

## NATURAL AREAS PARTNERSHIP INITIATIVE WINTER 1996

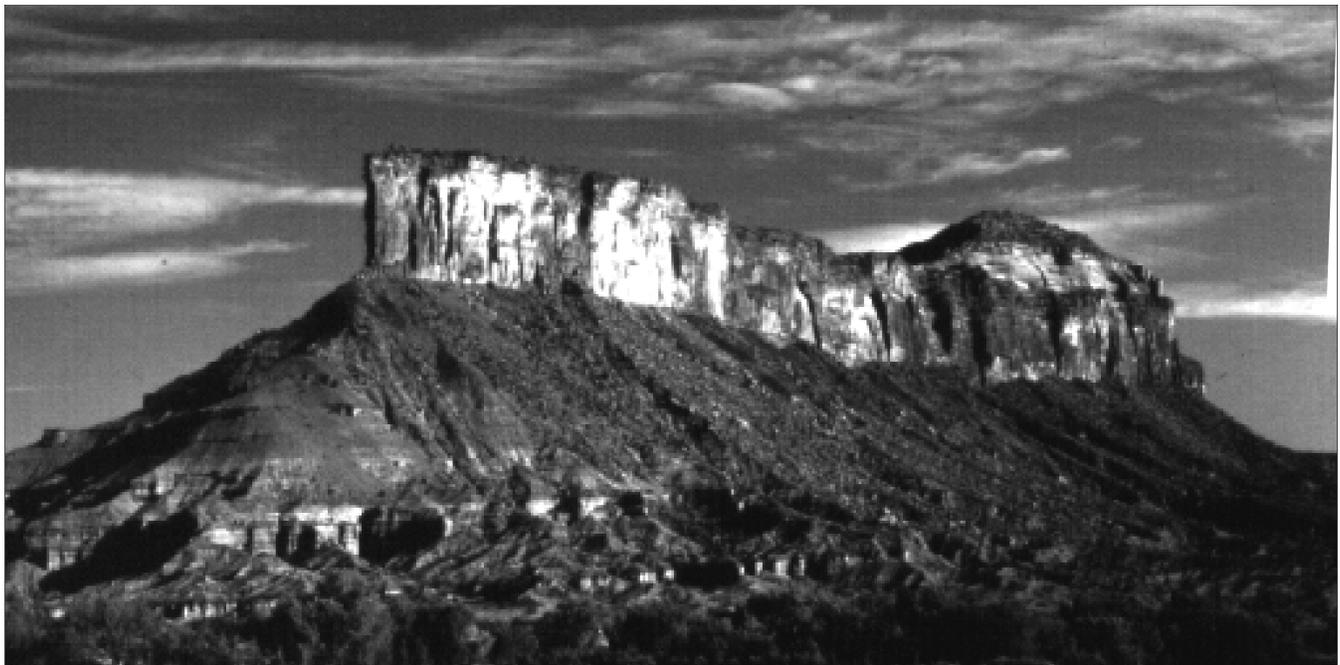


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Hundreds of dedicated people have and continue to spend countless hours to identify and conserve special features in the state for the benefit and future enjoyment of Colorado's citizens. Many of the hours and much of the work already accomplished has proceeded with little fanfare. This report reflects an important preliminary tabulation of these efforts and provides criteria whereby GOCO can support acquisition, conservation, environmental education and interpretation of significant natural resources in Colorado.

As project coordinator, the Colorado Natural Areas Program is deeply appreciative for contributions to this report by 24 organizations and agencies. Too numerous to list here, their participation in providing data and formulating recommendations was essential to completing this report. We also appreciate the efforts of the CNAP staff, Ms. Janet Coles, Ms. Kathy Carsey and Ms. Keldyn West and Colorado State Parks Natural Resources Programs' Mr. Tom Easley for their time spent editing this document and providing valuable comments and suggestions. The beautiful layout and document design were prepared by the Colorado State Parks' graphic artists: Deb Duke and Christine Torres.



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# EXECUTIVE SUMMARY

In January, 1995, the Great Outdoors Colorado Board (GOCO) awarded a \$25,000 grant to Colorado State Parks to pursue this Natural Areas Partnership Initiative (*Initiative*) through the Colorado Natural Areas Program (CNAP). The goals of the *Initiative* are twofold:

*To bring together Colorado's leaders in natural areas protection work to develop a cohesive, strategic approach to natural areas work statewide.*

*To have this working group develop a recommended framework for GOCO to use when evaluating natural areas and open space grant applications.*

## **Background**

GOCO's enabling legislation, Amendment 8, identified four categories in which grants will be provided. One of these categories is Open Space and Natural Areas of Statewide Significance. Grants are to be made through the Division of Parks and Outdoor Recreation, Division of Wildlife, municipalities, counties or other political subdivisions of the state, and nonprofit land conservation organizations to identify, acquire and manage open space and natural areas of statewide significance.

This *Initiative* closely matches one of six overarching goals adopted by GOCO in its Strategic Plan: Support planning efforts to inventory, survey and assess wildlife and wildlife habitat, open space, natural areas and recreational opportunities which advance the GOCO Amendment and guide GOCO in making strategic investment decisions.

## **Initiative Products**

To accomplish these goals, the CNAP distributed a questionnaire and convened and coordinated a working group which participated in two meetings. Twenty-two questionnaire responses were received. The working group was composed of representatives from GOCO, CNAP, five land trusts, one private/non-profit, one private for-profit, three cities, three counties, three federal agencies, four state divisions and one state department.

The working group met in facilitated sessions to focus on three main objectives, the results of which are summarized below:

### **Objective 1:**

**Catalog all statewide natural area protection efforts to date; compile this information into report format and prepare mapped information.**

### **Results:**

We have contacted most of the land trusts, conservation organizations and agencies of local, state and federal governments; over 80 entities are currently active. Four cities, three counties, the State of Colorado and three federal agencies have specific legislation in place to address natural area identification and management. Many more entities perform natural area conservation work under nationally or regionally-mandated organizations or under legislation approved for the broader concepts of open space and outdoor recreation. **Still, there is much left to be done!**

An effort to catalog sites considered natural areas or natural open space resulted in a table containing over 230 entries (Appendix 6.2). Although these sites are known to have natural values ranging from local to global significance, only a few have truly protective management in place. On private lands in particular, a change in ownership could result in an entirely new form of management and/or land use adverse to conservation. The types of sites receiving protection were also evaluated; over 80% contain ecological resources, showing the overall focus of past inventory efforts. Future inventories must also include an analysis of geologic resources present, to be of greatest value.

The mapped distribution of natural areas shows where inventory efforts have been concentrated and where detailed landscape inventories have yet to be conducted. In an effectively inventoried county (Boulder County), 30 natural resource sites have been identified for conservation. The City of Fort Collins has identified 20 natural resource sites for protection, but some entire counties and regions of Colorado have yet to even be

inventoried for natural resources. Distribution maps created for this report can also be used to identify geographic and political regions, so that natural areas are considered part of larger planning units, not isolated sites within these units.

Following analysis of information concerning inventory efforts to date, only two counties were considered to have a high level of inventory effort and 20 counties had a moderate inventory effort level. Sixty-five percent (42) of Colorado's counties are considered to have a low level of natural areas inventory effort. Federal agencies with diverse human resources have identified and protected over 100 natural area sites, almost all in the western half of the state. Even though poorly inventoried, all or part of over sixty sites have been identified and protected on private land.

