of thousands of years of weathering and erosion have resulted in the formation of numerous natural bridges and arches throughout the river corridor area. The canyons vary in width from a mile to only inches wide. These narrow canyons are commonly called slot canyons and number in the hundreds in this river system. Although these features are common to the Colorado Plateau, the number and variety of natural bridges, arches, and slot canyons make this area distinctive and exceptional.

**C Riparian** - The river segments provide unique riparian corridors through an otherwise arid region. A variety of wildlife species, both aquatic and terrestrial, rely upon the river for habitat. The riparian area contains occupied or suitable habitat for numerous sensitive or special status wildlife and plant species. The Escalante River System is home to the following documented wildlife groups: 8 amphibians, 190 birds, 54 mammals, 20 fishes, and 20 reptile species. Among these are the threatened and endangered southwestern willow flycatcher, peregrine falcon, Mexican spotted owl, and wintering bald eagles.

**C Historic** - The Escalante River system has provided water for humans in a relatively arid environment for at least 10,000 years. Prehistoric Native American Indian

sites are prolific throughout the system. It continues to provide water for humans today.

Other values that support the addition of the Escalante River to the NWSRS are significant paleontological values, including fossil trackways and petrified wood, and cultural sites that would be enhanced and protected by designation.

The Escalante River, Boulder Creek, Deer Creek, Sand Creek, Twentyfive Mile Wash, Calf Creek, The Gulch, Steep Creek, Coyote Gulch, Harris Wash, Mamie Creek and Death Hollow were included in *A Citizen's Proposal to Protect the Wild Rivers of Utah*.

**Current Uses and Land Ownership Concerns:**

**C Energy and Minerals:** There are 2 oil and gas leases within the river area near the confluence of Phipps Wash and the Escalante River (at T35S, R5E, S18), and an active lease on a small portion of Mamie Creek. There are no mining claims, mineral sites, or coal leases in the river area. Existing valid claims or leases within the river boundary remain in effect, and activities may be allowed subject to regulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment. To the extent that the holders of valid existing rights are entitled to reasonable access, the BLM would work to provide access consistent with the Proclamation and the protection of outstandingly remarkable values.

**C Water Resource Developments, Water Rights and Instream Flow:** Existing water developments and rights held on the river area are associated with livestock, agricultural and domestic use. Ninety-nine surface, 6 underground, and 8 spring water rights within 1 mile of each stream course in the Monument are on record with the State of Utah. Of these, the BLM holds the rights to 40 surface, 0 underground, and 4 springs. Utah Division of Water Rights reports a total of 1.55 cfs surface diversions in the Escalante River, Calf Creek, Lower Deer Creek, and The Gulch. Most of the surface diversions are located on private land or on segments classified as Recreational. WSR designation would not

affect these existing water rights as they are senior to any rights acquired through designation.

There is some concern from local water conservancy districts and potential users over the possible effects designation could have on proposed or potential projects. This concern should be addressed by Congress upon WSR designation. No action taken in this Plan or WSR recommendation can establish an appropriation or Federal reserved water right. A Congressional Act designating a WSR may or may not establish a Federal reserved water right. If Congress creates a reserved right, the BLM or the State of Utah may establish instream flows necessary to meet the purposes of the designation. The nature of such a condition would depend on the wording in the Act. Protective management for suitability could affect specific proposals if the BLM would have to issue a right-of-way across BLM managed lands. At this time, there are no project proposals on suitable river segments.

**C Forestry, Agriculture and Livestock Grazing:** There are no forested lands within the study area. Agriculture in the form of irrigated farmlands occurs near the communities of Escalante and Boulder. These areas of agricultural use are not within the study area. However, farming has an impact on the river study area. Water is diverted out of the channels to irrigate the farmland and the runoff returns to the river bed. When this water returns, it can carry residues of agricultural chemicals, nutrients, and salts.

Livestock grazing is permitted on public lands throughout the river area. There are 13 allotments in the study area. Grazing along the river and on the uplands is primarily a fall/winter/spring operation. The rivers provide a significant source of water in this area for livestock. Grazing would continue to be governed by applicable laws and regulations.

Several fences cross the rivers within their corridors. These include allotment boundary fences, pasture fences, and state section line fences. If not removed after use, these wire fences typically wash out or are taken up during high flows but are rebuilt each year as flows

recede or grazing operations start up for the season. Landowners and ranchers are concerned that they will not be able to maintain these fences with designation. WSR designation would not affect the ability of landowners or ranchers to maintain fences.

**C Recreation Use and Facilities:** The Escalante River and major tributaries provide outstanding opportunities for recreational activities. These include hiking (canyoneering), backpacking, bird-watching, photography, viewing cultural sites, camping, and nature study. Recreational use is estimated to be 29,300 visits per year (based on 1997 RMIS data). Developed or semi-developed trail heads and trails are located at Calf Creek Lower and Upper Falls, Deer Creek, Escalante River outside of the town of Escalante, Highway 12, Harris Wash, and The Gulch.

The BLM operates Calf Creek Campground along Calf Creek, and Deer Creek Campground along Deer Creek. These sites received a total of 30,210 visits in FY 1997. Access to Calf Creek Falls, Deer Creek and other river-based activities is available at these sites.

**C Transportation/Utility Facilities:** Utah State Route 12 travels over the Escalante at the dividing point between segments 1 and 2. Along tributaries, dirt roads approach the water's edge and in some places, ford the river bed. An overhead utility line crosses over the river near State Route 12. Another line crosses Lower Sand Creek near its northern end. WSR designation would not affect the ability to maintain these lines.

**C Private and Commercial Development:** Protective management for suitable segments only applies to BLM managed lands. Private and commercial development is not a concern for river management on public lands. There are 843 acres (2.6 miles) of private land within the river area.

**Resources and uses that would be enhanced or curtailed by designation:**

**C Scenic** - Approximately 140 river miles provide outstanding scenery. Deep, narrow canyons, colorful rock walls, numerous interesting geologic features, and waterfalls provide exceptional opportunities for

sightseeing and photography. During a BLM visual resources inventory, the river corridors were determined to have scenic quality A. This indicates that scenic qualities of the landforms, vegetation, and waterform are extremely high, with great variety and distinction. Designation would ensure that the scenic values of this river system would not be impaired by additional water diversions or dams.

**C Recreational** - The Escalante River and major tributaries provide outstanding opportunities for hiking, backpacking, photography, and nature viewing. The canyons and colorful sandstone outcrops, known as slickrock, attract visitors from throughout the United States and other countries. Canyons of the Escalante and its tributaries are well known for canyoneering (seeking out and hiking narrow slot canyons). Designation could improve the ability to manage recreational uses and values through the increased focus that a WSR management plan would provide.

**C Geological** - The Colorado Plateau is a region of generally horizontal geologic strata where plateaus and mesas are separated by deep canyons. The meandering Escalante River has become deeply incised or entrenched into the Jurassic Navajo Sandstone in some places. Small side canyons within the 1/4 mile boundary to segments such as Little Death Hollow or the Escalante River are called slot canyons. Colorful canyon walls composed of layers of sandstone, siltstone, and limestone record times in the geologic past of extensive sand dunes, invasions by seaways, and deposits made by broad river systems. Tens of thousands of years of weathering and erosion have resulted in the forming of natural bridges and arches, water carved alcoves, rincons, and oxbows throughout the river area. Designation would ensure that our knowledge would be enhanced by providing an additional reason for scientific study.

**C Wildlife and Riparian Habitat** - The river and tributaries provide riparian corridors through an otherwise semi-arid region that support a wide variety of wildlife. As typical of wetland areas, the diversity of plants and wildlife around the washes and streams is greater than in the surrounding uplands. Various wildlife species rely upon the outstandingly remarkable

riparian and wildlife habitat values of the river area for food, water and other requirements. The Escalante river supports a variety of fish species. Special status wildlife species include bald eagles, southwestern willow flycatcher, Mexican spotted owl and peregrine falcons. The riparian area is potential habitat for spotted bat, Townsends big-eared bat, and golden eagle. Canyons of the Escalante could provide habitat for the recently reintroduced California condor. Other wildlife include bighorn sheep, mule deer, raccoons, bats, reptiles, amphibians, waterfowl, raptors, neotropical species, and other birds. WSR designation would ensure that habitat for these species would continue to be protected and would provide an additional reason to conduct scientific studies.

- C Vegetative Composition Varies Greatly Depending on the Zone:** Riparian communities associated with the river are composed largely of tamarisk stands with narrow corridors of native willows, ash, bulrushes, cattails, and cottonwoods. Mature cottonwood and willow galleries occur along the Escalante, and at scattered springs in tributaries. Stretches that receive disruptive, scouring floods on a regular basis may remain in a disclimax successional stage. Other vegetation includes rushes, sedges, and a variety of grasses and forbs. Algal mats are found in some quiet pools. Upland vegetation is described as a mixture of desert shrub, sagebrush, piñon and juniper, grasslands, mountain shrub, and coniferous woodlands. The distribution of these associations is determined largely by elevation and precipitation.

The Wild and Scenic Rivers Act states A...selected rivers of the Nation which, with their immediate environments, ...shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected ... There is a chance that without WSR designation, rivers could be dammed or diverted upstream, jeopardizing the instream flow in downstream segments. Therefore, designation could protect the viability of riparian communities by protecting the instream flow upon which these immediate environments rely.

