AN ANALYSIS OF THE OUTDOOR RECREATION RESOURCE
AND ITS DEVELOPMENT IN THE CANYON COUNTRY
OF SAN JUAN AND GRAND COUNTIES, UTAH

by

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of the requirements for the degree
of
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in
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ABSTRACT

An Analysis of the Outdoor Recreation Resource
And Its Development in the Canyon Country
of San Juan and Grand Counties, Utah
by
Lawrence E. Royer, Master of Science
Utah State University, 1968

Major Professor: John D. Hunt
Department: Wildlife Resources

The wild lands recreational resources of the canyon country of southeastern Utah were analyzed within an evaluation framework specific to the region. Patterns of recreation development were established and recommendations for planning were submitted.

The study area was found to be richly endowed with environmental recreation resources and opportunities. Contributing environmental factors included the uniqueness, diversity, configuration, and/or abundance of the scenic, water, climatic, and primitive resources. An unusually wide spectrum of quality opportunities were present.

Planning and development were inconsistent with the expression of the environmental resources. A lack of coordination among the responsible public agencies, disparities in allocation of planning and development priorities, and the failure of planning to derive maximum utility from the resources were evident. Deficiencies of
existing development can be easily corrected because of the embryonic state of development.

Recommendations pertinent to coordination among agencies, master planning, facilities development, land classification, wilderness allocation, interpretation, and scenic drives were proposed. (249 pages)
INTRODUCTION

Purpose and Desirability of Study

Recreation use of the canyon country in southeastern Utah is presently in a transitional phase. Increased cognizance of the scenic diversity of the canyon country has resulted in its recent change from a region of recreational obscurity to one of major significance. Because of this former obscurity, hardened patterns of recreational use and irreversible patterns of development are not yet manifest in the canyon country. San Juan county is unique in that it offers little in the way of a relevant historical pattern of visits. Rather, it embraces a new undeveloped national park and a national recreation area with inadequate access and undeveloped facilities. Some of the pending developments in the county have no definite date of completion. In such a situation, the traditional methods of forecasting offer little in the way methodology (sic). (Stewart and Lueck, 1966, p. 27)

Because use is in a formative stage, almost all alternatives and opportunities for development remain available to the recreation planner. Woodbury observes that

In very few regions can planning start with a fairly clean slate. Nearly always planners are, in fact, pushed into devising corrective measures to deal with the mistakes of the past... It is difficult to do the basic analysis of conditions and trends soon enough and thoroughly enough that the remedies for specific ills stand some chance not only of correcting obviously unsatisfactory conditions, of not creating other serious difficulties, but also of fitting into the longer-range development of the area as a whole. (Woodbury, 1966, p. 572)

Thus possessing this rare advantage, does current planning in the canyon country embrace all of the available opportunities and
alternatives for development? Does existing development indicate direction and purpose pertinent to an optimal future recreation environment? Have the responsible state and federal agencies coordinated planning to evolve a unified approach that derives maximum benefits from the recreation resource?

Judicious planning will insure optimum development of the outdoor recreation resource consistent with quality of the resource. Poor planning will ultimately result in a mediocre recreation environment plagued by the conflicts that now envelop many developed areas in the western United States. A comprehensive evaluation of outdoor recreation development, planning, and policy in the canyon country is lacking. It is appropriate and timely that such an appraisal be forthcoming. It is the purpose of this thesis to provide that appraisal.

Objectives

This study constitutes a problem analysis of the development status of outdoor recreation in southeastern Utah. There are two objectives:

1. Catalogue and analyze the existing and potential outdoor recreation resource and development patterns.

2. Submit recommendations and goals for outdoor recreation planning and development.

Scope of Study

The study geographically embraces the canyon country of San Juan and Grand Counties, Utah (figure 1). That region north of U.S.
Figure 1. Geographical situation.
Highway 6-50 is physiographically disjunct from the canyon country (Fenneman, 1931, pp. 306-312) and is excluded from the study area. Much of the area east of Utah Highway 47 is not part of the canyon country proper and is treated superficially. The study area embraces approximately 9,649 square miles.

The study is restricted to recreation development of wild lands. Wild lands are defined (Brockman, 1959, p. 23) as "areas characterized by a natural or largely unmodified character." With the exception of the private dude ranch, the study is limited to wild land recreation resources on lands of the public sector. Urban recreation resources are not considered.
PROCEDURE

The total recreation resource was divided into two component resources--the environmental resource and the developed resource. To achieve the objective of inventory and analysis, the two components were investigated individually. Once these resources were defined, a comparative analysis was accomplished. The outline of procedure assumes the following configuration:

I. The Environmental Resource.
   A. Identify the environmental oriented recreation resources present in the study area.
   B. Develop a recreation resource inventory-evaluation framework which possesses elements that anticipate environmental oriented planning goals.
   C. Inventory and evaluate the resources within the context of the framework.

II. The Developed Resource.
   A. Inventory existing and planned development.
   B. Determine planning and development policies.

III. Establish the Patterns of Development.

Identification of environmental associated recreation resource classes within the study area

Climate, water, geology, scenery, open space, fish and wildlife, vegetation, primitive areas, prehistory and history are acknowledged environmental associated recreation resource classes
(National Park Service, 1950; Lewis, 1965; Soil Conservation Service, 1966; State of Wisconsin, 1966; Price, 1967). Each of these resource classes assumes varying significance when placed in regional context. A preliminary reconnaissance was conducted to determine if resource classes such as primitive areas and prehistory were present in the study area. Classes that were determined by reconnaissance to be closely related were combined as a single class for the convenience of discussion.

**Development of inventory-evaluation framework**

Scheffey (1965, p. 1) has emphasized the desirability of developing "methods of identifying, describing, and evaluating the supply of outdoor recreation resources within a particular geographical context--local, regional, and state." Because the Outdoor Recreation Resources Review Commission (hereafter designated as ORRRC) area categories (Appendix A) are designed to classify area management situations within a national context (ORRRC, 1962a, p. 96), they do not satisfy this objective. The ORRRC, however, emphasized that

Because the basic stock of potential recreation resources for specific activities varies widely among regions of the country, the criteria used in any classification system will have to be developed with specific reference to the total region to be covered. (ORRRC, 1962d, p. 157)

Unfortunately, criteria for regional evaluation of the canyon country have not been developed.

Resource evaluation cannot assume a strictly quantitative approach. Additional elements must be evaluated. As Scheffey points out, the inventory process
must include consideration of process or function recognizing both passive and active forms of recreation, views and scenery, particular habitats, and opportunities for weekday activities as well as for vacation pursuits. The non-consumptive and apparently nonproductive aspects of many so-called recreational resources or amenities--open space, scenery, visual relief--are difficult to incorporate into traditional benefit-cost analysis useful for other forms of resource development appraisal, further complicating the inventory and evaluation phase of supply analysis. (Scheffey, 1965, p. 4)

No single methodology that identifies all of the various criteria that characterize recreation environments is available. Wisconsin (State of Wisconsin, n.d.) has pioneered a spatial approach that identifies qualities applicable to its regional peculiarities.

It is evident that inventory-evaluation of the canyon country region is dependent upon the development of an inventory-evaluation framework that selects environmental elements applicable to the peculiarities of the region. The following approach was utilized to develop the framework. Elements were identified which contributed to recreation environments in general. Elements which had specific reference to planning in the canyon country region were then selected from the identified elements.

A review of the literature identified many elements appropriate for the evaluation of recreation environments. Selection and modification of those elements that responded to the particular environmental situation of the canyon country region necessitated a close familiarity with the area. The ORRRC (1962d, p. 157) indicates that this familiarity can be attained "by applying . . . analysis to data collected in field resource studies, aerial photogrammetry, and reconnaissance survey."
Although the task was complicated by the vastness and inaccessibility of the study area, extensive field reconnaissance was conducted to better understand the complexities of the canyon country. The entire area was surveyed by aerial reconnaissance in 1966 and 1967. Much of the area was surveyed by car, jeep, and horseback during the spring and summer of 1967. The National Park Service described the relationship between ground and aerial reconnaissance in its survey of the Colorado River basin.

Ground studies are an indispensable supplement to air surveys and should follow them for purposes of verification, but the air surveys should come first because they provide at the outset a visual and mental grasp of the entire region which could be attained only by months or years of ground work. This is particularly true of large unfamiliar regions having a rugged and complicated topography which can be glimpsed only intermittently and at long range by ground travel. (National Park Service, 1950, p. 222)

Figure 2 maps the "rugged and complicated topography" of the study area.

Personnel of the National Park Service, U.S. Forest Service, and Bureau of Land Management; river runners; and jeep tour operators were interviewed with reference to specific aspects of the recreation environment. Field resource studies of the National Park Service, U.S. Forest Service, and Bureau of Land Management were analyzed. Reference was made to descriptive scientific and popular literature of the area. Aerial photography of the study area was analyzed.

Inventory of existing and planned development. This portion of the inventory procedure utilized material obtained during the conduct of the Utah State University project, Development of Comprehensive Inventory Systems for Recreation Planning in Utah.
Existing and potential sites and other phases of planning and development by the U.S. Forest Service, Bureau of Land Management, National Park Service, and Utah Division of Parks and Recreation were identified through a review of master plans and similar records of these agencies. Development by agencies other than those listed above was identified in the field and by interview. Because planning is a dynamic process, the inventory material is considered chronologically relevant only through the dates of its collection during the spring and summer of 1967.

**Determination of planning and development policies.** Determination of policy involved the review of general agency policies as stated by law and by agency literature intended for public consumption. Area policy was ascertained, when possible, by review of statements within master plans and other planning statements. Agency officials were interviewed to identify aspects of policy or additional policy objectives not disclosed in agency literature. The reluctance of those interviewed to reveal policy objectives under formulation or to designate personal statements as official policy is appreciated and acknowledged. When area policy objectives were unavailable, unstated, or lacking, historical precedence was often examined for its relevancy to apparent policy.
RESULTS AND DISCUSSION

Environmental Associated Resource Classes

The initial reconnaissance indicates that all general resource classes are present within the study area. These classes are: (1) water, (2) scenery, (3) climate, (4) geology, (5) history, (6) prehistory, (7) open-space, (8) primitive areas, (9) vegetation, and (10) fish and wildlife. However, the reconnaissance indicates that the following modification of the classes is desirable. Open-space and primitive areas are closely associated entities in the wild land environment of the canyon country. For convenience, these two resource classes can be treated as one class under the inventory-evaluation framework. Thus, the recreation resource classes in the study area are: (1) water, (2) scenery, (3) climate, (4) geology, (5) history, (6) prehistory, (7) open-space--primitive areas, (8) fish and wildlife, and (9) vegetation.

Framework for inventory-evaluation

The framework for inventory-evaluation first lists and describes the various features and activities associated with the recreation resource classes. The framework then interprets expressions of the canyon country recreation resources that anticipate environmental associated planning guidelines and goals. The framework both catalogues and evaluates. The framework assumes this configuration.
Part I. The inventory must:

1. describe the basic intrinsic or extrinsic features of each resource class, and

2. list all activity opportunities that derive directly from each resource class or classes combination or from facilities induced by that resource class or classes combination.

Part II. The evaluation must interpret each resource class, class combinations, or the total resource, whichever is most appropriate, by the following processes:

1. examine the width of the activity spectrum.

2. examine the quantity of features of each class with respect to other resource classes.

3. determine the specific environmental features and activity opportunities that are peculiar to the study area or to the area and its perimeters. Uniqueness derives from one or a combination of three situations. The particular feature or opportunity is present only within the canyon country and nowhere else. The superlative examples of the feature or opportunity are present within the canyon country. The canyon country possesses the feature or opportunity in superior abundance to other areas.

4. analyze any spatial configuration of resource features that denotes frequent contrast and consequent patterns of diversity.

5. analyze any spatial configuration of specific resource feature denoting large areal concentration and thus defining nodes of abundance.

6. determine the strategy of location of features and opportunities.
The inventory portion of the framework is a basic element of analysis utilized by most federal resource agencies (Bureau of Land Management, 1963; U.S. Forest Service, n.d.; Bureau of Outdoor Recreation, 1964; Soil Conservation Service, 1966). Although the inventory catalogues and quantifies, it is only the initial phase of resource analysis. Wagar states that

In establishing zones that include recreation, it may not be nearly as important to devote a specific area to a specific recreation opportunity as it is to insure that the opportunity is adequately represented somewhere among our recreation resources. Therefore because many areas are suitable for any of a variety of activities, recreation planning must proceed opportunity by opportunity, as well as area by area. (Wagar, 1964, p. 5)

The inventory phase identifies the opportunities and areas. The evaluation of resource areas and opportunities must interpret the significant relationships between these various areas and opportunities. Once the structure and capability of the total area is defined, planning then possesses the criteria by which it can "proceed opportunity by opportunity, as well as area by area."

**Width of activity spectrum**

Tocher (1964) states that "recreationists are a series of minority groups requiring a full spectrum of recreational opportunities." A recreation environment possessing a wide spectrum of recreation opportunities is thus an environment of high capacity and recreation quality. The inventory phase must identify all opportunities that emanate from the resource classes if the width of the spectrum is to be properly evaluated. The incorporation of broad general opportunity classes such as boating and hunting into the opportunity spectrum is of little value to the planner. Recreation
activities must be redefined in more specific terms that express the full gamut of the spectrum. Boating in the canyon country should be expressed as activities such as pleasure boating, boat sightseeing, float trips, boat camping, sailboating, and river running (Appendix B).

**Comparable abundance of resource classes**

Although it is impossible to compare all resource classes under one quantitative framework, indications of gross relative abundance, when viewed in context with other evaluation criteria, are relevant to the planning process.

**Unique areas and opportunities**

Unique features and opportunities are expressions of area individuality. Uniqueness thus distinguishes one area from another and constitutes the particular attractiveness of that area to the visitor. As such, unique attributes should be identified and their degree of uniqueness ascertained.

Identification of unique features is also justified by current philosophy which places high value upon unusual and significant natural areas of limited quantity.

With few exceptions the places of superior scenic beauty, the unspoiled landscapes, the spacious refuges for wildlife, the nature parks and nature reserves of significant size and grandeur that our generation save will be all that is preserved. (Udall, 1962, p. 3)

This concept of preservation of unique features is inherent in National Park Service policy.

Each national park is supposed to be unique and to have some special national significance. Most of the units of the National Park System meet these qualifications. However, many kinds of habitat are completely missing. The system is hardly representative of all the kinds of scenery in the country. (Eichhorn, 1966, p. 336)
The ORRRC report (1962a, p. 109), recognizing that unique areas are not the exclusive domain of the National Park Service, included the category "Class IV - Unique Natural Areas" (Appendix A) within its six-fold classification system. The ORRRC (Ibid.) stated that "the scenic sites and features included in this class are limited in number and are irreplaceable." Identification and classification of unique areas are thus justified by the ORRRC because the fact that Class IV areas are by definition unique, and therefore irreplaceable, argues strongly, almost unanswerably, in favor of placing all those that really qualify in Class IV. (Ibid., p. 117)

Unique areas and opportunities within the study area are thus identified and evaluated because:

1. they are a function of area identity and attraction.
2. they are irreplaceable.

**Patterns of frequent contrast and diversity**

Patterns of frequent contrast and diversity are quality elements that contribute to the maximization of variety when judiciously utilized in planning approaches. Maximization of variety is implied in the concept of the full spectrum of recreation activities. In this sense, patterns of frequent contrast and diversity indicate that many disjunct activities are available in a limited area.

Patterns of diversity and frequent contrast maximize variety in an additional sense. This sightseeing activity is a visual experience. Frequence of outstanding landscapes enriches the visual experience and thus constitutes a quality environmental element. The University of Wisconsin (U.S. Department of Commerce, 1966, p. 118) emphasizes that the sightseeing experience is intensified
"by providing maximum change and variety along the right-of-way."

The U.S. Department of Commerce (Ibid., p. 172) assigns "Quality of Landscape" and "variety provided" as the single most important intrinsic factor in planning for a scenic road program.

Nodes of abundance

A spatial configuration of resource features that denotes large areal concentration and abundance has an important implication for planning. This configuration represents a favorable climate for planning since nodes of abundance imply activity allocation with a minimization of use conflict. Thus a full spectrum of appropriate recreation opportunities can be applied to these nodes. This spatial configuration is essentially an impact-reducing situation.

Strategy of location

Strategy of location relates to resource availability and utility. It reveals those mutually reinforcing resource combinations which constitute areas of outstanding total abundance and variety. "It is not the total number of acres that is critical; it is the number of effective areas" (ORRRC, 1962a, p. 86). It indicates areas of resource incompatibility. It anticipates interpretative resource development feasibilities and priorities.

Inventory and Evaluation

Water resource-inventory

The ORRRC report states that the ways in which water enters into the recreational scene are extremely varied. Two general types are obvious. Water is used in recreation as a medium on which or in which the recreational occupations engage. This type
of use includes fishing, hunting, boating, swimming, and the gamut of associated activities.

The second general type of use, if it may be called a use, is that in which water provides principally the background or setting enhancing the intrinsic satisfaction to be derived from any recreation occupation. This general type includes all recreational activity for which water as a scenic asset is involved, or where it adds to the emotional quality of any personal experience. For instance, camping or canoeing primarily for nature study, photography, or just plain contemplation, requires a natural setting.

This second type of use illuminates the relationship of water to wilderness. (ORRRC, 1962c, p. 3)

Five water types are identified (figure 3) which adapt to the function of water as an activity medium and as an intrinsic setting.

These five types are:

Type I. Open water channel and bay areas of Lake Powell.
Type II. Narrow canyon arms of Lake Powell.
Type III. White-water portions of the Colorado and San Juan Rivers.
Type IV. Smooth-water portions of the Colorado, Green, San Juan, and Dolores Rivers.
Type V. Small lakes and ponds.

Certain activity types emanating from the water resource require definition. Selected study area activity types are defined in Appendix B.

Type I, open-water channel and bays of Lake Powell. Figure 3 illustrates the configuration of Lake Powell. The impoundment, linear in configuration, will extend 186 (174 miles in Utah) miles at full pool. It is acknowledged to be one of the most scenic lakes in the world (Edwards, 1967).

Activities that emanate from the main channel and bays (figure 4) are: (1) boat sightseeing, (2) sailboating, (3) pleasure boating, (4)
Figure 3. Map of water resource.
Figure 4. The configuration of Lake Powell maximizes variety. The 186 mile channel (above) represents a water travel corridor joined frequently by narrow tortuous canyon arms (below).
boat camping, (5) water skiing, (6) photography, (7) scenic flights, (8) boat historical interpretation, and (9) fishing--trout (Jacobson, 1966, p. 44).

**Type II, narrow canyon arms of Lake Powell.** Lake Powell possesses numerous arms that follow the Glen Canyon tributary canyons (figure 3). These arms explain the disparity of shoreline, 1,860 miles, to length, 186 miles. Many arms are narrow and tortuous (figure 4), extending many miles back from the main channel.

Activities that emanate from the canyon arms are: (1) fishing--bass (Barry and Blanchat, 1966, pp. 9-14), (2) photography, (3) wilderness boating, (4) swimming, (5) boat archeological interpretation, (6) boat geological interpretation, (7) scuba diving, (8) boat camping, (9) scenic flights, (10) hiking, and (11) nature study.

**Type III, white-water rivers.** The study area possesses three white-water river sections (figure 3), Westwater and Cataract Canyons of the Colorado River (figure 5), and the San Juan River Canyon.

Cataract Canyon, 41 miles long, possesses over 40 rapids. Westwater Canyon contains 17 miles of alternating rapids and smooth water. The San Juan Canyon contains 61 miles of white-water sections. Thus the study area presently contains 119 miles of white-water opportunities. Lake Powell at full pool will reduce this amount to 92 miles. Another measure of white-water river running is its distribution in time (ORRRC, 1962c, p. 11). A minimum of 13 days is required to run all white-water sections in the study area.

Activities that emanate from white-water rivers are: (1) river running, (2) hiking, (3) photography, (4) wilderness camping, (5) swimming, (6) boat historical interpretation, (7) ecological
Figure 5. The white-water resource is a unique study area resource in terms of quality and abundance. The river running opportunity in Westwater Canyon (above) is characterized by ready availability and a short distribution in time. Cataract Canyon (below) is considered by some river guides to be the "most challenging river run in North America."
interpretation, (8) nature study, and (9) hunting—bighorn sheep.

Type IV, smooth-water rivers. The Green and Colorado Rivers possess lengthy sections of smooth-water. The entire Green River portion (figure 6) of the study area and the Colorado River from its confluence with the Green River to the mouth of Westwater Canyon, a total of 184 miles, can be considered as smooth-water rivers. The San Juan River from the Colorado border to Bluff, 41 miles, exhibits the characteristics of smooth-water rivers. The Dolores River, 11 miles, is included within this water type.

Activities that emanate from smooth-water rivers are: (1) float trips (wilderness and non-wilderness), (2) boat sightseeing, (3) hiking, (4) photography, (5) wilderness camping, (6) boat camping, (7) swimming, (8) scenic flights, (9) boat historical interpretation, (10) boat geological interpretation, (11) boat ecological interpretation, (12) nature study, (13) hunting—mule deer, and (14) water skiing.

Type V, small lakes and ponds. Lake Powell is the major water body in the study area. Small lakes and ponds do exist in the La Sal Mountains area, the Abajo Mountains area, and in the vicinity of Blanding. A partial listing would include:

La Sal Mountains - Oowah Lake
  - Warner Lake
  - Dark Canyon Lake
  - Blue Lake

Abajo Mountains - Monticello Lake
  - Race Track Reservoir

Blanding City Reservoirs Number 3 and 4.
Figure 6. The Green River flows through Bureau of Land Management lands at Saddle Horse Bottom immediately north of Canyonlands National Park. The Green and Colorado Rivers are superlative examples of smooth-water desert rivers within the Canyon scenic type.
Other small lakes, reservoirs, and stock ponds are scattered sparsely throughout the mountainous situations. Indian Creek, the only significant small perennial stream, is included within this type.

Activities emanating from these lakes and reservoirs include: (1) camping, (2) picnicking, (3) fishing—trout, and (4) nature study.

**Water resource evaluation**

**Width of spectrum.** With the exception of the small lakes and ponds, the study area water types possess an exceptionally wide array (25) of recreation opportunities. The narrow canyon arms of Lake Powell (11) and the smooth water river section (14) are particularly rich in number of opportunities.

**Abundance.** Since quantity of the water resource is measured in linear miles, it cannot be compared directly with the quantity of most of the other recreational resources of the study area. However, it is significant that within a study area characterized by an essentially arid environment, the water resource can be considered unusually abundant. The quantity of the water resource is summarized in table 1.

**Uniqueness.** The water resource is unique in many respects. The white-water of Cataract Canyon is unique (figure 5).

Most professional river guides agree that Cataract Canyon is one of the most challenging stretches of the Colorado River. Some even say that the Cataract Canyon trip is the most challenging river run in North America. (Sunset, 1967, p. 40)

The National Park Service states that

Cataract Canyon—the explorers' nightmare and modern river-runners' challenge—is a feature well worth seeing (and hearing). In the heart of the canyonlands, the Green and Colorado Rivers merge their differing shades of silt-laden waters to form the wildest river on the
Table 1. Quantity of water resource

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continent—an untamable stream, whose geological history of erosion is astounding, and whose basin holds some of the world's most vivid scenery. (National Park Service, 1967)

Only two areas of the Colorado River system, the Green-Yampa Rivers section of Dinosaur National Monument (89 miles, approximately 8 days) and the Marble Canyon-Grand Canyon section (310 miles, 12 days), possess desert white-water in comparable abundance of that of the study area (119 miles, 13 days). It is suggested that the study area is unique in the United States in terms of abundance (distribution in time, number of sections) of white-water (ORRRC, 1962b, pp. 319-321).

The smooth-water river sections are unique in several respects. They are the superlative examples of smooth-water desert rivers within a canyon scenic setting. The study area sections are the only rivers of this type generally navigable by power boats.

Lake Powell satisfies all three criteria of uniqueness. It is not a naturally occurring lake form. It is the only large impoundment created within a desert canyon complex of the Glen Canyon type. This water type is shared with Kane and Garfield Counties, Utah. It offers unique recreation opportunities not duplicated elsewhere.

The small lakes and ponds do not possess attributes unique to the study area.

Patterns of frequent contrast and diversity. The configuration of the Lake Powell shoreline (figures 3 and 4) is one of recurrent variety. The frequent joining of the narrow canyon arms at right angles to the main lake channel provides a maximization of variety of recreation opportunities and landscape contrast within short intervals of travel time.
Nodes of abundance. The water resource does not assume a pattern of large areal concentration. It is distributed irregularly throughout the study area and assumes a linear configuration where present.

Strategy of location. The water resource occupies an extremely strategic position within canyon country of the study area and its perimeters. Lake Powell and the river canyons can be considered water highways (figure 3). The significance of their location is explained as follows:

1. Lake Powell is the only major corridor to many of the area's other recreational resources. The lower Glen Canyon portion represents a single water travel corridor. Above the junction of the San Juan River (figure 3), the lake functions as two water travel routes, each penetrating different regions within the study area. It is situated adjacent to areas possessing significant scenic resources (figures 3 and 7). Thus Lake Powell increases the utility of these portions of the scenic resource. Conversely, the scenic resource, as an intrinsic setting for Lake Powell, contributes to the recreational quality of the impoundment. Jennings states:

   An overwhelming aspect of the recreational success of Lake Powell is the stunning grandeur of its red-rock setting. Nowhere in the Americas do comparable features occur. (Jennings, 1966, p. 5)

2. The Green River from Green River, Utah, to its confluence with the Colorado River, and the Colorado River from that confluence to the Texas Gulf Sulphur Potash Plant are considered to be a single travel corridor. The white-water river sections exhibit a limited corridor effect associated with their uni-directional travel possibilities.
3. Several canyon arms of Lake Powell are situated in canyons rich in archeological resources. In many instances, boat conveyance is the most practical method of access to these canyons. An unusual and quality recreation experience derives from the close relationship of the archeological resource and Lake Powell within these canyons.

4. With few exceptions, the early historical resource is associated with the river canyons (including Glen Canyon) which constituted the only practical travel routes through the region. Many of these sites have been inundated by Lake Powell. However, Lake Powell and the river canyons still constitute the major access to many of the remaining historical sites.

5. Lake Powell and the river sections of the water resource can be considered as wilderness or wilderness thresholds (page 81 and figures 3 and 15). This fortunate circumstance of duality and location is important to and should be recognized in the planning process.

Scenic resource-inventory

The scenic resource is the canyon country's most widely publicized recreation resource. All areas possessing scenic values are located in figure 7. It is appreciated that specific locations within these areas are esthetically superior to the remaining acreage of a particular scenic type. These scenic areas are categorized by five distinctive types.