**Objective 2:**

**Develop a set of recommendations GOCO can use to evaluate natural areas and open space applications.**

**Results:**

GOCO should consider six important criteria to prioritize sites, in addition to or in combination with established rating criteria for Land Conservation Project acquisition proposals. These criteria are:

**Rarity** - sites should contain one or more rare or unique natural feature(s).

**Representativeness** - sites in natural condition that represent the ecological diversity of Colorado.

**Ecological Integrity** - presence of functioning or restorable ecologic processes.

**Threats** - anything that will adversely affect the integrity of a functioning ecosystem or geologic process.

**Stewardship and Sustainability** - short- and long term site management needs to insure functioning ecosystems for future generations.

**Value to Science, Education and Community** - natural areas are valuable for research on ecologic and geologic processes, monitoring studies, outdoor classrooms and community pride.

*Initiative* criteria can be included on grant applications under the following Land Conservation Projects sections: 1) qualities of the resource to be protected, 2) need, 3) urgency/jeopardy and 4) direct impact of the project. Criteria developed by the working group respond to these general headings as follows: A) Resource qualities; a) rarity, b) representativeness, c) ecological integrity, d) value to science, education and community, B) Need; a) rarity, b) representativeness, c) value to science, education and community, C) Urgency/Jeopardy; threats, and D) Direct project impact; a) stewardship and sustainability, b) value to science, education and community. Potential natural areas identified for acquisition by GOCO should have sufficient support information available for the above criteria.

**Objective 3:**

**Identify potential natural areas protection projects that could be carried out over the next ten years; prioritize projects and develop a cross-jurisdictional strategy to guide implementation.**

**Results:**

As interest in natural area identification and protection grows, it is important to secure adequate funding to provide inventories, create management agreements, apply stewardship principles and acquire land if necessary. A goal of the *Initiative* was to prioritize natural area sites for acquisition, yet project participants felt this action to be premature. Participants decided a more beneficial goal at this time is to prepare cooperative strategies to conserve deserving sites and/or landscapes.

The logical and necessary steps for future success are:

- 1.) an MOU to fulfill the need for coordination among entities by building a framework using a common dialogue, setting general goals and obtaining a level of commitment.

- 2.) a statewide conservation plan is needed to address long-term natural area identification, conservation and stewardship needs.
- 3) a statewide inventory of natural resources, their condition and importance is necessary to determine protection priorities. These may best be conducted on a county-by-county basis.
- 4) a statewide database will provide natural resource and land use planners adequate information to make informed decisions.
- 5) land trust participation is important because of their ties to local communities and regions and their effectiveness working with private landowners.
- 6) an annual forum will allow efficient information sharing, updates of databases and provide momentum among land preservation entities.
- 7) professional and technical advisory groups provide expertise to identify areas in need of protection, stewardship actions and provide the necessary tie to science associated with natural areas.

Protection of natural areas and natural open space is a priority of *Initiative* participants, as has been shown by contributions of partners to this effort. A recent survey of 1,400 citizens by GOCO and Colorado State Parks determined that 36% of respondents preferred natural areas and minimum access parks rather than developed parks and open space (GOCO 1996).



Photo by: Janet Coles

# 1.0 INTRODUCTION

**S**trong cooperative relationships between public and private organizations involved in natural area conservation and preservation work currently exist. To date, however, no statewide strategy to coordinate efforts among these organizations has been attempted. As a result, GOCO has not been able to draw on a statewide vision to pursue its natural areas conservation mandate. Recognizing this void, Colorado State Parks worked with GOCO to fund a grant to the Colorado Natural Areas Program (CNAP) to begin coordination efforts throughout Colorado. This *Initiative* is intended to bring together Colorado's leaders in natural areas protection work and develop a cohesive, strategic approach to natural areas work statewide.

Why is an *Initiative* featuring natural areas necessary? Why should GOCO care about natural areas at any level of significance (local, regional, state, national) when it is evaluating and funding open space applications? Generally, groups working with urban open space, agricultural lands, and corridor, park and city buffers are well-organized and focused in their planning and acquisition needs. With newly available GOCO resources, it is timely to similarly focus those who work with the natural area subset of open space landscapes with biotic, aesthetic, research and educational values that would be tragic to lose to development. The need exists and becomes more urgent each day to establish a rational and scientific system of priority-setting, gap analyzes, criteria development, etc., for Colorado's valued naturally-functioning landscapes.

GOCO's enabling legislation, Amendment 8, identified four categories in which grant funds are to be provided. One of these categories is Open Space and Natural Areas of Statewide Significance. Grants are to be made through Colorado State Parks, Colorado Division of Wildlife, municipalities, counties or other political subdivisions of the state, and nonprofit land conservation organizations to identify, acquire and manage open space and natural areas of statewide significance.

This *Initiative* closely matches one of six overarching goals adopted by GOCO in its Strategic Plan: "Support planning efforts to inventory, survey and assess wildlife and wildlife habitat, open space, natural areas and recreational opportunities which advance Amendment 8 and guide GOCO in making strategic investment decisions."

# 1.1 WHO PERFORMS NATURAL AREA WORK?

Private landowners, businesses, nonprofit conservation groups, land trusts, and city, county, state and federal government agencies are all involved in natural area and open space work. In many cases the focus is not on land as natural areas, per say, but on existing use or concepts such as working ranches, business buffer areas, biodiversity preserves, Areas of Critical Environmental Concern, important wildlife habitat, nature parks, wilderness and/or open space. With the exception of national parks and monuments, research natural areas and preserves of well-established conservation groups, most natural area conservation efforts are relatively recent, occurring since the 1960's.

Many states have enacted natural area programs through legislative mandate, much like that of Colorado's. However, the level at which these programs function varies widely. For example, in California and Ohio, natural area programs are given Division status in state government and along with a heritage program component, actively inventory, acquire and manage preserved lands. Staff size for these programs may be as high as 20-30 employees to cover this wide range of responsibilities. Neighboring states, including Wyoming, Nebraska, Kansas, New Mexico and Utah, have not yet legislated natural area programs at the state level.

## **Colorado Natural Areas Program**

One of Colorado's primary mechanisms for the protection and management of natural areas is the Colorado Natural Areas Program. The CNAP is supported within Colorado State Parks and is currently operated with four employees; because of the small staff size, the program does not attempt to own and manage lands, rather it works under voluntary cooperative management agreements with landowners and managers to promote and guide conservation-oriented practices. At this time 90 sites have been registered as Colorado Natural Areas by the seven-member oversight Colorado Natural Areas Council and the Board of Parks and Outdoor Recreation.

## **Colorado Natural Heritage Program**

Sites of biological significance are typically determined by inventories conducted by the Colorado Natural Heritage Program (CNHP), academic researchers and other research entities. Within state government, the CNHP provides the inventory effort which identifies potential natural areas and the CNAP works to conserve these lands into the future through cooperative management agreements.

## **Advisory Groups**

Sites of geological significance have been identified by academic and agency researchers, primarily, the most concerted effort was by the Geological Advisory Group which was formed in the early 1980's to determine significant sites on Bureau of Land Management (BLM) lands. Geologists and paleontologists from federal and state agencies, academia and the private sector came together to identify over 30 sites which subsequently became BLM Areas of Critical Environmental Concern and/or Colorado Natural Areas (CNAs).