- C Cultural Resources** - There is evidence to suggest that cultural properties and features representing the entire time span of human occupation of the region are present along or immediately adjacent to the study area. This should not be surprising since water is a limiting factor to all human activity. The probable span of use of the riverine habitat covers from about 11,000 years before present to the most recent activities of our own time. Numerous prehistoric sites can be attributed to several Native American Indian cultures: Anasazi and Fremont, Hopi, Zuni, Paiute, and possibly Navajo. The riverine system continues to be important to modern societies. Cultural properties likely to be encountered along the river could include rock art sites, agricultural features, storage cists, rock shelters, habitations, artifact scatters, and pioneer-era homesteads, ranches, and travel routes. These cultural properties exhibit a challenge in balancing conservation and utilization, but also offer great opportunities for scientific study, education, and interpretation. WSR designation would enhance the BLM's ability to further study these cultural resources and may help prioritize research projects in these segments.

- C Wilderness Study Areas** - 82 percent of the Escalante River and major tributaries run through Wilderness Study Areas (WSA) or Instant Study Areas (ISA). The river and/or tributaries flow through Phipps-Death Hollow ISA Complex, North Escalante Canyons/The Gulch ISA Complex, Escalante Canyons Tract 5 ISA Complex, Steep Creek WSA, and Scorpion WSA. There are no designated wilderness areas in the study area. WSR designation would complement the BLM's management of the WSAs if classified as wild.

- C Streamflow and Water Quality** - The Escalante River and tributaries meet the definition of free-flowing. A mean flow of 11.4 cfs is recorded at the USGS gauging station located at the Escalante River/Pine Creek confluence and 22.5 cfs are recorded in Boulder Creek above the Escalante River. Data was collected from 1950-1955 which showed a mean flow of 82.2 cfs at the mouth. High flows typically occur during the spring runoff period and as a result of summer thundershowers.

Scouring of the river beds as a result of high flows can affect channel morphology and riparian ecosystems.

Utah Division of Water Quality has classified the Escalante River and tributaries from Lake Powell to the confluence with Boulder Creek as 2B, protected for secondary contact recreation (boating, wading), and 3C, protected for non-game fish and other aquatic life. The Escalante River and tributaries from the confluence of Boulder Creek to the headwaters and Deer Creek and tributaries, from confluence with Boulder Creek to headwaters are classified as 2B, protected for secondary contact recreation (boating, wading), 3A, protected for cold water fish and other cold-water aquatic life, and 4, protected for agricultural use.

The Utah Division of Water Quality defines anti-degradation segments as high quality waters with exceptional recreational or ecological significance or waters that require protection and are to be maintained at their existing quality. New point sources are prohibited and non-point sources shall be controlled to the extent feasible through best management practices. Calf Creek, Sand Creek, Mamie Creek, and Deer Creek are anti-degradation stream segments in the Monument. WSR designation would further protect streamflow and water quality.

Designation would not significantly restrict, foreclose, or curtail any activities currently occurring or proposed within the Escalante River System.

#### **Federal, Public, State, Tribal, Local, or Other Interests**

Garfield County was primarily concerned about the effect that WSR designation would have on their proposal for Wide Hollow reservoir, which is located above the suitable WSR segments. The existing reservoir currently holds about 1,100 acre feet although it originally held 2,400 acre feet when it was built in 1956. The county is proposing a new location for the reservoir because the existing location has filled with sediments. The proposed reservoir would be located on BLM land outside of the Monument boundary. At the time that this document went to print, there was no

detailed proposal for the project. Subsequent environmental analysis would be required on any specific reservoir proposal to determine the potential impacts, including impacts on Monument resources downstream. WSR designation may affect this project, depending upon impacts to outstandingly remarkable values, although additional environmental review would be needed to assess impacts and the ability to mitigate such impacts.

Garfield County is also concerned that the segments immediately downstream from Hole-in-the-Rock Road would curtail the ability to improve that road. The upper part of Harris Wash, which is adjacent to the road, is considered non-suitable for this Plan.

Another concern expressed by Garfield County was for private landowners. It was suggested that the BLM exclude those river segments from being suitable. Private landowners have 0.9 acres along the Escalante River upstream and downstream of the Highway 12 bridge and 1.7 miles along Deer Creek upstream of the Burr Trail. Under the WSR Act, designation neither gives nor implies government control of private lands within the river corridor. Although Congress (or the Secretary of the Interior for 2(a)(ii) rivers) could include private lands within the boundaries of the designated river area, management restrictions would not apply.

Escalante and Boulder are the only communities within the river area. It is anticipated that these communities would be most affected by possible designation of the river. Much of the economy of Escalante is dependant on agriculture and the scarce water supplies available. The viability of Escalante is dependant of the continuation of existing water diversions (Franson and Noble). These diversions are upstream from the river study area.

Native American Indian tribes are concerned about rock art in the canyons. WSR designation could contribute to the protection of the rock art and surrounding area.

**Ability to Manage**

The Escalante River system is considered to be manageable based on the current level and type of activities taking place, and adequate staff and funding is available to carry out management of a designated WSR. The free-flowing character and outstandingly remarkable values identified in the determination of eligibility can be protected through management actions. If the river segments are designated, a management plan would be developed within three years pursuant to the WSR Act. This would be done in order to determine management objectives and strategy for long-term protection of the river's outstandingly remarkable values to the full extent of the WSR Act.

About 87 percent of the river segments are on public land. River protection measures are being applied in environmental assessments of proposed projects and considered in all land use and activity plans.

All river segments are within GSENM or on BLM lands directly south of the Monument. Almost half of the river mileage is in Outstanding Natural Areas (ONA) which became ISAs in the wilderness study process. These other administrative designations, including wilderness study areas, would complement WSR designation and provide specific authority and guidance for the BLM to protect and manage the rivers.

**Historical or Existing Rights That Could be Adversely Affected by Designation**

No impact on existing or historical rights would occur as a result of designation, although there is a perception that existing water rights could be adversely affected. Section 13 (b) of the Act states that jurisdiction over waters is determined by established principles of law. Existing, valid water rights are not affected by designation.

Alterations to existing irrigation or water withdrawal facilities may be approved under Section 7 of the Act as long as there is no direct adverse effect to the values for which the river was designated. The valid and existing rights of present land owners to use water and shorelines are not affected.

**Estimated Cost**

No additional easements or land acquisitions are anticipated as a result of NWSRS designation. Section 6(b) of the National WSR Act specifically prohibits the use of condemnation for fee title purchase of lands if 50 percent or more of the acreage within the river area

boundary is in public ownership (Federal, state or local government). This is the case with both the Escalante and Paria River Systems. It is estimated that an additional \$70,000 or 1 FTE would be needed to develop, implement, and maintain actions identified in the river plans.



**Table A11.1**  
**Escalante River System Suitable Segments**

| Segment             | Segment Description   | Length (Nearest 0.1 mile) | Tentative Classification | Characteristics which make the area a worthy addition to NWSRS   | Current uses and land ownership concerns  | Resources and uses that would be enhanced or curtailed by designation | Federal, public, state, tribal, local, or other interests  |
|---------------------|---|---------------------------|--------------------------|--|---|---|--|
| Escalante River-1   | Confluence with Pine Creek (T35S, R3E, S9) to Highway 12 (T35S, R4E, S12)             | 13.8                      | Wild                     | C High scenic quality, high recreational use, numerous geologic features, important fish and wildlife habitat, prehistoric sites, historic homestead and roads, riparian area, fossil tracks, petrified wood make this a worthy addition to the NWSRS. | C 2 powerlines, 1 pipeline, and 1 telephone line cross the Escalante River and Calf Creek near their confluence, T35S, R4E, S12. There is also a ROW for State Route 12 near Escalante River and Calf Creek confluence. |   | C Garfield County is concerned about their ability to replace Wide Hollow Reservoir upstream of this segment.                        |
| Escalante River-2   | Highway 12 to east side of private land (T35S, R4E, S13)                              | 1.1                       | Recreational             |  |   |   |  |
| Escalante River-3   | Private land to boundary (T36S, R6E, S4)  | 19.2                      | Wild                     |  |   |   |  |
| Harris Wash         | T36S, R5E, S35 to Monument boundary (T36S, R5E, S36)                                  | 1.2                       | Wild                     | C High quality scenery, recreational attraction, southwestern willow flycatcher habitat, historic road, prehistoric sites, scientific study opportunities are the characteristics that make the lower section a worthy addition to the NWSRS.          |   |   | C 1 mile Federal public water reserve. Garfield County concerned that WSR designation would curtail improving Hole-in-the-Rock Road. |
| Lower Boulder Creek | Downstream side of state section (T34S, R4E, S11) to Escalante River (T35S, R5E, S22) | 13.6                      | Wild                     | C High quality scenery, high recreational use, part of the Escalante Canyons ONA and prehistoric sites.  | C 0.5 miles runs through private ownership.<br>C A pipeline ROW exists along the north end T34S, R4E, S11 & 12  | C Fisheries could be enhanced with designation                        |  |
| Slickrock Canyon    | Monument boundary (T33S, R5E, S22) to Deer Creek (T33S, R5E, S33)                     | 2.8                       | Wild                     | C High quality scenery, recreational values, prehistoric sites, and riparian areas make this a worthy addition to the NWSRS.   |   |   |  |