Type I, Alpine and Type II, Forested. Mountainous areas, although commonplace landscapes in many other western regions, are unusual in the canyon country. Wherever montane situations do
Figure 7. Map of scenic resource.
occur, they constitute contrasting landscapes of high esthetic appeal and are included within the scenic resource.

Type I, Alpine, and Type II, Forested (figure 8), approximate the Crest and Intermediate Zone designations employed by the U.S. Forest Service Intermountain Region in multiple use land management. The alpine landscapes are generally considered to be of very high esthetic quality.

Camping, hiking, fishing, horseback riding, winter sports, photography, and the enjoyment of wildlife and rare flowers reach their culmination for many persons in this remote, and, to many, most beautiful and inspiring of all recreation regions. (National Park Service, 1950, p. 6)

Although the pygmy forest and the oak-scrub vegetative types may possess limited situational or seasonal scenic appeal, they cannot be considered to possess scenic attributes equivalent to alpine or mountainous forested situations.

Type III, Transitional, montane-canyonlands. The Transitional, montane-canyonlands scenic type reaches its culmination in the study area. Type III is characterized by the interfingering of deep colorful canyons with the mountain flanks and plateau extensions. Esthetic appeal derives chiefly from the vivid color contrast between the exposed white or red rock and the dark green forest, and from the contrast in relief between canyon and mountain flank. The type is particularly appealing to the sightseeing recreationist because of the pattern of frequent repetition of encounter between mountain forest and arid canyon. The National Park Service described this scenic type in the discussion of life zones in the canyon country.

Spectacular examples of climatic extension downward into a lower zone may be seen in the Canyon Lands of Utah. There the streams, upon leaving the mountains, frequently vanish
Figure 8. Alpine and Forested scenic types. The crest of Mt. Mellenthin (12,646 feet) and a lower meadow (above) are examples of the Alpine scenic type present in the La Sal Mountains. Ponderosa pine and aspen (below) are associated with the Forested scenic type at this junction in the South Elk portion of Elk Ridge (8,188 feet).
into narrow, shadowy gorges of great depth which wind erratically for miles below the rolling surface of the sandstone mesas, on their way to join the canyon of the Colorado. The Transition Zone pines, in following these streams down from the mountain slopes, likewise disappear beneath the surface of the desert, and may be glimpsed only from the brink of one of these groges or from an airplane. The reversal of the usual altitudinal relationships is well illustrated in Indian Creek and Montezuma Creek Canyons at the base of the Abajo Mountains . . . (Ibid., p. 13)

Figure 9 illustrates this type.

Type IV, Canyonlands. The Canyonlands type embraces a myriad of land forms and shapes all characterized by vast exposures of rock and intense color. Lack of vegetation is a factor of esthetic appeal. Variety, form, relief, and uniqueness of configuration are all esthetic components of Type IV.

Included here are the buttes, spires, domes, fins, grabens, slickrock expanses, sheer-walled terraces, and monocline ridges that are the classic examples of canyon country scenic geology. Figures 10 and 11 are examples of this type.

Type V, Canyons. Canyons, as distinguished from Canyonlands, comprise Type V. The canyons and canyon systems of the study area are extremely diversified in appearance. They vary from the smooth-walled canyons of the Glen Canyon area to the deep rough-cut canyons of the Cataract-Dark Canyon area. Large erosion basins such as the Red Canyon area and Junction Butte-Colorado River area are included within the Canyonlands type. Canyons, as distinguished from Canyonlands, generally provide a greater intimacy with the landscape. Figures 4, 5, 6, and 12 provide examples of canyon extremes.
Figure 9. Transitional scenic type. This scenic type is characterized by the interfingering of deep colorful canyons with mountain flanks and plateau extensions. Hammond Canyon (above) and Arch Canyon (below) are examples of this scenic type. Both canyons cut deeply into the forested Elk Ridge.
Figure 10. Canyonlands scenic type. The Canyonlands scenic type is characterized by a visual absence of vegetation and a myriad of rock and physiographical forms. Color of the rock exposures is an important esthetic component. The Needles area of Canyonlands National Park (above) and the White Rim-Island in the Sky area in the northern portion of the Park are examples of this scenic type.
Figure 11. Canyonlands scenic type. Slickrock expanse near Cottonwood Canyon in the San Juan Triangle (above) and the erosional basin of Blue Notch Canyon (below) are examples of this scenic type.
Figure 12. Canyon scenic type. Lake Canyon (above) is characteristic of canyon tributaries to Glen Canyon below Red Canyon. Dark Canyon (below) assumes a distinctly different configuration. The Dark Canyon system is the most extensive canyon system in the study area and is a superlative backpack only wilderness.
Certain activities emanate directly from the scenic resource. However, the quality of many activities deriving from other resources is appreciably enhanced by scenic involvement. Activities immediately involving the scenic resource are: (1) overlook--observation, (2) scenic interpretative trails, (3) sightseeing, (4) pleasure driving, (5) photography, (6) scenic flights, (7) jeep touring, and (8) enjoyment of illustrative literature.

The scenic resource contributes in part to most developed site opportunities and to dispersed recreational opportunities. For example, camping and campground placement is often governed by the esthetic quality of the site and its surroundings. The scenic component is generally incorporated into site-oriented recreation development. The U.S. Forest Service considers scenic involvement as a quality criterion of its developed sites (U.S. Forest Service, 1965, p. 35). "The variety and attractiveness of the camping sites mirror the changing landscape. Many of the sites are unsurpassed in natural beauty."

**Scenic resource-evaluation**

**Width of spectrum.** Nine distinct recreational opportunities derive directly from the scenic resource. Scenic enjoyment is an adjunct to most developed site and dispersed activities.

**Abundance.** Inspection of figure 7 indicates that scenic areas comprise a major portion of the study area. Approximately 4,063 square miles of the study area possess scenic value. It is apparent that the scenic assets of the canyon country are an abundant recreation resource.
Uniqueness. The Canyonlands and Canyons scenic types are so peculiar to the southern Utah region that it may be said that these two types are without precedence elsewhere. The San Juan and Grand Counties area possesses a greater abundance of these types than do the other southern Utah counties. The Transitional, montane-canyonlands type reaches its greatest expression in the study area. The Dark Canyon-Gypsum Canyon area, Salt Creek-Needles area, Island in the Sky, Rainbow Bridge and north slope of Navajo Mountain, Arches National Monument, and the Castle Valley-Onion Creek areas are esthetic resources not duplicated outside the confines of the study area. Grand Gulch, Comb Ridge, the east-bank Glen Canyon tributary canyons, the White Canyon system, the Canyon Rims area, and the San Juan Triangle slickrock expanses are duplicated elsewhere in southern Utah but are probably unique to the remainder of the earth. Cataract Canyon, Glen Canyon, the Green River Canyon, and Monument Valley are scenic features shared with adjacent areas. The very uniqueness of the canyon country scenery is identified as an outstanding resource.

Patterns of frequent contrast and diversity. Inspection of figure 7 reveals that the scenic types are extensively interspersed. There is also a tremendous diversity within scenic types—particularly Types III, IV, and V. Areas that exhibit an extreme mixture of scenic types are the Elk Ridge-Abajo Mountains-Dark Canyon-Needles area, the La Sal Mountains-Onion Creek-Colorado River-Dolores Triangle area, and the Navajo Mountain-Glen Canyon-San Juan Triangle area.

Canyon scenic types exhibit recurrent variety along Lake Powell and Comb Wash. This phenomenon is not generally associated with the
remaining canyon scenic resource which exhibits patterns of isolated linearity.

Scenic diversity is also dependent upon the distinct variety of visual impressions gained from various modes of travel--air, overland, and boat. Certain scenic types relate to altitudinal and, consequently, climatic diversity. Types I and II represent cooler montane climates while Types III, IV, and V are characterized by the warmer desert climate. The montane scenic types are seen to occur in three widely distributed areas (figure 7).

**Nodes of abundance.** Figure 7 shows that the Canyonlands scenic type predominates both in total land area and in the number of large aggregate concentrations. Large nodes of abundance are found in Canyonlands National Park, the San Juan Triangle, and on the Navajo Reservation.

The Canyon scenic type assumes a linear pattern and does not display nodes of abundance. The remaining three scenic types (I, II, III) are either of short supply or sufficiently dispersed so as to not demonstrate nodes of abundance.

**Strategy of location.** Reference to figure 7 indicates that the Canyonlands scenic type predominates along travel corridors and that the Canyon scenic type exhibits limited association with overland travel corridors. The remaining three scenic types are removed from travel corridors.

Montane scenic types are not grouped but are instead situated in three widely separated areas. Each montane area possesses a periphery of desert scenic types. However, it is seen (figure 7) that the strategy of location of this periphery varies in degree of encirclement and in length of radiation from the montane center.
The La Sal Mountains area possesses the greatest abundance of the Alpine scenic type. The downward progression of scenic types from this alpine core is most apparent along a relatively short line radiating to the northwest. In the Abajo Mountains area, the Alpine scenic core is flanked by Transitional, Canyonlands, and Canyon scenic types on the north, west, and southwest. Major travel corridors (Utah Highway 95 and Utah Highway 47) flank the Abajo Mountains on the east and south. The core itself occupies a somewhat singular position to the east of this great abundance of scenic types. A six-mile line extended from Rainbow Bridge to the summit of Navajo Mountain would cross every scenic type present in the study area. The strategy of location of Navajo Mountain indicates that its summit possesses perhaps the most outstanding but isolated scenic view in the study area (Brower, 1967, pp. 106-107).

Climate-inventory and evaluation

Because climate is not commonly defined as a physical resource, it is not analyzed within the inventory-evaluation framework. Aspects of climate and their seasonality are significant elements of a recreation environment. The climate of the canyon country is summarized as follows:

With the exception of the mountain summits, which are cool and moist, the greater portion of the area receives but little snowfall in winter and is characterized by a long, warm summer season. Average temperatures are higher than those of valleys to the north, in conformity with the decrease in latitude, but lower than those of deserts to the south. The annual precipitation ranges from about 6 to 14 inches, with the greatest amount coming from thunderstorms during July and August. (National Park Service, 1950, p. 4)

Figure 13 depicts May to September precipitation in the study area. Table 2 indicates mean number of days with precipitation greater
PRECIPI TATION
MAY TO SEPTEMBER
in Inches

Scale-Miles

5 10 20
Table 2. Mean number of days with precipitation ≥.10 inches and ≥.50 inches

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than .10 and .50 inches. Mean daily maximum and minimum temperatures are summarized in table 3. Temperature decreases $3^\circ$F and precipitation increases 2.59 inches with every 1,000 feet increase in altitude.

Climatic implications for planning in the study area are:

1. With the exception of the mountain masses over 7,000 feet, daytime temperatures in the study area are conducive to an eight to twelve month general recreation season.

2. Nighttime temperatures preclude general overnight outdoor activities from November to April in most portions of the study area.

3. During the summer months, high daytime temperatures are moderated by the sharp reduction in nighttime temperatures.

4. While the number of monthly days of precipitation is low, early summer and fall have extremely low total monthly days of precipitation and a consequent high proportion of clear days.

5. Rainfall in July and August occurs as afternoon thunderstorms which cloud the clear blue skies only briefly.

6. The arid climate is characterized by a favorable low humidity.

7. Snowfall in the Abajo and La Sal Mountains is conducive to winter sports opportunities.

8. The interspersion of montane and desert conditions produces a situation of frequent climatic contrast and diversity. It is noted that the La Sal Mountains are the second highest mountain mass in Utah.

Geological resource-inventory

Although the geological resource frequently possesses scenic-geological attributes, singularly, this resource is the most significant
### Table 3. Mean daily maximum and minimum temperatures

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interpretable recreation resource of the canyon country. The canyon country is the heart of the Colorado Plateau Province. The National Park Service states that

Events representing the history of the earth undoubtedly are more closely and simply illustrated by the record of the rocks in the Colorado Plateau than anywhere else in the world. (National Park Service, 1950, p. 54)

Since virtually the entire study area can be considered a geological textbook, opportunities for interpretation are practically unlimited. Although the list can be expanded, some of the more important geological features represented in the area are laccolith mountains, salt domes, faults, grabens, monoclines, river formation and incised meanders, deposition, paleontological phenomena, and an almost endless variety of erosional phenomena.

Interpretative activities that emanate from the geological resource are:

1. Visitor center geological interpretation.
2. Geological interpretative foot trails.
4. Individual geological sites.
5. Geological boat trails.
6. Individual boat geological sites.

Non-interpretative opportunities include:

1. Photography.
2. Rock climbing (Fisher Towers area).
3. Rock hounding.
Geological resource-evaluation

Width of spectrum. The interpretative portion of the opportunity spectrum is limited in activity types to the standard gamut of techniques. The richness of the geological opportunity spectrum is more adequately expressed by the myriad of geological phenomena available for interpretation.

Abundance. The geological resource represents the study area's most abundant interpretative recreation opportunity. As a recreation resource, geology can be considered to occupy virtually the entire study area.

Uniqueness. The geology of the study area is not unique to the study area. The uniqueness of the canyon country geology is that more aspects of geology are better illustrated for interpretative purposes in the study area than in any other region on earth.

Patterns of frequent contrast and diversity. Uniform distribution precludes patterns of diversity.

Nodes of abundance. The geological resource is uniformly distributed throughout much of the study area. Areas of geology that are readily interpreted are those that possess a topography shaped by extensive erosional processes. These areas display stratigraphy to advantage (figure 2). They are extensive and thus constitute large nodes of abundance. Rock hounding and amateur prospecting areas enjoy a wide but localized distribution and thus cannot be considered to possess nodes of abundance.

Strategy of location.

1. The total geological resource is abundant both in remote and easily accessible areas.
2. Most aspects of the geological story are present in both remote and easily accessible areas (figure 14).

3. Spectacular scenic-geology is often removed from major travel corridors.

**Historical resource-inventory**

The historical resource is associated with interpretative opportunities. Crampton (1959, 1964) has advanced eight historical themes pertinent to the study area. They are:

2. Government surveys and exploration.
3. Navajo-Ute-Paiute conflicts.
4. Range cattle industry and outlaw period.
5. San Juan and Glen Canyon gold rushes.
7. Copper, uranium, and oil booms.
8. Tourism.

The study area possesses an interesting and varied history. Some of the more spectacular historical events such as the Hole-in-the-Rock expedition, the lost Merrick and Mitchell silver mine, the killing of Chief Posey, and the Powell expeditions are well known to history enthusiasts. Other historical aspects are little known but equally fascinating. Crampton comments that the cattle industry in southeastern Utah, particularly through its youngest years to about 1900, offers a drama of open range warfare, little operator vs. big outfit, long drives, cattlemen vs. settlers, rustling, Indian troubles, and struggles against drouth and environment, as exciting as anything like it in the history of the West. (Crampton, 1959, p. 28)
Figure 14. As interpretative and scenic resources, geology and prehistory are both available to the transient traveler. Window Arch (above) is situated adjacent to U.S. Highway 160. Present development consists of four garbage cans and a pulloff provided by the Utah State Department of Highways. Visitors (note figures in Arch) have created a well worn path to the Arch. Westwater Ruins are reached by a two-mile graveled spur road from Utah Highway 47 immediately south of Blanding. The City of Blanding has expressed interest in developing this site.
It is suggested that this can also be said of the Glen Canyon gold rush, the Old Spanish Trail and its traffic of slaves and stolen horses, the uranium boom, and the early tourist industry. Moreover, for the Glen, Cataract, and San Juan Canyons, the historical data are richer than for any river in the West (Jennings, 1966, p. 40), thus indicating that several historical themes have accumulated a large body of knowledge. This, of course, increases their interpretative utility.

There are four historical trails in the study area—the Escalante-Dominguez trail, the Old Spanish Trail, the Powell expeditions' water route, and the Hole-in-the-Rock expedition trail.

The interpretative opportunity is further defined as several distinct facility-oriented activities. Although not always confined to the wild land environment, these activities are: (1) visitor center interpretation, (2) interpretative motor routes, (3) museums, (4) individual interpretative sites, and (5) boat interpretative sites. Non-interpretative opportunities that are extrinsic resource oriented are: (1) retracing historical trails (boat, jeep, horse, foot), (2) historical site-ghost town exploration (bottle collecting, photography), and (3) sightseeing in historical communities.

**Historical resource-evaluation**

**Width of spectrum.** The width of the historical opportunity spectrum is confined to the number of basic interpretative techniques available to the planner and to the number of non-interpretative activities present. The width of the historical spectrum and of any interpretative spectrum is thus limited and relatively inflexi-
ble. Evaluation of an interpretative resource under the criteria of width of spectrum is not appropriate since interpretative techniques are not derivatives of the resource. The inclusion of non-interpretative opportunities expands the opportunity spectrum to eight historical opportunities.

Abundance. Eight historical themes are represented. Although these themes are rich in diversity, they are not indicative of unusual resource quantity. Because the harsh nature of the environment of the study area has not been sympathetic to man, historical sites are not abundant. However, the historical resource that is present is enriched by this very phenomenon. Thus quantity should not serve as an indication of the quality of the resource. Rather, the paucity of sites establishes the historical resource as a critical quality resource.

Uniqueness. Canyon country history is not unique to San Juan and Grand Counties. Many themes continue throughout the entire canyon country region of southern Utah.

Patterns of frequent contrast and diversity and Nodes of abundance. In contrast to the geological resource (page 59) history in the study area is site-oriented, localized, and widely distributed. There are no recurrent patterns or nodes of abundance.

Strategy of location.

1. The early historical resource is generally associated with the water resource (page 34). More than one-half of the historical sites in Glen Canyon will be inundated by Lake Powell at full pool (Jennings, 1966, p. 40).
2. Certain themes such as the uranium boom, the range cattle industry, and Mormon colonization are widely distributed.

3. Elements of certain themes are situated in remote areas.

4. Historical trails are of linear configuration and thus are associated with a variety of recreational resources.

**Prehistory resource-inventory**

The archeological resource occupies a significant position within the total recreation resource of the study area. Canyon country prehistory is essentially an extension of the archeological wealth of the Four-Corners area of the Southwest. The cultural occupation represented is Anasazi—one of the Pueblo provinces. Three local variants are present—Mesa Verde, Kayenta, and Fremont. Jennings offers an Anasazi chronology for the study area.

Today the Anasazi stages are usually assigned these dates:

- Basketmaker I - Pre A.D. 1
- Basketmaker II - A.D. 1-500
- Basketmaker III - A.D. 450-750
- Pueblo I (where encountered) - 750-900
- Pueblo II - 850-1100
- Pueblo III - 1100-1300
- Pueblo IV - 1300-1700
- Pueblo V - 1700 to present (Ibid., p. 33)

Archeological sites are present throughout the southern two-thirds of the study area. Although many outstanding sites and artifacts are found in open situations, most recreationally significant sites are situated in the recessed walls of cliffs and canyons. While the archeological resource is a significant interpretative resource, it is also a highly photogenic resource. Scenic-archeology is as valid a construction as scenic-geology.
Interpretative recreation opportunities which emanate from the archeological resource are: (1) individual archeological interpretative sites, (2) archeological interpretative foot trails, (3) boat archeological interpretative sites, and (4) archeological visitor center interpretation. Non-interpretative opportunities include: (1) photography, (2) observation, (3) amateur excavation and collecting, and (4) discovering archeological sites.

Prehistory resource-evaluation

Width of spectrum. Eight recreational opportunities are associated with study area prehistory. The fact that interpretative opportunities comprise only one-half of the archeological spectrum is indicative of a greater potential flexibility of width of opportunity for this resource class.

Abundance. As the most abundant extrinsic resource, prehistory occupies a dominant position among study area resources. It is not a critical component in terms of total abundance.

Uniqueness. Cultural affiliations represented in San Juan and Grand Counties are extensions of cultural centers within the greater Four-Corners region. The study area, however, has unique interpretative applications because it:

1. Contains components of both cultural variant centers and of peripheries.

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1 It is noted that amateur excavation and collecting are prohibited under State law and the federal Antiquities Act on state and federal lands. Therefore, technically, even the collecting of arrowheads is illegal. Although the excavation opportunity is legally available upon private lands, its indulgence on the public lands examined in this thesis is prevalent and constitutes an acute enforcement problem.
2. Represents the peripheral confrontation of three cultural variants.

3. Possesses sites demonstrating an almost complete Anasazi chronology.

The study area is perhaps unique in abundance of Anasazi structures suitable for observation and interpretation. A 25 square mile survey in the White Canyon area revealed a density of eight sites per square mile compared to the density of a 26 square mile survey at Mesa Verde National Park, Colorado, of 7.2 sites per square mile (Bureau of Land Management, 1967b). Grand Gulch, Montezuma Canyon, Mule Canyon, and others may demonstrate similar densities.

The study area is not distinguished by the large spectacular structures of Mesa Verde, Navajo National Monument, and other specific localities.

Patterns of frequent contrast and diversity. The canyon archaeological resource exhibits patterns of frequent recurrence in areas where canyon systems parallel each other. This pattern is evidenced in the Arch Canyon-Road Canyon progression, in the Grand Gulch-Johns Canyon tributary systems of the San Juan River, and in the Slickrock-Canyon-Lake Canyon-Moki Canyon progression in Glen Canyon.

Nodes of abundance. Canyon prehistory is linear and does not express nodes of abundance. Although artifacts are widespread throughout the southern two-thirds of the study area, Beef Basin is the only area that is considered to possess a nodal abundance of open structural sites.

Strategy of location. The general distribution of archaeological sites within the study area suggests that prehistory can be inter-
interpreted to both the transient and destination visitor (figure 15). The superpositioning of interpretable canyon prehistory and the primitive resource anticipates a resource allocation conflict. Two areas of outstanding archeological quality—Montezuma Canyon and the Hovenweep area—exhibit an impoverishment of other recreation resource classes. Study area prehistory is in close proximity to Mesa Verde National Park.

**Open-space--primitive areas-inventory**

Open-space is traditionally considered within an urban context. However, non-urban open-space should be considered in the evaluation of a wild land environment. Durden defines these areas as "empty areas."

A persistent feature of American land use patterns has been the presence of many areas whose landscapes display no significant imprint of man's current activities. These are habitats in which man, at any given time, is not visibly dominant. In this paper they are called "empty areas."

The name is anthropocentric. While man may be currently absent from these areas, other life abounds there and they are prime habitats for other species. Though empty of man, they are not empty of value for him. (Durden, 1966, p. 479)

Open-space or "empty areas" is an important recreational resource in the study area. The National Park Service states that

The great stretches of open range, unobstructed by buildings, fences, transmission lines, and other signs of modern civilization, comprise one of the most important recreational features of the basin (Colorado River). As other sections of the United States become more and more highly developed, this one feature of the Colorado River country, if preserved, will have unusual appeal. (National Park Service, 1950, p. 21)

Virtually the entire study area is considered to possess open-space. The exceptions which exhibit landscapes visibly dominated by human intrusions are listed as follows:
Figure 15. Map of primitive resource.
1. Moab-Spanish Valley area.


3. The general area south of Utah Highway 46 including mining and ranching activities in Liabon Valley and the vicinity of the La Sal townsite.

4. Uranium and chaining areas in the vicinity of Polar Mesa.


6. Human occupation along the Utah Highway 95 corridor from Gravel Canyon to Fortknocker Canyon.

7. The chaining area southwest of Fable Valley on the Dark Canyon Plateau.

8. Chaining areas in the vicinity of Indian Creek and Peters Point.


10. Blanding and Utah Highway 47 corridor on White Mesa.

11. Mexican Hat and vicinity.

It is noted that the above areas are not necessarily comparable in terms of area or degree of human intrusion. Navajo homes are scattered throughout the Navajo Reservation, but they represent a minor visual impact upon the open-space resource. The effect of open-space is most apparent in areas characterized by a relative flat relief such as the San Juan Triangle, from overlook points such as Grandview Point, or from an aerial perspective.

Primitive areas derive from an open-space environment. Criteria for primitive areas are more stringent than those for open-space.
The ORRRC report describes primitive areas as follows:

The essential characteristics of these areas are that the natural environment has not been disturbed by commercial utilization and that they are without mechanized transportation. Their natural, wild, and undeveloped characteristics distinguish them from all other recreation resources included in this system (ORRRC) of classification. They may or may not be of the unique quality characteristic of Class IV areas. Size is a limiting factor only to the extent that the area must be large enough and so located as to give the user the feeling that he is enjoying a "wilderness experience" - a sense of being so far removed from the sights and sounds of civilization that he is alone with nature. The size will vary with different physical and biological conditions and will be determined in part by the characteristics of adjacent land. Size will also vary in different parts of the country. (ORRRC, 1962a, p. 113)

The peculiarities of the canyon country require that this definition be modified to include areas containing no roads suitable for passenger car traffic. Much of the canyon country contains primitive jeep trails resulting from extensive mineral exploration in the 1940's and 1950's. ORRRC (1962b, p. 26) states, "in the southwestern deserts and plains, because of the region's openness and hard ground, primitive roads and car trails are nearly everywhere."

ORRRC (Ibid.) thus modified its "definition for analysis" to include "Wilderness Tracts . . . containing no roads . . . suitable for passenger car traffic in deserts or plains." ORRRC also defined a "Wilderness Tract" as

a tract of land . . . with its succession of major ecological stages not interrupted by on-site human influence, except that . . . effects of domestic livestock are acceptable . . . it must be recognized that there is no significant area of land within the continental United States which has not at some time been put to a utilitarian use by men of European stock. Except in a very few places in the northern Rockies, all western lands have been heavily grazed by sheep and cattle; mining and prospecting have been widespread. (Ibid.)
Areas within the study area that exhibit the effects of grazing are acceptable for primitive area consideration.

The primitive resource of the study area is classified into specific types that are appropriate to the resource in its canyon country context. These primitive types are defined according to the particular primitive travel-activity capability of an area. The primitive areas of the study area are designated as:

Type 1. Wild rivers.
Type 2. Lake Powell wilderness arms.
Type 3. Horseback primitive areas.
Type 4. Backpacking only primitive areas.
Type 5. Jeep primitive areas.

This series of primitive types breaks with traditional primitive type designations. It does structure the primitive resource in a way that defines the opportunity capacity of the resource.

Wagar emphasizes:

As Burch pointed out, the recreating public is really a series of minorities. If a broad range of recreation opportunities is to be provided for this series of minorities, new kinds of areas and facilities will be needed for some parts of this recreation spectrum. This calls for new and imaginative thinking. For example, Herrington has proposed "micro-wilderness" areas to supplement established wilderness areas and to provide many wilderness-type values in areas designed to serve the people who many not have the time, money, or energy to use a wilder or larger environment. Whether or not the micro-wilderness concept is adopted by administrators, it is important as an imaginative idea that helps to break us away from our "conventional wisdom." (Wagar, 1964, p. 14)

Lucas indicates that user wilderness concepts run a full gamut of value sensitivity from concepts of purist wilderness to semi-wilderness. He thus advances the position that
user concepts make possible evaluation of rationing recreational use in terms of at least some measure of its effect on the quality of the use. Expansion might be considered ... in terms of adding various types of semi-wilderness. (Lucas, 1964, p. 29)

The relevance to planning is that

a variety of wilderness recreation settings, in terms of ease of access and facilities, degree of restriction of non-recreational uses, and limits on type and amount of recreational use, seems to be implied.