## **Federal Agencies**

Federal agencies use different designations to define natural areas and provide protection; these designations are usually agency-specific (Table 6.5). Some of the earliest efforts in conserving significant natural open space were in the form of national parks and monuments. Today, the National Park Service (NPS) protects and manages Rocky Mountain and Mesa Verde National Parks and the monuments of Dinosaur, Great Sand Dunes, Black Canyon of the Gunnison and Colorado. The NPS also oversees designation of National Natural Landmarks (NNLs), which can occur on all lands regardless of ownership, however the NPS does not assume land management. Eleven NNLs containing biologic and geologic sites of national significance have been designated by the NPS and most have also been designated as Colorado Natural Areas.

Perhaps the most protective types of land conservation within all federally-managed lands includes the Forest Service (USFS) and NPS Research Natural Area (RNA) and USFS Wilderness designations. Ten RNAs are designated by the USFS and most are co-designated as CNAs by the CNAP.

Three RNAs are designated in Rocky Mountain National Park by the NPS, these are also co-designated as CNAs. Wilderness is protected and managed to preserve natural conditions while allowing primitive recreation. Currently, there are 36 wildernesses designated in the federal land system of Colorado; four include BLM land, one includes Fish and Wildlife Service (USFWS) land and Spanish Peaks is a designated planning area with protections due to expire in 1996.

Federal land protection also includes less-restrictive designations as Areas of Critical Environmental Concern (ACECs) and National Wildlife Refuges (NWRs). The BLM has designated fifty-seven and proposed fourteen ACECs that provide a level of protection for biodiversity and scenic, historic, geologic, and cultural values on these managed lands. ACECs meeting the CNAP guidelines have been recognized as CNAs under a Memorandum of Understanding between the BLM and the CNAP. Four NWRs are currently managed by the USFWS in Colorado.

### **State Agencies**

Colorado also protects natural areas and natural open space within its state park system and natural areas through voluntary cooperative management agreements between the CNAP and the State Land Board (SLB), Division of Wildlife (DOW) and Division of Parks and Outdoor Recreation (Colorado State Parks). Roxborough, Mueller, Castlewood Canyon, Bonny and State Forest State Parks are, or contain, important natural areas including sites with biological diversity and geologic formations and are managed for restricted outdoor recreation opportunities. Nine CNAs are designated on lands managed by the SLB and two are located on DOW-managed lands. Several more state-managed sites are currently under evaluation for protection under voluntary cooperative agreements with the CNAP; these agreements do not restrict current land use significantly. Eighteen CNAs are located all or partially on private lands, mostly ranches.

### **Local Governments**

Local governments, particularly some Front Range counties and cities (Boulder, Larimer, Fort Collins and Denver) have created and developed natural area and open space identification, protection and management

programs. Several other local governments within the state have used the larger open space and natural park categories to provide managed protected areas; generally with fewer use restrictions, the primary use being recreation. The CNAP has entered into voluntary cooperative management agreements or registered four local government owned/managed sites as CNAs and several others are currently under evaluation.

### **Private Organizations**

Private conservation groups and local land trusts are particularly successful in protecting open space and natural areas, largely on private lands. The Nature Conservancy (TNC) has purchased land outright, protected sites through partnerships with a variety of landowners and recently acquired a unique, long-term lease of Aiken Canyon from the SLB. The Wilderness Land Trust has successfully acquired approximately 4,000 acres of private inholdings within designated wilderness or adjacent to wilderness boundaries. Most land trusts can accept conservation easements, which provide tax incentives to private landowners. Private lands are represented in the CNAP by all or a portion of eighteen sites. Five of these sites are registered as CNAs jointly, under an agreement between TNC and the CNAP. Generally, private lands are not well represented in the CNAP registry of CNAs and represent an important focal area for conservation programs and land trusts.

### **Private Landowners**

Some private landowners have signed conservation easements to insure long-term protection of their property as open space. These easements are often held by land trusts or city/county managing entities and have benefits for the land and those involved in the agreements. Many private landowners who are sympathetic of open space and natural area concepts and values, may also be reluctant to work with government or private conservation entities. Land trusts play an important role in developing a working relationship with and providing conservation benefits to private landowners.

## 1.2 Initiative GOALS AND OBJECTIVES

### 1.2

The goals of this *Initiative* are threefold, using the objectives described below to achieve them:

#### Goal 1.

Catalog all Colorado natural area protection efforts to date.

Objective 1. Summarize natural area protection efforts in a table.

Objective 2. Identify natural areas on a suitable base map, i.e., 1991 - U. S. Geological Survey 1:500,000 map of Colorado with U.S. Bureau of Land Management Surface Management Status units.

#### Goal 2.

Identify potential natural area protection projects that can be achieved over the next ten years.

\*[Objective 1. Prioritize projects so identified.]\*

Objective 2. Develop a \*[cross-jurisdictional]\* strategy to guide implementation.

#### Goal 3.

Develop a set of recommendations for GOCO to evaluate natural area grant applications.

Objective 1. Provide screening criteria suggested by *Initiative* participants.

Objective 2. Provide rating methods suggested and reviewed by *Initiative* participants.

Objective 3. Present any other factors presented by *Initiative* participants for consideration by GOCO.

\*[]\* Note: during the Summation Meeting, it was suggested and approved to eliminate Goal 2 - Objective 1 and change Goal 2 Objective 2 to read: Develop a cooperative strategy to guide implementation. Prioritization of sites was eliminated because only a few organizations were prepared to provide this potentially sensitive information and some site negotiations could be adversely affected if sites appeared on a prioritized list.

The remainder of this report describes the *Initiative* success in attaining desired goals and objectives. It also points to data gaps and provides future direction to filling these gaps.

## 1.3 Initiative PARTNERS AND PROCESS

### 1.3

The CNAP began operation in 1977 with the mission of identifying, evaluating and protecting significant open space or natural areas using voluntary cooperative agreements. The CNAP has never sought to own land and has pursued site protection independently and networked among similar private, local, state and federal entities to protect special and exemplary landscapes. Through this process, ninety sites have been registered and/or designated as CNAs. Another 65 sites await evaluation for eligibility as CNAs.

The CNAP used several methods to solicit participation by organizations and agencies involved in natural area conservation work for this *Initiative*. Initial contacts were made by telephone to a cross-section of natural areas protection leaders, followed by a meeting to discuss *Initiative* goals and objectives. Other contact attempts included literature disseminated at the 1995 Colorado Coalition of Land Trusts conference in Montrose, general mailing to listed Colorado Open Lands membership, personal meetings with conservation organization and agency representatives and telephone contacts followed by informational mailings.

To date, over 80 organizations and agencies have been contacted and several hundred sites with potential natural area or significant open space attributes have been identified statewide. [Appendix 6.1](#) lists contacted and participating organizations.

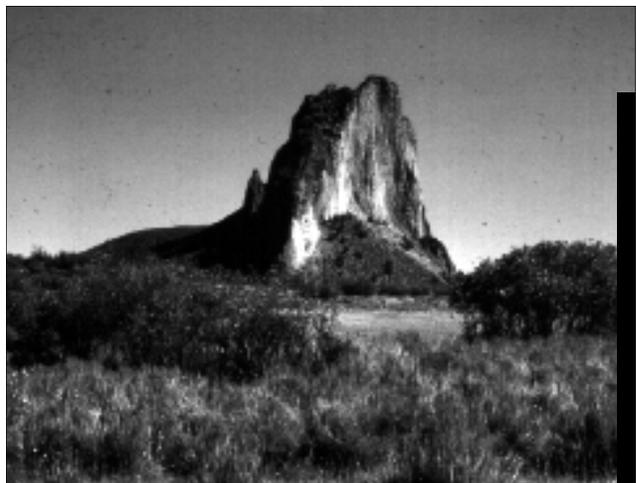


Photo courtesy of Colorado State Parks

## 1.4 Initiative MEETING SUMMARIES

### 1.5 NATURAL AREA DEFINITION

#### 1.4

Two meetings were held to discuss the *Initiative* and to determine report content, mapped products and tabular information to be prepared for GOCO. Complete meeting summaries are included in Appendix 6.4 and have also been mailed to all *Initiative* partners contacted.