**Table A11.1**  
**Escalante River System Suitable Segments**

| Segment            | Segment Description  | Length (Nearest 0.1 mile) | Tentative Classification | Characteristics which make the area a worthy addition to NWSRS  | Current uses and land ownership concerns  | Resources and uses that would be enhanced or curtailed by designation   | Federal, public, state, tribal, local, or other interests |
|--------------------|--|---------------------------|--------------------------|---|---|---|---|
| Lower Deer Creek-1 | Slickrock Canyon (T33S, R5E, S 33) to Burr Trail Road (T34S, R5E, S16) | 3.8                       | Recreational             | C High quality scenery, Deer Creek Recreation Area, Escalante Canyons ONA, southwestern willow flycatchers, prehistoric sites, threatened plant, and riparian area. | C 1.7 miles of the section of Deer Creek between Slickrock and the Burr Trail is on private land. Irrigation pipeline and ROW for maintenance of water system on part of public land, water right to approx 1.5 cfs for irrigation and non-consumptive use through this section. This is not a significant diversion for this stream. | C Fisheries could be enhanced with designation. A Federally threatened species, the Ute-ladies-tresses orchid, is found in the Deer Creek drainage and could be further protected by WSR designation. | C Part of this segment is in the Escalante Canyons ONA.   |
| Lower Deer Creek-2 | Burr Trail Road to Lower Boulder Creek (T35S, R5E, S9)                 | 7.0                       | Wild                     |   |   |   |   |
| The Gulch-1        | Monument boundary (T32S, R6E, S32) to Burr Trail Road (T34S, R5E, S13) | 11.0                      | Wild                     | C High quality scenery, outstanding recreation, natural arch, peregrine habitat, Traditional Cultural Property, riparian area and petrified wood                    |   |   | C ONA   |
| The Gulch-2        | Along Burr Trail Road to T34S, R5E, S13)                               | 0.6                       | Recreational             |   |   |   |   |
| The Gulch-3        | Below Burr Trail Road to Escalante River (T35S, R5E, S36)              | 13.0                      | Wild                     |   |   |   |   |
| Steep Creek        | Monument boundary (T33S, R5E, S24) to The Gulch (T34S, R5E, S12)       | 8.9                       | Wild                     | C High quality scenery, recreational values, and riparian areas.  |   |   |   |

**Table A11.1**  
**Escalante River System Suitable Segments**

| Segment   | Segment Description  | Length (Nearest 0.1 mile) | Tentative Classification | Characteristics which make the area a worthy addition to NWSRS   | Current uses and land ownership concerns   | Resources and uses that would be enhanced or curtailed by designation | Federal, public, state, tribal, local, or other interests |
|---|--|---------------------------|--------------------------|--|--|---|---|
| Lower Sand Creek and tributary Willow Patch Creek | Sweetwater Creek (T34S, R4E, S8) to Escalante River (T35S, R4E, S10)   | 13.2                      | Wild                     | C High scenic quality, part of an ONA, fish habitat, southwestern willow flycatcher habitat, historic trail, and riparian area.  | C A utility line crosses the north end of Lower Sand Creek, T34S, R4W, S8.   |   |   |
| Mamie Creek and west tributary                    | Monument Boundary (T34S, R3E, S16) to Escalante River (T35S, R4E, S7)  | 9.2                       | Wild                     | C High scenic quality, part of an ONA, high recreational use, natural bridge, fish and wildlife habitat, prehistoric and historic sites including an historic mail trail, and riparian area. |  |   | C Part of Phipps Death Hollow ONA.                        |
| Death Hollow Creek                                | Monument boundary (T34S, R3E, S3) to Mamie Creek (T34S, R3E, S36)      | 9.9                       | Wild                     | C High scenic quality, part of an ONA, southwestern willow flycatcher habitat, prehistoric sites, dinosaur tracks, and riparian area.  |  |   | C This segment is in the North Escalante Canyons ONA.     |
| Calf Creek-1                                      | Headwaters (T34S, R4E, S10) to Lower Calf Creek Falls (T34S, R4E, S24) | 3.5                       | Wild                     | C High scenic quality, Calf Creek Recreation Area, bird habitat, prehistoric site, and riparian area   | C Public campground, diversion on lower end. 2 powerlines, 1 pipeline, and 1 telephone line cross the Escalante River and Calf Creek near their confluence, T35S, R4E, S12. There is also a ROW for State Route 12 near Escalante River and Calf Creek confluence. | C Recreation could be enhanced  | C This segment is in an ONA and Recreation Area           |
| Calf Creek-2                                      | Lower Falls to Calf Creek Recreation Site (T35S, R4E, S1)              | 3                         | Scenic                   |  |  |   |   |
| Calf Creek-3                                      | Recreation Site to Escalante River (T35S, R4E, S12)                    | 1.5                       | Recreational             |  |  |   |   |

**Table A11.1**  
Escalante River System Suitable Segments

| Segment               | Segment Description   | Length (Nearest 0.1 mile) | Tentative Classification | Characteristics which make the area a worthy addition to NWSRS   | Current uses and land ownership concerns | Resources and uses that would be enhanced or curtailed by designation | Federal, public, state, tribal, local, or other interests |
|-----------------------|---|---------------------------|--------------------------|--|--|---|---|
| Twenty-five Mile Wash | T37S, R6E, S2 to Monument boundary (T37S, R6E, S25), does not include unnamed tributary on north side | 6.8                       | Wild                     | C High scenic quality, high recreation use, bird habitat, rock art, prehistoric structures, and riparian |  |   | C ONA   |

Note: Short segments of Scorpion Gulch, Fools Canyon, Coyote Gulch and Willow Gulch may be on Monument lands. These segments will be managed and suitability recommendations made with the remainder of the named segments by Glen Canyon National Recreation Area.

**Table A11.2**  
Escalante River System Segments Determined Non-Suitable

| Segment          | Segment Description  | Length (Nearest 0.1 mile) | Characteristics which do or do not make the area a worthy addition to NWSRS  | Current uses and land ownership concerns | Resources and uses that would be enhanced or curtailed by designation | Federal, public, state, tribal, local, or other interests  |
|------------------|--|---------------------------|--|--|---|--|
| Harris Wash      | Tenmile Crossing (T365S, R4E, S17) to west side State section (T36S, R5E, S36) | 14.4                      | C This upper section was found non-suitable because the values identified, with the exception of the historic road, apply primarily to the lower section and the portion that flows through the National Recreation Area<br>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS |  |   | C 1 mile Federal public water reserve<br>C Garfield County concerned that WSR designation would curtail improving Hole-in-the-Rock Road. |
| Dry Hollow Creek | Monument boundary (T34S, R4E, S3) to Lower Boulder Creek (T34S, R5E, S30)      | 4.3                       | C High quality scenery<br>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS   |  |   |  |

**Table A11.2**  
**Escalante River System Segments Determined Non-Suitable**

| Segment              | Segment Description   | Length (Nearest 0.1 mile) | Characteristics which do or do not make the area a worthy addition to NWSRS   | Current uses and land ownership concerns  | Resources and uses that would be enhanced or curtailed by designation | Federal, public, state, tribal, local, or other interests |
|----------------------|---|---------------------------|---|---|---|---|
| Cottonwood Canyon    | Monument boundary (T33S, R5E, S22) to Lower Deer Creek (T34S, R5E, S4)  | 4.4                       | <p>C High quality scenery, high recreational attraction, cultural sites</p> <p>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS</p>   |   |   |   |
| Blackwater Canyon    | Entire (T34N, R5E, S23)   | 0.6                       | <p>C High quality scenery, outstanding recreation, natural arch, peregrine habitat, Traditional Cultural Property, riparian area, petrified wood.</p> <p>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS</p> | <p>C These are short, side tributaries to the Gulch whose outstandingly remarkable values are scenery, and a natural arch. Although they are beautiful canyons, they contribute little to the riverine values of the Escalante River system. They are not in and of themselves worthy additions to a national river system.</p> |   |   |
| Lamanite Arch Canyon | Monument boundary (T32S, R6E, S31) to The Gulch (T33S, R6E, S8)   | 2.4                       |   |   |   |   |
| Water Canyon         | Headwaters (T33S, R6E, S7) to Forest Service boundary (T32S, R5E, S13); Forest Service boundary to The Gulch (T33S, R6E, S30) | 3.5                       |   |   |   |   |
| Lower Horse Canyon   | T35S, R6E, S29 to Escalante River (T35S, R6E, S32)  | 3                         | <p>C High quality scenery, ONA, high recreational use, international use, paleontology.</p>   | <p>C There is a diversion pipe at the top of this section, and although it is not currently being used, it could be used in the future to remove livestock from riparian areas.</p>   |   | <p>C ONA</p>  |