This does not necessarily mean the present wilderness areas should be converted into various sorts of semi-wilderness. The maintenance of variety would seem to include a need for relatively undisturbed wilderness at one end of the range, and reducing this area seems dubious in view of projections of demand for wilderness-type recreation. All the evidence seems to point toward a greater relative growth in wilderness recreation than for recreation in general. (Ibid., p. 37)

The decision to designate Lake Powell wilderness arms and jeep primitive areas as segments of the study area primitive resource rests with the planner. The study inventory suggests that the area does express a relevancy for these opportunities.

Areas are inventoried that demonstrate a capability for primitive type recreation. Since "wilderness" is technically created only in a legal sense through the mechanism of the Wilderness Act (Committee on Commerce, 1965, pp. 414-421) and the study area possesses no legal wilderness, the primitive tracts inventoried within the study area are considered de facto wilderness. Primitive area and wilderness are considered synonymous for the purposes of the study. Primitive types are depicted in figure 15.

**Type 1, wild rivers.** The ORRRC report established the following criteria for a wilderness river.

A wilderness river contains a continuous length of at least 20 miles with a volume of water sufficient to float a loaded canoe or kayak ... during at least 2 months of
the year and without noticeable modification of banks and main drainage valley from roads, logging, or other development. (ORRRC, 1962b, p. 319)

The definition of a wild river within the study area is expanded to include the use of motorized craft and the 20 miles length criterion is discarded. The other ORRRC criteria are retained.

The study area possesses four major wilderness rivers (figure 15):

- Green River—one section—117 miles (figure 6).
- Colorado River—two sections—44 and 24 miles (figure 5).
- San Juan River—two sections—68 and 16 miles.
- Dolores River—one section—8 miles.

Activities that emanate from wild rivers are listed in the white-water and smooth-water rivers sections of the water resource inventory.

**Type 2, Lake Powell wilderness arms.** Lake Powell possesses numerous canyon arms radiating laterally from the main lake channel. Of the total study area aggregate length of these arms, approximately 123 miles, approximately 67 miles could be considered appropriate for wilderness use. The criteria for wilderness arms are:

1. Length—3 miles, and/or
2. Intricacy and number of tributary arms, and/or
3. Wilderness character and length of the canyon portions not submerged by water.

These canyons are depicted in figure 15.

Activities that emanate from the wilderness arms are: (1) wilderness boating, (2) wilderness camping, (3) hiking, (4) backpacking, (5) photography, (6) nature study (botanical), and
(7) exploration.

**Type 3, horseback.** These are primitive areas accessible to both horse and foot travel. Areas where stock water is not available but could be developed are included. Approximately 2,536 square miles are available for this purpose.

Activities that emanate from these areas are: (1) wilderness camping, (2) pack trips, (3) horseback riding, (4) hiking, (5) backpacking, (6) photography, (7) nature study, (8) exploration, (9) hunting--mule deer, (10) hunting--bighorn sheep, and (11) hunting--mountain lion.

**Type 4, backpacking only.** These are primitive areas that cannot be negotiated by horses. They are generally restricted to canyons which contain difficult "jump-ups" and/or accumulations of debris. The study area possesses approximately 74 square miles and 36 linear miles of canyons available for this type of primitive activity.

Activities that emanate from these areas are: (1) wilderness camping, (2) hiking, (3) backpacking, (4) photography, (5) nature study, (6) exploration, (7) hunting--mule deer, and (8) hunting--bighorn sheep.

**Type 5, jeep.** Jeep primitive areas are areas where motorized travel is only possible by four-wheel-drive vehicles. Since no jeep trails or roads are constructed or maintained, these areas are in a sense roadless areas.

Areas suitable for jeep primitive consideration are confined to two physical types which minimize permanent scarring of the landscape by the vehicles.
1. Canyons which contain running water and are subjected to frequent flash flooding which removes all traces of vehicular travel. Precedence for this type has been established in Canyon De Chelly National Monument and Canyonlands National Park (National Park Service, 1965, p. 5). Approximately 26 linear miles of this type are available.

2. Large expanses of slickrock sandstone characterized by little intervening soil, sand, or vegetation. Four-wheel-drive vehicles leave little evidence of passage on such slickrock expanses. Because of the mobility of four-wheel-drive vehicles, an area must be of large areal expanse before it "conveys a strong impression of vastness" (ORRRC, 1962b, p. 3) necessary to the wilderness experience. Jeep primitive areas are depicted in figure 15. Approximately 115 square miles of this type are available within the study area.

Activities which emanate from jeep primitive areas are: (1) four-wheel-drive sports, (2) exploration, (3) hiking, (4) photography, (5) nature study, (6) wilderness camping, (7) rock hounding, and (8) hunting--mule deer.

It is apparent that a system of primitive types as defined by travel mode is not mutually exclusive. Certain jeeping areas may be utilized by horse or foot travel. Some banks of wild rivers can be hiked or ridden. Furthermore, much of the horseback primitive resource, while negotiable by horse, is physically unusable due to an absence of adequate water. These areas represent a utilitarian "geography of hope" wilderness which can be observed from the air or elevated points and utilized in wilderness literature. The objective of the system is to anticipate planning goals relevant to wilderness opportunity allocation. Because the primitive resource class
is not solely associated with the natural environmental resource, its inventory does not represent a static situation.

**Open-space--primitive areas-evaluation**

**Width of spectrum.** Almost all study area dispersed recreation pursuits compatible with the primitive designation are available in primitive areas. On-site interpretative activities, general camping opportunities, and certain sightseeing opportunities are, of course, incompatible. With the exception of the upper portion of the Dark Canyon system and Navajo Mountain, activities associated with montane situations are absent. Because primitive types are present in abundance and embrace a diversity of landforms, the activity spectrum is wide and varied.

**Abundance.** In terms of total land area, the primitive resource is an abundant resource. Primitive areas occupy 2,725 square miles or 28 percent of the total study area. The open-space resource embraces virtually the entire study area. However, physically usable primitive areas presently constitute only a small fraction of the total primitive resource. Measured in linear miles, the two water associated primitive types exhibit an ample abundance which precludes primitive versus mass use conflicts if adequate planning measures or primitive designations are implemented.

Useable horseback and backpack only types are essentially relegated to the canyon scenic type. Water sources are generally non-existent in areas other than canyons. Although the study area possesses many primitive canyons, few possess an adequate water supply. The backpacking opportunity is thus limited in those canyons lacking water and in most other areas. Backpacking in these
areas is possible, but extremely hazardous, only after rainfalls which fill the slickrock "tanks" and initiate ephemeral canyon stream flows. Horseback opportunities are limited in an identical manner, but can be engaged during the winter if snow is present. Horse and foot travel is further restricted by the paucity of ingress-egress points to the canyons and by an almost total absence of developed trails. Stock access trails are present in most situations where physical access is conceivable. However, these trails are normally extremely primitive and are not considered to be negotiable by the inexperienced wilderness horseback traveler.

Notable exceptions to the above situations include the Salt Creek-Horse Canyon area of Canyonlands National Park, Grand Gulch, Nigger Bill Canyon, North Fork of Mill Creek, Iceberg Canyon, Lake Canyon, Moqui Canyon and North Gulch, and Wilson Canyon—all of which possess an adequate although sometimes marginal water supply and are negotiable by horses. Dark Canyon (43 miles) can be considered the superlative backpacking only primitive area within the study area. Many of the side canyons of Glen Canyon in the Navajo Mountain area including Cathedral, Little Arch, Grotto, and Dungeon Canyons, are available to backpackers but the degree of opportunity fluctuates with the varying levels of Lake Powell. It is noted that fluctuations of the Lake Powell pool determine the quantity of all adjacent wilderness Types (Types I, II, III, and IV).

Reference to figure 15 indicates that jeep primitive areas are of short supply. These areas constitute approximately 115 square miles or 4 percent of the total primitive resource. The physical
characteristics of the lands rather than available water constitute limiting factors.

Uniqueness. The National Park Service (1950, p. XXi) stated in 1950 the canyon country of southeastern Utah was part of "the largest section in the United States without improved roads and one of the least known." Because access conditions have not changed substantially since 1950, this statement is still applicable to much of the study area. The Wells (1956, p. 265) state that

the vast desert region of southeastern Utah . . . could well be considered as a wilderness "area," since most of it is totally unpopulated and one could literally spend years exploring its roadless reaches without backtracking.

The extensive primitive acreage within the study area is thus considered to be an unique recreational feature.

Open-space is also considered unique. The National Park Service (1950, p. 151) states of the canyon country:

the most impressive feature is that of space. Not the monotonous space of the Great Plains, but dramatic, colorful space accentuated by these varied land forms and the high mountains to the east and west and the broad sweeps of unfenced range.

The National Park Service (Ibid., p. 187) attributes the existence of vast areas of open-space to an unique settlement pattern.

. . . practically all of the population of the region lives in towns and limited irrigation districts. There are only a few isolated ranches. Men running cattle on the range have their homes in the towns where schools, stores, churches, and social activities are available. This practical custom has resulted in the concentration of such developments of favorable points and a corresponding complete freedom of great areas of open country from an interruption by scattered reminders of town life. It is impossible to find such a set-up in most sections of the United States where the people live on the land they graze or farm.
Patterns of frequent contrast and diversity. Reference to figures 15 and 7 indicate that the primitive resource exhibits patterns of recurrent contrast similar to those associated with the Canyon scenic type (page 50). The Moab area, Canyonlands National Park, San Juan Triangle, and the Navajo Mountain area all possess a diversity of primitive resource types.

Nodes of abundance. The San Juan Triangle-Navajo Mountain area and the Canyonlands National Park-Dark Canyon area are nodes of primitive area abundance.

Strategy of location. The following considerations are applicable to an evaluation of the strategy of location of the primitive resource.

1. Several primitive resource types are situated in close proximity to Moab.

2. With the exception of the upper portion of the Dark Canyon system and Navajo Mountain the primitive resource is not associated with montane situations.

3. The primitive resource is associated with the archeological resource in many canyons.

4. Entrances to primitive areas in Canyonlands National Park and Grand Gulch are approached by adequate roads.

5. Lake Powell wilderness arms and many horseback wilderness canyons are extensions of one another.

6. The Red Canyon-Mancos Mesa area is situated in an area of uranium-bearing formations (pages 117 and 120).
Fish and wildlife resource-inventory

The fish and wildlife resource class is associated with several recreational pursuits. In conjunction with the vegetation resource, the resource possesses ecological interpretative value. The altitudinal variation within the study area (3,700 feet to 12,721 feet) permits a wide gradation of life zone associated ecological situations. Ecologists have identified a variety of ecosystems within these situations. The study area generally possesses a flora and fauna characteristic of the ecological habitats encountered at this latitude. Desert ecology, however, represents a fascinating opportunity for interpretation of the survival mechanisms of a flora and fauna confronted with a harsh environment. Of significant interpretative value is the phenomenon of canyons within the desert situations. Jennings states of the canyons:

There is the ecological paradox of extreme variety and a score of special and restricted ecological systems merging into a single large system. This comes as a surprise to those who conceive of the desert as barren and lacking in resources. (Jennings, 1966, p. 17)

Game animals represent a major component of the fish and wildlife resource class. Big game animals present within the study area are the mule deer, elk, desert bighorn, and mountain lion. Mule deer hunting is excellent in the Abajo Mountains-Elk Ridge area and the La Sal Mountains-Dolores Triangle area. Hunter success during the five-year period of 1962 to 1966 averaged 73 percent and 71.4 percent respectively in these two areas. A total of 5,903 deer were harvested in the study area in 1966 (Utah Department of Fish and Game, 1967).

Elk hunting was initiated in the La Sal Mountains in 1967. Harvest data is not available. A desert bighorn hunt was also
initiated in the greater San Juan Triangle in 1967. Nine trophy rams were harvested (figure 16) with 100 percent hunter success (Salt Lake Tribune, 1967).

Small game animals include the cottontail rabbit, bobcat, forest grouse, and chukar. Cottontail rabbits are particularly abundant in chained areas. Chukar populations have steadily increased after their introduction.

Sport fish populations are limited. The rivers contain catfish, while Lake Powell is stocked with bass, rainbow trout, and sunfish. Monticello Lake, Race Track Reservoir, Spring Creek, the Beaver Pond, Blanding Reservoirs Numbers Three and Four, Oowah Lake, Dons Lake, and Hidden Lake are natural lakes and impoundments stocked with rainbow trout (Lowery, 1963, p. 22; Tate, 1967). Indian Creek is also planted with rainbow trout (Lowery, 1963, p. 22).

Nature study and sightseeing opportunities are enhanced by the presence of an abundant herptofauna; wild flowers; unusual ornithology and botany associated with riparian habitats; desert raptors; and the mule deer, elk, and desert bighorn big game animals. Pinyon "pine nuts" are collected during the fall.

Activities emanating from the fish and wildlife resource class include: (1) ecological interpretation, (2) nature study, (3) photography, (4) collecting specimens, (5) sightseeing (big game animals, wildflowers), (6) collecting "pine nuts," (7) hunting--desert bighorn, (8) hunting--mule deer, (9) hunting--elk, (10) hunting--mountain lion, (11) hunting--cottontail, (12) hunting--bobcat, (13) hunting--chukar, (14) hunting--forest grouse, (15)
Figure 16. The desert bighorn is a unique sightseeing and hunting wildlife resource. These two rams were taken on Found Mesa during Utah's first authorized hunt in November, 1967. Desert bighorn range corresponds with the White Canyon mining district and a large de facto primitive area.

Photograph courtesy of Utah Division of Fish and Game.
fishing--rainbow trout, (16) fishing--largemouth bass, (17) fishing--sunfish, and (18) fishing--catfish.

**Fish and wildlife resource-evaluation**

**Abundance.** The mule deer big game resource is considered to be an abundant asset of this resource class. Evaluation is not applicable to other facets of the class.

**Width of spectrum.** The resource exhibits a large opportunity spectrum. Its width is a reflection of the total number of game and sport fish species available within the study area.

**Uniqueness.** The following aspects of the resource class are considered unique.

1. The presence of the desert bighorn as a trophy game and sightseeing animal.

2. The excellence of the mule deer hunting opportunity as reflected in the 74 percent hunter success ratio of the study area in 1966 and an annual five-year (1962-1966) average of approximately 72 percent. During these periods, success ratios for the entire State of Utah averaged 54 percent (Ibid.)

3. An unusual flora associated with the Glen Canyon system and the "hanging gardens" of the study area.

4. The occurrence of endemic fish species in the Colorado River system.

5. Small mammal subspeciation associated with a Colorado River barrier.

**Patterns of frequent contrast and diversity.** The resource class exhibits patterns of contrast and diversity in the following situations.
1. An ecological repetition of contrast in the Glen Canyon canyon-desert system.

2. An ecological diversity associated with a rapid downward altitudinal progression from centers in the Elk Ridge-Abajo Mountains area, in the La Sal Mountains, and on Navajo Mountain.

Nodes of abundance. The Elk Ridge-Abajo Mountains and La Sal Mountains-Dolores Triangle areas can be considered as nodes of mule deer hunting abundance.

Strategy of location. The desert bighorn range corresponds with the primitive resource and uranium deposits in the Dark Canyon-White Canyon-Red Canyon area. Portions of Utah Highway 95 cross this range. Life zone diversity and change correlate with areas of scenic contrast and variety. The configuration of Lake Powell assumes the same configuration of the ecological contrast in the Glen Canyon area.

Vegetation resource

The vegetation resource serves as a recreational resource in three ways. It represents:

1. An ecological interpretative element.


3. A landscaping and shade element of site location.

The interpretative element is discussed in the section treating fish and wildlife (page 82). The scenic contribution is discussed under the scenic resource class (pages 37 and 40). Vegetation as a landscape element is associated with site suitability in montane situations. In more arid situations, the pinyon-juniper vegetative type is used
extensively for landscape and shade purposes. It is noted that shelters or the judicious use of rock formations and cliffs serve these purposes in many arid situations.

Summary evaluation

**Width of activity spectrum.** The study area is rich in recreational opportunities. The number of site-oriented activities is both a function of environment and of development techniques and capabilities. The environment has high potential for both diversity and total number of developed site opportunities. Potential dispersed recreation opportunities are a function of environment. The environment of the study area demonstrates excellent capability for:

1. An abundance of dispersed activities, and
2. A great diversity of opportunities signifying a broad spectrum.

The five environmental factors responsible for the quantity and diversity of the recreation spectrum are:

1. The diversity and quantity of the water resource.
2. The distribution of three mountain masses within otherwise arid surroundings.
3. A topographic complexity and restraint dictating a variety of travel methods.
4. An abundance of primitive resources providing a base for the complete graduation of limited to mass recreation participation.
5. The incremental wealth of outstanding geological, scenic, hunting, and archeological resources.

To summarize, the study area demonstrates a capacity for extreme width and diversification of wild land recreation opportunity. This
is a significant environmental endowment possessed by an area generally regarded to be of a restrictive arid nature. The extent of diversity and width of the opportunity spectrum is a unique asset of the study area not duplicated in surrounding regions.

Comparable abundance of resource classes. Direct comparisons of abundance between resource classes defy uniform quantitative analysis. In terms of opportunities, each resource class enumerates a number of specific opportunities. It is recognized that:

1. Many opportunities are contributed by a combination of resource classes.
2. Many opportunities cannot be traced directly to one resource or class combination.
3. Opportunity distinctions originate by definition and therefore opportunities may exist which have not been defined and catalogued during inventory.

Thus individual resource classes can be considered either to directly contribute an opportunity, to enhance an opportunity, or to function in both capacities. The number of opportunities related to each resource class is listed in table 4. In terms of abundance of opportunities, the water, primitive, and fish and wildlife resources are significant.

Several resource classes are compared by area or linear measurements. These comparisons are found in table 5. The Transitional and Canyonlands scenic types, geology, open-space, and horseback primitive areas are present in large areal quantity. Lake Powell channel and bays, smooth water rivers, and the Canyon scenic type are present in large linear quantity. The Alpine scenic type
(figure 7 and table 5) and physically useable primitive areas (pages 78-79) are in short supply.

Table 4. Quantity of resource class opportunities

<table>
<thead>
<tr>
<th>Resource class</th>
<th>No. of opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>25</td>
</tr>
<tr>
<td>Scenic</td>
<td>8</td>
</tr>
<tr>
<td>Geology</td>
<td>10</td>
</tr>
<tr>
<td>History</td>
<td>8</td>
</tr>
<tr>
<td>Prehistory</td>
<td>8</td>
</tr>
<tr>
<td>Primitive areas</td>
<td>14</td>
</tr>
<tr>
<td>Fish and wildlife</td>
<td>18</td>
</tr>
</tbody>
</table>
Table 5. Quantity of resource classes

<table>
<thead>
<tr>
<th>Resource class</th>
<th>Sq. miles</th>
<th>Linear miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Powell-channel and bays</td>
<td>245</td>
<td></td>
</tr>
<tr>
<td>Lake Powell-canyon arms</td>
<td>123</td>
<td></td>
</tr>
<tr>
<td>White-water rivers</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td>Smooth-water rivers</td>
<td>236</td>
<td></td>
</tr>
<tr>
<td>Scenic-Alpine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Forested</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>- Transitional</td>
<td>292</td>
<td></td>
</tr>
<tr>
<td>-Canyonlands</td>
<td>497</td>
<td></td>
</tr>
<tr>
<td>-Canyons</td>
<td>3,202</td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td></td>
<td>entire study area</td>
</tr>
<tr>
<td>Prehistory</td>
<td></td>
<td>south 2/3 of study area</td>
</tr>
<tr>
<td>Open-space</td>
<td></td>
<td>entire study area</td>
</tr>
<tr>
<td>Primitive areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Wild rivers</td>
<td>277</td>
<td></td>
</tr>
<tr>
<td>-Lake Powell arms</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>-Horseback</td>
<td>2,536</td>
<td></td>
</tr>
<tr>
<td>-Backpacking only</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>-Jeep</td>
<td>115</td>
<td></td>
</tr>
</tbody>
</table>

Unique areas and opportunities. Six resources display unique qualities. These resources are the: (1) open-space–primitive areas resource, (2) water resource, (3) geological resource, (4) scenic resource, (5) prehistory, and (6) fish and wildlife. The water resource is unique with respect to its

1. Diversity of water types,
2. Quality and quantity of river running opportunities,
3. Quality and quantity of smooth-water experiences, and
4. Endowment with Lake Powell. Unique aspects of Lake Powell include its scenic setting, canyon arms, and dimensions.
Abundance and appropriateness for interpretative development are unique assets of the geological resource. The unusual abundance and availability of ruins characterize the archeological resource. The presence of the desert bighorn and the outstanding deer hunting opportunities are unique aspects of the fish and wildlife resource. The Canyonlands scenic type, the variety and number of canyons, and the Transitional scenic type are all unique to the canyon country. Unique scenery constitutes the most significant recreation resource of the study area.

The great abundance of the open-space--primitive areas resource is a unique feature of the study area. This unique abundance and the scenic resource represent the greatest contributions to study area identity and appeal. Jennings (1966, p. 5) states that "the romantic appeal of the Canyon Lands derives from about equal parts of beauty, isolation and difficulty, and the lure of the dangerous unknown."

Patterns of frequent contrast and diversity. Several resource classes demonstrate frequent contrast and diversity. The scenic resource exhibits this pattern in three general areas. The Lake Powell portion of the water resource possesses this pattern. The primitive resource displays a variety of opportunity types in the San Juan Triangle region and in Canyonlands National Park and its southern peripheries.

When several resource classes exhibit contrast and diversity in one general area, that area becomes highly significant to planning. The area is endowed with a wealth of different opportunities--a wide spectrum is available in a limited area. Complexes of this type are
thus the richest areas in a recreational region. They are significant because:

1. As richly endowed areas, they are of the highest priority for planning and development, but

2. If limited in size, a critical problem of incorporation of the entire continuum of variety into the development plan is posed.

**Nodes of abundance.** Several resources exhibit large areas of resource continuity. The Canyonlands scenic type possesses three such areas. The geological resource also displays nodes of abundance. Areal size facilitates the development of an entire range of Canyonlands scenic and geological derived opportunities within the nodal areas. Gould (American Forests, 1961) states that "The positive value of grouping related activities is . . . important and must not be overlooked in the scramble to reduce conflicts between uses."

Scenic nodes are particularly significant. Where other resource opportunities are present within a Canyonlands scenic resource node, the scenic resource, as an aesthetic setting, enhances the quality of the unrelated opportunities. It is thus possible, within a limited area, to place each variant of the particular resource spectrum within the Canyonlands esthetic setting. Canyonlands National Park is the major example of this relationship.

The antithesis is best illustrated by the absence of nodes of abundance within the Canyon scenic type. Grand Gulch and many other canyons possess outstanding scenic qualities. However, a critical problem of allocation exists in Grand Gulch—should the scenic resource enhance an opportunity for archeological interpretation or
an opportunity for purist of wilderness pack trip experiences. Thus allocation of canyons for various recreation opportunities is a problem of linear incapability. Only in such areas of frequent recurrance as the Lake Powell canyon arms, the Dark Canyon system, and the Arch Canyon-Road Canyon system can a variety of incompatible opportunities be engaged within a limited area of Canyon scenic environments.

Strategy of location. Summaries treating contrast and diversity and nodes of abundance have developed the strategy of location involving superposition of resource classes. Strategy of location is significant in other respects. Analyses of access and ownership patterns which are pertinent to environmental resource strategy of location are found on pages 98, 101, and 125-129.

Inventory of Existing Development

Two aspects of existing development are examined in the developed resource inventory. Developed sites are catalogued and mapped. Dispersed recreation opportunities development is inventoried.

Recreation sites are grouped into six basic types. Each type may possess several subtypes. This system interprets sites as facilities contributing to specific recreation opportunities. The site types and subtypes are defined in Appendix B. Site types and subtypes are listed below:

1. Campgrounds
   Transient-general
   General
Hunter
Primitive
Picnic only

2. Interpretative sites
Geological
Archeological
Historical
Ecological
Combination
Visitor center
Trails
Drives

3. Observation sites

4. Dude ranches

5. Winter sports areas

The following elements are identified as descriptive of each site:

1. Number of family camping units or picnic units.
2. Access—paved, transient, or other.
3. Administering agency or unit.

Existing site types and subtypes are catalogued in tables 7, 8, 10, and 11. Figures 17-19, 22, and 24 depict location, access type, agency administration, and parent recreation area. Site vicinity description and site vicinity activities are generally determined through reference to resource class maps.

The inventory of dispersed recreation development considers the following elements:
1. Established recreation areas which possess designated boundaries.

2. ORRRC zones established by managing agencies.

3. Primitive areas proposed for inclusion under the Wilderness Act.

4. Existing access and road development.

5. Boating sites which contribute to the boating opportunity.

6. Hiking and riding trails.

These elements are depicted in figures 17, 18, 30, and 31. Table 6 lists acreages of established recreation areas and ORRRC zones.

With the exception of the Canyon Rims Recreation Area, Bureau of Land Management Recreation Areas are undeveloped. All National Park Service areas possess developed sites. The U.S. Forest Service has not designated any recreation or scenic areas. Although the study area possesses five State Parks, only Dead Horse Point State Park is of sufficient size to be considered a recreation area. The Navajo Tribe has created the Monument Valley Tribal Park which occupies portions of both Utah and Arizona. Exact boundaries are not available. Dead Horse Point State Park and Monument Valley Tribal Park both possess developed sites. Developed sites within the Tribal Park are in Arizona.

All Bureau of Land Management lands and most National Park Service units possess the ORRRC classification. The remainder of the study area lands have not been classified.