Guidance information developed during the first meeting included: 1) identification of site evaluation criteria to be considered by GOCO when evaluating natural area grant applications, 2) initial gathering of natural area and significant open space site location information, 3) site location and ownership map, supporting information table and report preparation, 4) site prioritization willingness, and 5) suggestions for future partner contacts, discussion of the overall concept and future meeting needs.

Guidance information gathered during the second meeting included: 1) further refinement of site evaluation criteria to be considered by GOCO when evaluating natural area grant applications, 2) additional information gathering of natural areas and significant open space site locations, 3) add a second map which shows areas that have been inventoried for natural area sites, 4) clarification of useful information for tables and table formats, 5) elimination of site prioritization for this *Initiative* effort due to concerns about affects this may have on land acquisition order and costs, and 6) incorporation and discussion of ideas generated during “brainstorming” exercises.

#### 1.5

Many different interpretations of what comprises “natural areas” have been used by groups working for site protection. During the preliminary meeting of the *Initiative* working group, the definition provided in the Colorado Natural Areas Act (HB 1184; Article 33 - Colorado Natural Areas, 1988) was considered appropriate. This definition includes biotic features, but also includes other Colorado natural heritage values, particularly geologic features, as follows:

*“Natural area” means a physical and biological area which either retains or has reestablished its natural character, although it need not be completely undisturbed, and which typifies native vegetation and associated biological and geological features or provides habitat for rare or endangered animal or plant species or includes geologic or other natural features of scientific or educational value.*

Under this definition, candidate sites for identification and protection should provide one or more of the following benefits:

- a) Serve as examples of the native condition for ecological studies, including those relating to air, water and soil quality and habitat productivity;
- b) Serve as resource material from which new knowledge may be derived and as a reservoir of genetic material which has present and future value to scientific inquiry;
- c) Provide habitat for rare or endangered animal or plant species;
- d) Serve as outdoor classrooms and laboratories for scientific study by students of all ages; or
- e) Serve as areas of natural beauty, inspiration and diversity which meet aesthetic needs and which enrich the meaning and enjoyment of human life.

Several sites have more than one designation by various entities, e.g., Roxborough State Park, in Douglas County, is owned by Colorado State Parks and managed as a natural resource protection and interpretation site; it is also a registered NNL, registered National Historic District and designated CNA. Summit Lake, in Clear Creek County, is owned by the City of Denver and managed by the Denver Department of Parks and Recreation as a mountain park and recreation site; it is also a registered NNL (the first Colorado Natural History Landmark) and an identified CNA.

Natural Areas may be considered significant on different levels by various entities; a site could be significant locally, regionally or statewide. Some exemplary sites fulfill all of these concepts and may additionally be considered of national or even global significance. This *Initiative* report does not attempt to make these distinctions of significance for the Section 2.0 catalogue of known sites. Appendix 6.5 contains several additional definitions of natural areas and open space, supplied by *Initiative* partners.

# 1.6 FUTURE DIRECTION FOR NATURAL AREAS WORK

## 1.6

Conduct of this *Initiative* has laid the groundwork for future partnerships by identifying groups performing natural areas work, considering their mission, listing sites with known natural values, identifying gaps in existing data and specifying natural area evaluation criteria to be used by GOCO. Viable ideas and justification for funding future partnerships or a continuation of a partnership developed from this *Initiative* to identify, conserve and manage Colorado's natural areas are discussed in this report and include:

- ▶ Prepare a Natural Areas Memorandum of Understanding among participating entities to set common dialogue and goals and obtain organizational commitment.
- ▶ Develop a natural areas database, digitized into a GIS format for ease of updating, and including the existing sites, their boundaries and levels of protection, to be used to support planning and needs assessments.
- ▶ Conduct a county-by-county or drainage basin-by-drainage basin inventory to identify natural areas of local, regional and statewide significance.
- ▶ Form and support professional/technical advisory teams and volunteers to insure credible site evaluations and recommendations for conservation.
- ▶ Conduct an annual forum focused on natural areas.
- ▶ Increase the participation of land trusts who work closely with private landowners.
- ▶ Prepare a Colorado Conservation Plan to adequately identify, protect and manage the state's irreplaceable natural areas.



Photo by: Janet Coles

## 2.0 CATALOG OF KNOWN SITES

This section summarizes sites with known natural area values, cataloged in [Appendix 6.2](#). These sites are generally located on Figure 2.0 and coded relative to ownership, illustrating their general distribution within Colorado. Only a few areas of Colorado have been surveyed in detail for potential natural areas; Figure 2.1 shows the relative level of known inventory efforts to date, with a summary of larger efforts provided in Table 2.0.

Many significant natural areas in Colorado are currently under management that guarantees or implies protection of the natural resources present. Sites managed for open space, conservation, preservation and research include national parks and monuments, designated wilderness, RNAs, ACECs, wildlife refuges, state parks and wildlife areas, nonprofit and land trust preserves, county or city open space, parks and natural areas and private lands with conservation easements. Types of use allowed on these lands varies widely from research only, to sites managed for urban, rural and primitive outdoor recreation.

The map and list of currently protected sites are taken from data supplied by *Initiative* partners. At this time, no attempt is being made to determine if each site fits the natural area definition and criteria described in [Section 1.5](#), although many sites have already undergone evaluation and justification as natural areas. [Appendix 6.2](#) summarizes these sites by ownership, applying a site number, name, county, size, attribute and type of conservation or protection vehicle(s) currently in place. In several instances, “layers” of recognition exist for sites, for example: Roxborough is a State Park, Designated Colorado Natural Area, National Natural Landmark and National Historic District, and is known for its representative/outstanding geologic features, plant communities in good to excellent condition, healthy wildlife populations, historic and archaeological values.

Gaps in the data base for natural area sites are easily recognized. Rapidly urbanizing cities and counties along the Front Range, with planning departments in place, have generally completed open space analyzes. For example, Boulder County has identified 30 open space sites and twenty have been identified within the City of Fort Collins. Conversely, no inventory work is known for Sedgwick, Phillips or Costilla counties.

There is also a difference in types of sites that have been identified and protected to date (Table 2.0), for example, 51 sites are recognized as having significant geologic resources, while 185 sites (approximately 80%) are known for significant ecologic resources. This probably reflects the early focus of inventories designed to search for rare plant and animal species and high quality plant communities and wildlife habitat.

Large agencies, particularly federal agencies with more diverse human resources, have also inventoried significant natural features during creation of resource management plans. Seventy-six significant sites have been identified on lands managed by the BLM and 33 on lands managed by the USFS. Twelve sites are known for SLB lands to date, although an ongoing inventory has identified over twenty more sites. The Nature Conservancy has protected six preserves in Colorado.