**Table A11.2**  
**Escalante River System Segments Determined Non-Suitable**

| Segment                              | Segment Description   | Length<br>(Nearest<br>0.1 mile) | Characteristics which do or do<br>not make the area a worthy<br>addition to NWSRS  | Current uses and land<br>ownership concerns | Resources and uses that<br>would be enhanced or<br>curtailed by designation | Federal, public, state, tribal,<br>local, or other interests |
|--------------------------------------|---|---------------------------------|--|---|---|--|
| Wolverine Creek                      | Entire (T34S, R7E, S20) to (T35S, R6E, S16)                     | 9.7                             | C Scenery was the only outstandingly remarkable value identified for this segment.<br>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS             |   |   |  |
| Little Death Hollow                  | Entire (T34S, R7E, S28) to (T35S, R6E, S28)                     | 14.8                            | C Scenery was the only outstandingly remarkable value identified for this segment.<br>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS             |   |   |  |
| Phipps Wash and tributaries          | Headwaters (T35S, R4E, S22) to Escalante River (T35S, R5E, S18) | 6                               | C Scenery and recreation were the outstandingly remarkable values identified for this segment.<br>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS |   |   |  |
| Unnamed tributary west of Calf Creek | Headwaters (T34S, R4E, S35) to Escalante River (T35S, R4E, S11) | 2.6                             | C High quality scenery, recreational attraction, geologic features, cultural sites.<br>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.           |   |   |  |

### Paria River System

The Paria River System begins on the Paunsaugunt Plateau near Bryce Canyon. The river system flows through the White Cliffs and the Vermilion Cliffs, and carves its way through the Paria Canyon/Vermilion Cliffs Wilderness Area to the Colorado River. The Paria River and tributaries are in the Colorado Plateau Physiographic Province and in the Canyonlands and High Plateaus subprovinces. Dominant vegetation zones change with elevation and precipitation levels. These zones start in lower elevations with shadscale, then blend with sagebrush, and eventually piñon and juniper zones. Headwaters of some tributaries are in the Montane Zone. The Paria is a significant tributary in the Colorado River Basin and joins the Colorado at Lees Ferry in Arizona. It flows through the Plateau Uplands water province.

The headwaters of the Paria River are composed of several tributaries in Dixie National Forest and Bryce Canyon National Park. From there, the Paria flows through the BLM managed GSENM and then leaves the study area at the Arizona State line. The Paria River System studied in this document covers 117 river miles, of which 111 miles (86 percent) are on public lands managed by the BLM. This suitability assessment covers the river and major tributaries within the boundaries of the Monument, as well as designated BLM wilderness outside the Monument boundaries.

As prescribed in the Wild and Scenic River (WSR) Act and by BLM policy, the area included in this evaluation is the river area and its adjoining tributaries within the river corridor. Generally, the corridor width cannot exceed an average of 320 acres per mile, which is usually measured approximately 1/4 mile from the mean high-water mark on both sides of the channel. Few designated WSRs have a boundary that is exactly one-quarter of a mile from the ordinary high water mark along their entire length. Corridor boundaries for Federally designated and administered WSRs may vary based on a number of conditions, but are usually delineated by legally identifiable lines (survey or property lines). They can also be delineated by some form of on-the-ground physical features (i.e., topography, natural or man-made features such as canyon rims, roads, etc.), which

provide the basis for protecting their values and practicality in managing those values.

### Suitability Recommendations for the Proposed Plan

106 miles of the Paria River System would be considered suitable for inclusion into the National Wild and Scenic Rivers System (NWSRS).

The Paria River and selected tributaries would be worthy additions to the WSR system because they contain outstandingly remarkable river values that require special protective measures. These values are scenic, recreational, wildlife, geological, historic, and riparian. Unique natural and human resources would benefit from the protection and enhancement afforded by NWSR designation.

Bull Valley Gorge is considered non-suitable for inclusion in the NWSRS. The rationale for dropping this 5.9 mile segment is that, while this segment has outstandingly remarkable values, the watershed for this tributary is small and the outstandingly remarkable values are derived from its geology rather than being a riverine system. The recreation interest lies in the tributary as a slot canyon. The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS.

Threats to the Paria River or tributaries within the study area could come from diverting or impounding water for use or modifying stream channels. However, there are no major developments or actions being proposed that would significantly alter the river system's values.

The following factors were analyzed generally for the Paria River System as a whole. Additional specific facts and concerns are addressed in Tables A11.3 and A11.4.

### Characteristics Which do or do not Make the Area a Worthy Addition to NWSRS

The segments identified in this report are in the Colorado Plateau Physiographic Province, Canyonlands and High Plateaus subprovinces. Currently, there are no designated components of the NWSRS within this province. The

Nationwide Rivers Inventory identified the Paria River from the Colorado River to its source as possessing values of national significance as identified by the National Park Service (NPS) (NPS, 1982, 1986, 1988). The Paria was listed as an object of historic or scientific interest when the Monument was designated.

The adjacent Arizona Strip District identified the segment of the Paria River within designated wilderness (in Utah) and it was determined suitable. This determination (although in the administrative record) was not included in the Arizona statewide WSR review in 1994 - 1996.

The Paria River, Hackberry Creek and Bull Valley Gorge were nominated as eligible rivers in *A Citizen's Proposal to Protect the Wild Rivers of Utah*.

The Paria River system would be a worthy addition to the NWSRS based on the following outstandingly remarkable values:

- C **Scenic** - Throughout the spectacular Paria River Gorge, rugged canyons, colorful outcroppings and imposing cliff faces provide unique opportunities for sightseeing and photography.
- C **Recreational** - The Paria River and major tributaries provide outstanding opportunities for hiking, backpacking, photography, and nature viewing. The canyons and colorful sandstone outcroppings, known as slickrock, attract visitors from throughout the United States and other countries.
- C **Geologic** - The Paria River cuts through strata of successively older rocks ranging in age from Cretaceous through Permian, a time span of more than 150 million years, as it descends toward the Colorado River.
- C **Riparian** - The river provides a unique riparian corridor through an otherwise arid region. This corridor provides habitat for 329 species of wildlife: 7 amphibians, 242 birds, 59 mammals and 21 reptiles. Among these are the threatened and endangered southwestern willow flycatcher, peregrine falcon, Mexican spotted owl, and wintering bald eagles. There are documented nests in the

riparian vegetation along the banks of the Paria. This is also important historic habitat for the population of reintroduced bighorn sheep.

- C **Historic** - The Paria River system has provided water for humans in a relatively arid environment for at least 10,000 years. Prehistoric Native American Indian sites are prolific throughout the system. The river system continues to provide water for humans today.

#### Current Uses and Land Ownership Concerns

- C **Energy and Minerals:** An existing oil and gas lease is within the river area on the north end of Hackberry Creek. There are no oil or gas wells within the river area. There are no mining claims. All Federal lands in the Monument are withdrawn from new mineral entry. Existing valid claims or leases within the river boundary remain in effect, and activities may be allowed, subject to regulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment.

- C **Water Resource Developments, Water Rights and Instream Flow:** Existing water developments and rights within the river area are associated with livestock, agricultural, and domestic use. Sixty four surface, 6 underground, and 7 spring water rights within the river corridor are on record with the State of Utah. Of these, the BLM holds the rights to 31 surface, 2 underground, and 7 springs. Utah Division of Water Resources reports a total of 3.14 cfs surface diversions in Buckskin Gulch, Hackberry Creek, Hogeeye Creek, Lower Paria River, and the Upper Paria River. Three of these cfs are held by private landowners primarily on the upper Paria, with some on the lower Paria. Existing, valid water rights would not be affected by designation. Future water developments on or above public land segments would be subject to environmental analysis where Federal permits, approval, or funding would be involved.

There is some concern from Kane County Water Conservancy Districts and potential users over the possible affect specific proposals if the BLM would have to issue a right-of-way across BLM managed lands. At this time, there are no project proposals on suitable river segments.

- C **Forestry, Agriculture and Livestock Grazing:** There are no forested lands within the study area. Agriculture, in the form of irrigated farmlands, occurs near the communities of Tropic, Cannonville, and Adairville. These areas of agricultural use are not within the study area. However, the farming has an impact on the river study area. Water is diverted out of the channels to irrigate the farmland and the runoff returns to the river bed. When this water returns, it can be carrying remnants of chemicals used to spray the fields.

Livestock grazing is permitted on public lands throughout the river area. The Paria and tributaries flow through seven allotments and serve as boundaries for others. The Paria flows through Bunting Well, Cottonwood, and Headwaters Allotments. Grazing along the river and on the uplands is primarily a fall/winter/spring operation. The river is the major source of water in this area for livestock. Grazing would continue to be governed by applicable laws and regulations.

Six fences cross the Paria within the corridor. These include allotment boundary fences, pasture fences, and state section line fences. If not removed after use, these wire fences typically wash out or are taken up during high flows, but are rebuilt each year as flows recede or grazing operations start up. Landowners are concerned that they will not be able to maintain these fences with designation.

WSR designation would not affect the ability of landowners or ranchers to maintain fences.

- C **Recreational Use and Facilities:** Corridors of the Paria River and tributaries provide outstanding opportunities for recreational activities. These include hiking (canyoneering), backpacking, bird-watching, photography, camping, and nature study. Recreational use is estimated to be about 7,200 visits per year (based on 1997 RMIS data).