No tracts are presently within the Wilderness System. Canyonlands National Park and Arches National Monument have delineated areas that possess wilderness characteristics. A wilderness hearing
Table 6. Recreational and ORRRC acreages

<table>
<thead>
<tr>
<th></th>
<th>Acres—total unit</th>
<th>ORRRC classification acreage</th>
<th>Unclassified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>National Park Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canyonlands National Park</td>
<td>257,640</td>
<td>4,275</td>
<td>17,869</td>
</tr>
<tr>
<td>Canyonlands Wilderness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposal (tentative)</td>
<td>257,640</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arches National Monument</td>
<td>34,010</td>
<td>2,135</td>
<td>26,900</td>
</tr>
<tr>
<td>Arches Wilderness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposal</td>
<td>34,010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Bridges N. M.</td>
<td>7,600</td>
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<td></td>
</tr>
<tr>
<td>Hovenweep N. M.</td>
<td>160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rainbow Bridge N. M.</td>
<td>160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glen Canyon N. Rec. A.</td>
<td>298,979</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bureau of Land Managementa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snow Flat Recreation Area</td>
<td>37,920</td>
<td>1,280</td>
<td>31,960</td>
</tr>
<tr>
<td>Butler Wash Recreation Area</td>
<td>42,880</td>
<td>22,880</td>
<td>6,000</td>
</tr>
<tr>
<td>Valley of the Gods Recreation Area</td>
<td>6,485</td>
<td>6,485</td>
<td></td>
</tr>
<tr>
<td>Canyon Rims Recreation Area</td>
<td>76,600</td>
<td>520</td>
<td>60,710</td>
</tr>
<tr>
<td>Beef Basin Recreation Area</td>
<td>49,920</td>
<td>30,400</td>
<td>13,150</td>
</tr>
<tr>
<td>Grand Gulch Recreation Area</td>
<td>23,760</td>
<td>22,000</td>
<td>7,000</td>
</tr>
<tr>
<td>Utah Park and Recreation Com.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dead Horse Pt. State Park</td>
<td>3,893</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navajo Tribe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monument Valley Tribal Park</td>
<td>N.A.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*aSeveral Bureau of Land Management ORRRC acreage totals are not consistent with total unit acreages. Explanation of discrepancies was not available. Where total unit acreage exceeds ORRRC acreage, the excess is placed in the unclassified category.
for three wilderness areas in Arches National Monument (table 6 and figure 31) was conducted in December, 1967. There are no Primitive Areas (L20) within Forest Service boundaries.

The study area possesses only one major paved through highway—the north-south U.S. Highway 160-Utah Highway 47 route. This route joins U.S. Highway 6-50 (and the future Interstate Highway 70) at the north boundary of the study area. It crosses the Utah-Arizona state line at Monument Valley and eventually intersects the Navajo Trail—Arizona Highway 64. Three paved trunks to this route, Utah Highway 262, U.S. Highway 160, and Utah Highway 46, intersect from the Colorado border. Paved spurs include the Potash Road, Arches National Monument road, Utah Highway 128, and Dead Horse Point road in the Moab area. The Potash Road is the only non-interstate highway to be chosen as one of the five most scenic highways in the United States (U.S. Department of Commerce, 1966, p. 115). A portion of the road through the Canyon Rims Recreation Area is paved. Limited sections of Utah Highways 261 and 95 are paved. Although the study area embraces 9,649 square miles, it possesses only 458 miles of paved highways. Figure 17 locates all paved highways, gravel roads, and major dirt-jeep routes. Route and access relationships to scenic features and recreation areas can be ascertained by comparison of figures 7 and 17.

Utah Highway 95 bisects the study area from an east-west position. In conjunction with Utah Highway 262 or Utah Highway 261, it constitutes a through route. Although Utah Highway 95 deteriorates into a graded dirt road shortly after crossing Comb Ridge, it is expected to be paved by 1972 (Bureau of Land Management, 1967b). The Halls Crossing road, a spur from Utah Highway 95, leads to Lake Powell.
Figure 17. Access map.
Most unpaved roads are marginal to passenger car traffic in situations of inclement weather. Surface and dust conditions make them unacceptable to the average driver. For this reason, no distinctions of gravel, graded, dirt, primitive, jeep, and so forth are made for unpaved roads in figure 17.

**Inventory of Planned Development**

The inventory of planned development considers sites proposed for development by managing agencies or private landowners. Only those sites listed in agency master plans and inventories are included. The inventory of planned site development catalogues sites much in accord with the system established for existing sites. Tables 9 and 12 and figures 21, 23 and 24 catalogue planned site development. Dispersed development planning is discussed in the following sections treating policy and patterns of development.

**Planning and development policy**

Planning and development policy must be initially examined in the broad terms of agency responsibility as ordained by organic acts, supplementary acts, and administrative fiat at the Washington, D.C., state, or private echelons. Each of the three major federal agencies holding jurisdiction over recreational lands within the study area—the National Park Service, the U.S. Forest Service, and the Bureau of Land Management—must approach recreation planning within the bounds of varying restrictions imposed by law. The Navajo Tribal holdings are private lands managed in accord with Tribal Council decisions. Utah State Parks are developed and managed according to an organic act and administrative policy formulated by the Utah
Close examination of general agency policy is profitable because it reveals the extent of flexibility possessed by each agency in recreation planning and development. Since policy does reveal agency latitude and capability, agency planning and development should then be evaluated in the light of that total flexibility. Examination of general policy and consideration of specific policy within the study area constitute the analytical format.

**National Park Service--general policy**

The National Park Service administers six areas within the study area--Arches National Monument, Canyonlands National Park, Natural Bridges National Monument, Hovenweep National Monument, Rainbow Bridge National Monument, the proposed Glen Canyon National Recreation Area (Moss, 1967a) of the Glen Canyon Reclamation Withdrawal. Broad National Park Service policy is stated in the organic act (Committee on Commerce, 1965, pp. 345-346) and includes two objectives. The organic act states that the fundamental purpose . . . is to conserve the scenery and the natural and historical objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. (Ibid., p. 345)

The objectives are somewhat contradictory and frequently pose situational dilemmas. Although analysis is concerned with the second objective, it is recognized that implementation of this objective is governed by the duality of the organic act objectives.

The National Park Service has established management principles and administrative policies for natural areas. A natural area is defined as follows:
The natural area category includes those National Parks and Monuments that were established to conserve the scenery, natural objects and wildlife therein. Natural area as used in this statement is synonymous with the aforementioned National Parks and Monuments. (National Park Service, n.d.b, p. 1)

All National Park Service units within the study area except Hovenweep National Monument belong to the natural area category. Excerpts from the Park Service statement of principles and policies pertinent to planning and development in the above National Park Service units follow.

**Master Plan**
A Master Plan will be prepared for each area. It shall cover specifically all Resource Management, Resource Use, and Physical Development programs. An approved Master Plan is required before any development program may be executed in an area. (Ibid., p. 4)

**Physical Developments:** They shall be limited to those that are necessary and appropriate, and provided only under carefully controlled safeguards against unregulated and indiscriminate use, so that the least damage to park values will be caused. Location, design, and material, to the highest practicable degree, shall be consistent with the preservation and conservation of the grandeur of the natural environment. (Ibid., p. 1)

**Off-Road Use of Motorized Equipment**
Public use of motor-propelled vehicles in natural areas shall be confined to designated park roads or other designated overland routes exclusive of foot trails and bridle trails. (Ibid., p. 4)

**Plant and Animal Resources**
Natural areas shall be managed so as to conserve and portray as a composite whole the indigenous fauna, flora, and scenic landscape. Management will minimize, give direction to, or control those changes in the native environment and scenic landscape resulting from human influences or natural processes of ecological succession. (Ibid.)

**Advertising**
The Service may participate in signing and other public information programs to the extent necessary to acquaint the public with means of access to the areas it administers and with the facilities and services available in them. (Ibid., p. 6)
Concessions and Other Business Operations
Where adequate public accommodations, facilities and services exist, or where it is feasible for them to be developed by private enterprise outside a natural area, such shall not be provided within the area. Such accommodations, facilities and services as may be necessary for public use and enjoyment of the area shall be provided, insofar as practical, by private enterprise under contractual arrangements ... (Ibid.)

Recreation Activities
... activities such as hiking, mountain climbing, bicycling, horseback riding, sightseeing, water oriented activities, winter sports, nature observation, photography, camping, picnicking, and the like, that can be accommodated without material alteration or disturbance of environmental characteristics or the introduction of undue artificiality into a natural environment, are to be encouraged, and provision shall be made to facilitate public participation in them. (Ibid., p. 8)

Physical Facilities
Only those physical facilities needed for management and public use shall be provided in a natural area and only at sites designated on the approved Master Plan for the area. To the extent practical, new facilities should be developed only in accordance with an approved architectural theme for an area or sites within an area. (Ibid., p. 10)

Ramifications of Park Service policy are thus:

1. Detailed master planning must precede implementation of development,
2. Location and design must complement the scenic resource,
3. Vehicular use is confined to designated routes,
4. Development must portray the composite whole of the scenic, vegetative, and fish and wildlife resources, and
5. Dispersed recreation activities are implemented only if they do not alter the natural environmental resources.

U.S. Forest Service--general policy

The National Park Service is delegated the singular responsibilities of preservation and recreation management within its holdings.
The U.S. Forest Service and Bureau of Land Management must consider recreation management within the context of total resource management. Multiple use management thus carries with it implications for resource allocation and priorities foreign to the National Park Service administrative experience. With certain exceptions, this thesis does not attempt to evaluate U.S. Forest Service and Bureau of Land Management recreation policies in light of total resource planning. Rather, policies are examined which are concerned with allocation and development within the recreation resource sphere.

U.S. Forest Service responsibility for recreation planning and development is recognized by the Multiple Use-Sustained Yield Act of 1960 (Committee on Commerce, 1965, pp. 303-304). Excerpts from the Act outlining responsibilities in recreation development follow.

... That it is the policy of the Congress that the National Forests are established and shall be administered for outdoor recreation, range, timber, and wildlife and fish purposes ... Nothing herein shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish on the National Forests.

... due consideration shall be given to the relative values of resources in particular areas. The establishment and maintenance of areas of wilderness are consistent with the purposes and provisions of this Act.

... "Multiple use" means: ... making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources ... with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output. (Ibid.)

The National Park Service achieves planning flexibility through the Master Plan system at the unit level. U.S. Forest Service policy achieves much of this flexibility at the Washington level (Forest
Service, 1965, pp. 66-77). Its responsibility for multiple use management requires further policy interpretation at the Washington level. General U.S. Forest Service policy is thus defined in some detail. U.S. Forest Service policy applicable to the study area can be grouped under several categories. Several policies relate to general recreation planning. These policies are stated as follows:

With the exception of areas to be preserved in primitive condition, making all resources available for public use and enjoyment involves development of access, informational services, regulation, of use, program planning and implementation, and a host of other activities including coordinating a wide variety of uses. (Ibid., p. 66)

Values related to public hunting, fishing, hiking, boating, scenic enjoyment, and similar activities are recognized in virtually all resource management decisions and actions. (Ibid., p. 67)

... emphasis will be given to development of well-planned combinations of a variety of forest recreational facilities and areas which provide an attractive and readily available array of recreation opportunities. These recreation centers will vary in size ... some ... will be informal groupings of facilities in a loosely knit combination of recreational opportunities over large areas ... Regardless of the size of overall significance, the Forest Service will work with State, local, and other groups to combine the best available features of private, State, and Federal resources into a well-planned complex for public use and enjoyment. (Ibid., pp. 69, 71)

Other policies concern long-range planning.

Sustained yield implies that current actions and uses should not preclude or limit future uses and benefits. (Ibid., p. 66)

Specific policies evolve in response to new knowledge and to the changing patterns and needs in public use ... A constant effort to anticipate prospective needs is a primary feature ... Conscious effort to generate forward-looking actions is required by ... a public trust which spans scores of years and generations ... (Ibid., p. 68)

The National Forest Recreation Survey served to identify many potential sites ... Certain of these are selected for development each year, but most sites must be managed
for a number of years before they are developed . . . for recreational purposes. (Ibid., p. 73)

Land classification is stated as policy.

Zoning is a standard procedure in developing multiple use management plans.

... the Bureau of Outdoor Recreation has recommended general use of . . . six classes . . .

The Forest Service has adopted this terminology although some interpretation and refinements have been necessary to adequately reflect National Forest characteristics. Other descriptive classifications are used as needed to guide management and use of resources in specific situations.

Development sites, waterfront zones, municipal watersheds, and other classifications . . . indicate the importance of land classification in general and recreation zones in particular. Management of outstanding recreational areas is based upon special studies and plans. (Ibid.)

U.S. Forest Service policy includes statements regarding coordination and cooperation.

Forest Service cooperation with other Federal agencies, State, local governments and private individuals reflects a basic policy. (Ibid., p. 67)

National Forest managers actively seek to achieve the combination of private, State, and Federal efforts and resources that will be most effective in meeting public recreation needs in specific areas.

Forest Service policy with regard to cooperative actions recognizes the responsibilities associated with management of public properties. Legislative actions have made it clear that managerial responsibilities must be redeemed by the managing agency. Direct responsibility for multiple use management of all resources and the need to avoid fragmentation of administrative units are among the reasons which preclude transfer of such responsibilities to State, local, or other Federal agencies. (Ibid., p. 68)

Specific policies treat esthetics and scenic roads, access, wilderness, motorized travel, transient visitors, and endangered species.

Recreation activities that detract from the forest environment are not compatible with proper stewardship of the resources. (Ibid., pp. 66-67)

Forest Service policy requires that roadside zones, trailside zones, and waterfront zones must have adequate width
and must be managed to enhance the forest environment for public use and enjoyment. (Ibid., p. 73)

Forest Service policy is to develop parkway-type and other recreational driving opportunities as rapidly as possible . . . Overlooks, rest stops, and other facilities are established at appropriate locations as needed. Multi-purpose roads are located to aid enjoyment of scenic beauty wherever it is feasible and justified by recreational traffic. (Ibid., p. 75)

Road and trail construction will be coordinated with facility development and use to achieve optimum access to resources and dispersion of National Forest visitors. (Ibid., p. 69)

Land-use studies will be made of other areas (other than Primitive Areas) suitable for wilderness purposes and those primarily valuable and needed for such use will be considered for inclusion in the Wilderness Preservation System. (Ibid., p. 74)

Forest Service policy is to control the use of motorized equipment for off-road travel to the extent necessary to protect visitors, resources, or a wilderness or other special environment. Within this policy, positive actions are taken to provide opportunity . . . for all forms of outdoor recreation dependent upon motorized equipment. (Ibid., p. 75)

Interstate recreational travel tends to concentrate visitors along main highways passing through or near many National Forests . . . Forest Service policy is to provide picnic sites, campgrounds, rest stops, visitor information centers, and other facilities at appropriate locations for the convenience of these transient visitors. (Ibid.)

A specific Forest Service policy . . . is to preserve rare or endangered species by special management practices. (Ibid., p. 77)

The Intermountain Region of the Forest Service has formulated a regional guide (U.S. Forest Service, n.d.a) for multiple use management zones that states management direction and establishes coordinating requirements. The zone system delineates six major zones: Crest, Intermediate, Lower, Travel Influence, Water Influence, and Special. Special zones are formally designated areas including wilderness,
scenic, geological, and historical areas. Significant policy implications of the zoning system include:

1. Emphasis within the Crest and Intermediate Zones upon opportunities for dispersed recreation and scenic enhancement, and

2. An emphasis within the Travel Influence Zone upon the priorities of intensive recreation opportunities and scenic recreation travel over other resource development.

Forest Service recreation policy embraces many facets of planning and development. It is sufficiently detailed and specific to be readily interpreted at the regional level. It possesses sufficient latitude to impart flexibility to local planning situations. It details recreational priorities within the multiple use scheme. Significant ramifications of general Forest Service policy pertinent to planning and development in the study area includes the emphasis upon:

1. Variety of recreation opportunities.

2. Flexibility of current development which anticipates future changes in use patterns.

3. Desirability of recreation land classification.

4. Coordination in planning with other agencies.

Bureau of Land Management--general policy

The Bureau of Land Management has only recently initiated the evolution of a firm recreation policy. The tardiness of the Bureau in formulating a specific policy stems partially from its tenuous position as an interim management agency.
The Public Land Use Act of September 19, 1964 states that

... pending the implementation of recommendations to be made by the Public Land Law Review Commission ...

(a) The Secretary of the Interior shall develop and promulgate regulations containing criteria by which he will determine which of the public lands ... shall be (a) disposed of ... or (b) retained, at least during this period, in Federal ownership and managed for ... (2) fish and wildlife development and utilization, ... (6) outdoor recreation, ... (9) wilderness preservation, or (10) preservation of public values that would be lost if the land passed from Federal ownership ... (Committee on Commerce, 1965, p. 461)

The Act stipulates that the public lands are to be reviewed by the Secretary of the Interior. Those suitable for retention are then subject to a public hearing. If after receiving public hearing, the lands are determined to be suitable for retention and indefinite management, they shall be managed for multiple use and sustained yield. The Act defines multiple use in terms basically identical to the Forest Service definition.

Bureau of Land Management lands in San Juan and Grand Counties have yet to be classified for retention. Studies are now being conducted (Erickson, 1967) and it is indicated that large areas of recreationally significant lands will be proposed for retention. It is noted that public lands adjacent to the study area in Wayne and Garfield Counties—a tract of 579,300 acres between the Dirty Devil and the Green and Colorado Rivers—have been classified for indefinite retention (Pusey, 1967; Deseret News Washington Bureau, 1967). An additional 1,068,964 acres west of the Colorado River in the Henry Mountains area have been proposed for retention by the Bureau (Deseret News, November 23, 1967). These lands bear close resemblance to public lands in the study area.
The Public Land Use Act is significant because lands retained must be managed in accordance with a multiple use policy embracing "outdoor recreation" and "wilderness preservation." It is assumed that the Bureau should theoretically enjoy the same latitude and flexibility of multiple use implementation as possessed by the Forest Service.

Basic policy thus states that the Bureau protects, preserves and develops public land resources valuable for outdoor recreation. These include scenery, water, wildlife, natural landscapes and phenomena, archeological and historic sites. (Bureau of Land Management, 1965, p. 69)

In accord with this policy, the Bureau in 1962 initiated an inventory and evaluation of the outdoor recreation resources on its lands. The ORRRC classification system was utilized in the identification of the resource (Ibid.). In assigning multiple use priorities, the Bureau incorporated a "recreation area" designation into the inventory and evaluation system. A "recreation area" is defined as

... A tract of public land (usually several thousand acres in size) on which outdoor recreation or wildlife has been determined to be the primary use ... Where wilderness values predominate, an area will be preserved in a primitive, roadless condition. (Ibid., p. 70)

The Bureau has defined its role in the preservation of its scenic resource. Excerpts from this policy follow.

Land disposal that would result in damage to aesthetic values will not be made ... Where possible, full title or scenic easements to key scenic tracts of land will be acquired via land exchange or gift ... All public lands multiple-purpose roads will be located and constructed so that natural values are preserved and scenic vistas opened as far as possible. (U.S. Department of the Interior, 1966a, p. 36)

The Recreation and Public Purposes Act of 1954 provides for sale of public domain for recreation development to state and local

A development plan and construction schedule are required to insure professional programming for the future use of the land.

... The Bureau may approve or disapprove any application in whole or in part, or require its revision. (Ibid., p. 12)

In 1966 the Department of the Interior stated that with the recreation inventory now complete and the potential identified, BLM is proceeding with orderly planning along the following lines:

- Establish priorities for planning, development, and management to meet present and future demands;
- Identify and protect scenic corridors and roadside strips, reservations, and other areas;
- Classify and protect existing and potential recreation areas; emphasize development on areas that have national or regional significance or offer water-based recreation opportunities;
- Preserve natural beauty and provide only appropriate recreation facilities in harmony with the surroundings;
- Provide information, access, boundary identification, ownership maps, and directional signs;
- Reserve areas with special values, such as wilderness and wild rivers;
- Interpret the history, archeology, geology, and ecology for better understanding and appreciation;
- Manage and improve wildlife habitat in coordination with State and Federal agencies;
- Coordinate with other units of government to fulfill the nationwide recreation plan; assist them in using the Recreation and Public Purposes Act;
- Provide sanitation facilities and good maintenance; and
- Reach management agreements with intermingled owners to facilitate recreation use of the public lands. (U.S. Department of the Interior, 1966b, p. 90)

These statements reflect a firm and specific commitment by the Bureau to orderly recreational planning.

National Park Service--area policy

The National Park Service has formulated planning policy for Canyonlands National Park and Arches National Monument. The Master
Plan for each unit spells out specific policy. Excerpts from the Canyonlands National Park Master Plan (National Park Service, 1965) are examined closely for they establish National Park Service policy, illustrate the problems confronting planners in the canyon country, and illuminate the planning approach instilled by the duality of the National Park Service organic act.

Vast expanses of land plus divergent types of visitor experiences and requirements create great problems for the Park staff. For instance, some visitors are content to drive to an overlook point, spend a few moments and drive on their way. Others prefer an intimate park experience, hiking, jeeping or horseback, exploring large areas over periods of several weeks. Both types of use must be recognized. (Ibid., p. 5)

There is a need for an encompassing, yet distinctive approach to integrate interpretation in the Park as in the surrounding BLM area ... (Ibid., p. 1)

... cooperation with the State of Utah and with the BLM is expected to coordinate regional interpretation ... (Ibid., p. 5)

Overlook points inside and outside the Park will account for much of the Park experience of visitors. Such points as Grandview, Dead Horse, Hatch, Lavender Canyon, The Loop Overlook, etc., will provide ideal viewing platforms for visitor enjoyment. (Ibid.)

Existing: Camp sites have been unregulated and locations uncontrolled in the past. Needed: Two types of campgrounds are envisioned in the park: (1) the developed campgrounds accessible by paved road for the majority of the visitors, including those with self-contained camper or trailer units and boat trailers ... and (2) a network of designated primitive camp sites along the jeep routes, the rivers and certain trails to accommodate the smaller number of back country enthusiasts. These primitive camps ... at designated points would preclude the intrusion of this type of activity in high value areas ... Back country camping by jeeping and horseback groups would be limited to designated areas. (Ibid.)
Existing: This means (jeeping) of transportation is the only practical means of reaching points of interest in many portions of the Park. Stream beds provide the principal routes with no damage to the Park.

Needed: Jeeps will be required to stay on established and approved routes. Enforcement of this regulation will require education and patrol. (Ibid.)

Canyonlands National Park stresses variety in its interpretative plan. The Master Plan designates that interpretation include the full gamut of themes--archeological, historical, geological, ecological, and scenic. Interpretative sites will be located to accommodate visitors engaging in all modes of travel.

The Canyonlands National Park organic act (Public Law 88-590, 1964, p. 5) specifically provides that

... In order to provide suitable access to the Canyonlands National Park ..., the Secretary (of the Interior) may select the location or locations of an entrance road or roads ... from United States Route 160 and States Routes 24 and 95 . . . .

... The Secretary may construct, reconstruct, improve, and maintain ... an entrance road or roads and connections of parkway (my italics) standards . . . .

Provided, that if any portion of such road or roads crosses national forest land the Secretary shall obtain the approval of the Secretary of Agriculture . . . .

... The Secretary is hereby authorized to cooperate with the Secretary of Agriculture in the location and extension of a forest development road from State Route 95 and may extend the same from the national forest boundary to the park . . . . (Ibid.)

Tenets of National Park Service philosophy and policy for the large undeveloped tract that constitutes Canyonlands National Park thus state that:

1. The full spectrum of opportunity is recognized in the planning process.
2. Cooperation with other agencies is desirable.
3. Manipulation and control of the visitor protects the resource.
4. Designation and classification of areas facilitates manipulation and control.

5. Jeeping is recognized as a legitimate and desirable form of park travel in the unique environment of the canyon country.

6. Interpretation is to accommodate a diversity of themes and visitor types.

The Master Plan for Arches National Monument advances a planning policy essentially identical to that of Canyonlands National Park. However, a more limited and elongated acreage, the advanced state of development, and other Monument individualities invite several policy variations. Variations include an emphasis upon the geological and scenic interpretative themes with only minor interpretation of historical and ecological values, the restriction of vehicular travel to established roads, and the desirability of locating further campground development on adjacent Bureau of Land Management lands (National Park Service, 1966).

No current master plans are advanced for Natural Bridges and Rainbow Bridge National Monuments. Although a study team appraisal of the Glen Canyon National Recreation Area is completed, formulation and approval of a Master Plan is set for an indefinite date (Bean, 1967). The Park Service, however, indicates that planning and development will embrace the following elements:

Concerning development priorities, Service plans are, of necessity, closely tied to State and County plans for access roads outside the Recreation Area. The Services will, of course, cooperate closely with State and County agencies in getting all proposed development sites completed as soon as possible, because they are all needed if the full recreational potential of the area is to be realized.

The classification of lands will be included in the Master Plan. Because of the multiple-use policy which is
basic to National Recreation Areas, it can be anticipated that most of the area will be Class II and III, with minor areas of I, II, and IV, and little, if any, Class IV or V. (ORRRC Classification) (sic)

It is contemplated that as a National Recreation Area it will be subject to review under the Wilderness Act the same as other units of the National Park System.

The Service contemplates retaining the entire area, including the streams and rivers, in as natural a condition as possible. However, in the interests of providing for the full recreational potential of the streams and rivers, the provision of facilities to make one or two of them usable solely for recreational purposes may be desirable.

As access roads serving the area are developed, it is contemplated that both land and water-based recreational needs will be adequately met on a balanced basis. (Ibid.)

These statements are not to be construed as final policy, but they are indicative of an approach to preliminary planning.

Bureau of Land Management--area policy

Although the Monticello District of the Bureau of Land Management constitutes the largest recreation landholding within the study area, a comprehensive development policy has not been formulated for the entire District. Master plans have been developed for two areas--Canyon Rims and Beef Basin.

The Master Plan, Canyon Rims Interpretative Area (Bureau of Land Management, 1962) represents a development plan for the buffer zone of plateaus surrounding Canyonlands National Park. The Master Plan is essentially a site inventory of observation points and campgrounds within the zone. The Canyon Rims are geographically divided into three areas--the North, East, and South Rims. Planning policies emanating from the plan state that:

1. The East Rim is of highest development priority.
2. The East Rim should receive development as an integrated recreation complex of overlooks, campground, and information center to satisfy visitor demand from U.S. Highway 160.
3. The North Rim is of lowest development priority.

4. The South Rim is to receive "primitive-type" development. The Master Plan does not detail dispersed recreation development planning.


1. The strategic location of Beef Basin as an ingress-egress area to Canyonlands National Park is recognized.

2. Archeology should receive interpretative priority with on-site and visitor center development contemplated.

3. Hunter campsite development is desirable.

4. Land classification should assume a westward gradation of intensive corridor use, wilderness threshold, and wilderness designations.

The Beef Basin Master Plan constitutes a comprehensive planning statement treating both dispersed and site-oriented recreation development.

The Bureau has completed an analysis of the multiple use planning problems in the area essentially representing the greater San Juan Triangle (Bureau of Land Management, 1967b). This study does not constitute a comprehensive recreation planning statement for the area. Where applicable, specific statements are examined in the Patterns of Development section.

However, a major policy consideration involving potential conflicts between mineral resource development and enhancement of the recreation resource emanates from the study. The document recommends
Figure 18. Map of ownerships.
that it be the policy of the Bureau to conduct special studies in two areas.