Rural areas of the state that are owned and managed by private landholders usually have not been inventoried for natural values. Sixty identified sites are known to be all or partially located on private lands. Less scenic portions of the state, particularly the eastern one-third, east of the Front Range, have also not been thoroughly investigated for natural areas.

Large databases are present that can be a valuable source of existing information and can guide future inventory focus. The DOW captures wildlife data statewide in the WRIS database and the CNHP operates a biodiversity data system. Over 2,000 records of wildlife location data are currently available from these sources. In addition, the CNHP maintains records for botanical information including rare plant species and plant communities.

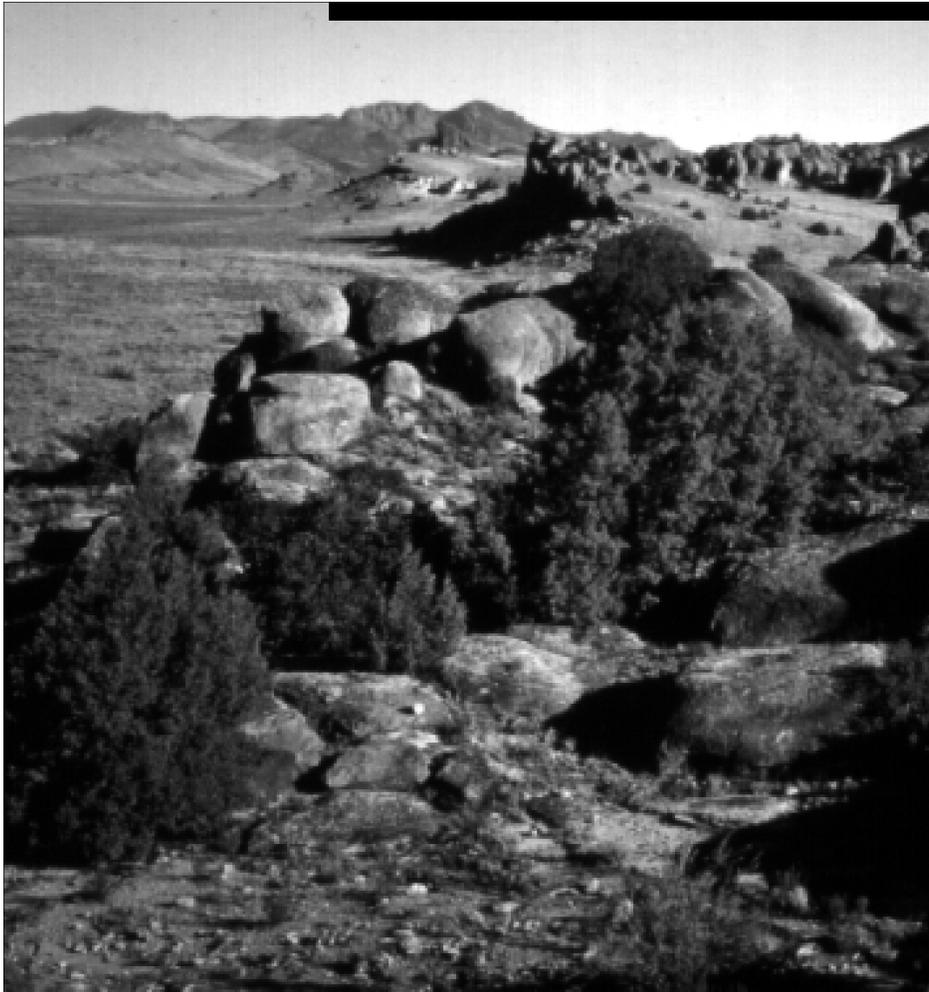
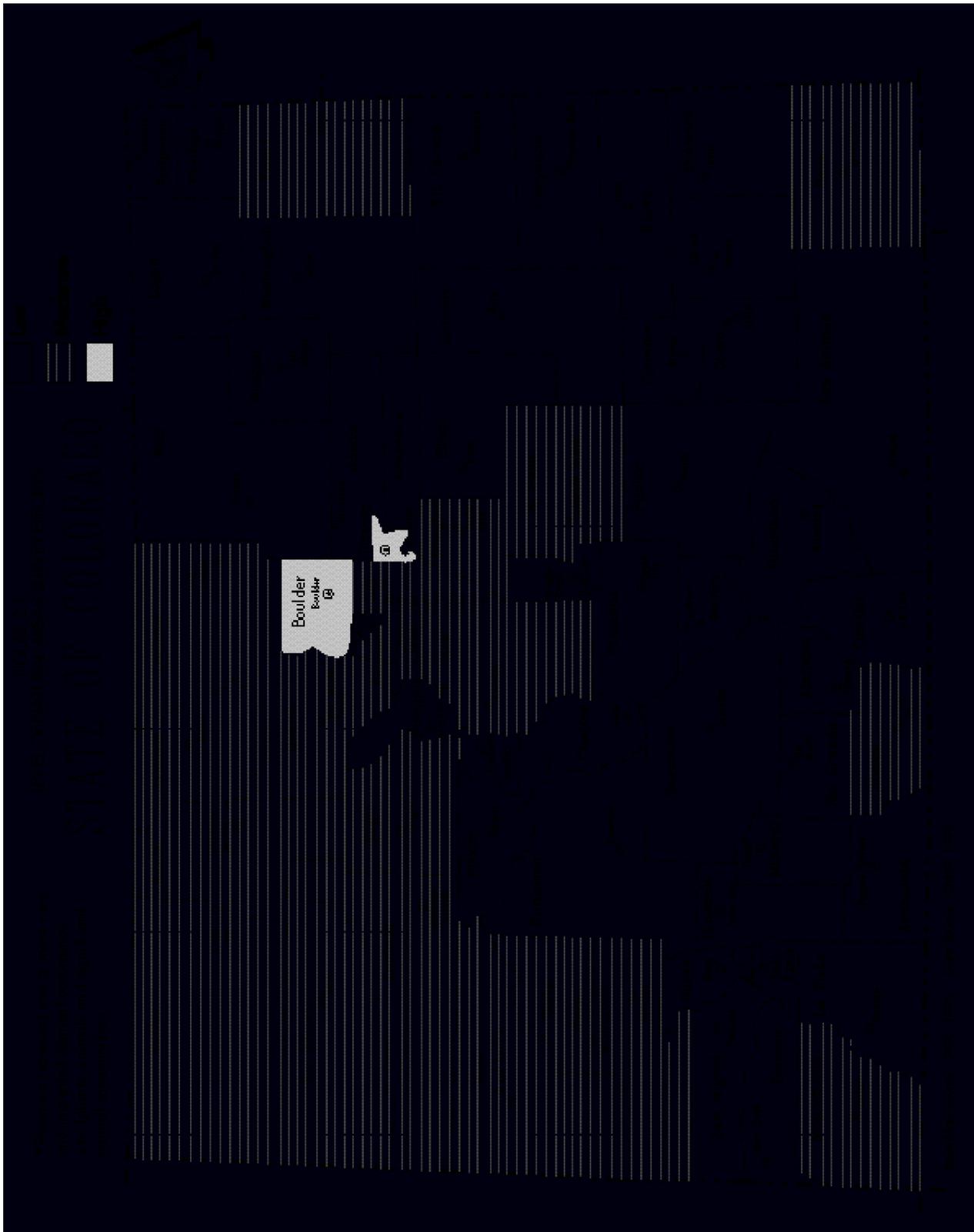


Photo by: R.L. Powell

## **FIGURE 2.0: MAP OF KNOWN NATURAL AREAS**

See Map inside back cover.