The BLM has developed trailheads at Whitehouse, Buckskin Gulch, and Wire Pass. These sites receive most of the Paria visitors (6,986 in FY 1997). Access for hiking and river-based activities is available at these trailheads. A visitor contact station and developed campground are located near the Whitehouse trailhead. The old Pahreah townsite and Paria Movie Set are located near the river corridor north of Highway 89.

- C **Transportation/Utility Facilities:** U.S. Highway 89 travels over the river at the lower end of the Upper Paria. Outside of the Wilderness area, dirt roads approach the water's edge, and in some places, ford the river. An historic travel route goes along the Upper Paria river channel, in and out of the river. Power transmission lines cross over the river at three places between the Pahreah townsite and Highway 89, and two others cross the Paria at the Wilderness boundary. WSR designation would not affect the ability to maintain these lines.

- C **Private and Commercial Development:** All major visitor facilities and developments would be outside the Monument boundaries. There are 1,152 acres (5 miles) of private land within the river area. Development on these parcels is not a concern for river management.

- C **Rights-of-Way, Leases or Traditional Uses:** Three rights-of-way (ROW) fall within the Paria River study area. They are for utility lines at T41S, R1W, S29 and 32; T42S, R1W, S16; and T43S, R1W, S 23.

### Resources and Uses that Would be Enhanced or Curtailed by Designation

- C Scenic** - The inventory indicates that 85 river miles possess outstanding scenic values. Deep, narrow canyons and colorful rock walls provide exceptional opportunities for sightseeing and photography. During a BLM visual resources inventory, the river corridors were determined to have scenic quality A. This indicates that scenic qualities of the landforms, vegetation, and water form are extremely high, with great variety and distinction. Designation would ensure that the scenic values of this river system would not be impaired by additional water diversions or dams.
- C Recreation** - The Paria River and major tributaries provide outstanding opportunities for hiking, backpacking, photography, and nature viewing. The canyons and colorful sandstone outcrops, known as slickrock, attract visitors from throughout the United States and other countries. Thousands of hikers and backpackers a year visit the river as it flows through the Paria Canyon/Vermilion Cliffs Wilderness Area. Outside the Wilderness area, visitor use is quite low and dispersed. Designation would enhance the recreation values for this river system through the increased focus that a WSR management plan would provide.
- The Paria River Corridor is also accessed by motorized users. This use would be curtailed for the entire river corridor by the Monument Plan zone prescriptions. WSR classifications support the zone prescriptions.
- C Geological** - The Colorado Plateau is a region of generally horizontal geologic strata where plateaus and mesas are separated by deep canyons. The Paria River cuts through strata of successively older rocks ranging in age from Cretaceous through Permian, a time span of more than 150 million years, as it descends toward the Colorado River near Lees Ferry. The upper tributaries of the Paria include slot canyons, so defined because they are very deep with extremely narrow walls, are incised mostly into the Jurassic Navajo Sandstone. Southern portions of

the Paria River and tributaries such as Buckskin Gulch, also form slot canyons. Kaibab Gulch, the upper reaches of Buckskin Gulch, is the stratigraphic type section for the Permian Kaibab Formation. Designation would help prioritize research projects and ensure that knowledge would be enhanced by providing an additional reason for scientific study.

- C Riparian and Wildlife Habitat**- The river and tributaries provide riparian corridors through an otherwise semi-arid region that support a wide variety of wildlife. As typical of wetland areas, the diversity of plants and wildlife around the washes and streams is greater than in the surrounding uplands. Various wildlife species rely upon the river area for consumptive use and other requirements. Special status wildlife species include bald eagles, southwestern willow flycatcher, Mexican spotted owl and peregrine falcons. The riparian area is potential habitat for the recently reintroduced California condor. Other wildlife include bighorn sheep, mule deer, raccoons, bats, reptiles, amphibians, waterfowl, raptors and other birds. WSR designation would contribute to the protection of habitat for these species and would provide an additional reason to conduct scientific studies.
- C Vegetative Composition Varies Depending on the Zone:** Riparian and Upland Riparian communities associated with the river consist of native willows, cottonwoods, bulrushes, cattails, and non-native tamarisk. Stretches that receive disruptive, scouring floods on a regular basis remain in a disclimax successional stage. Other vegetation includes rushes, sedges, and a variety of grasses and forbs. Algal mats are found in some quiet pools. Upland vegetation is described as a mixture of desert shrub, sagebrush, piñon and juniper, grasslands, mountain shrub and coniferous woodlands. The distribution of these associations is determined largely by elevation and precipitation.

The Wild and Scenic Rivers Act states "...selected rivers of the Nation which, with their immediate environments, ...shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected ...". There is a chance that without WSR designation,

rivers could be dammed or diverted upstream, jeopardizing the instream flow in downstream segments. Therefore, designation could protect the viability of riparian communities by protecting the instream flow upon which these immediate environments rely.

- C Cultural (Prehistoric and Historic) Resources** - There is evidence to suggest that cultural properties and features representing the entire time span of human occupation of the region are present along or immediately adjacent to the Paria River. This should not be surprising since water is a limiting factor to all human activity. The probable span of use of the riverine habitat covers from about 11,000 years before present to the most recent activities of our own time. Numerous prehistoric sites can be attributed to several Native American cultures: Anasazi and Fremont, Hopi, Zuni, Paiute, and possibly Navajo. The river system continues to be important to modern societies. Cultural properties likely to be encountered along the river include rock art sites, agricultural features, storage cists, rock shelters, habitations, artifact scatters and pioneer-era homesteads, ranches, and travel routes. These cultural properties exhibit a challenge in balancing conservation and utilization, but also offer great opportunities for scientific study, public education and interpretation.
- C Wilderness and Wilderness Study Areas**- 75 percent of the Paria River and tributaries run through Wilderness Study Areas (WSA) and a designated Wilderness areas. The river and tributaries flow through the Paria-Hackberry WSA and The Cockscomb WSA. Lower Paria River-2 segment and the entire eligible segments of Buckskin Gulch and Wire Pass are within the Paria Canyon/Vermilion Cliffs Wilderness Area (23 miles or 19 percent). WSR designation would complement the BLMs management of Wilderness and WSAs.
- C Streamflow and Water Quality**- The Paria River and tributaries are free-flowing streams, although intermittent. A mean flow of 9.08 cfs is recorded by USGS south of the town of Tropic. High flows typically occur during the spring runoff period and as a result of summer thundershowers. Frequent scouring of the river as a result

of high flows constantly affects channel morphology and the stage of riparian ecosystems.

Utah Division of Water Quality has classified the Paria River and tributaries from the State line to headwaters as 2B, protected for secondary contact recreation (boating, wading), 3A, protected for cold water fish and other cold-water aquatic life, and 4, protected for agricultural use.

The Paria generally is turbid and saline. The water appears turbid for most of the year to the degree that the substrate is not visible. Dissolved salt and sediment loads are high, reducing the feasibility and success of impoundments on the river. There is heavy algal growth in pools during periods of low water. River designation would further protect streamflow.

#### **Federal, Public, State, Tribal, Local, or Other Interests**

Kane County Water Conservancy District does not support WSR designation for the Paria River System. They are specifically concerned about being able to maintain the powerlines on the lower portion of the Paria River and upgrading the crossing on Skutumpah road over Bull Valley Gorge. However, WSR designation may or may not affect the county's ability to improve the crossing over the canyon, dependent on an individual site specific assessment of impacts. This is not a concern for this Plan, as Bull Valley Gorge is not considered suitable. Powerlines would be able to be maintained although upgrades would be evaluated in light of impacts to river values.

Kane County Water Conservancy District also expressed concern for the private property owners near Highway 89. They feel that those private property owners will not be able to use their water rights if designation occurs. They are also concerned that ranchers will not be able to repair and build fences in the river corridor. Under the WSR Act, designation neither gives nor implies government control of private lands within the river corridor. Although Congress (or the Secretary of the Interior for 2(a)(ii) rivers) could include private lands within the boundaries of the designated river area, management restrictions would not apply.

There was also concern that motorized users will not be able to access the Paria River Corridor as they have in the past. Motorized and mechanized use would be curtailed in this Plan.

Native American Indian tribes are concerned about rock art in the canyons. WSR designation could contribute to the protection of the rock art and surrounding area.

#### **Ability to Manage**

The Paria River study area is considered to be manageable based on the current level and type of activities taking place, and assuming that adequate staff and funding is available to carry out management of a designated WSR. Designation of the Paria River System would slightly raise the level of management needed above that being proposed in the Monument Plan. The free-flowing character and outstandingly remarkable values identified in the eligibility study can be protected through management actions. If the rivers are designated, a management plan would develop management objectives and a strategy for long-term protection of the rivers' outstandingly remarkable values to the full extent of the WSR Act.

Ninety-six percent of the segments are on public lands. Protective management has been in effect since eligibility was determined, as outlined in BLM Manual Section 8351. River protection is considered in environmental assessments of proposed projects and in all land use and activity plans.

Twenty percent of the river system is in a designated Wilderness area. The majority of the remainder is on public land in WSAs. Dams could be constructed in wilderness but not on WSR. Overlapping designations complement WSR designation and provide additional authority, protection, and guidance for the BLM to manage the river if designated.