1. A probable open-space and scenic resource versus uranium extraction conflict exists along Utah Highways 95, 47, 261, and the Halls Crossing road.

A detailed and intensive study is needed to identify specific open space and natural beauty values in order to resolve these conflicts. This study is recommended as a high priority action for the So. San Juan Planning Unit. (Ibid.)

2. A probable resource conflict between the desert bighorn wildlife resource, and uranium exploration and extraction exists in the White Canyon mining district. Although the bighorn is intolerant of intensive development activities, present mining laws and regulations, and the economic value of the uranium resource may effectively preclude any endangered species management program.

For these reasons, a resource conflict zone is identified. The area should be the subject of a special study to determine:
(1) Are there ways to harmonize the two uses?
(2) If not, which use is most important, economically and socially to:
   a. The Nation
   b. The State
   c. The Region
   d. The County. (Ibid.)

Concern for the resolution of these conflicts marks the inauguration of four aspects of recreation policy by the Monticello District.

1. The District recognizes the desirability of resolving multiple use conflicts involving the recreation resource through the mechanism of special study analysis.
2. The uniqueness of the desert bighorn is identified as an important component of the District's fish and wildlife recreation resource.

3. The scenic travel corridor is identified as a recreation resource of high priority.

4. Open space is recognized as a significant resource.

The Monticello District has generally approved Recreation and Public Purposes Act applications from the Utah Park and Recreation Commission. The approvals imply that this has been a general policy of the District.

Utah Division of Parks and Recreation--area policy

No general policy statements are advanced by the Utah Division of Parks and Recreation. Past State Park development has been hindered by a lack of suitable access and a shortage of funds (Cassall, 1967). These impediments and an examination of current developmental status indicate that the development in the study area assumes this pattern:

1. State Parks development in the canyon country is contingent upon suitable access development.

2. State Parks development in the canyon country is generally of low priority in funding allocations.

3. Dead Horse Point State Park was of high development priority and can be considered an exception to this pattern.

Navajo Tribe--area policy

The Navajo Tribe owns that portion of the study area south of the San Juan River. Although Tribal recreation policy has not fully congealed, recreation development is a definite objective of the
Tribe (Tribune Washington Bureau, 1967; Rea, 1967). Planning is conducted by consultation, but basic planning decisions remain the responsibility of the Tribe.

Patterns of Development

The analysis of patterns of development relates planning and development to the environmental resource. Disagreement and conformity between policy and actual planning and development patterns become manifest. The very lack of an identifiable pattern is often in itself construed as a pattern—a pattern of discontinuity of development. Patterns thus reflect continuity, deficiencies, coordination, and other expressions of recreation planning in the study area. Full cognizance of the various ramifications of development patterns is, however, dependent upon examination of two elements—the spatial complexities of land ownership and the spatial relationship of the ownership pattern to the various recreation resources.

The spatial relationship of agency boundaries to one another and to major access routes constitutes a significant pattern within the study area. Recognition of its complexities is essential to an appreciation of the various patterns of development. Figures 17 and 18 illustrate the following situations.

1. Although the study area possesses six National Park Service units, only three—Canyonlands National Park, Arches National Monument, and Glen Canyon National Recreation Area—are significant in the sole terms of total land area (table 6). Hovenweep and Rainbow Bridge National Monuments aggregate only 320 acres. Natural Bridges National Monument, 7,600 acres, can be considered intermediate in
size but remains insignificant as only .1 percent of the study area. Thus only within the three largest units is ample opportunity afforded for dispersed activity development on National Park Service lands.

2. The Manti-La Sal National Forest is a major landholder within the study area. The two districts, the Moab and Monticello Districts, comprise 2 percent and 6 percent respectively of the total study area.

3. The Bureau of Land Management's jurisdiction constitutes approximately 60 percent of the study area. The Bureau thus greatly predominates in total land area administration.

4. The Navajo Reservation constitutes a major recreational land holding (2,031 square miles) in the southern portion of the study area.

5. Five scattered Utah State Parks aggregate 4,583 acres.

6. With the exception of Arches National Monument, National Park Service units are removed from paved travel routes. The two entrances to Canyonlands National Park, the Neck and Cave Springs, are 34 miles and 22 miles respectively from U.S. Highway 160. Overland access to Glen Canyon National Recreation Area by Utah Highway 95 and the Utah Highway 95-Halls Crossing route constitutes 57 and 71 unpaved miles respectively. Neither route can be considered a major through route at present.

7. The two units of the Manti-La Sal National Forest are removed from paved travel routes. Two exceptions exist. One mile of Utah Highway 46 enters the Moab District and one mile of U.S. Highway 160 touches the Monticello District.

8. Bureau of Land Management lands parallel almost all paved travel routes.
9. The Navajo Reservation parallels 21 miles of Utah Highway 47.

10. The most significant spatial pattern is the relationship of the assorted ownerships to one another. The study area is one of the few areas in the United States in which three major Federal resource agencies all possess lands of superlative recreational resource endowment. The intricacy of ownership is evident in this summary:

   Six National Park Service units.
   Two disjunct National Forest Districts.
   One Bureau of Land Management District.
   One Navajo Reservation.
   Five Utah State Parks.

The pattern is one of great interspersion of ownership involving both large and small acreages.

11. Reference to figure 18 indicates that the Monticello District of the Manti-La Sal National Forest approximates the geographical center of the study area. From this center radiates a series pattern of first, Bureau of Land Management lands, and then National Park Service units. The Navajo Reservation and the Moab District of the National Forest terminate the series in two instances.

12. Figure 18 identifies an important relationship. U.S. Forest Service and Park Service units are interspersed as entities within a continuity of Bureau of Land Management ownership. The Bureau thus assumes the key position within the ownership pattern—it invariably ties the whole together.
The spatial distribution of land ownerships among the environmental resources is identified by reference to figure 18 and figures 3, 7, 13, and 15 delineating the various resources. The following patterns are identified as significant.

The water resource is primarily the province of the Glen Canyon National Recreation Area, Canyonlands National Park, and the Bureau of Land Management. Three areas of joint agency responsibility exist:

1. The Green River--Canyonlands National Park and Bureau of Land Management.
2. The Colorado River--Canyonlands National Park and Bureau of Land Management.
3. The Colorado River-Canyonlands National Park and Glen Canyon National Recreation area.

In most instances the scenic resource does not respect jurisdictional boundaries. However, the Alpine and Forested types, with one exception, are found entirely within either the Manti-La Sal National Forest or the Navajo Mountain portion of the Navajo Reservation. A large area of the Forested type exists within the block of private and State lands on the east slope of the La Sal Mountains.

The Transitional-montane-canyonlands type is bisected frequently by Bureau of Land Management-U.S. Forest Service boundaries. This situation exists on the north slope of the La Sal Mountains; the north slope of the Abajo Mountains; and the north, west, and south slopes of Elk Ridge.

The Canyonlands type is shared extensively by National Park Service units, the Bureau of Land Management, and the Navajo Reservation.
The Canyonlands type is shared with the Bureau of Land Management along most of the perimeter of Canyonlands National Park. Large areas of this type are situated along the Glen Canyon National Recreation Area-Bureau of Land Management boundary. Glen Canyon National Recreation Area and the Navajo Reservation also possess in common extensive areas of Canyonlands type.

Canyons, because of their linear configuration, often cross jurisdictional boundaries. This situation is evidenced by the deep penetrations of canyons from the Glen Canyon Recreation Area into adjacent Bureau of Land Management lands. Above the Glen Canyon National Recreation Area jurisdictional level, canyons continue into the Navajo Reservation. The Dark Canyon system represents a major penetration of the Canyon scenic type through three jurisdictional boundaries.

The interspersion of scenic types is not limited to specific land ownerships. The three areas that exhibit extreme scenic diversity (page 50) are located within a complex pattern of U.S. Forest Service, Bureau of Land Management, and National Park Service ownerships. Canyonlands scenic nodes are present within Canyonlands National Park and the Navajo Reservation.

The relationship of the scenic resource to the land ownership pattern thus indicates that;

1. The scenic endowment is well distributed throughout the ownership pattern,

2. Maximum utility of scenic variety requires close coordination between agencies, and
3. Utilization of certain Canyon scenic types, because of their linear qualities and limitations of ingress-egress, dictates coordinated planning.

Enhancement of climatic variety is determinant upon U.S. Forest Service development and the coordination of access development with adjacent agencies.

Because the geological resource enjoys a wide distribution, close coordination among responsible agencies is essential to avoid duplication of interpretative themes. Its general distribution also suggests that geology can be interpreted by the Bureau of Land Management along major highway corridors as well as by the National Park Service in the spectacular scenic-geological areas.

The early historical resource is generally associated with Glen Canyon and the San Juan Canyon. Thus the Glen Canyon National Recreation Area should be delegated the responsibility for its interpretation.

The uranium boom, the range cattle industry, and Mormon colonization historical themes are widely distributed and require coordination among agencies to insure integration and continuity of themes. These themes are well represented along travel corridors and thus present excellent interpretative opportunities for the Bureau of Land Management. Three of the four historical trails within the study area cross jurisdictional boundaries.

Because study area prehistory is widely distributed, interpretative planning is readily susceptible to duplication of cultural themes among agencies. Outstanding prehistory is frequently associated with the canyon scenic resource--particularly in the San Juan Triangle.
where Glen Canyon National Recreation Area and Bureau of Land Management lands abut each other. The general distribution suggests that the Bureau of Land Management assume a responsibility for transient interpretation.

The relationship of the primitive resource variants to the ownership pattern poses critical planning problems. Primitive resource variants in the San Juan Triangle do not respect the Bureau of Land Management-Glen Canyon National Recreation Area boundary. The Dark Canyon system represents a primitive type encompassing lands within the Glen Canyon National Recreation Area, the Bureau of Land Management-Monticello District, and the Manti-La Sal National Forest. A similar situation, with Canyonlands National Park added to the above trilogy, exists between the confluence of the Green and Colorado Rivers and the north slopes of Elk Ridge and the Abajo Mountains. Here the complexity is compounded by the variety of potential primitive opportunities available. Lake Powell wilderness arms continue as horseback or backpacking-only primitive types into the Navajo Reservation. Wild Rivers remain wild only to the extent that the Bureau of Land Management and Canyonlands National Park coordinate access along their reaches. Arches National Monument shares primitive situations with the Bureau of Land Management.

The Manti-La Sal National Forest shares the mule deer hunting resource with the Bureau of Land Management in the pinyon-juniper vegetative zone. Elk Ridge and its peripheries represent a high quality hunting area under joint ownership. Coordination of hunting camp and access development is a joint responsibility in the Elk Ridge and Dolores Triangle-La Sal Mountain areas. While habitat
management is a responsibility shared by both agencies, the Utah Division of Fish and Game is the non-landholding agency responsible for herd and hunt management.

Ecological interpretative opportunities are not limited to jurisdictional boundaries. The downward extension of life zones, the linear pattern of canyon ecology, and the southward transition of Upper to near Lower Sonoran life zones all dictate continuity of interpretation.

Patterns of both site-oriented and dispersed opportunity development are considered. Figures 19, 22, and 24 and tables 7, 8, 10, and 11 indicate that the paucity of existing recreation sites is a most conspicuous development pattern. The poverty of developed sites has important planning ramifications for the study area.

1. Because no extensive development structure exists as a precedent, future site patterns are difficult to determine (page 1). Further development may reveal patterns of "latent demand" not anticipated by use analysis based upon the present embryonic development structure (Price, 1967).

2. Lack of development is conducive to a planning atmosphere of extreme flexibility and diversity.

3. Planning for development designed to integrate the visitor with the environmental expression of the recreation resource and the particular objectives of responsible agencies is greatly enhanced.

4. An excellent opportunity exists for the creation of demands for new and perhaps unique recreation opportunities. Scheffey states that

an increase in the supply of a particular recreation resource or opportunity tends, in fact, to increase the
Ingenuity in site-oriented planning is thus encouraged by the impoverishment of existing development.

5. Extensive coordination of development between all agencies remains within the realm of practicability.

Thus, although the pattern of impoverished development exerts a negative influence upon present recreation opportunity, the pattern places the planner in an extremely advantageous situation with respect to future development. Further analysis of the patterns of site development examines patterns within the various site types.

**Sites—patterns of development**

**Campgrounds.** Figure 19 and table 7 detail the distribution and characteristics of existing general campgrounds. In terms of gross total capacity, the study area provides a substantial (12 sites, 234 family units) camping opportunity. However, a paucity of campgrounds and total family units within certain National Park Service units and on Bureau of Land Management lands reflects the infancy of several Park Service units and of the Bureau of Land Management recreation responsibility, a poverty of access, and a protraction of funding. Moreover, the camping opportunity is poorly distributed. The northern portion (Canyonlands National Park and north) of the study area possesses seven sites and 145 family units—58 percent and 62 percent respectively of the total general camping capacity. Campgrounds are widely but sparsely distributed over the southern portion which constitutes the bulk of the study area.
Figure 19. Map of existing campgrounds and picnic sites.
<table>
<thead>
<tr>
<th>Site number</th>
<th>Name of site</th>
<th>Sites</th>
<th>% of tot. sites</th>
<th>Family units</th>
<th>% of tot. fam. u.</th>
<th>Paved access</th>
<th>% of paved access</th>
<th>Paved access as % of p.a. units</th>
<th>P.A. - % of agency sites</th>
<th>% of p.a. units</th>
<th>Trans. sites</th>
<th>% of trans. sites</th>
<th>% of trans. sites as % of total sites</th>
<th>% of trans. units</th>
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<td>Island in Sky</td>
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<td>6</td>
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<td>8</td>
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<td>Total</td>
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<td>2</td>
<td>17</td>
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<td>8</td>
<td>1</td>
<td>13</td>
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</table>
The following patterns of ownership (table 7 and figure 19) are considered significant. The National Park Service contributes 42 percent of the campgrounds and 48 percent of the family units within the study area. The Forest Service contributes 33 percent of the campgrounds and 31 percent of the family units within the study area. The Bureau of Land Management and Utah Division of Parks and Recreation Commission contribute only 17 and 8 percent of the campgrounds respectively and 13 and 8 percent of the family units respectively within the study area.

Two campgrounds, the Park Service Devils Garden campground (site number 1) and the Forest Service Devils Canyon campground (site number 9) contribute 35 percent of the study area family units, but constitute only 16 percent of the campgrounds available within the study area. Most study area campgrounds are thus characterized by a small family unit capacity.

Choices of climatic and scenic variations are limited in the Moab area. The La Sal Mountains possess one 20-family unit campground (site number 8) situated 12 miles from a paved road. The three easily accessible campgrounds in the Monticello area (site numbers 9, 10, and 11) are located upon Forest Service lands at elevations averaging approximately 8,100 feet. Camping is prohibited on the Blanding-Monticello watersheds which comprise a large portion of the Abajo Mountains. Elk Ridge does not possess campgrounds. Thus, with the exception of the Monticello area, camping is essentially limited to the desert and semi-desert climatic situations. Although nighttime temperatures are pleasant at these lower elevations, daytime temperatures may be high (table 3). It is recognized that the
Forest Service and Bureau of Land Management permit camping in areas other than developed sites. The Canyonlands scenic type predominates in site vicinity landscapes (figures 7 and 19).

Inadequate access is a liability of the present general campground system. The following aspects (table 7 and figure 19) of paved access are deemed significant.

The study area possesses four paved access sites (site numbers 1, 6, 9, and 10). Paved access sites constitute 33 percent of study area sites and 47 percent of study area family units.

Arches National Monument contributes 46 percent of the paved access family units within the study area.

The Devils Garden campground (site number 1) is the only National Park Service campground possessing paved access. As such it constitutes 20 percent of total Park Service sites and 46 percent of total Park Service family units.

The U.S. Forest Service (two sites) is the only Federal agency to possess more than one paved access site. The two sites (site numbers 9 and 10) constitute 50 percent of U.S. Forest Service sites and 54 percent of total U.S. Forest Service family units.

The Bureau of Land Management possesses one paved access site which constitutes 67 percent of that agency's family unit capacity, but only 18 percent of all paved access units and only 8 percent of total campground site and unit development within the study area.

The Utah Division of Parks and Recreation does not possess paved access sites.

One paved access site is located south of the townsite of Monticello.
No paved access sites are present in montane environs in the Moab area.

No paved access sites are present in desert or semi-desert environs in the immediate vicinity of Monticello.

Paved access sites thus demonstrate the following general patterns of development. The lack of paved access is considered a pattern of development deficiency. This deficiency is attributed to three factors:

1. The poverty of funding for primary road construction,
2. The geographical restriction of National Park Service and U.S. Forest Service sites to administrative units generally situated in remote areas, and
3. The infancy of Bureau of Land Management development responsibility (page 109).

The magnitude of the access liability is compounded by the fact that unpaved routes are generally unacceptable or marginal to passenger car travel during inclement weather (page 101). The U.S. Forest Service has emphasized the quantity of paved access in its campground development program and as such has assumed the role of providing the majority of such sites within the study area. The U.S. Forest Service, National Park Service, and Bureau of Land Management have emphasized the quantity of paved access family units within their campground development programs. However, the contribution of the Bureau of Land Management is considered marginal in the context of total study area paved access units. Paved access sites exhibit a pattern of omission in the southern portion of the study area. The present pattern of development does not exhibit an equitable
distribution of sites within the environmental (scenic and climate) recreation resources.

Existing campground development exhibits a pattern of emphasis upon site locations removed from present paved travel corridors. Campground development conforms to this pattern in National Park Service units because of unit location. The exception to this pattern is the Forest Service Devils Canyon campground (site number 9) adjacent to Utah Highway 47. Location of this campground implements Forest Service policy (page 109). It is noteworthy that the Devils Canyon campground constitutes one of two locations available to the U.S. Forest Service for paved corridor development. Furthermore, the campground comprises 40 percent of available U.S. Forest Service family units within the study area. The Monument Valley campground constructed by the Navajo Tribe is a transient campground situated immediately outside the study area in Arizona. The Moab Lions Club rest-picnic area (figure 20) is used extensively by transient campers. The Dalton Springs campground (Forest Service--site number 10) and the Windwhistle campground (Bureau of Land Management--site number 6) are situated six and five miles respectively from the U.S. Highway 160-Utah Highway 47 travel corridor. Both possess paved access, but the Dalton Springs access represents a Monticello-Blanding mountain loop drive (page 180 and figures 17 and 19), while the Windwhistle access represents a terminating spur route paralleling the proposed Canyonlands National Park-Elk Ridge loop drive (page

Canyonlands National Park possesses nine primitive campsites aggregating 12 units. These sites are summarized in table 8.
Figure 20. Deficiencies of campground development. Squaw Flat campground (below) in Canyonlands National Park is reached by an unsurfaced road. It is the only campground in the Needles District of the Park. Inadequate access is a liability of existing campground development. Paved access sites constitute only 33 percent of available campgrounds. Although designed and designated as a picnic area, the Moab Lions Club site (above) is used extensively by transient campers. The study area possesses one transient campground of 30 units.
Table 8. Existing primitive campgrounds

<table>
<thead>
<tr>
<th>Agency</th>
<th>Name</th>
<th>Sites</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canyonlands National Park</td>
<td>Devils Kitchen</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peek-a-Boo</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Angel Arch</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Twin Valleys</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elephant Hill</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confluence Overlook</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Split Top Cave</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Squaw Slot</td>
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</tr>
<tr>
<td></td>
<td>North Window</td>
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</tr>
<tr>
<td>Total N.P.S.</td>
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<td>12</td>
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<tr>
<td>Total Study Area</td>
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<td>9</td>
<td>12</td>
</tr>
</tbody>
</table>

These sites reflect implementation of Park policy (page 113). This control and sanitative technique has not been utilized on U.S. Forest Service or Bureau of Land Management lands. There are no primitive campsite facilities in the interior of Grand Gulch or in the Behind the Rocks jeeping area--both of which are currently receiving use.

There are no campgrounds designed for the hunter within the study area. It is not known if the hunter camp would significantly control indiscriminate camping on Bureau of Land Management lands (Bureau of Land Management, 1967a). However, this type of campsite contributes to the variety of camping opportunities available--serving both as a hunter camp and as a wilderness threshold camp.
To summarize, existing campground development exhibits the following patterns of development:

1. A spatial distribution which is inequitable in terms of climatic variety and scenic variety.

2. A distribution pattern which favors the smaller northern portion of the study area in terms of abundance and availability of opportunity.

3. A pattern within which the National Park Service and U.S. Forest Service contribute the majority of available camping opportunities.

4. A pattern characterized by a paucity of paved access sites.

5. A pattern of deficient transient camping opportunities.


Figure 21 and table 9 represent a compilation of potential campgrounds as listed in agency inventories. Inventoried campgrounds represent those sites identified as suitable for future development. As such, a potential site inventory is not necessarily indicative of site priorities. It is indicative of:

1. Thoroughness of agency programs designed to identify sites, and

2. Patterns of emphasis within these programs.

The potential site inventory rectifies many of the deficiencies associated with the patterns of developed sites. Figures 19 and 21 graphically portray the general shift of emphasis from the northern to the south-central portion of the study area--an area of neglect within the existing site pattern. Figure 21 also depicts a
Figure 21. Map of potential campgrounds and picnic sites.
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</tr>
<tr>
<td>% of agency sites</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>21</td>
<td></td>
<td></td>
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<td>No. of sites</td>
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<td></td>
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<td>100</td>
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<td></td>
<td>3</td>
</tr>
<tr>
<td>% of hunter sites</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total site types</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>% of agency sites</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
concentration of sites in the La Sal Mountains which currently possess one developed site. Of primary significance in the redefinition of emphasis are the:

1. Concentration of sites on Elk Ridge.
2. Identification of sites in the Montezuma Creek drainage area.
3. Frequency of sites paralleling the Utah Highway 95 through corridor.

The potential site inventory is associated with a diversification of planning by the Bureau of Land Management. The inventory details a continued diversified development within Canyonlands National Park. It indicates that Arches National Monument has approximated its capability for development. The patterns of potential development are discussed below.

The concentration of U.S. Forest Service sites on Elk Ridge and in the La Sal Mountains have positive significance. The majority of sites in the La Sal Mountains are situated in Forested or Alpine scenic types (figure 7). As such, they respond to the scenic resource characteristics and the corresponding climatic situations of the environmental resource in that area. They complement adjacent existing development within the Canyonlands scenic type. It is noted that the Moab area possesses both outstanding canyon country scenery and the second highest range of mountains in Utah. The pattern of potential sites in the La Sal Mountains thus represents an evolution of a camping complex in the Moab area of extreme environmental variety and outstanding quality.
Elk Ridge commands a strategic location within the study area (page 124). The potential site inventory represents the evolution of an area camping complex embracing the greatest environmental variety of scenic and climatic resources to be found within the study area.

The Bureau of Land Management inventory of the area east of Utah Highway 47 is indicative of the close correlation between the Bureau's archeological interpretative site inventory (figure 23) and campground inventory. The area exhibits an otherwise impoverished environmental resource and is "generally lacking in scenic values" (Price, 1966). It is thus judged to be of low priority for future campground development.

The campground inventory paralleling Utah Highway 95 anticipates the paving of this presently low standard travel corridor. The Bureau of Land Management thus has assumed the responsibility for transient campground development along a future primary travel corridor. It is noted that sites are identified only along that segment of Utah Highway 95 east of Natural Bridges National Monument. This segment constitutes 38 miles of the 75 miles of Utah Highway 95 located within the study area. This situation reflects the association of the Bureau's inventory with available water sources and the pinyon-juniper vegetative zone. The Bureau site situated on Utah Highway 261 represents a transient site along a variant of the Utah Highway 95 corridor and a wilderness threshold campground to Grand Gulch. The Bureau has identified a strategic campsite on the Halls Crossing road which could become a transient site (page 185).

Although the Bureau of Land Management site inventory anticipates camping activity along a future paved through route, it does
not correct the existing deficiency of transient campgrounds on the U.S. Highway 160-Utah Highway 47 paved travel corridor. The Bureau has identified a strategic site at the junction of the Dead Horse Point Road and U.S. Highway 160. However, the Forest Service Devils Canyon campground represents the only existing or potential site within the remaining 164 miles of the 183-mile corridor. The two potential Bureau of Land Management sites on the Utah Highway 128 corridor variant represent:

1. The only sites identified in the Moab area within the Canyon scenic type.
2. Potential transient campgrounds along the proposed Canyon Country National Parkway (pages 185-186).
3. A wilderness threshold campground to Nigger Bill Canyon.
4. Readily accessible sites close to the largest population center of the study area.

They are thus considered to be high priority sites.

The Bureau of Land Management and U.S. Forest Service site inventories constitute 94 percent of the total sites identified. The predominance of these two agencies in the site inventory is attributed to:

1. The development to capacity within Arches National Monument, Natural Bridges National Monument, and Hovenweep National Monument.
2. The rudimentary development of the majority of sites identified in the Canyonlands National Park Master Plan.
3. The absence of a Glen Canyon National Recreation Area site inventory.
4. An inventory of U.S. Forest Service lands that has identified virtually all suitable locations along existing forest roads.

5. The magnitude of the acreage under Bureau of Land Management jurisdiction.

The Bureau of Land Management and U.S. Forest Service have both emphasized site identification along roads and jeep trails (figures 17 and 21). The comparative discrepancy of a greater number of Forest Service sites identified within a lesser land area is indicative of the greater availability of water on U.S. Forest Service lands. The Bureau of Land Management inventory is essentially complete in terms of potential sites possessing water sources.

Water is a limiting factor in the Bureau of Land Management inventory. The availability of water has serious implications for future Bureau development. In many instances, water sources are found in those situations that are marginal in terms of priority of locality and of scenic vicinity landscapes. It is significant that the Bureau trucks water to a campground in the San Rafael Swell in Emery County, Utah, and that the water supply for Dead Horse Point State Park is trucked to the Park.

The Bureau of Land Management inventory shows a diversification of campground development (table 9). Four site types are represented in the inventory. General campgrounds comprise 43 percent; transient campgrounds, 25 percent; primitive camps, 21 percent; and hunter camps, 11 percent of the Bureau inventory. It is significant that four primitive campsites are associated with Grand Gulch. In contrast, the U.S. Forest Service inventory does not list primitive sites in the Dark Canyon system nor hunter camps on Elk Ridge or in the
La Sal Mountains. It is appreciated that general U.S. Forest Service sites along existing forest roads would be utilized by hunters in the fall.

**Picnic areas.** Developed picnicking areas are associated with campgrounds, roadside rests, and picnic only sites. Figure 19 and table 10 summarize picnic only sites. The picnicking opportunity generally displays patterns associated with existing campground development. However, if all types of picnic sites including urban sites are considered, transient picnicking opportunities are well developed along travel corridors. A deficiency of sites exists along the Utah Highway 95 through corridor. Transient development is often inadequate in terms of water and shade. The Moab Lions Club and Kane Springs sites are exceptions.