**FIGURE 2.1: LEVELS OF NATURAL AREA SURVEY EFFORT(S)**



**TABLE 2.0: DESCRIPTION OF MAJOR NATURAL AREA INVENTORY EFFORTS BY COUNTY**

<b>County</b>	<b>Inventory Efforts and Type</b>
Adams	<ul style="list-style-type: none"> <li>- Barr Lake State Park: DPOR/CNAP, 1994 - Botanical, Wetland, Riparian.</li> <li>- Lower South Platte River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
Alamosa	<ul style="list-style-type: none"> <li>- Great Sand Dunes NM: NPS, 1960's - 90's General.</li> <li>- Alamosa and Monte Vista NWRs: USFWS, 1960's - Wildlife.</li> <li>- BLM Lands: BLM 1970's &amp; 80's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1994 - General.</li> <li>- San Luis Lakes State Park: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1994-95 - Potential RNA Evaluation.</li> <li>- San Luis Valley: TNC/CNHP, 1990's - Biological.</li> </ul>
Arapahoe	<ul style="list-style-type: none"> <li>- Cherry Creek and Chatfield State Parks: 1994</li> <li>- Botanical, Wetland, Riparian.</li> <li>- Lower South Platte River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
Archuleta	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1994-95 - Potential RNA Evaluation.</li> <li>- Navajo State Park: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- School Trust Lands: SLB/CNAP, 1995 - General.</li> <li>- San Juan River: CNHP, 1994 - Riparian, Wetland.</li> </ul>
Baca	<ul style="list-style-type: none"> <li>- Comanche National Grassland: USFS, 1970's - 90's</li> <li>- Potential RNA Evaluation, General.</li> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> </ul>
Bent	<ul style="list-style-type: none"> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> </ul>
Boulder	<ul style="list-style-type: none"> <li>- Rocky Mountain National Park Lands: NPS, 1930's- 90's - Potential RNA Evaluation, General.</li> </ul>

County	Inventory Efforts and Type
Boulder (cont.)	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> <li>- City Open Space: BOS, 1970's - 90's - General.</li> <li>- County Open Space and Parks: Boulder County, 1970's - 90's - General, CNHP, 1995 (new properties) - Biological.</li> <li>- Eldorado Canyon State Park: DPOR/CNAP, 1994 - Wetland, Riparian.</li> </ul>
Chaffee	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1992 - General.</li> <li>- Upper Arkansas River: CNHP, 1995 and CDOW, 1995 Wetland, Riparian.</li> </ul>
Cheyenne	<ul style="list-style-type: none"> <li>- No inventory known.</li> </ul>
Clear Creek	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> </ul>
Conejos	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP 1994-95 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- School Trust Lands: DPOR/CNAP, 1994 - General.</li> </ul>
Costilla	<ul style="list-style-type: none"> <li>- No inventory known.</li> </ul>
Crowley	<ul style="list-style-type: none"> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> </ul>
Custer	<ul style="list-style-type: none"> <li>- School Trust Lands: SLB/CNAP, 1992 - General.</li> </ul>
Delta	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluation.</li> </ul>

County	Inventory Efforts and Type
Delta (cont.)	<ul style="list-style-type: none"> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Crawford, Paonia and Sweitzer Lake State Parks: DPOR/CNAP, 1993-94 - Botanical, Wetland, Riparian.</li> <li>- Gunnison River: CNHP, 1994 - Riparian, Wetland.</li> </ul>
Denver	<ul style="list-style-type: none"> <li>- Open Space and Parks: DDP, 1994 - General.</li> <li>- Lower South Platte River: CNHP, 1995 Riparian, Wetland.</li> </ul>
Dolores	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1995 - General.</li> <li>- Dolores River: CNHP, 1992 - Riparian, Wetland.</li> </ul>
Douglas	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- County-wide Lands: CNHP, 1994 - Biological.</li> <li>- Castlewood Canyon, Roxborough and Chatfield State Parks: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- Lower South Platte River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
Eagle	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Eagle's Nest Wilderness: CU, 1980's - Botanical.</li> <li>-Sylvan Lake State Park: DPOR/CNAP, 1993-94 - Botanical, Wetland, Riparian.</li> <li>- Town of Vail: CNHP/CSU, 1990's - Biological, Wetland.</li> <li>- White River Plateau: CU, 1990's - Botanical.</li> </ul>
Elbert	No inventory known.

County	Inventory Efforts and Type
El Paso	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- Air Force Academy: USAF, 1980's - General.</li> <li>- Fort Carson: USA, 1980's - General.</li> <li>- County Parks: EPCPRD, 1980's-90's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> <li>- Aiken Canyon: SLB/TNC, 1980's-90's - Biological.</li> </ul>
Fremont	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1992 - General.</li> <li>- Upper Arkansas River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
Garfield	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Piceance Basin: 1982 - Botanical.</li> <li>- Rifle Falls, Rifle Gap and Harvey Gap State Parks: DPOR/CNAP, 1993-94 - Botanical, Wetland, Riparian.</li> <li>- Flattops Wilderness: CU, 1990's - Botanical.</li> <li>- Colorado River: CNHP, 1993 - Riparian, Wetland.</li> </ul>
Gilpin	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> <li>- Golden Gate Canyon State Park: DPOR/CNAP, 1994 - Wetland, Riparian.</li> </ul>
Grand	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Rocky Mountain N. P.: NPS, 1960's - 90's - Potential RNA Evaluation, General.</li> </ul>

County	Inventory Efforts and Type
Gunnison	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Curecanti NRA: NPS, 1970's - 90's - General.</li> <li>- Gunnison River: CNHP, 1994 - Riparian, Wetland.</li> </ul>
Hinsdale	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluation.</li> </ul>
Huerfano	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> <li>- Lathrop State Park: DPOR/CNAP, 1993-94 - Botanical, Wetland, Riparian.</li> </ul>
Jackson	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1994-95 - Potential RNA Evaluation.</li> <li>- Arapahoe N. W. R.: USFWS, 1970's - 90's - Wildlife.</li> <li>- State Forest State Park: DPOR/CNAP, 1994 Wetland, Riparian.</li> <li>- Ecosystem Planning Project: SLB/CSF/OMP, 1990's - General.</li> </ul>
Jefferson	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- Chatfield and Golden Gate Canyon State Parks: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- Staunton State Park: DPOR, 1980's - General.</li> <li>- County-wide Lands: CNHP, 1994 - Biological.</li> <li>- Lower South Platte River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
Kiowa	<ul style="list-style-type: none"> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> </ul>

County	Inventory Efforts and Type
Kit Carson	No inventory known.
Lake	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- School Trust Lands: SLB/CNAP, 1992 - General.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Upper Arkansas River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
La Plata	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluations.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1995 - General.</li> </ul>
Larimer	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Rocky Mountain N. P.: NPS, 1960's - 90's - Potential RNA Evaluation, General.</li> <li>- Boyd Lake, Lory and Picnic Rock State Parks: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- City of Fort Collins Natural Areas: City of Fort Collins Natural Resources Department, 1986 - 90's - Riparian, Wetland, Wildlife.</li> </ul>
Las Animas	<ul style="list-style-type: none"> <li>- Comanche National Grassland: USFS, 1970's-90's Potential RNA Evaluation, General.</li> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> <li>- Trinidad State Park: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- Mesa de Maya: TNC/CNHP, 1990's - Biological, Botanical.</li> </ul>
Lincoln	- School Trust Lands: SLB/CNAP, 1993 - General.