#### **Historical or Existing Rights that Could be Adversely Affected by Designation**

No impact on existing or historical rights would occur as a result of designation.

#### **Estimated Cost**

No additional easements or land acquisitions are anticipated as a result of NWSRS designation. Section 6(b) of the National WSR Act specifically prohibits the use of condemnation for fee title purchase of lands if 50 percent or more of the acreage within the river area boundary is in public ownership (Federal, state or local government). This is the case with both the Escalante and Paria River Systems. It is estimated that an additional \$70,000 or 1 FTE would be needed to develop, implement, and maintain actions identified in the river plans.



**Table A11.3**  
**Paria River System Suitable Segments**

| Segment               | Segment Description  | Length (Nearest 0.1 mile) | Tentative Classification | Characteristics which make the area a worthy addition to NWSRS  | Current uses and land ownership concerns   | Resources and uses that would be enhanced or curtailed by designation  | Federal, public, state, tribal, local, or other interests  |
|-----------------------|--|---------------------------|--------------------------|---|--|--|--|
| Upper Paria River - 1 | Little Dry Valley (T38S, R2W, S21) to T41S, R1W, S7  | 22.0                      | Wild                     | C High quality scenery, recreational attraction, exposed geologic strata and arches, and historic sites make this area a worthy addition.   | C The Paria River runs through 3.1 miles of private lands in the Recreation segment.<br>C The landowner in the lower segment periodically constructs a diversion utilizing their water rights. While this blocks the flow temporarily, the diversion is frequently washed out by high flows retaining the free-flowing character .<br>C There is motorized use and commercial horseback rides in the river corridor. It is used as a livestock driveway and historic throughway. | C Motorized use would be curtailed if designated Wild<br>C Enhance southwestern willow flycatcher habitat<br>C Enhance deer population and all other wildlife if no OHV use allowed. | C Kane County Water Conservancy District is concerned that private property owners will be constrained from using their water rights or building fences.<br>C They also are concerned that ranchers will not be able to drive their cattle down the Paria like they do now.<br>C They are also concerned that the existing powerlines could not be maintained if designated. |
| Upper Paria River - 2 | T41S, R1W, S7 to downstream side of private property south of Highway 89 (T42S, R1W, S28)    | 16.9                      | Recreational             |   |  |  |  |
| Lower Paria River - 1 | Downstream side of private property (T43S, R1W, S10) to wilderness boundary (T43S, R1W, S23) | 3.3                       | Recreational             | C High quality scenery, wilderness area, high recreation use, narrow canyon, peregrine, and historic travelway make this a worthy addition. |  | C Habitat for peregrine and southwestern willow flycatcher would be enhanced   | C 4.9 miles is in the designated Paria-Vermilion Cliffs Wilderness area outside GSENM boundaries   |
| Lower Paria River - 2 | Segment in wilderness (T43S, R1W, S23 to T44S, R1W, S12)                                     | 4.8                       | Wild                     |   |  |  |  |
| Deer Creek Canyon     | Headwaters (T40S, R3W, S1) to Paria River (T40S, R2W, S4)                                    | 5.1                       | Wild                     | C High quality scenery and recreation values make this a worthy addition.   |  |  |  |

**Table A11.3**  
**Paria River System Suitable Segments**

| Segment           | Segment Description   | Length (Nearest 0.1 mile) | Tentative Classification | Characteristics which make the area a worthy addition to NWSRS  | Current uses and land ownership concerns                         | Resources and uses that would be enhanced or curtailed by designation | Federal, public, state, tribal, local, or other interests |
|-------------------|---|---------------------------|--------------------------|---|--|---|---|
| Snake Creek       | Entire (T39S, R2W, S26 to T40S, R2W, S10)                         | 4.7                       | Wild                     | C High quality scenery and recreation values make this a worthy addition.   |  |   |   |
| Hogeye Creek      | Entire (T40S, R2W, S 1 to T40S, R2W, S26)                         | 6.3                       | Wild                     | C High quality scenery and recreation values make this a worthy addition.   |  |   |   |
| Kitchen Canyon    | T40S, R2W, S28 to Starlight Canyon (T40S, R2W, S34)               | 1.2                       | Wild                     | C High quality scenery makes this a worthy addition to the system.  |  |   |   |
| Starlight Canyon  | Entire (T41S, R2W, S7 to T40S, R2W, S35)                          | 4.9                       | Wild                     | C High quality scenery makes this a worthy addition to the system.  |  |   |   |
| Lower Sheep Creek | Bull Valley Gorge (T39S, R2W, S7) to Paria River (T39S, R2W, S17) | 1.5                       | Wild                     | C High quality scenery, recreational values, a known spotted owl sighting make this a worthy addition to the NWSRS. | C Motorized use<br>C Livestock driveway<br>C Historic throughway | C Motorized use would be curtailed if classified Wild                 |   |
| Hackberry Creek   | Top (T38S, R1W, S29) to Cottonwood Creek                          | 20.0                      | Wild                     | C Recreational and scenic values, spotted owls, and riparian area make this a worthy addition to the system.        | C Limited OHV use at upper and lower ends.                       | C Motorized use would be curtailed if classified Wild.                |   |

**Table A11.3**  
**Paria River System Suitable Segments**

| Segment                | Segment Description  | Length (Nearest 0.1 mile) | Tentative Classification | Characteristics which make the area a worthy addition to NWSRS                             | Current uses and land ownership concerns   | Resources and uses that would be enhanced or curtailed by designation | Federal, public, state, tribal, local, or other interests   |
|------------------------|--|---------------------------|--------------------------|--|--|---|---|
| Lower Cottonwood Creek | Confluence with Hackberry Creek to Paria River                       | 2.9                       | Recreational             | C Recreational values and ecological continuity make this a worthy addition to the system. | C 1.3 miles run through private lands.   |   |   |
| Buckskin Gulch         | Wilderness boundary (T43S, R2W, S15) to Paria River (T44S, R1W, S12) | 18.0                      | Wild                     | C High quality scenery, high recreational use, slot canyons make this a worthy addition.   | C There is a lone watering hole in this segment used for livestock.<br>C Motorized vehicles are used to maintain range improvements. | C Spring and vegetation could be enhanced.                            | C These segments are in the designated Paria-Vermilion Cliffs Wilderness area outside GSENM boundaries. |

**Table A11.4**  
**Paria River System Segment Determined Non-Suitable**

| Segment           | Segment Description  | Length (Nearest 0.1 mile) | Characteristics which do or do not make the area a worthy addition to NWSRS   | Current uses and land ownership concerns | Resources and uses that would be enhanced or curtailed by designation | Federal, public, state, tribal, local, or other interests |
|-------------------|--|---------------------------|---|--|---|---|
| Bull Valley Gorge | Little Bull Valley (T38S, R3W, S28) to Sheep Creek (T39S, R2W, S7) | 5.9                       | C High quality scenery, recreational values related to slot canyons, Mexican spotted owls<br>C The BLM felt that the quality of river characteristics in this segment would not significantly enhance nor contribute to the NWSRS |  |   |   |

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**INTRODUCTION**

The Southwest region includes five counties: Beaver, Garfield, Kane, Iron, and Washington. The region also encompasses the area covered by the Bureau of Land Management's (BLM) Cedar City District. These five counties are also included in the Five County Association of Governments and in the Southwest Multi-County District. The counties of the region are linked by common problems, resources, and opportunities. The people of the region are interdependent economically and socially, and the region forms a functional economy. The region has a closed labor market in the sense that about 90 percent of the income generated in the region is also received there, and, conversely, about 90 percent of the income received in the region is also generated there. For these reasons the impacts of the Proposed Management plan have been modeled at the regional level.

Grand Staircase-Escalante National Monument (GSENM) is located in both Garfield and Kane Counties and includes over 1.8 million acres. The population in both Kane and Garfield Counties can be characterized relative to the State as small, sparsely distributed, increasing slowly, and old. Approximately 10,500 people live in the area. Both counties have among the lowest population per square mile of any of the counties in Utah. The two largest towns in the area are Kanab, with approximately 3,600 people, and Panguitch, with approximately 1,400 people.

Population growth in the counties has generally been lower than the state average. In Garfield County, net out-migration has occurred in five of the past ten years. Kane County's population has been increasing at a faster rate than in Garfield County, and net out-migration has only occurred in two of the past ten years.

The populations in both counties are among the oldest in the State. For instance, the median age in Garfield County of 31.8 years is the sixth highest in the State, Kane County is eight highest, with a median age of 30.5.

These unique demographic characteristics are closely associated with the economic realities faced by both counties. The population is small because there are relatively few employment opportunities for local residents. The population is old and net out migration is common because many of those aging into the labor force have to leave to find work.

The performance of the economies in Kane and Garfield Counties can be characterized as cyclical and sluggish compared to the vibrant performance of the State's economy in recent years. Both counties struggle with unemployment rates higher than the state average, per capita personal income lower than the State average, and a lack of employment diversity. For instance, in Garfield County unemployment is currently the second highest in the State at 8.3 percent, and unemployment rates have been in the double digits in five of the past ten years. Per capita income in Garfield County is estimated to be \$16,900, just 83 percent of the State average. Kane County is faring better, with an unemployment rate of 4.1 percent and per capita personal income of \$19,900, close to the State average of \$20,400.