Destination and local day-use sites are scattered throughout the northern portion of the study area including the Abajo Mountains. There is a paucity of sites in the southern portion of the study area including Elk Ridge.

The pattern of potential site distribution rectifies many of the deficiencies of the existing site pattern. Emphasis is shifted to the southern one-half of the study area. Five sites are identified along Utah Highway 95 and the Halls Crossing Road. It is noted that no potential sites are identified along the Utah Highway 47 and 261 corridors or along the Valley of the Gods loop drive.

**Interpretative sites.** Existing interpretative sites are concentrated in the northern one-third of the study area (figure 22). Arches National Monument possesses the largest aggregate of interpretative sites (11). Natural Bridges National Monument (eight sites)
Table 10. Existing picnic only sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Site No.</th>
<th>Units</th>
<th>Paved access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devils Garden</td>
<td>13</td>
<td>12</td>
<td>yes</td>
</tr>
<tr>
<td>Balanced Rock</td>
<td>14</td>
<td>3</td>
<td>yes</td>
</tr>
<tr>
<td>Cave Springs</td>
<td>15</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Grandview</td>
<td>16</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Upheaval Dome</td>
<td>17</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Needles Overlook</td>
<td>18</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Anticline Overlook</td>
<td>19</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Pack Creek</td>
<td>20</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Lake Oowah</td>
<td>21</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Red Bluff</td>
<td>22</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Indian Creek</td>
<td>23</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Kane Springs</td>
<td>24</td>
<td>6</td>
<td>yes</td>
</tr>
<tr>
<td>Moab Lions Club</td>
<td>25</td>
<td>35</td>
<td>yes</td>
</tr>
<tr>
<td>Four Corners Monument</td>
<td>26</td>
<td>4</td>
<td>yes</td>
</tr>
<tr>
<td>Goosenecks</td>
<td>27</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Figure 22. Map of existing interpretative sites.
is an exception to the northern concentration of sites (figure 22). The Utah State Department of Highways has constructed 10 interpretative facilities. Because these sites exhibit a rudimentary design generally consisting of pulloffs to historical markers or to geographical-geological directional finder devices, they must be considered as marginal interpretative developments. The Department of Highways sites are widely distributed throughout the study area (figure 22). The Utah Division of Parks and Recreation and the U.S. Forest Service possess two and one sites respectively. There is one site on Bureau of Land Management lands.

Arches National Monument has implemented its policy of geological interpretative priority (figure 22, table 11, and page 115). Natural Bridges National Monument also emphasizes the geological theme in its interpretative observation sites, but has developed within a limited area a diversified interpretative approach utilizing a loop drive, visitor center, and trails.

Existing interpretative development is thus concentrated and impoverished (36 sites). A geological bias exists within the present pattern (15 sites). Specific elements that have relevancy to planning follow.

Only nine sites are located on paved through travel routes (figure 22). It is noteworthy that the National Park Service (Arches Visitor Center) and U.S. Forest Service (Devils Canyon Self-guiding Trail) represent two of the three possible through route locations available to these agencies. They constitute the only visitor center and nature trail available to the transient visitor.
<table>
<thead>
<tr>
<th>Administrative Unit</th>
<th>Map no.</th>
<th>Name</th>
<th>Map no.</th>
<th>Name</th>
<th>Map no.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Geographical</td>
<td></td>
<td>Ecological</td>
<td></td>
<td>Other</td>
</tr>
<tr>
<td>Arches National</td>
<td>1</td>
<td>La Sal</td>
<td>7</td>
<td>Park Avenue</td>
<td>8</td>
<td>Self-Gd. Dr.-18 mi.</td>
</tr>
<tr>
<td>Monument</td>
<td>2</td>
<td>Devils Garden Tr. Hd.</td>
<td></td>
<td></td>
<td>9</td>
<td>Visitor Center</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Panorama Point</td>
<td></td>
<td></td>
<td>10</td>
<td>Fiery Furnace Tour-2 mi.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Windows</td>
<td></td>
<td></td>
<td>11</td>
<td>Broken Arch Tour-1.5 mi.</td>
</tr>
<tr>
<td>Natural Bridges</td>
<td>12</td>
<td>Sipapu</td>
<td></td>
<td></td>
<td>15</td>
<td>Loop Drive-19 mi.</td>
</tr>
<tr>
<td>National Mon.</td>
<td>13</td>
<td>Owachomo</td>
<td></td>
<td></td>
<td>16</td>
<td>Sipapu Self-Gd. Tr.</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Kachina</td>
<td></td>
<td></td>
<td>17</td>
<td>Owachomo Self-Gd. Tr.</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Upheaval Dome</td>
<td></td>
<td>Archeological</td>
<td>18</td>
<td>Kachina Self-Gd. Tr.</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>Dead Horse Pt.</td>
<td>23</td>
<td>Square Tower</td>
<td>19</td>
<td>Visitor Center</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Monument Valley</td>
<td>24</td>
<td>Four-Corners</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>Redlands</td>
<td>31</td>
<td>Soldiers Grave</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>Unnamed</td>
<td>32</td>
<td>Elk Mtn. Mission</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Unnamed</td>
<td>33</td>
<td>George B. Hobbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>John W. Powell</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bluff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Existing through route development does not reflect the expression of the geological interpretative resource (page 60) because Department of Highways geological interpretation stresses the location of topographic features rather than strict geological interpretation. Foushee in *Roadside Geology in Textbook Country* (1963, pp. 10-11, 39) has identified 16 geological sites along the U.S. Highway 160-Utah Highway 47 travel corridor which portray a cross-section of canyon country geology. Other paved through corridor variants and Utah Highway 95 possess an equally rich geological resource. The present pattern of geological interpretation thus denies the transient traveler an adequate prospective of canyon country geology.

The historical themes of the range cattle industry and uranium boom are absent from existing travel corridor interpretative development. The strategy of location of the historical resources (page 65) indicates that existing corridor development does not respond to these characteristics of the historical resource. The Mormon colonization historical theme is represented (three sites) along travel corridors (figure 22 and table 11) and thus represents a partial fulfillment of this particular resource potential.

The presence of the Arches Visitor Center and Dead Horse Point Visitor Center in close proximity (figure 22) suggests a near saturation of visitor centers in the Moab area.

With the exception of Arches National Monument, access to existing *non-travel corridor* interpretative sites is by dirt or poorly graveled roads. Thus, to a degree, the total existing interpretative site pattern reflects the relationship of limited availability as a direct function of access.
To summarize, existing interpretative development is fragmented and inadequate. It does not reflect the characteristics of the interpretative resources. Insufficient access and limited funds contribute to many of the deficiencies of current development.

The potential interpretative development pattern is complex and requires detailed examination. Analysis is complicated by the absence of an interpretative site inventory of the Glen Canyon National Recreation Area (page 115). The following analyses are judged significant to present planning and future development. The general pattern is one of omission. Correlation of the interpretative resource evaluation with the site inventory indicates that many geographical areas are neglected. The potential interpretative site inventory does not resolve the deficiencies of existing transient interpretative development. Three sites are inventoried along the U.S. Highway 160-Utah Highway 47 paved corridor. One site represents a potential Bureau of Land Management site at the existing Bluff historical marker. Four sites embracing three themes are inventoried along the Utah Highway 95 route. Inspection of the interpretative resource suggests that the following interpretative elements are well represented adjacent to Utah Highway 95:

1. Virtually complete cross-section of canyon country geology represented by outstanding scenic-geological phenomena.

2. Six of the eight historical themes (Spanish-Mexican-fur trapper exploration, and government surveys and exploration are poorly represented).

3. Abundance of prehistory (White Canyon area and at other specific localities).
Utah Highway 95, as an eventual paved through route, thus displays excellent potential for comprehensive transient and sightseer interpretative development. With variations of theme, the U.S. Highway 160-Utah Highway 47 route offers an interpretative resource of nearly equal breadth and abundance.

There is a conspicuous absence of potential inventoried interpretative sites on National Forest lands and in Utah State Parks (figure 23 and table 12). The two sites in Arches National Monument reflect a near-capacity pattern of existing development. The abundance of potential sites in Canyonlands National Park (21) and on Bureau of Land Management lands (46) are indicative of the recreational infancy of the two administrative units.

Other areas of neglect (figure 23) include:
1. Canyon ecology and geology along the Potash Road and Utah Highway 128.
3. No complementary interpretative sites along the Indian Creek entrance road to Canyonlands National Park.
4. A singular potential site in the entire greater San Juan Triangle.
5. No sites on Navajo lands.

Table 12 represents an analysis of potential interpretative sites. The following patterns are judged significant.
1. Themes are represented in these proportions:
   Geology 20 percent
   Ecology 3 percent
Table 12. Potential interpretative sites

<table>
<thead>
<tr>
<th></th>
<th>Canyonlands N.P.</th>
<th>Arches N.M.</th>
<th>Total N.P.S.</th>
<th>BLM</th>
<th>USFS</th>
<th>Study area total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geology--no. of sites</strong></td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>% of geol. sites</td>
<td>29</td>
<td>7</td>
<td>36</td>
<td>64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of agency themes</td>
<td>20</td>
<td>5</td>
<td>25</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total sites</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>13</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td><strong>Ecology--no. of sites</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>% of ecol. sites</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
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</tr>
<tr>
<td>% of agency themes</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total sites</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Archeology--no. of sites</strong></td>
<td>3</td>
<td>3</td>
<td>31</td>
<td>34</td>
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<td></td>
</tr>
<tr>
<td>% of arch. sites</td>
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<td>9</td>
<td>91</td>
<td>91</td>
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<tr>
<td>% of agency themes</td>
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<td>15</td>
<td>69</td>
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<tr>
<td>% of total sites</td>
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<td>4</td>
<td>44</td>
<td>44</td>
<td></td>
<td>49</td>
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<td><strong>History--no. of sites</strong></td>
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<td>1</td>
<td>7</td>
<td>4</td>
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<td>% of hist. sites</td>
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<td>8</td>
<td>58</td>
<td>33</td>
<td>8</td>
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<tr>
<td>% of agency sites</td>
<td>30</td>
<td>5</td>
<td>35</td>
<td>9</td>
<td>100</td>
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</tr>
<tr>
<td>% of total sites</td>
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<td>1</td>
<td>10</td>
<td>6</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td><strong>Combination--no. of sites</strong></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of comb. sites</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of agency sites</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total sites</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Visitor center--no. of sites</strong></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of total sites</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Trails--no. of sites</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>% of total sites</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>No. of sites</strong></td>
<td>21</td>
<td>2</td>
<td>23</td>
<td>46</td>
<td>1</td>
<td>70</td>
</tr>
</tbody>
</table>
Figure 23. Map of potential interpretative sites.
INTERPRETATION
POTENTIAL SITES

LEGEND
- Geological
○ Ecological
△ Archeological
△ Historical
■ Visitor Center
□ Combination
...... Trail
.... Drive

SCALE OF MILES

0 5 10 20

LAWRENCE ROYER 1968
2. Archeology comprises 69 percent of the Bureau of Land Management interpretative inventory.

3. The Bureau of Land Management archeological inventory thus, in effect, limits the Bureau's total inventory to three geographical areas--Montezuma Canyon, Grand Gulch Plateau, and Beef Basin (figure 23).

4. The Bureau of Land Management archeological inventory represents 44 percent of the total study area interpretative inventory.

5. Canyonlands National Park (21 sites) exhibits a great diversity of themes (geology, four sites; ecology, one site; archeology, three sites; history, six sites; combination, four sites).

6. Ecology represents only three percent of the total study area inventory.

The five sites along the Green River and Cataract Canyon in Canyonlands National Park are significant. Three historical sites in Cataract Canyon are inventoried to accommodate a specific recreational participant--the river runner. The nature trail and combination site on the Green River involve the smooth-water river boater. These sites represent an intent by Canyonlands National Park to accommodate all modes of recreation travel and participation. As such, they derive a greater utility from the interpretative facets represented within the environmental resources.

Canyonlands National Park is considering a "passive" interpretative approach to the Needles district of the park. On-site
interpretation would be minimal. It is felt that the destination visitor while enroute through the park would be provoked by the environmental complexities of the park. Personnel of the visitor center at the park entrance would then answer questions raised (Wilson, 1967). This approach would reduce facility impact upon a National Park essentially characterized by a wilderness environment. It would be operative within the relatively closed system of the park administrative unit. It would enlarge the interpretative spectrum as interpretative coverage would be dictated by visitor queries rather than by the rigidity of on-site presentation. If implemented, this approach will perhaps reduce the total potential site inventory for Canyonlands National Park.

The interpretative inventory along the transient U.S. Highway 160-Utah Highway 47 and Utah Highway 95 corridors is concerned with either geological spectaculars or site-oriented historical phenomena. As such, it does **not** provide the transient visitor with:

1. A continuity of geological content.
2. A broad historical perspective.
3. An understanding of the commonplace as well as the spectacular.
4. A basic comprehension of regional distinctiveness and totality.

To summarize, the following are indicative of the potential patterns of study area interpretative development.

1. A pattern of inequity with the environmental interpretative expression.
2. A pattern of neglect along transient travel corridors.
3. An archeological bias within the Bureau of Land Management inventory.


5. A pattern of ecological neglect.

6. A pattern of accommodation of various recreationists as characterized by travel mode within Canyonlands National Park.

7. A pattern of omission of the commonplace.

8. A pattern which generally does not resolve the deficiencies of existing development.

**Observation sites.** Existing observation sites are depicted in figure 24. Many of the outstanding scenic views in the study area are augmented with overlooks. The northern one-third of the study area possesses 16 overlooks of outstanding scenic quality. These are summarized as follows:

- Arches National Monument--9 sites.
- Canyonlands National Park--4 sites.
- Dead Horse Point State Park--1 site.
- Bureau of Land Management--2 sites.

Four of these observation sites--Dead Horse Point, Anticline, Needles, and White Rim--are plateau rim sites overlooking the Canyonlands scenic type. These overlooks represent a cooperative endeavor between the National Park Service and the Bureau of Land Management to provide coordinated development in the Canyonlands National Park area. As such, they are a realization of planning policies (pages 113 and 116). The Arches National Monument observation sites and the Upheaval Dome
Figure 24. Map of existing and potential observation sites.
site are associated with scenic geological phenomena. Thus with the exception of the Confluence Overlook, the Canyonlands scenic type is exclusively represented in the existing observation site inventory of the northern portion of the study area.

The Potash Road and Utah Highway 128 possess rudimentary pull-offs associated with Canyon scenic types. However, these pull-offs are marginal with respect to design and safety and are thus excluded from the site inventory. Thus the Canyon scenic type is not associated with adequate development. Although the scenic resource evaluation (figure 7) indicates the presence of the Transitional, Forested, and Alpine scenic types in this portion of the study area, observation sites are lacking. Moreover, there is a total absence of observation sites in the La Sal Mountains-Onion Creek-Colorado River-Dolores Triangle area—an area characterized by extensive scenic type inter-spersion (figure 7 and page 50). Existing development in the northern one-third of the study area thus displays a situation of imbalance dominated by an emphasis upon the Canyonlands scenic type. This imbalance does not reflect the expression of the scenic resource in that area.

The remainder of the study area exhibits an extreme poverty of developed overlooks. The three overlooks in Natural Bridges National Monument and the Goosenecks overlook all represent the Canyon scenic type. The State Department of Highways has developed five sites in this portion of the study area. The Westwater Ruins Overlook is a Blanding City development featuring a prehistoric dwelling within a small canyon. Although many observation sites exist along the Arches National Monument Self-guiding Motor Trail, the visitor is afforded
few opportunities for observation stops along the Potash Scenic Highway. The Natural Bridges National Monument interpretative loop drive possesses frequent scenic pulloffs.

Existing observation sites exhibit a wide sequence of elaborateness of development. Highly developed overlooks are characteristic of the Dead Horse Point, Needles, and Natural Bridges National Monument sites. The Arches National Monument observation sites and the Utah State Department of Highways sites are considered to generally possess intermediate development. Many sites such as the Goosenecks, Comb Ridge, and Arch Canyon sites are of rudimentary design.

With the exceptions of the Utah Department of Highways sites, all observation site development in the study area exhibits a pattern of development associated with spur roads. The northern portion of the study area exhibits this pattern to an advanced degree. Here, observation sites are essentially distributed along three spur routes—the Grandview Point-Dead Horse Point route, the Arches National Monument spur, and the Hatch Point road. The Arches National Monument spur is entirely paved. Access to observation sites on the remaining spurs consists of graded dirt roads. Sites on the Grandview Point-Dead Horse Point spur and the Hatch Point spur are situated an average of 33 and 27 miles respectively from major through route intersections. In the southern portion of the study area, the Natural Bridges observation sites are situated 37 miles from the Utah Highway 95-Utah Highway 47 intersection. Existing observation site distribution thus favors the more adventurous
destination visitor rather than the transient or apprehensive destination visitor.

The Utah State Department of Highways has constructed five pulloffs along the 183 miles of U.S. Highway 160-Utah Highway 47 paved through corridor. This corridor thus provides safe opportunities for viewing and scenic photography approximately once every 37 miles. The Bureau of Land Management has not constructed observation sites on lands adjacent to the through travel corridors. The evaluation of the scenic resource (figure 7 and page 51) indicates that observation site opportunities are abundant along the U.S. Highway 160-Utah Highway 47 paved highway corridor. This situation is considered a pattern of deficiency with respect to viewing opportunity and safety of the sightseeing and transient visitors.

The pattern of development suggests that the sightseeing visitor based at Moab and to a lesser degree, Monticello, is provided varied alternative destination overlook opportunities. The sightseer staying overnight at Blanding, Bluff, and Mexican Hat is denied a wide opportunity of destination sightseeing drives to developed observation sites.

To summarize, existing observation sites demonstrate the following patterns:

1. An adequate development in the northern one-third of the study area associated with the Canyonlands scenic type.

2. A paucity of development throughout the study area associated with the remaining four scenic types.

3. A pattern of development generally associated with unsurfaced routes.
4. A pattern of development favoring the destination visitor.

5. Development along the U.S. Highway 160-Utah Highway 47 corridor associated exclusively with Utah State Department of Highways sites.

6. A pattern of development providing few opportunities for the sightseeing visitor based at Blanding, Bluff, and Mexican Hat to visit destination overlooks.

Potential observation site patterns retain many of the deficiencies exhibited by the existing site patterns. The following situations illustrate the continuance.

Through corridor observation sites are represented by two Bureau of Land Management sites along the U.S. Highway 160-Utah Highway 47 route. One of these sites is associated with an existing Utah State Department of Highways pulloff. There is a conspicuous absence of potential observation sites along the 111-mile southern portion of this 183-mile corridor. Three potential sites are identified by the Bureau of Land Management along the unpaved Utah Highway 95 corridor. No sites are represented within the Utah Highway 128 corridor variant. This pattern does not reflect the scenic characteristics of the study area (figure 7 and page 51). The Utah Highway 128 route is considered to be of such high scenic quality that it is included within a proposed Canyon Country National Parkway (Moss, 1967b; Western Gateways, 1967).

Nineteen observation sites are identified by the Bureau of Land Management in that portion of the study area south of Canyonlands National Park. One site is identified by the Forest Service in that area. It is assumed that the Glen Canyon National Recreation Area
The study team has identified observation sites (pages 115-116). The Bureau of Land Management overlooks are generally associated with the Canyonlands scenic types. Thus with the exception of the Bureau of Land Management sites overlooking the White Canyon area in the vicinity of Natural Bridges National Monument, identification of potential sites is not complete.

The potential observation site inventory does not reflect the variety of scenic types possessed by the three areas of scenic contrast and diversity (page 50). Moreover, observation sites are few or non-existent along potential one-day scenic loop drives (page 167).

The patterns exhibited by the potential observation site inventory have these important implications for planning:

1. The site inventory does not anticipate changes in the status of paved or well graveled access routes.

2. The site inventory does not anticipate changes in the status of paved through corridors. The present inventory is inadequate for planning along the Utah Highway 95 and Utah Highway 128 corridors.

3. The site inventory does not exhibit the scenic diversity expressed by the resource and therefore does not anticipate planning approaches attempting to embrace that variety.

Dude ranches. The study area possesses two dude ranches--the Blue Mountain Ranch in the Abajo Mountains and the M-4 or Pack Creek Ranch in the La Sal Mountains (figure 18). These sites are the only private recreation developments associated with wild lands environments within the study area. The evaluation of the environmental
resource opportunities indicates that dude ranching has excellent potential within the study area.

The study area possesses two large areas of environmental diversity providing a wide choice of guest ranch based dispersed recreation alternatives. The private lands along Indian Creek (Dugout Ranch) and the large block of private and State sections on the east slope of the La Sal Mountains (figure 18) are strategically advantageous for guest ranch operations. It has been suggested that until the study area becomes better known nationally, the economic feasibility of additional guest ranches will remain marginal (Porter, 1967). The environmental resource indicates that outstanding opportunities are present.

Many motels and lodges are associated with jeep tours. However, only Goulding's Lodge and Trading Post (figure 17) is considered to possess attributes of a guest ranch operation. The Canyonlands Enterprise development at the entrance of Canyonlands National Park's Needles District will approximate the Goulding development. Both enterprises are considered marginal with respect to traditional guest ranch operations associated with wild lands environments (Appendix B).

Winter sports areas. The Blue Mountain ski area near Monticello (figure 18) is the singular study area ski operation. This development is under Forest Service special-use permit. The study area possesses environmental potential for winter sports development (page 56), but the economics of such development dictate that feasibility studies precede investment.
Dispersed opportunities-patterns of development

The availability of a broad spectrum of dispersed recreation opportunities is essentially a function of the quality and wealth of the environmental resource. Certain dispersed opportunities are enhanced or derive from the planning and development process. These opportunities include the sightseeing opportunity, the wilderness opportunity, the hiking and riding opportunities, and the boating opportunity. Dispersed opportunities are also enhanced by the recreation zoning of land and the creation of single-use "recreation areas." Such planning and legal processes emphasize those environmental areas possessing unusual dispersed and site-oriented opportunity capability.

Sightseeing opportunity. Overland sightseeing by passenger car and jeep touring are considered in this section. Boat sightseeing is treated in the boating opportunities section. Passenger car sightseeing and jeep touring opportunities are directly related to the pattern of road development within the study area. With certain exceptions, this thesis does not attempt to analyze the responsibilities of the various road construction agencies--county, state, and federal. Rather, the present pattern of road development is examined in terms of its sightseeing opportunity capability.

Present road development favors the jeep sightseer at the expense of the passenger car sightseer. The following factors underlie this imbalance:

1. The presence of large areas without road development which are nonetheless accessible to jeeps (figure 17).
2. A limited secondary road system generally consisting of graded dirt roads of marginal utility to passenger cars.

3. A paucity of paved road mileage.

4. An extreme geographical paucity of paved and unpaved roads in areas of high sightseeing appeal.

Portions of virtually all areas of the Canyonlands scenic type are accessible to jeeps as evidenced by the extensive network of jeep trails which evolved during the uranium boom. Canyonlands National Park has initiated a management program that encourages yet regulates jeep sightseeing. The Behind the Rocks area is being considered for designation as a jeeping area. The Monument Valley Tribal Park possesses a loop jeep sightseeing trail. The majority of this loop is located in Arizona. Although off-road jeeping is prohibited in Arches National Monument, jeep sightseeing is not "managed" in the remainder of the study area possessing the Canyonlands scenic type.

Jeep sightseeing is physically impossible in many of the larger canyons. Johns Canyon, portions of the Arch Canyon-Road Canyon sequence, Copper Canyon, and Kane Springs Canyon are major exceptions. It is recognized that jeep operators exhibit great tenacity and that the above listing is presumably incomplete. Jeep sightseeing is possible in portions of most areas possessing the Transitional scenic type. Jeeping is generally restricted by obstacles of vegetation and terrain to primitive roads in the Forested and Alpine scenic types. Jeep sightseeing is not regulated in these remaining four scenic types.
The jeep sightseeing opportunity is greatly enhanced by the availability of jeep package tours in the study area. A variety of tours are available ranging from a basic day tour to tours of several days duration. The Canyonlands National Park area, Monument Valley, Onion Creek, Valley of the Gods, and Recapture Pocket are favored areas of operations. The Navajo Tribe encourages jeep touring on Reservation lands with licensed tour operators rather than by private jeep owners. Visitors may also engage tour operators for sightseeing trips to areas not included in the package tour offerings. Jeep tour operators offer combination sightseeing packages that include jeep tours, scenic flights, and boat trips.

Figure 17 illustrates the availability of roads for passenger car sightseeing purposes. It is emphasized that the total mileage available is contingent upon the individual driver and his willingness to negotiate marginal roads. The following patterns of road development are considered significant to the sightseeing opportunity.

The U.S. Highway 160-Utah Highway 47 paved through route (183 miles) possesses three sections of sightseeing opportunity. These sections are summarized as follows:

Moab airport to head of Peters Canyon  
Verdure Creek to Recapture Wash  
Head of Cow Canyon (above Bluff) to Arizona line

An aggregate of 125 miles of opportunity are available on this corridor. The Utah Highway 128 trunk to the U.S. Highway 160-Utah Highway 47 corridor possesses 35 miles of high quality canyon scenery (U.S. Highway 160 junction to Dewey Bridge area). Although only eight miles of this route are paved, it can be considered a through
route variant of the U.S. Highway 160-Utah Highway 47 through corridor.

The singular east-west through route, Utah Highway 95, possesses eight paved miles and can be considered as a scenic route in its entirety (75 miles). However, the Comb Ridge section (three miles) and the To-ko-chi Canyon (below Natural Bridges National Monument) to Colorado River bridge section (36 miles) are of exceptional scenic quality. Utah Highway 261, as a Utah Highway 95 variant, possesses seven paved and one unpaved miles of sightseeing opportunity.

The study area thus possesses 140 miles of paved and 67 miles of unpaved through corridor sightseeing opportunity. With the paving of Utah Highway 95, the utility of through routes will be greatly enhanced in terms of alternatives of route and of readily available opportunity.

Several sightseeing routes are associated with terminating spur roads. These routes are summarized as follows:

- Arches National Monument 21 miles paved
- Grandview Point-Dead Horse Point 14 miles paved
- Hatch Point (to Anticline Overlook) 15 miles paved
- Potash Road (to Texas Gulf Sulphur plant) 16 miles paved
- Halls Crossing Road 47 miles unpaved
- Indian Creek-Squaw Flat 35 miles unpaved

Several spurs of questionable passage for passenger cars are listed below:

- Nokai Dome 12 miles
Blue Notch Canyon 12 miles
Dark Canyon Plateau 26 miles
Clay Hill Crossing 11 miles
La Sal Pass 7 miles
Abajo Peak 12 miles

With one exception, spur roads of sightseeing caliber are associated with the Canyonlands scenic type. The Potash Road follows the Colorado River canyon. Spur roads thus offer a variety of alternatives in length and difficulty but generally display an uniformity of the Canyonlands scenic type. The pattern of development of observation sites along these spurs is discussed on page 167. The majority of the spur road sightseeing opportunities are found in the Moab-Monticello area.