County	Inventory Efforts and type
Logan	<ul style="list-style-type: none"> <li>- North Sterling Reservoir State Park: DPOR/CNAP, 1994 Wetland, Riparian.</li> <li>- Lower South Platte River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
Mesa	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP 1995 and USFS/CNHP, 1994-95 - Potential RNA Evaluation, General.</li> <li>- Colorado NM: NPS, 1960's - 90's - General.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Colorado River, Island Acres, Highline and Vega State Parks: DPOR/CNAP, 1993-94 - Botanical, Wetland, Riparian.</li> <li>- Uncompahgre Plateau: CU, 1990's - Botanical.</li> <li>- Colorado River: CNHP, 1993 - Riparian, Wetland.</li> </ul>
Mineral	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluation, General.</li> </ul>
Moffatt	<ul style="list-style-type: none"> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Dinosaur N. M.: NPS, 1960's - 90's &amp; NPS/CNAP, 1980's - Botanical.</li> <li>- Brown's Park NWR: USFWS, 1960's -90's - Wildlife.</li> <li>- Yampa River: CNHP, 1992 - Riparian, Wetland.</li> </ul>
Montezuma	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluation, General.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Mancos State Park: DPOR/CNAP, 1993-94 - Botanical, Wetland, Riparian.</li> <li>- School Trust Lands: SLB/CNAP, 1995 - General.</li> </ul>
Montrose	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluation, General.</li> </ul>

County	Inventory Efforts and Type
Montrose (cont.)	<ul style="list-style-type: none"> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Black Canyon of the Gunnison N. M.: NPS, 1960's- 90's - General.</li> <li>- San Miguel River: TNC, 1980's &amp; 90's - Riparian, Wetland.</li> <li>- Crawford State Park: DPOR/CNAP, 1993-94 - Botanical, Wetland, Riparian.</li> <li>- Uncompahgre Plateau: CU, 1990's - Botanical.</li> <li>- Gunnison River: CNHP, 1994 - Riparian, Wetland.</li> </ul>
Morgan	<ul style="list-style-type: none"> <li>- Jackson Lake State Park: DPOR/CNAP, 1993-94 Botanical, Wetland, Riparian.</li> <li>- Lower South Platte River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
Otero	<ul style="list-style-type: none"> <li>- Comanche National Grassland: USFS, 1970's - 90's -Potential RNA Evaluation, General.</li> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> </ul>
Ouray	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNAEvaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General. Ridgway State Park: DPOR/CNAP, 1994 Wetland, Riparian.</li> <li>- Uncompahgre Plateau: CU, 1990's - Botanical.</li> </ul>
Park	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1992 - General.</li> <li>- High Creek Fen: TNC, 1990's - Biological.</li> <li>- Eleven Mile and Spinney Mountain State Parks: DPOR/CNAP, 1994 - Wetland, Riparian.</li> </ul>
Phillips	<ul style="list-style-type: none"> <li>- No inventory known.</li> </ul>

County	Inventory Efforts and Type
Pitkin	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- City of Aspen: ACES, 1970's - 90's - Biological.</li> <li>- White River Plateau: CU, 1990's - Botanical.</li> <li>- White River: CNHP, 1993 - Riparian, Wetland.</li> </ul>
Prowers	<ul style="list-style-type: none"> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> </ul>
Pueblo	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- School Trust Lands: SLB/CNAP, 1993 - General.</li> <li>- Pueblo State Park: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- Arkansas River: CNHP, 1995 - Riparian, Wetland, Botanical.</li> </ul>
Rio Blanco	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Piceance Basin: 1982 - Botanical.</li> <li>- Flattops Wilderness: CU, 1990's - Botanical.</li> <li>- White River: CNHP, 1993 - Riparian, Wetland.</li> </ul>
Rio Grande	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1994-95 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Monte Vista NWR: USFWS, 1960's - 90's - Wildlife.</li> </ul>
Routt	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP and USFS/CNHP, 1994-95 - Potential RNA Evaluation, General.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> </ul>

County	Inventory Efforts and Type
Routt (cont.)	<ul style="list-style-type: none"> <li>- Pearl Lake, Stagecoach and Steamboat Lake State Parks: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- Flattops Wilderness: CU, 1990's - Botanical.</li> <li>- Yampa River: CNHP, 1992 - Riparian, Wetland.</li> </ul>
Saguache	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluation, General. 90's - General.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- San Luis Valley: TNC, 1990's - Biological.</li> <li>- School Trust Lands: SLB/CNAP, 1994 - General.</li> </ul>
San Miguel	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNAP, 1995 - Potential RNA Evaluation, General.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- San Miguel River: CNHP, 1994 &amp; TNC, 1990's - Biological, Riparian, Wetland.</li> <li>- Uncompahgre Plateau: CU, 1990's - Botanical.</li> <li>- School Trust Lands: SLB/CNAP, 1995 - General.</li> <li>- San Miguel River: CNHP, 1992 - Riparian, Wetland.</li> </ul>
San Juan	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - General and USFS/CNAP, 1995 - Potential RNA Evaluation, General.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- San Juan River: CNHP, 1994 - Riparian, Wetland.</li> <li>- School Trust Lands: SLB/CNAP, 1995 - General.</li> <li>- Upper San Juan River: CNHP, 1993 - Riparian, Wetland.</li> </ul>
Sedgwick	<ul style="list-style-type: none"> <li>- Lower South Platte River: CNHP, 1995 - Riparian, Wetland.</li> </ul>

County	Inventory Efforts and Type
Summit	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness and USFS/CNHP, 1994-95 - Potential RNA Evaluation.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Eagle's Nest Wilderness: CU, 1980's - Botanical.</li> </ul>
Teller	<ul style="list-style-type: none"> <li>- USFS Lands: USFS, 1960's - Wilderness.</li> <li>- BLM Lands: BLM, 1970's - 90's - General.</li> <li>- Florissant Fossil Beds NM: NPS, 1960's - 90's - General.</li> <li>- School Trust Lands: SLB/CNAP, 1992 - General.</li> <li>- Mueller State Park: TNC, 1980's &amp; DPOR/CNAP, 1994 Biological, Wetland, Riparian.</li> </ul>
Washington	<ul style="list-style-type: none"> <li>- Lower South Platte River: CNHP 1995 - Riparian, Wetland.</li> </ul>
Weld	<ul style="list-style-type: none"> <li>- USFS Lands: USFS/CNHP 1994-95, TNC 1990's and USFS, 1970's - 90's - Potential RNA Evaluation, Biological.</li> <li>- Barbour Ponds State Park: DPOR/CNAP, 1994 Wetland, Riparian.</li> <li>- Lower South Platte River: CNHP, 1995 - Riparian, Wetland.</li> </ul>
Yuma	<ul style="list-style-type: none"> <li>- Bonny State Park: DPOR/CNAP, 1994 - Wetland, Riparian.</li> <li>- Arikaree River: TNC &amp; CNHP 1990's - Biological, Riparian, Wetland.</li> </ul>

## 2.1 SUMMARY OF NATURAL AREAS AND NATURAL OPEN SPACE SITES

### 2.2 SOME NATURAL AREA SUCCESS STORIES

#### 2.1

To address Goal 1 (Catalog all Colorado Natural Area Protection Efforts to Date), of this *Initiative*, an attempt was made to list known Colorado Natural Areas and other natural open space that is managed for resource conservation and/or preservation.