Many of the economic problems in both counties can be explained by a general lack of diversity in the economic structure. The area relies heavily on the economic performance of just four major industries: agriculture, government, timber and tourism. The first three of these industries are fairly stagnant or declining. For example, while agriculture is an important economic resource to both counties, employment in agriculture has been stagnant and at times declining for many years. Employment in the timber industry has been cyclical and declining, as sawmills have downsized and closed. Employment in local, state, and Federal government has been increasing, but slowly. It is only in the tourism industry that employment growth has been sustained. In fact, the economies' dependence on the tourism industry has steadily increased.

**Modeling the Impacts of the Proposed Management Plan**

The impacts of the proposed management plan are driven by these factors: BLM spending and employment, and spending by visitors. The direct, indirect and induced effects of this spending and employment on population, employment, employee earnings, and local government revenues in the Southwest region are the focus of this analysis. Below is an illustration of the regional modeling framework used for the analysis.

**Direct Spending**

The base budget for the Monument was projected at approximately \$3 million. Spending above that level is assumed to be new spending associated with the Proposed Management Plan. For 1998 that figure is \$3.4 million. In 1999, \$4.3 million is assumed. In the year 2000 spending of \$11 million is assumed, about two-thirds of which will be spent on construction, furniture and/or exhibits. Afterwards (2001 to 2012), spending is assumed to be approximately \$3.4 million.

**Direct Employment**

Employment remains constant for the years 1998 to 2012. Approximately 30 jobs are associated with the Proposed Management Plan.

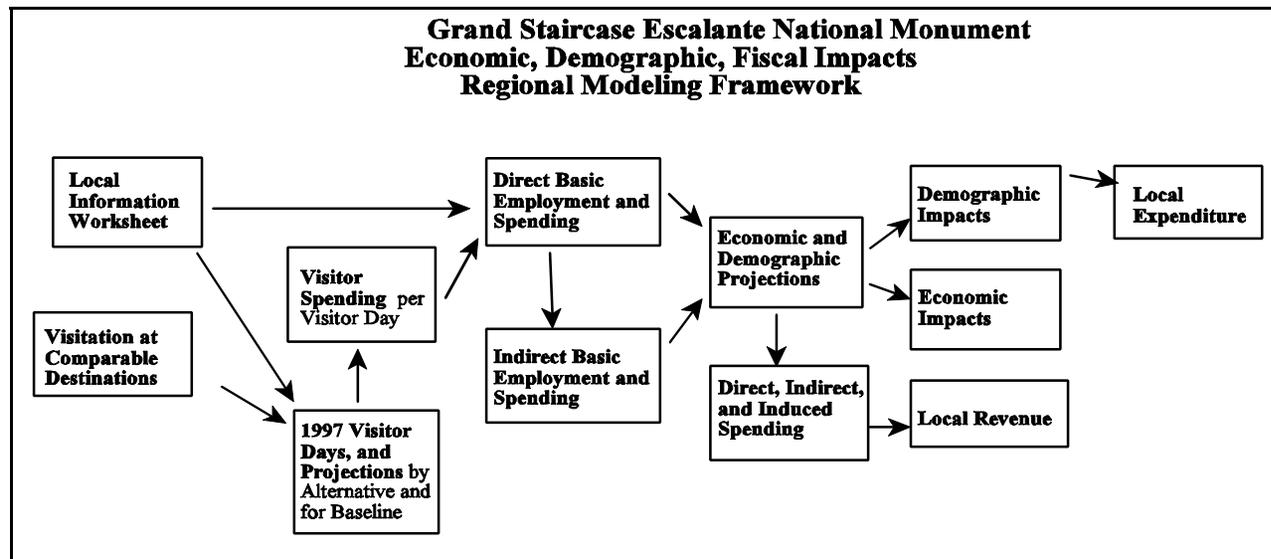
**Visitors, Projections and Spending**

**Visitor Days**

Visitor days were estimated using BLM data on visitor counts and activities. The information was compared to data collected at comparable destination in the Southwest region and at other national destinations.

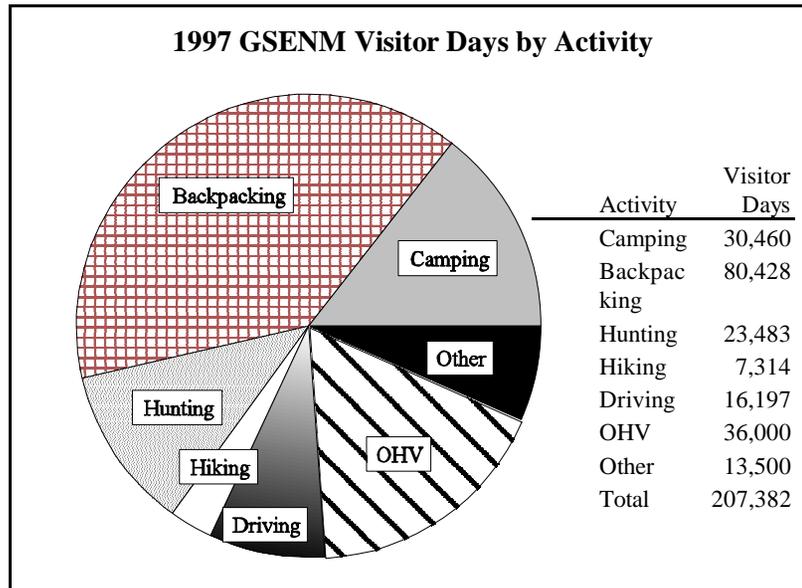
**Analysis of BLM Visitation Data for 1997 and 1996 Baseline**

Although the methodology used by the National Park Service differs from the methodology to develop GSENM visitor days estimates,



comparing the estimates offers a frame of reference. The 1997 estimated visitor days at GSENM are: more than twice the estimates for Capitol Reef; about half of visitor days at Canyonlands; two-thirds of visitor days at Arches; a quarter of visitor days at Bryce Canyon; and 15 percent of visitor days at Zion National Park.

Visitors to GSENM participate in a broad range of activities. BLM records indicate that many of the visitor days are accounted for by backpackers. Off-highway-vehicle (OHV) use, camping, and hunting are also popular activities in the Monument. The category “other” includes activities such as biking, fishing, nature study, photography, picnicking, and viewing wildlife, as well as other activities. This category accounts for the second highest percent of visitor days. Camping and hunting are also significant activities in the Monument.



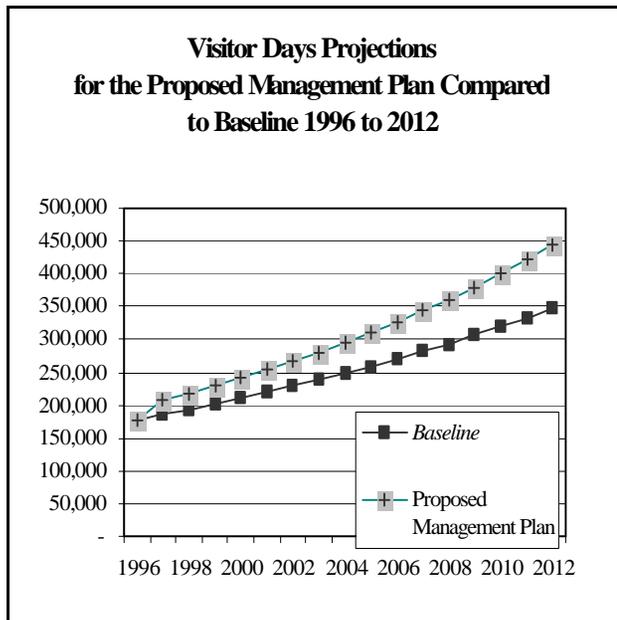
| Park Name         | Recreation Visits | Recreation Hours | Visitor Days |
|-------------------|-------------------|------------------|--------------|
| Arches NP         | 858,525           | 3,715,704        | 309,642      |
| Bryce Canyon NP   | 1,174,824         | 9,336,175        | 778,015      |
| Canyonlands NP    | 432,697           | 4,461,952        | 371,829      |
| Capitol Reef NP   | 625,680           | 1,142,783        | 95,232       |
| Cedar Breaks NM   | 608,399           | 1,273,678        | 106,140      |
| G S- Escalante NM | 192,096           | 2,488,584        | 207,382      |

A baseline projection of visitation was also developed. The methodology for developing the baseline was similar to that used for 1997. However, counting procedures are judged to be more accurate in 1997 than in 1996 by BLM officials. Because of this, the estimate for 1996 produced using the same methodology as the 1997 estimate for visitor days was determined to be too low; half of the difference between the 1996 estimate and the 1997 estimate was attributed to undercounting. The purpose of the baseline is to analyze how the visitation associated with the Proposed Management Plan differs from what would have occurred in the area without designation of the Monument. The baseline is a projection of 1996 visitor days (178,097) assuming a constant growth rate of 4.25 percent. This is the same rate at other national destinations in Southern Utah.