Although it is appreciated that the visual experience may vary considerably with route direction and the hour of the day when traversing spur routes, the loop route offers the greatest variety of visual experiences. The study area possesses several sightseeing loops, none of which exhibit a paved continuity. Sightseeing loop drives are summarized in table 13. Road conditions are extremely variable. Mileage includes return to point of origin unless otherwise indicated.

The tabulation of sightseeing loop drives indicates that Monticello, Blanding, and Moab are favorable points of origin. Three basic loop drive alternatives are available in the Monticello-Blanding area. Variants are numerous. Moab possesses two basic and two variant loop drive alternatives. The Valley of the Gods (figure 25) constitutes the only loop drive in the Bluff-Mexican Hat area. Loop
Table 13. Sightseeing loop drives

<table>
<thead>
<tr>
<th>Route</th>
<th>Mileage</th>
<th>Paved</th>
<th>Unpaved</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moab-Potash Road-Shafer Trail-Seven Mile Canyon</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Long Canyon-Dead Horse Point variant</td>
<td>28</td>
<td>26</td>
<td>54</td>
<td></td>
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<tr>
<td>Moab-U. 128-Castle Valley-Bald Mesa-Pack Creek</td>
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<td></td>
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<td></td>
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<tr>
<td>Geyser Pass-U. 46-La Sal Jct. var.</td>
<td>60</td>
<td>34</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>Monticello or Blanding-Abajo Mountains</td>
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<td>52</td>
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</tr>
<tr>
<td>Monticello or Blanding termination variant</td>
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<td>24</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Monticello or Blanding-Indian Creek-Cottonwood Canyon-Elk Ridge (Bears Ears)-U. 95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monticello or Blanding termination via Cottonwood Creek variation</td>
<td>26</td>
<td>97</td>
<td>123</td>
<td></td>
</tr>
<tr>
<td>via Cottonwood Creek-Monticello or Blanding termination</td>
<td>47</td>
<td>80</td>
<td>127</td>
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<tr>
<td>Monticello or Blanding-Indian Creek-Cottonwood Canyon-Elk Ridge-Causeway</td>
<td>39</td>
<td>75</td>
<td>114</td>
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<tr>
<td>Monticello or Blanding termination Monticello origin-via Causeway-Abajo Mountain loop</td>
<td>18</td>
<td>75</td>
<td>93</td>
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<tr>
<td>Monticello origin-via Causeway-Abajo Mountain loop</td>
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<td>110</td>
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<tr>
<td>Blanding-Cottonwood Canyon-Bears Ears U. 95</td>
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<td>51</td>
<td>75</td>
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<tr>
<td>Mexican Hat-Valley of the Gods</td>
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<tr>
<td>Bluff termination variant</td>
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</tr>
<tr>
<td>Bluff-Valley of the Gods</td>
<td>27</td>
<td>17</td>
<td>44</td>
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</table>
Figure 25. Valley of the Gods Loop Drive. The Valley of the Gods scenic drive is the singular loop drive available to sightseers in the Bluff-Mexican Hat area. The 17-mile loop is associated with Utah Highway 47 and is thus of strategic significance to the transient sightseer.
drive opportunities vary in length from 30 to 144 miles. The sightseer is thus afforded great flexibility in planning. One day trips and sightseeing-camping combinations are possible.

Reference to figure 7 and 17 indicates that many loop drives embrace four or five scenic types. Two sightseeing loops are considered to possess exceptional diversity. The 94-mile Moab-Utah Highway 128-Castle Valley-Bald Mesa-Geyser Pass-Utah Highway 46-La Sal Junction variant (figure 26) and the 110-mile Monticello-Indian Creek-Cottonwood Canyon-Elk Ridge-Causeway-Abajo Mountains loop variant (figure 27) exhibit altitudinal changes of 6,535 (4,025 to 10,560 feet) and 4,961 (5,359 to 10,320 feet) feet respectively. Both possess sections of marginal road.

Sightseeing loops are essentially situated upon Bureau of Land Management and Forest Service lands (figure 17). All possess marginal sections of road.

Reference to figures 17 and 24 suggests that with the exception of the spur roads in the northern one-third of the study area, sightseeing routes and observation site planning and development do not exhibit a strong association. This is evidenced along sightseeing loop drives, particularly those loop drives embracing a great variety of landscapes (page 170). It is evidenced in the impoverishment of planning and development along through travel corridors (page 169). It is significant that developed observation sites associated with scenic spur routes are terminally located.

Three aspects of potential road development merit discussion. The proposed Utah Highway 95-Elk Ridge-Canyonlands National Park road (page 114) possesses a diversity of sightseeing opportunities
Figure 26. Colorado River-La Sal Mountains Loop Drive. Embracing an altitudinal change of 6,535 feet, this 94-mile loop is the superlative scenic drive of the study area. The loop follows the Colorado River Canyon (above left) upon leaving Moab. It then ascends Castle Valley to the Manti-La Sal National Forest (above right). Reaching an altitude of 10,600 feet in the Geyser Pass area (below left), the route winds beneath the northeast exposures of the La Sal Mountains peaks (below right) before descending to Utah Highway 46.
Figure 27. Loop drive from Monticello. Upon leaving Monticello, the sightseer enters Indian Creek Canyon (above left). He then ascends Cottonwood Canyon (above right) to the plateaus and flanks of Elk Ridge and the Abajo Mountains (below left). The 110-mile loop returns the visitor to Monticello via the Abajo Mountains (lower right).
(figure 7). This route represents the only loop route within the study area which extensively involves National Park Service lands.

The proposed Canyon Country National Parkway (Moss, 1967b) crosses the northern portion of the study area. Although the specific routing of certain sections of the Parkway is under study, 32 miles of Utah Highway 128 are included within the right-of-way. The proposed Parkway is of outstanding scenic quality.

Although the general route of Utah Highway 95 is associated with the Canyonlands and Canyon scenic types (figures 7 and 17), the present alignment does not derive the maximum utility from the scenic resource. Minimal realignment would enhance the sightseeing opportunity.

The installation of a inexpensive, large capacity car ferry at the Halls Crossing-Bullfrog Bay area of Lake Powell (figures 3 and 17) would unite two spur roads—the Halls Crossing road in the study area and the Bullfrog Basin road in Garfield County, Utah. The union would thus form a sightseeing loop from Utah Highway 95 originating in either the study area or in Garfield County. It would constitute the only sightseeing loop in the San Juan Triangle.

The Bureau of Land Management has identified a potential scenic drive in the Onion Creek drainage. This drive would complement the existing interpretative spur in Arches National Monument and the Potash scenic road spur in the Moab area. It would intersect the proposed Canyon Country National Parkway.

To summarize, the development of the sightseeing opportunity exhibits these patterns:
1. Jeep sightseeing opportunity is in excess of passenger car opportunity.

2. The U.S. Highway 160-Utah Highway 47-Utah Highway 128 and Utah Highway 95 through corridors possess abundant sightseeing opportunity.

3. Through routes are generally associated with the Canyonlands scenic type.

4. The paving of Utah Highway 95 will appreciably enhance the sightseeing opportunity.

5. The present alignment of Utah Highway 95 does not respond to the sightseeing potential.

6. The Moab-Monticello area possesses the majority of sightseeing spur routes.

7. Spur routes are generally associated with the Canyonlands scenic type.

8. Observation sites are generally associated with the terminals of spur routes.

9. Moab, Monticello, and Blanding are favored points of origin for loop drive sightseeing.

10. Loop drives embrace a wide variety of scenic types.

11. Observation site development is not generally associated with the loop drive sightseeing opportunity.

12. Spur and loop drive routes generally possess sections marginal to passenger cars.

13. The proposed Canyonlands National Park-Elk Ridge loop drive is of outstanding scenic quality.
14. A portion of the study area is included within the proposed Canyon Country National Parkway.

Wilderness opportunities. Although the study area possesses approximately 2,725 square miles of wilderness opportunities, only 20 square miles have been proposed for inclusion within the Wilderness System or designated as ORRRC Class V. Much of the de facto wilderness is presently not threatened by conflicting multiple uses or recreation uses. However, the paucity of designated Class V areas suggests that planning does not adequately anticipate the inevitable multiple use or other recreation use conflicts. Particularly significant is the paucity of Class V designated areas on Bureau of Land Management lands (figure 31) and the indicated reluctance of the Glen Canyon National Recreation area to utilize the Class V designation in classification (page 116). Bureau of Land Management areas not classified as Class V include the Red Canyon drainage, Wilson Mesa area, Grand Gulch and several other San Juan River tributary canyons, and the Comb Wash tributary canyons. Class V areas designated by the Bureau include Lavendar Canyon, Dark Canyon, the north edge of the Dark Canyon Plateau, the Cedar Canyon-North Gulch-Mancos Mesa area, Behind the Rocks, and the area immediately south of Arches National Monument. Significant de facto wilderness areas within the Glen Canyon National Recreation area are depicted in figure 15.

Canyonlands National Park has proposed a tentative wilderness land classification as part of its Master Plan (figure 31). The Master Plan states that "... much of the land within the park should and doubtless will be classified as wilderness ..."
This suggests that Canyonlands National Park in context with the existing peripheral Bureau of Land Management land classification scheme, will eventually represent a wilderness core of unrealistic and unmanageable boundaries. Within its limited area, Canyonlands National Park planning has provided for a diversity of wilderness opportunity types. This diversity, stemming partially from the physiographical characteristics of the Park, has been implemented specifically by:

1. The designation and retention of the upper Salt Creek and the Horse Canyon drainages as jeeping areas (these areas are not classified as "Class V wilderness" by the Park Service).

2. The classification of those portions of the park east and south of the Colorado River that are not potential road corridors as wilderness.

3. The designation of the area beneath the White Rim and the river canyons as wilderness.

This planning approach coupled with the physical variety of white water and smooth water rivers, and Canyon and Canyonlands scenic types provides the diversity of wilderness opportunities within Canyonlands National Park. The present pattern of development as suggested by the Bureau of Land Management ORRRC classification and the contemplated Glen Canyon National Recreation Area classification policy may eventually eliminate most of the wilderness opportunities in the immediate area outside of the park. The status of current wilderness planning in this particular area is summarized as exhibiting the following characteristics:
1. No classification by Glen Canyon National Recreation Area.

2. Dark Canyon, upper drainages of Gypsum and Bowdie Canyons, and Lavender Canyon designated as ORRRC Class V by the Bureau of Land Management.

3. No classification of National Forest lands embracing the upper Dark Canyon complex and the north slopes of Elk Ridge and the Abajo Mountains.

4. An extensive area of Class V designated lands within Canyonlands National Park.

The present pattern of wilderness planning is thus one of extreme fragmentation and suggests a breakdown of coordinated planning within the area.

A situation exists throughout the San Juan Triangle area below Dark Canyon and west of Johns Canyon (figure 2) which again suggests a lack of coordinated planning between the Bureau of Land Management and National Park Service. The resource evaluation (page 81 and figure 15) indicates a diversity of wilderness types are present in this area, but that their strategy of location poses a critical allocation problem. This problem is further compounded by the situation of dual jurisdiction (page 128). The pattern of development indicates that planning has not responded to the problem of allocation. It is appreciated that the present Bureau of Land Management classification represents implementation of Bureau policy and planning priority (pages 111-112) before the master planning procedure was initiated by the Glen Canyon National Recreation Area.

In anticipation of the Arches National Monument Wilderness Proposal (page 98), the Bureau of Land Management has classified
lands adjacent to the monument between lower Salt Wash and lower Courthouse Wash as Class V. Coordination between the two agencies has thus been accomplished.

The Bureau of Land Management has proposed that the Behind the Rocks area be retained as a wilderness jeeping area under the ORRRC Class V designation. This development plan of the Bureau reflects an ideal approach to planning. The Behind the Rocks area exhibits these characteristics:

1. It is situated in the immediate vicinity of the town of Moab (figure 28).
2. It is a challenging jeeping area.
3. Natural topographical boundaries and internal physiography convey a sense of remoteness within a limited area.
4. It possesses an outstanding Canyonlands scenic landscape. Planning that prohibits road building in the Behind the Rocks area thus provides a high quality wilderness jeeping experience readily available to the visitor residing in Moab. It is indicative of a planning approach that maximizes variety (wilderness jeeping) in a limited area of strategic significance.

Nigger Bill and the North Fork of Mill Creek Canyons immediately east of Moab are horseback wilderness types. These canyons thus represent an opportunity for provision of a useable foot and horse micro-wilderness in the Moab vicinity. The Bureau of Land Management has not classified these canyons as ORRRC Class V.

Development in the Moab area indicates an emergent pattern of easily available wilderness opportunities of diversified characteristics. The designation of Nigger Bill and the North Fork of Mill
Figure 28. Elephant Hill (above, below left) marks the beginning of a designated jeep trail in Canyonlands National Park. The Park Service recognizes and regulates jeeping as a legitimate method of travel in the de facto primitive areas of the Park. Behind the Rocks (below right) is designated by the Bureau of Land Management as a Class V jeeping area. Behind the Rocks is a challenging primitive jeeping area situated in a Canyonlands scenic type of superior quality. The primitive jeeping area designation by the Bureau is indicative of planning which maximizes variety in the immediate vicinity of Moab (green area in photograph).
Creek Canyons as ORRRC Class III is a disruption of this pattern.

Grand Gulch represents a widely publicized horseback wilderness opportunity (Crampton, 1964, p. 31, 48; Roylance, 1965; Utah Tourist and Publicity Council, n.d., p. 23). Planning for this canyon system exhibits a pattern of inconsistency. The lower portion of the canyon is under the jurisdiction of the Glen Canyon National Recreation Area and has not been classified. The remainder of the canyon has been classified Class IV by the Bureau of Land Management. However, the Bureau has limited access to Grand Gulch by installing padlocked gates at all entrance points. Motorized travel (trail bikes and scooters) is not allowed. These restrictions imply that the Bureau is managing Grand Gulch as a Class V area while designating the canyon as Class IV.

The Arch Canyon-Lime Creek sequence of canyons exhibits a diversity of wilderness types. The entire canyon complex possesses an ORRRC Class III designation (figure 31) implying a negative response to the resource capability.

To summarize, present planning for wilderness opportunities displays a pattern of fragmentation that does not adequately reflect the capability of the wilderness resource in terms of abundance and of allocation of wilderness travel activities. It is a paradox that within a study area characterized as "America's last wilderness" (National Park Service, n.d.a), there is as yet no acreage included within the National Wilderness Preservation System. Canyonlands National Park and the Moab area display patterns of planning that provide a diversity of opportunity and must be considered exceptions to the pattern of fragmentation.
It is recognized that wilderness planning is a difficult procedure in the study area because of established patterns of grazing and mineral use and the resultant political obstacles to formal classification. However, it is suggested that:

1. Identification and establishment of priority wilderness areas will clarify the present nebulous situation of multiple use classification and the resultant confusion and uncertainty. Immediate wilderness planning initiates the resolution of those conflicts that will inevitably deepen with a prolongation of classification.

2. The three major Federal landowning agencies possess the appropriate legal authority and mechanisms to classify land for permanent wilderness use. It is noted that the Bureau of Land Management and Forest Service interpretations of the Class V designation do not necessarily require curtailment of grazing activity in so designated areas.

3. Wilderness constitutes a major unique recreation resource of the study area.

4. The total acreage of de facto wilderness is not indicative of the acreage of physically useable wilderness.

5. An abundance of physically useable wilderness constitutes a useable "geography of hope" wilderness that contributes a significant quality of regional distinctiveness and identity to the study area.

6. Jeep trails and mineral development are unmistakable to the air sightseer.

7. The White Canyon mining district constitutes a significant portion of study area de facto wilderness which may be eliminated.
8. The study area is large enough to support extensive wilderness opportunities, site-oriented opportunities, and other dispersed opportunities without conflict with judicious and coordinated planning.

9. The Bureau of Land Management represents the key to coordinated wilderness planning because of its continuity within the complex ownership pattern.

10. The primitive resource serves as a base for a continuum of recreational opportunities over a wide activity spectrum.

**Hiking and riding opportunity.** Hiking and riding development is considered in terms of trail construction and water developments. Interpretative trails are tabulated in table 11. The study area possesses six interpretative trails totaling approximately five miles of hiking opportunity. Although it is recognized that hiking opportunities derive from interpretative trails, this section is concerned with general non-interpretative trail development.

Trail development is generally absent in the study area. Trail construction is evident in two areas:

1. Approach to Rainbow Bridge in Glen Canyon National Recreation Area.

2. Kane Gulch, Collins Canyon (figure 29), and Polly's Pasture entrances to the Bureau of Land Management Grand Gulch Recreation Area.

Horse trails used by cattlemen are present in many portions of the study area, but they are of questionable utility to the recreationist. They have not been developed as recreational trails.
Figure 29. Padlocked gate in the Collins Canyon tributary to Grand Gulch. Padlocked gates at entrance points to Grand Gulch represent an inconsistency of planning and management. Grand Gulch is designated ORRRC Class IV by the Bureau of Land Management, yet the padlocked gates and an exclusion of motorized vehicular travel are elements of limited access generally associated with the Class V designation. The strategy of location of de facto wilderness and superior archeology in many canyons suggests that a Class V designation for these canyons would formally facilitate protection of their prehistory and fragile ecology.
Potential hiking and riding trail development is confronted with the problems of difficult physiography, flash floods, and scarcity or absence of water. Hiking trail construction has been contemplated in several portions of Canyonlands National Park. The Park Service has rejected these plans because the necessary accompanying artificial water developments would alter the original ecology of the areas in question (Wilson, 1967). However, trail development by the Bureau of Land Management and Forest Service is not limited by such restrictions.

The Bureau of Outdoor Recreation has suggested that an Upper Colorado River Trail be considered as part of a national system of trails. This trail would follow the Colorado River and Lake Powell through the study area (Bureau of Outdoor Recreation, 1967, p. 15). It is felt that the physiographic restrictions of the many lateral canyons crossing the route of this trail place the feasibility of its construction in doubt. It is noted that no developed recreational trails lead from Lake Powell to the rim of the Glen Canyon canyon system.

Boating opportunity. The boating opportunity is analyzed in terms of access, camping, and sightseeing opportunities. Figure 30 and table 14 tabulate existing and potential boating sites. Current development (five sites) exhibits a poverty of boating sites. However, existing sites are strategically located. The Green River State Park (site number 5) and Moab Lions Club (site number 6) developments provide access to smooth water portions of the Green and Colorado Rivers and to Cataract Canyon. The primitive Lathrop Canyon launch only site (site number 1) is a strategic take-out site.
Figure 30. Map of boating sites.
<table>
<thead>
<tr>
<th>Name</th>
<th>Map no.</th>
<th>Administrative unit</th>
<th>Boat gen. camp</th>
<th>Marina</th>
<th>Launch only</th>
<th>Dock</th>
<th>Picnic</th>
<th>Area served</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lathrop Canyon</td>
<td>1</td>
<td>Canyonlands N. P.</td>
<td></td>
<td>e</td>
<td></td>
<td></td>
<td></td>
<td>Colorado R.</td>
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<td></td>
<td>--smooth-water</td>
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<tr>
<td>Halls Crossing</td>
<td>2</td>
<td>Glen Canyon N.R.A.</td>
<td>p</td>
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<td></td>
<td></td>
<td>Colorado R. arm</td>
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<td></td>
<td></td>
<td></td>
<td>--Lake Powell</td>
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<tr>
<td>Rainbow Bridge</td>
<td>3</td>
<td>Glen Canyon N.R.A.</td>
<td>e</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Glen Canyon</td>
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<tr>
<td>Marina</td>
<td></td>
<td></td>
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<td></td>
<td>--Lake Powell</td>
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<tr>
<td>Bridge Canyon</td>
<td>4</td>
<td>Glen Canyon N.R.A.</td>
<td>e</td>
<td></td>
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<td></td>
<td>Glen Canyon</td>
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<tr>
<td>Courtesy Docks</td>
<td></td>
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<td></td>
<td></td>
<td>--Lake Powell</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Green River State</td>
<td>5</td>
<td>Utah Division</td>
<td>e</td>
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<td></td>
<td>e</td>
<td>Green River</td>
</tr>
<tr>
<td>Park</td>
<td></td>
<td>Parks and Rec.</td>
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<td></td>
<td>--smooth-water</td>
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<td></td>
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<tr>
<td>Moab Lions Club Park</td>
<td>6</td>
<td>Moab Lions Club</td>
<td>e</td>
<td>e</td>
<td></td>
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<td>Colorado R.</td>
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<td>--smooth-water</td>
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<tr>
<td>Upheaval Bottom</td>
<td>7</td>
<td>Canyonlands N. P.</td>
<td>p</td>
<td>p</td>
<td></td>
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<td></td>
<td>Green River</td>
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<td>--smooth-water</td>
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<tr>
<td>Castle Butte</td>
<td>8</td>
<td>Glen Canyon N.R.A.</td>
<td>p</td>
<td>p</td>
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<td></td>
<td></td>
<td>Colorado R. arm</td>
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<td></td>
<td></td>
<td>--Lake Powell</td>
<td></td>
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<tr>
<td>Sand Island</td>
<td>9</td>
<td>BLM</td>
<td>p</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td>San Juan R.</td>
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<td></td>
<td>--white-water</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Drinks Canyon</td>
<td>10</td>
<td>BLM</td>
<td>p</td>
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<td>Colorado R.</td>
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<td></td>
</tr>
<tr>
<td>Mineral Bottom</td>
<td>11</td>
<td>BLM</td>
<td>p</td>
<td>p</td>
<td></td>
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<td></td>
<td>Green River</td>
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</tbody>
</table>

*ae indicates existing sites
p indicates potential sites
on the Colorado River. Halls Crossing marina (site number 2) is the singular overland access site to the east bank of Lake Powell. With the exception of the Green River State Park campground facilities, overnight camping opportunities preparatory to boat trips are non-existent.

The potential site pattern enhances existing development and remedies many areas of deficiency. Potential campgrounds are located at Castle Butte (site number 8) and Halls Crossing on Lake Powell. The Castle Butte marina constitutes a logical access point to the upper end of Lake Powell as it is easily available from Utah Highway 95. The Sand Island site (site number 9) is strategically located to serve white-water boaters on the San Juan River. The Bureau of Land Management Mineral Bottom site (site number 11) and the National Park Service Upheaval Bottom site (site number 7) expand the number of trip length alternatives available to Green and Colorado River boaters.

The potential site inventory does not correct certain deficiencies of existing development. No take-out site is inventoried for the terminus of the San Juan River white-water run. Although the Navajo Tribe has expressed interest in developing a marina on the San Juan arm of Lake Powell, no site has been identified by the Glen Canyon National Recreation area that would serve this arm.

Boat sightseeing on Lake Powell is served by two sites. Rainbow Bridge marina (site number 3) is a logical refueling site on Lake Powell. The Bridge Canyon Courtesy Docks (site number 4) facilitate access to the Rainbow Bridge trail. No additional landing or docking facilities, observation points, interpretative facilities, trails,
or sanitary facilities are available or inventoried for Lake Powell boaters. No boat campgrounds are identified for Lake Powell. Canyonlands National Park has identified three interpretative sites in Cataract Canyon and two interpretative sites on the Green River (figure 23) which would enhance the white-water and smooth-water sightseeing opportunity. The pattern of development on Lake Powell is one of adequacy of planned access and launching opportunities, but of deficiency in in-route sightseeing and camping opportunities. With the exception of Canyonlands National Park, the Green and Colorado Rivers corridor is deficient in sightseeing opportunities. The strategy of location of Lake Powell, the Green River, and the Colorado River (page 33) indicates that these water resources have outstanding sightseeing potential. Planned interpretative development in Cataract Canyon responds to the historical resource potential of the canyon.

**ORRRC classification.** Application of the ORRRC system of recreation land zoning (Appendix A) is illustrated in figure 31. The status of classification by administrative units is summarized as follows:

2. Navajo Tribal lands--not classified.
3. Glen Canyon National Recreation Area--classification in progress but unavailable.
5. Arches National Monument--two classifications (general and wilderness).
6. Other National Park Service units--not classified.
Figure 31. ORRRC classification map.
Orrrc Classification

Legend:
- 1
- 2
- 3
- 4
- 5
- no value
- unclassified

Scale of Miles

Lawrence Royer 1968
7. State Parks—not classified.


Bureau of Land Management lands in the northern portion of the study area depicted in figure 31 as unclassified have been classified by the Bureau but data was not obtained. The wilderness classifications rather than the general classifications for Arches National Monument and Canyonlands National Park are mapped and discussed. The classification of Canyonlands National Park represents planning in anticipation of a Wilderness Act proposal for the Park and does not represent a finalized wilderness proposal. The Arches National Monument classification represents the wilderness proposal submitted by the National Park Service at a hearing in December 1967. It is assumed that the remainder of the Monument will be reclassified accordingly after a final decision is rendered by Congress. Arches National Monument was originally classified as Classes III and IV with an additional Class II designation for the paved road corridor within the Monument.

Although the ORRRC classification system is not regionalized (page 7), it does represent a valuable tool for coordinated planning in areas of complex jurisdictional patterns. Consistent application of the system to these areas is thus indicative of coordinated planning between agencies. The Class V primitive designation represents a firm management commitment wherever it is applied. Patterns of Class V zoning are discussed in pages

ORRRC classification exhibits a pattern of fragmentation within the study area. The relationships of unclassified U.S. Forest Service lands and Glen Canyon National Recreation Area lands adjacent
to classified Bureau of Land Management lands are obvious examples of this pattern (figure 31). Of particular significance is the breakdown in coordination along the Bureau of Land Management-Glen Canyon National Recreation Area boundary. Here the Bureau of Land Management has identified four ORRRC classes all of which abut unclassified National Recreation Area lands. It is suggested that the Bureau of Land Management classifications in the greater San Juan Triangle are meaningless until they are accompanied by a well-coordinated Glen Canyon National Recreation Area classification plan.

A similar situation exists between Bureau of Land Management lands and U.S. Forest Service lands. The Castle Valley-Onion Creek area and the Dark Canyon area are critical areas within this relationship. The ORRRC classification for the Canyonlands National Park area (figure 31) represents an approach to land classification which is neither coordinated nor realistic (pages 187-189).

The Bureau of Land Management classification is generally an adequate reflection of the recreation potential of its lands. All Class IV areas correspond to areas of outstanding scenic quality. The designation of no value applied to the Red Canyon-Cedar Canyon drainages and the Class III designation given the San Juan Triangle are not representative of the scenic resource in these areas (figure 7).

Canyonlands National Park ORRRC zones possess detailed boundaries which correspond to the geographical intricacies of physiography and of the recreation resources. Bureau of Land Management zones are delineated by boundaries which only approximate the desired geographical inclusions. It is suggested that the degree of specificity
of the Bureau in delineating zones is insufficient for situations requiring detailed planning.

**Bureau of Land Management Recreation Areas.** Because Bureau of Land Management Recreation Areas are areas where "outdoor recreation" is the "primary use" (page 111), they are discussed in this section. The determination of the location and extent of these areas represents recreation planning initiated by the Monticello District of the Bureau. As such, Recreation Areas are products of local planning and do not emanate from the legislative process. Because National Park Service unit boundaries are identified with the political process, their locations are not as closely indicative of planning and are not discussed.

Bureau of Land Management Recreation Areas are identified in table 6 and figure 18. While all of the Recreation Areas possess outstanding recreation resources, several other areas within the Monticello District are of equal recreational caliber. The Dark Canyon area, the San Juan Triangle-Mancos Mesa primitive area, the Lavender Canyon area, Lockhart Basin-Hurrah Pass area, Upheaval-Spring Canyon area, Behind the Rocks, and the Onion Creek area are examples of such omissions. The pattern of planning by the Bureau is thus one of inconsistency and omission.

It is significant that the Beef Basin Recreation Area is the only Recreation Area which abuts Canyonlands National Park. The Canyon Rims Recreation Area was initially intended to constitute a buffer-zone to the Canyonlands National Park. This buffer-zone constitutes the area lying outside the boundary of the ... Park, but within the million acre area initially considered by Secretary Udall. (Bureau of Land Management, 1962)
It does not presently adjoin Canyonlands National Park. Although the Recreation Area designation is an appropriate mechanism of providing the desired buffer zone for Canyonlands National Park, the Bureau of Land Management has, with the exception of the Beef Basin Recreation Area, failed to utilize this planning tool. The Grand Gulch and Beef Basin Recreation Areas are the only such Areas adjacent to the Glen Canyon National Recreation Area. They abut terminal portions of the National Recreation Area. The designation of three Recreation Areas—Butler Wash, Snow Flat, and Valley of the Gods—in one area of superior recreation potential is indicative of a fragmented planning approach.
RECOMMENDATIONS

It is not the intent of the study to outline a recreation master plan for the study area. However, data from the study suggest that the following recommendations are relevant to planning and development in the study area. It is believed that these recommendations will enhance planning and development by:

1. Outlining general and specific objectives of planning in certain areas.
2. Outlining firmer courses of planning action in specific areas.
3. Proposing development priorities in specific areas.
4. Proposing corrective actions for specific deficiencies.

It is appreciated that the recommendations represent ideal situations and that their implementation is governed by the often impeditive realities of allocation of funds, road development schedules, and the political process. It is suggested, however, that agency policy statements embrace rather than reject the recommendations. Policy thus provides the initiating mechanism for their implementation. Order of listing is not indicative of the priority of various recommendations.

Recommendation One--Coordination

It is recommended that the Four Corners Regional Commission of the Bureau of Outdoor Recreation coordinate general recreation
planning within the study area. This recommendation is based upon the following findings:

1. The study area exhibits an extremely complex ownership pattern that necessitates close coordination and cooperation in planning (page 124).

2. The patterns of development indicate that this coordination has not been achieved. Patterns of interpretative development, of development for the transient visitor, of land classification, and of wilderness planning exhibit fragmentation, failures to establish priorities, and inconsistencies of response to the offerings of the environmental recreation resource.

3. Deficiencies of current development are not irretrievable and can be readily corrected with coordinated planning (page 1).

**Recommendation Two--Coordination**

It is recommended that the National Park Service, U.S. Forest Service, and Bureau of Land Management coordinate recreation planning and development by establishing three "recreation complexes." The boundaries of the "complexes" should be recognized by cooperative agreements among the three agencies. Coordination of detailed planning and development within "complexes" would be assured through approval of planning decisions by an advisory board composed of representatives appointed from each agency and from the Bureau of Outdoor Recreation or Four Corners Regional Commission. The latter two agencies would act as arbitrators in areas of dispute. The complexes should assume the general configurations as described below.
Moab Recreation Complex

Canyonlands National Park north of Colorado River.
Arches National Monument.
Moab District of the Manti-La Sal National Forest.
Bureau of Land Management lands

--bounded by a line extending from Spring Canyon to Klondike Bluffs to Yellow Jacket Canyon and along Westwater Canyon to the Colorado State line on the north.

--bounded by Hurrah Pass, Hatch Point Road, U.S. Highway 160, and Mill Creek on the south.

Monticello Recreation Complex

Canyonlands National Park south of the Colorado River.
Glen Canyon National Recreation Area north of Utah Highway 95.
Monticello District of the Manti-La Sal National Forest.
Bureau of Land Management lands

--bounded by the north rim of White Canyon on the south.

--bounded by U.S. Highway 160 and the Hatch Point Road and Hurrah Pass on the east.

San Juan Recreation Complex

Glen Canyon National Recreation Area south of Utah Highway 95.
Bureau of Land Management lands south of the north rim of White Canyon and west of Butler Wash.
The Navajo Tribe should be encouraged to include that portion of the Tribal Lands east of Chinle Wash within the San Juan Recreation Complex.
Recommendation Three--State Parks

It is recommended that undeveloped State Parks revert to Bureau of Land Management ownership. It is recommended that the Bureau of Land Management acquire Dead Horse Point State Park. It is recommended the Bureau of Land Management assume jurisdiction and management responsibilities at Indian Creek State Park. It is recommended the Glen Canyon National Recreation Area acquire Goosenecks State Park. It is recommended that the Bureau of Land Management reject further Recreation and Public Purposes Act applications by the Utah Division of Parks and Recreation. These recommendations emanate from the following findings of the study.

1. Development of State Parks is severely hindered by a lack of funding and apparently will continue to be in the foreseeable future (page 121). It is thus improbable that definite development schedules can be ascertained.

2. State Parks in the canyon country are of low development priority within the total State Park system (page 121).

3. The existence of State Parks of small scattered acreages in the study area complicates an already complex ownership pattern (page 124) and thus compounds problems of coordination of planning.

4. State Park holdings are considered to be of national significance and should remain in Federal ownership (National Park Service, 1964, pp. 480-485). State Park overlook sites (Goosenecks and Dead Horse Point) and developed Bureau of Land Management overlook sites (Anticline and Needles) exhibit few discernable distinctions of scenic quality. The Dead Horse Point site is perhaps of greater national significance than those overlooks at developed Bureau of
Land Management sites.

**Recommendation Four--Parkway**

It is recommended that the Utah Highway 128-U.S. Highway 160-Utah Highway 95 travel corridor be developed as a parkway. It is recommended that the Bureau of Land Management assume the responsibility for interpretative site, observation site, and campground and picnic site development. It is recommended that the Utah State Department of Highways consider realigning Utah Highway 95 closer to the rim of White Canyon and to a slightly higher elevation in that segment between Comb Ridge and the Utah Highway 261 junction before paving. It is recommended that the Bureau of Land Management establish the parkway as number one priority for development. These recommendations are based upon the following findings.

1. The travel corridor is rich in the scenic and interpretative resources.
2. Transient development exhibits a pattern of neglect in the study area.
3. The Canyon Country National Parkway has not been assured politically and is associated with an indefinite development schedule.
4. The Bureau of Land Management, by the logic of geographical location, is delegated the responsibility of development.
5. Utah Highway 95 is scheduled for paving in the near future.

**Recommendation Five--ORRRC Classification**

It is recommended that all lands under the jurisdiction of the National Park Service, U.S. Forest Service, and Bureau of Land
Figure 32. Colorado River canyon and La Sal Mountains from Utah Highway 128. Photographs from this point on Utah Highway 128 are frequently utilized in literature promoting the canyon country. Because no pulloff is available, the area is considered unsafe for sightseeing purposes. The site has excellent potential for interpreting laccolithic mountain formation and river canyons. It is recommended that Utah Highway 128 be included in a parkway and that the Bureau of Land Management assume the responsibility for site development along the parkway.
Management by zoned or rezoned under the ORRRC system. It is recommended that this process be coordinated to assure a continuity of land classification (page 206).

Recommendation Six--Glen Canyon National Recreation Area Planning

It is recommended that the National Park Service derive a recreational master plan for the Glen Canyon National Recreation Area which embraces the following objectives:

1. A plan fully coordinated with the existing Bureau of Land Management and Canyonlands National Park recreation plans.
2. A plan which anticipates Wilderness Act proposals for the National Recreation Area.
3. An ORRRC classification plan which provides greater acreages of Class IV and V than is presently indicated (page 150). It is suggested that a classification plan of this nature would be consistent with both a multiple use policy and the characteristics of the environmental resource classes.
4. Boat sightseeing development which includes landings and trails to overlooks of Lake Powell and interpretative points.
5. A coordinated plan with the Bureau of Land Management to develop boat-overland wilderness opportunities in Moki and Lake Canyons.
6. Identification of potential boat only campsites.
7. Feasibility study of installing improved ferry service between the Halls Crossing and Bullfrog sites (page 185).
8. A plan which embraces the contrast and variety present along the entire length of the main channels of Lake Powell. This can be
best achieved by allocating tributary canyons for different uses in a recurrent pattern.

Recommendation Seven--Navajo Tribal Lands

It is recommended that the Navajo Tribe adopt a recreation master plan which embraces the full spectrum of recreational opportunities and resources available upon Tribal holdings.

Recommendation Eight--Colorado River-La Sal Mountains Loop Drive and Loop Drive From Monticello

It is recommended that the Bureau of Land Management and the U.S. Forest Service initiate joint development plans for the Moab-Utah Highway 128-Castle Valley-Bald Mesa-Geyser Pass-Utah Highway 46-La Sal Junction and the Monticello-Indian Creek-Cottonwood Canyon-Elk Ridge-Causeway-Abajo Mountains loop drive variants. These two sightseeing loops are considered to possess exceptional diversity (pages 180-185).

Recommendation Nine--Valley of the Gods

It is recommended that the development of a Valley of the Gods scenic loop drive be of second highest priority in Bureau of Land Management planning. The significance of the Valley of the Gods loop drive is discussed in pages 176 and 178).
Recommendation 10—Bureau of Land Management

Potential Campground Inventory

It is recommended that the Bureau of Land Management potential campground inventory be revised and expanded. Analysis of the Bureau's site inventory indicates that:

1. Potential campgrounds are generally associated with those sites possessing water sources (pages 146 and 148).

2. Potential campgrounds are associated with a pinyon-juniper vegetative type (page 146).

3. The potential campground inventory does not rectify a deficiency of developed transient campgrounds along the U.S. Highway 160-Utah Highway 47 travel corridor and along that portion of the Utah Highway 95 corridor west of Natural Bridges National Monument (page 146).

4. Site identification is associated with areas immediately adjacent to roads and jeep trails (page 148).

It is recommended that the Bureau identify general campground sites in those areas of high recreation potential which have no water sources. It is suggested that the absence of on-site water sources should not be a limiting factor of campground location in arid regions. The trucking of water to sites in the San Rafael Swell and at Dead Horse Point (page 148) demonstrates the feasibility of ignoring this supposed limitation. Self-contained water supplies in pickup campers and trailers suggest that the identification and designation of dry campgrounds is an additional alternative to omission. It is suggested that artificial shelters and rock formations and cliffs are suitable alternative elements of landscaping and shade at sites
lacking a pinyon-juniper vegetative cover. It is recommended that the Bureau expand its potential site inventory to include such sites. It is recommended that the Bureau delete those marginal sites that have been included in the inventory only because they possess water or the pinyon-juniper cover type.

It is recommended that the Bureau assume the responsibility for transient campground development. Bureau lands predominate along highway corridors (page 123) and thus constitute the logical ownership from which transient campground sites should be identified. It is recommended that campgrounds be identified in areas without roads. The value of such sites is demonstrated in the Dolores Triangle area where a potential National Parkway is proposed (page 185). An inventory of possible site locations would anticipate campground development to accompany such a road. An inventory would also influence route determination to the advantage of the environmental resource and of other planning objectives.

It is felt that implementation of the three initial recommendations will provide greater flexibility to Bureau of Land Management planning. Utility of a greater geographical area, increased correlation with pertinent expressions of the environmental resource classes, reduction of detrimental user impacts, and a greater manipulative control over users will be realized.

Recommendation 11--U.S. Forest Service

Potential Campground Inventory

It is recommended that the U.S. Forest Service expand its potential campground inventory to include areas without roads.
Recommendation 12--Interpretation

It is recommended that interpretative planning embrace the following as goals for development within the study area.

**Goal One.** Interpretative development will embrace the full gamut of the interpretative resource thus providing the visitor with a comprehensive knowledge, understanding, and appreciation of the canyon country.

**Goal Two.** Comprehensive interpretation will be available to the entire spectrum of recreation visitors as they are defined by modes of travel.

It is recommended that the realization of these goals be accomplished through the following approaches to planning.

1. A Canyon Country Natural History Association with the National Park Service, U.S. Forest Service, and Bureau of Land Management as participants should be formed. It is suggested that the Navajo Tribe participate in the Association. Inherent in this recommendation is the objective that interpretative literature be area oriented rather than administrative unit oriented. Guides to National Parks and Monuments can only represent an incomplete and fragmented treatment of the study area.

2. Interpretative planning should stress the aggregate interpretative resource rather than fragment itself with a segregative approach concentrated upon individual themes. This suggests, for
example, that hiking and motor interpretative trails are of higher initial priority than wildflower and geological guides.

3. Interpretative development should stress the commonplace as well as the unusual and spectacular to achieve a comprehensive treatment of the study area.

4. The Glen Canyon National Recreation Area, Canyonlands National Park, and Bureau of Land Management should develop a coordinated interpretative plan that will provide comprehensive interpretation, within the limits of the interpretative resource capability, for the following areas of the water resource:

   Green and Colorado Rivers from Green River, Utah, to Moab, Utah, and Cataract Canyon.
   Lake Powell from Wahweap to Sheep Canyon and Grand Gulch.
   San Juan River to Grand Gulch.
   Colorado River from Westwater Canyon to Moab.

   Interpretative development should consist of on-site development in all areas that do not exhibit wilderness characteristics. The Canyon Country Natural History Association should prepare guide booklets for those sections exhibiting wilderness qualities. It is recommended that the Glen Canyon National Recreation Area develop interpretative techniques which treat phenomena inundated by the waters of Lake Powell.

5. The two through-travel corridors should be developed in such a manner that the transient visitor who does not leave these corridors will leave the study area with a thorough understanding of the character and identity of the region. It is recommended that
the Bureau of Land Management rather than the Utah State Department of Highways assume the responsibility for content and presentation of interpretative material.

6. Full interpretative schemes should be developed within each of the three recreation complexes to serve the destination visitor. The following suggestions are recommended:

a. The Forest Service and Bureau of Land Management should coordinate closely with National Park Service units to preserve continuity of the total interpretative scheme and to avoid duplication of effort.

b. Loop drives should be of high priority for future interpretative development.

c. Spur road interpretation should not be limited to sites associated with terminal overlooks.

d. The Natural History Association should prepare comprehensive guides for loop drives and wilderness areas such as Grand Gulch and wilderness complexes such as the Moab complex of Arches National Monument-Behind the Rocks-Nigger Bill Canyon-North Fork of Mill Creek.

7. Interpretative development should recognize that the study area is an integral part of a greater Golden Circle (the concentration of National Parks, National Monuments, and other recreational attractions encircling the Four Corners of Utah, Arizona, New Mexico, and Colorado) recreation whole. It is specifically recommended that interpretative planning consider the presence of Mesa Verde National Park and the other Four Corners archeological parks and phenomena.
and the peripheral geological presence of Capital Reef National Monument, Bryce Canyon National Park, Zion National Park, and Grand Canyon National Park.

8. The Bureau of Land Management should conduct an additional interpretative site inventory. This inventory should exhibit a balance among interpretative themes. The archeological bias of the present inventory should be eliminated.

**Recommendation 13--U.S. Forest Service Potential Interpretative and Observation Site Inventories**

It is recommended that the U.S. Forest Service identify potential interpretative and observation sites. Current U.S. Forest Service site inventories identify one interpretative site (page 157) and two observation sites (page 169).

**Recommendation 14--Cataract Canyon-Dark Canyon System Wilderness**

The study data indicate that the Cataract Canyon-Dark Canyon system

1. is a superior wilderness area (page 79),
2. does not respect jurisdictional boundaries (pages 125, 126 & 128),
3. represents a breakdown of coordinated planning (pages 188, 189, 206, and 207 and Figure 31).

It is thus recommended that the U.S. Forest Service conduct a land-use study (page 108) of that portion of the Dark Canyon system under U.S. Forest Service ownership and that those canyons considered suitable for wilderness purposes be proposed for inclusion in the Wilderness Preservation System. It is recommended that Glen Canyon
National Recreation Area classify Cataract Canyon and its tributary canyons; including Dark, Bowdie, and Gypsum Canyons, as ORRRC Class V-Primitive and propose these canyons for inclusion in the Wilderness Preservation System. It is recommended that the Bureau of Land Management retain its present Class V designation of the Dark Canyon system and manage the area accordingly.

Recommendation 15--Grand Gulch

It is recommended that Grand Gulch be classified as Class V by the National Park Service and the Bureau of Land Management. It is recommended that wilderness trails, camps, and corrals be constructed within Grand Gulch and that a system be devised for transporting hay over the canyon rim to horseback parties. It is recommended that archeological interpretation consist of information available in a wilderness guidebook to the canyon.

Because of the archeological wealth present in the canyons of the Johns Canyon-Slickhorn Canyons and the Comb Wash areas (page 67), it is felt that the superior wilderness opportunity in Grand Gulch should be of allocation priority. It is thus suggested that mass-use on-site archeological interpretation and observation can be allocated to various canyons in the two areas mentioned above.

Recommendation 16--Arch Canyon-Road Canyon System

It is recommended that the Bureau of Land Management develop a master plan for the Arch Canyon-Road Canyon system which allocates different uses to the individual canyons within the sequence. This
sequence of canyons represents an ideal opportunity to maximize variety within a limited area (pages 17, 50, 67, 187, and 193).

Recommendation 17--Nigger Bill Canyon and North Fork of Mill Creek Canyon Micro-wilderness Areas

It is recommended that the Bureau of Land Management designate the North Fork of Mill Creek and Nigger Bill Canyons as ORRRC Class V. It is recommended that the Bureau manage the two canyons as micro-wilderness areas thus assuring a diversified wilderness opportunity in the Moab area (page 190).

Recommendation 18--Bureau of Land Management Recreation Areas

It is recommended that the Bureau of Land Management apply the Recreation Area designation consistently to the entire Monticello District. It is thus suggested that the Dark Canyon area, the Red Canyon-Mancos Mesa area, the Green River tributary canyons north of Canyonlands National Park, and other areas (page 208) be given Recreation Area status. It is recommended that present Recreation Area boundaries be clearly delineated.

Recommendation 19--Snow Flat, Valley of the Gods, and Butler Wash Bureau of Land Management Recreation Areas

It is recommended that the Bureau of Land Management expand the Snow Flat, Valley of the Gods, and Butler Wash Recreation Areas into one recreation area. Implementation of this recommendation
will rectify the present unrealistic pattern of discontinuity within a limited area.

Recommendation 20--Hole-in-the-Rock Trail

It is recommended that the Hole-in-the-Rock trail be marked and developed as a recreation trail (page 65). It is recommended that various sections of the trail be developed to accommodate jeepers, backpackers, or riders.

Recommendation 21--John Wesley Powell Historical Boating Trail

It is recommended that a John Wesley Powell Historical Boating Trail be developed on the Green River, Cataract Canyon, and Lake Powell by the Bureau of Land Management and National Park Service. The strategy of location of the historical and water resource classes (pages 34 and 64) indicates that this trail would possess high recreational value. It is suggested that a boating trail would be of greater recreational utility and feasibility than an Upper Colorado River Trail (page 198).

Bean, Glen T. Letter to J. Whitney Floyd, July 5, 1967. (Mr. Bean is Chief, Office of Resource Planning, San Francisco Planning and Service Center, National Park Service.)


_________________________ 1967b. South San Juan planning unit resource analysis, special problems study, general land use plan. Monticello, Utah.

Bureau of Outdoor Recreation. 1965. Inventory, classification, and evaluation of potential outdoor recreation areas and facilities, BOR Form 8-75.


Deseret News Washington Bureau. 1967. 2 Utah areas tagged for retention by BLM. Salt Lake City, Utah. October 12, D8.


Goulding, Harry. 1967. Mr. Goulding is a long-time resident of Monument Valley and guides in the northern Navajo Reservation. Personal interview, August 14.


National Park Service. 1966. The masterplan Arches National Monument, Grand County, Utah. [National Park Service, Moab, Utah]


n.d.a. Island in the sky, Canyonlands National Park. Moab, Utah. (mimeographed)


n.d.b. Field inventory, potential development sites, NFORRR Form 17. [U.S. Forest Service, Ogden, Utah]


APPENDIXES
Appendix A

ORRRC classification system

The Outdoor Recreation Resources Review Commission (ORRRC, 1962a, p. 96) recommended in 1962 that "a system of classifying outdoor recreation resources in order to provide a common framework and to serve as an effective tool in recreation management" be adopted "by both public and private landowners." To meet these objectives, the Commission evolved a classification system of six categories. These categories are generally referred to as the ORRRC classes by recreation resource planners. The following is a resume of the characteristics of the system as stated in the original Outdoor Recreation Resources Review Commission report.

High-density recreation areas (Class I) are usually, though not necessarily, located near urban centers. They may provide facilities for all kinds of recreation appropriate to the terrain, to the location, and to the accommodation of large numbers of visitors. The "mass" use of the area is its most distinguishing characteristic.

General outdoor recreation areas (Class II) utilize natural resources for the specific recreation activities for which they are particularly suited, irrespective of location. Generally, they are readily accessible and are equipped with a wide variety of man-made facilities, which may vary from the simple to the elaborate. Although use is often heavy, it seldom has the "mass" feature characteristic of Class I. Because of the localized nature of the activities, Class II areas may often occur as enclaves in Class III, occasionally (with very simple facilities) in Class V, and very rarely in Class IV.

Natural environment areas (Class III) are usually large compared with Class I and Class II areas, and recreation activities include those which are feasible in a natural environment with few or no man-made facilities. Scattered rather than concentrated use is normal. Utilization of resources for economic purposes is a common but not essential feature.

Class IV areas are unique with respect to scenic splendor, natural wonder, or scientific importance. Accessibility is important, but recreation activities are
strictly limited to those which will not result in any lessening of the area's unique value.

Primitive areas (Class V) are open only to such developments and such uses as will not interfere with their undisturbed and primitive character.

Class VI areas are set aside and managed so as to make their cultural and historic values available to as many people as possible without deterioration.

A noteworthy feature of the classification is the difference in the availability of the several classes for various recreation activities. Camping, for example, is possible in Classes I, II, III, and V although rather rarely in Class I. Hunting is a typical activity in Class III and Class V areas, except in national parks and monuments. Motoring for pleasure is common through Class III areas but is impossible through Class V areas.

One of the prime virtues of the classification system is that it makes possible the logical and beneficial adjustment of the entire range of recreation activities to the entire range of available areas. When physical conditions permit the classification of a given area in more than one class, the classification which promises the optimum combination of values in the long run should be selected. (Ibid., p. 117, 120)
Selected definitions

Boat archeological interpretation--activity at archeological interpretative sites accessible by boat.

Boat campground--campground accessible only by boat or float plane. Facilities may vary from the rudimentary to the elaborate.

Boat camping--camping at sites accessible by power boat.

Boat general campground--campground accessible by boat and passenger car. These campgrounds are normally associated with marinas or boat launching facilities.

Boat geological interpretation--activity at geological interpretative sites accessible by boat.

Boat historical interpretation--activity at historical interpretative sites accessible by boat.

Boat picnic site--picnic site accessible by boat only or by boat and car. These picnic sites are generally associated with boat launching facilities.

Boat sightseeing--visiting historical, scenic, or other specific attractions by power boat. Sightseeing must involve a prior intention on the part of the recreation of visiting the attractions.

Dock boat tie-ups are available. No launching or other marina facilities are present.

Dude ranch--private development in a wild land setting catering to extended rather than overnight use. Cabins and a main lodge generally constitute the basic development design. A variety
of recreation activities such as jeeping, horseback riding, hiking, fishing, and family-type programs are provided. The primary purpose of the dude ranch is to provide relaxation and a wild land experience to families and couples with a destination--extended stay context.

Float trips--drifting in unpowered boats.

General campground--campgrounds of this type are accessible by passenger car. They may or may not possess trailer facilities such as pull-throughs, electrical hookups, and sewage dumps. Existing general campgrounds must be designated as campgrounds by the managing agency.

Hiking--short duration foot trail activity exclusive of backpacking and nature walking activities.

Hunter campground--campgrounds of this type are similar to primitive campgrounds. The chief distinctions are:

1. A primary purpose of development is to serve and regulate the hunter.
2. Passenger car access is permissible.
3. Horse facilities may include unloading ramps or other devices, large corrals, and stock watering developments.

Hunter campgrounds may serve as embarkation sites for non-hunting wilderness trips.

Launch only boating site--boat launching facilities are present, but no extensive marina developments are available.

Marina--sites of this type include launching facilities, boat slips, and fuel availability. Site may be operated by a concessionaire.
Picnicking only site--existing sites of this type must be designated as picnicking sites by the managing agency. Potential sites are those identified as picnic sites by the inventorying agency.

Picnicking site--all general campgrounds, transient general campgrounds, and picnicking only sites are included within this classification.

Pleasure boating--driving or riding in a power boat but only when the purpose is primarily for pleasure.

Primitive campground--campgrounds of this type are accessible by jeep, horse, or foot. Development may include one or more of the following facilities--pit toilet, fire circle or similar control facility, hitching rack, and culinary water development. Potential campgrounds are designated as primitive only if the intent to restrict their access to primitive travel methods (horse, foot, or jeep) is indicated by the inventorying agency.

River running--floating white-water rivers in unpowered craft.

Transient general campground--campgrounds of this type are situated on main travel routes or are located on spur roads no more than two miles from a through travel route. Potential campgrounds inventoried on routes that may eventually become through travel corridors are classified as transient general campgrounds.

Wilderness boating--boating with small unpowered craft (canoe, kayak, rubber boat, etc.) in canyon arms of Lake Powell.

Wilderness camping--camping at sites accessible only by unpowered boat, horse, foot, or jeep.
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