Again, the baseline for these GSENM visitor projections is visitation that would have occurred in the absence of national monument designation. The impacts of this visitation are assumed to be embedded in the regional economic and demographic projections. The impacts of the various management plans represent deviations from this visitation baseline path. However, part of the increase in visitation may come at the expense of tourism to other attractions in the area. This has not been formally modeled. Instead, a 5 percent "crowding out" factor has been assumed for both positive and negative visitation impacts.

**Visitor Projections**

The BLM projected visitor days for five categories of use: motorized use, scenic driving, mountain biking, backpacking, and car camping. These five categories of uses accounted for almost 80 percent of visitor days in 1997. Projections developed by the BLM are for the year 2012. The ratio of the five categories to total visitor days are assumed to remain constant. The Governor’s Office of Planning and Budget (GOPB) holds the growth rates constant throughout the projection horizon.



**Visitor Day Projections for the Proposed Management Plan**

With this Plan, visitor days are projected to grow from 207,382 in 1997 to 442,633 in 2012. Visitor days are projected to increase for all categories of use. Scenic driving is projected to triple from 16,200 visitor days in 1997 to 48,600 in 2012. All-terrain-vehicle (ATV) use is expected to double from 35,000 visitor days in 1997 to 70,000 in 2012. Mountain biking is assumed to increase from 3,000 visitor days in 1997 to 12,000 in 2012. Backpacking is assumed to double from 80,500 visitor days in 1997 to 161,000 in 2012. Car camping is assumed to increase from 30,500 visitor days in 1997 to 61,000 in 2012. Other uses increase from 42,182 in 1997 to 90,033 in 2012.

**Visitor Spending**

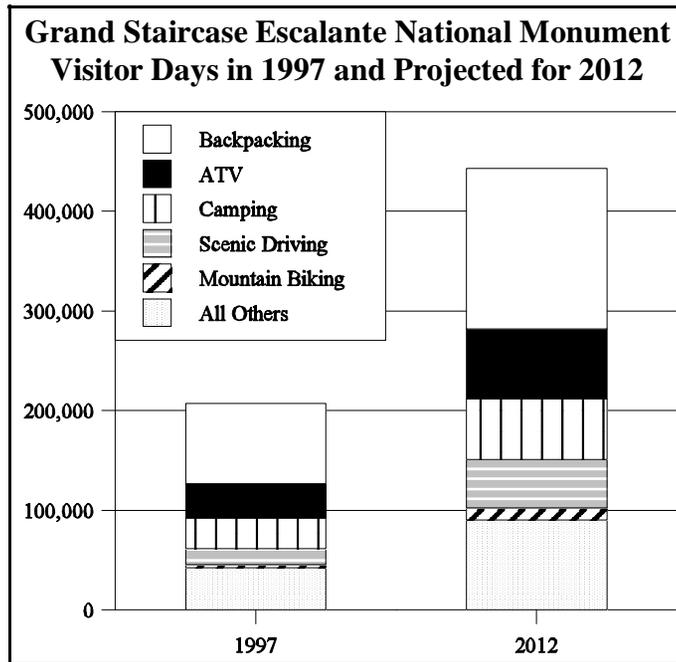
An estimate of visitor spending of \$20 per visitor day was selected for the analysis. A review of six different surveys of visitor expenditures and reliance on assumptions about the area and the types of visitors support this estimate, and the estimates of spending by industry.

| Proposed Visitor Expenditures<br>(Per Visitor Per Day Spending) |         |      |
|---|---------|------|
| Eating and Drinking   | \$4.40  | 22%  |
| Hotel and Personal Services                                     | \$4.00  | 20%  |
| Transportation  | \$1.60  | 8%   |
| Trade   | \$7.00  | 35%  |
| Amusement and Recreation  | \$3.00  | 15%  |
| Average Daily Visitor Spending                                  | \$20.00 | 100% |

**Direct, Indirect, and Induced Impacts of the Proposed Management Plan**

Direct and indirect employment impacts used as inputs to the Utah Process Economic and Demographic (UPED) model were estimated using the base period 1995 Utah Multi-Regional Input-Output (UMRIO-95) model of Southwest Utah and assumptions developed by the monument planning team and GOPB. (Technical documentation of the UMRIO-95 model will be forthcoming on the Internet at

<http://www.governor.state.ut.us/dea>. UPED is a structural equation, economic-demographic model that relates changes in economic structure to demographic changes. Documentation is available at: <http://www.governor.state.ut.us/dea/publications/MODEL/Model.htm>). Direct impacts involve the BLM’s activity and visitor spending. It was assumed that BLM would have an additional \$3.4 million budget and about 30 jobs over what would have been the case without Monument designation.



**Socio-Economic Impacts of the Proposed Management Plan**

**Population**

An increase of 244 people is projected for 1998. The largest increase in population is for the year 2000, in which 961 people are projected. However, in 2001 this number declines to 284 and grows slowly each year to reach 422 in 2012.

**Employment**

Employment is projected to increase by 157 in 1998. The largest increase in employment is 615 in the year 2000. However, in 2001 this number declines to 172, then increases slowly to 248 in 2012.

**Earnings**

Employees earnings are projected to be \$4.6 million in 1998, peak at \$18.4 million in 2000, then grow from \$4.9 million in 2001 to \$6.6 million in 2012.

**Local Government Revenues and Expenditures**

Local government revenues are projected to be \$361,000 in 1998, peak at \$1,356,000 in 2000, then increase steadily from \$397,000 in 2001 to \$598,000 in 2012. Local government expenditures follow the same path, and are projected to be \$201,000 in 1998, peak at \$791,000 in 2000, then increase steadily from \$232,000 in 2001 to \$362,000 in 2012. The results of this are net revenues of \$160,000 projected for 1998, peaking at \$565,000 in 2000, then increasing steadily from \$165,000 in 2001 to \$236,000 in 2012.

**Economic, Demographic and Fiscal Impacts to the Southwest Region from the GSENM Proposed Management Plan**

|      | Visitor |            | Earnings   | Revenue | Expenditures | Net Revenue |         |
|------|---------|------------|------------|---------|--------------|-------------|---------|
|      | Days    | Population | Employment | (\$000) | (\$000)      | (\$000)     | (\$000) |
| 1998 | 218,134 | 244        | 157        | 4,616   | 361          | 201         | 160     |
| 1999 | 229,443 | 338        | 215        | 6,459   | 496          | 278         | 218     |
| 2000 | 241,338 | 961        | 615        | 18,446  | 1,356        | 791         | 565     |
| 2001 | 253,850 | 284        | 172        | 4,940   | 397          | 232         | 165     |
| 2002 | 267,011 | 299        | 179        | 5,132   | 416          | 244         | 172     |
| 2003 | 280,854 | 309        | 183        | 5,241   | 429          | 253         | 176     |
| 2004 | 295,414 | 319        | 190        | 5,526   | 455          | 262         | 193     |
| 2005 | 310,730 | 328        | 195        | 5,412   | 453          | 274         | 179     |
| 2006 | 326,839 | 344        | 203        | 5,762   | 485          | 295         | 189     |
| 2007 | 343,784 | 347        | 209        | 5,913   | 502          | 299         | 203     |
| 2008 | 361,607 | 360        | 215        | 5,947   | 512          | 310         | 202     |
| 2009 | 380,355 | 372        | 222        | 6,079   | 530          | 320         | 210     |
| 2010 | 400,074 | 388        | 231        | 6,279   | 553          | 334         | 219     |
| 2011 | 420,816 | 405        | 240        | 6,444   | 574          | 349         | 225     |
| 2012 | 442,633 | 422        | 248        | 6,636   | 598          | 362         | 236     |

**Impacts Beyond the Scope of this Study**

The socio-economic impacts reported are driven by two factors: direct BLM spending and employment, and spending by visitors. The direct, indirect and induced effects of this spending on population, employment, employee earnings, and government revenues in the Southwest region are the focus of this analysis. The analysis relies on the current structure of the economy and historical averages to estimate these impacts.

However, the economy in Southwest Utah will be affected by many factors that are not directly the result of BLM actions, but may be influenced by how the Monument is managed. Some of these factors may have socio-economic impacts that are even larger than those

associated with the Proposed Management Plan analyzed here.

Private enterprises, local government and others will make decisions regarding infrastructure, business development, service expansions and the like. These decisions may result in significant economic impacts. For example, a decision made by a private business to open a lodging establishment could have the effects of capturing more visitor spending, employing more people, and generating higher tax revenues. Similarly, decisions made about restaurants, tow truck companies, car rental companies, outdoor supplies sales/rental companies, grocery stores, tour guides (air, horseback, jeep, etc.), and research projects are not decisions made by the BLM, but impact the Southwest economy and are not captured in this analysis. Another example of factors beyond the scope of this analysis are actions taken by local governments. Local governments can increase or decrease levels of services such as emergency search and rescue, law enforcement, emergency medical services, road maintenance, police protection, fire protection, waste management services, etc. Decisions about service levels will effect revenues and expenditures.

Many small rural communities in the western United States that have been supported by extractive industries or agriculture have experienced a transition toward greater reliance on tourism. This of course drives a different type of development in these communities, bringing in services that had not previously been present and changing the economies and character of these communities. Property values are often driven upward and greater demands are made on local governments to provide for the increased infrastructure and service needs. Unfortunately, adequate data does not exist to systematically evaluate these potential impacts to the area.