*Initiative* partners supplied information for 232 sites that contain natural landscapes. Sixty of these sites (26%) are located all or partially on private land, an area where land trusts and conservation organizations are active, but additional emphasis is needed. Federal lands contain 109 sites or 47% of the total sites listed at this writing. Local ownership, e.g., cities and counties, comprises all or a portion of 28% of the sites (64 sites). Eleven percent (26 sites) are owned entirely or partially by state agencies.

This list is relatively accurate for federal and state agencies, but under-represents sites located in local government and private ownership. A future need in natural areas work is to capture as much of this information as possible to determine future action priorities. The USFS is investigating a number of potential RNAs, however, it is unknown if any of these sites will be accepted during the planning process.

A systematic survey of SLB lands will likely uncover additional sites with important natural resources worthy of conservation.

#### 2.2

We have all been exposed to negative stories related to development and poor judgment in resource use and land exploitation. These can become overwhelming, however, we should all realize that there are also many positive stories, as well. A few examples of successful approaches for inventory efforts, site protection and stewardship are listed below and could serve as models for future conservation activities.

#### **Inventory**

- ▶ The Geologic Advisory Group (GAG), made up of geologists and paleontologists knowledgeable of Colorado, was convened by BLM/CNAP to identify significant features and processes on BLM land. Forty-one sites were identified and evaluated; 25 of these were recommended for Special Management Area designation. The cooperative aspects of GAG, federal, state and

private sector participation, insured a reasonable and balanced land and resource inventory approach that was highly effective and very inexpensive.

- ▶ SLB lands are being systematically inventoried for natural resource and recreation values by the CNAP. The project began under a NPS Land and Water Conservation Fund grant to State Parks/CNAP to support preparation of the Statewide Comprehensive Outdoor Recreation Plan and is being continued by SLB. Thirty-one counties have been inventoried to date and over 20 potential natural areas have been identified in addition to numerous potential local, county and state outdoor recreation sites.

- ▶ County-wide natural resource inventories have been conducted in Douglas and Jefferson counties by CNHP. These surveys have documented potential natural areas based on plant communities and individual species of plants and wildlife. Similar natural resource inventories have been conducted for the City of Vail by CNHP; City of Boulder and Boulder County by City Open Space and County biologists and City of Fort Collins by the City Natural Resources Department.

- ▶ River basin inventories are being conducted by CNHP/TNC, using funding from a variety of sources including EPA Wetlands Protection grant funds. These inventories are focused on the riparian and wetland communities along major rivers and their tributaries. Detailed information is collected from various plant associations and habitat quality is assessed for river and tributary reaches.

#### **Protection**

- ▶ The owner of White Rocks Ranch, a designated CNA and Boulder County Natural Area, signed a conservation easement with the City of Boulder Open Space Department for long-term preservation of this significant geological feature.
- ▶ Aiken Canyon Designated CNA was recently protected by a long-term lease of this SLB-owned property by TNC. The lease provides for appropriate stewardship of the land and environmental education programs.

- ▶ High Creek Fen Designated CNA was purchased fee title by TNC, using funds from a variety of donors, including elementary school classes “Fen Kids” and agencies like CDOT, for wetland mitigation credits.
- ▶ Dave’s Draw and Hoosier Ridge Registered CNAs were recently officially designated as Research Natural Areas by the USFS.
- ▶ Kremmling Cretaceous Ammonite Locality Designated CNA was protected from vehicular trespass (and removal of large ammonite casts) by using DPOR controlled maintenance funds to purchase fencing material and educational signs and BLM fencing and trail construction crews. This action required a cooperative agreement between the DPOR, CNAP, SLB, BLM and the grazing lessee.

- ▶ The CNAP resurrected the Colorado Natural Heritage Small Grants Program, funded by a State Parks/GOCO distribution, to advance research on CNAs and assist natural area managers. Twenty-five research projects were funded in 1995, selected from 48 proposals.
- ▶ The City of Boulder Open Space Department performed a controlled burn of a parcel of the Colorado Tallgrass Prairie Designated CNA and Boulder County Natural Area. Annual monitoring studies are conducted to understand the prairie community response to this fire.
- ▶ Rare, threatened and endangered species are monitored by the CNAP, CDOW, CNHP and TNC among other groups to understand life histories and management implications. Rare plant species are regularly monitored at Dudley Bluffs, Raven Ridge, North Park Phacelia and Pyramid Rock Designated CNAs and BLM ACECs. Rare birds and amphibians are monitored at Blue Lake and Rocky Mountain Wood Frog Pond Registered CNAs, respectively.

**Stewardship**

- ▶ A management plan was prepared to guide future activities for East Sand Dunes Designated CNA, located on SLB land managed by State Parks (recreation), CSFS (timber production) and CDOW (wildlife). Plan preparation involved the state agencies, county commissioners, recreation groups and grazing lessees.



Photo courtesy of Colorado State Parks

## 3.0 Evaluation Criteria

Existing evaluation criteria for grant applications to the GOCO Board were prepared primarily for open space acquisition. Because they appeared too general when evaluating sites considered to be natural areas of local, regional and statewide significance, *Initiative* partners recommended several refinements and elaboration of current criteria for Legacy and Land Conservation grants.

Before a site is considered for acquisition as a natural area, it must be recognized as having potential natural area attributes. For information to be of greatest value, it should include, at a minimum, location, size, ownership, biologic, ecologic and/or geologic attributes and the current and potential use of the area (CNAP 1993). Based on available background research information and a thorough on site inventory, natural features are summarily described and site condition assessed.

# 3.1 CURRENT GOCO EVALUATION CRITERIA

## 3.1

The most efficient and effective method to introduce natural area criteria to GOCO, involving a minimum of transitional confusion, is to incorporate them into the Application for Land Conservation Projects: Selection Criteria (GOCO 1995) and the Funding Guidelines: Weighted Selection Criteria for Project Evaluation: Great Outdoors Colorado Legacy Projects (GOCO 1995) documents. This can be accomplished by working the criteria into GOCO's existing framework, including a determination of sections applying to natural area acquisition fund distribution.

### 3.1.1

#### **Legacy Projects**

Legacy Projects are evaluated using the following major criteria:

1. Characteristics and Need for the Project - Project Significance, Integration, Need and Urgency/Jeopardy
2. Impact of the Project  
-Direct Impacts, Consistency with Plans and Policies, Quality and Benefit, Catalyst and Demonstration Value
3. Leveraging and Partnership  
-Leveraging of Funds, Partnership and Support
4. Stewardship and Sustainability  
-Demonstrable Project Stewardship and Sustainability

### 3.1.2

#### **Land Conservation Projects**

Land Conservation Projects are evaluated using the following major criteria:

1. Characteristics and Need for the Project - Qualities of the resource to be protected (Inholding or buffer, Natural area or nongame wildlife habitat, Agricultural land, Greenway/stream corridor, Community separator and/or Urban open space parcel), Need, Importance to the community, region or state and Urgency/Jeopardy
2. Impact of the Project - Direct Impact of the Project and Project as a Catalyst for Additional Conservation Activity, Demonstration Value (Important or unique tool), technique partnership or process useful to other entities, furthering the GOCO fund.
3. Leveraging and Partnerships -Leveraging of Funds, Partnerships and Support

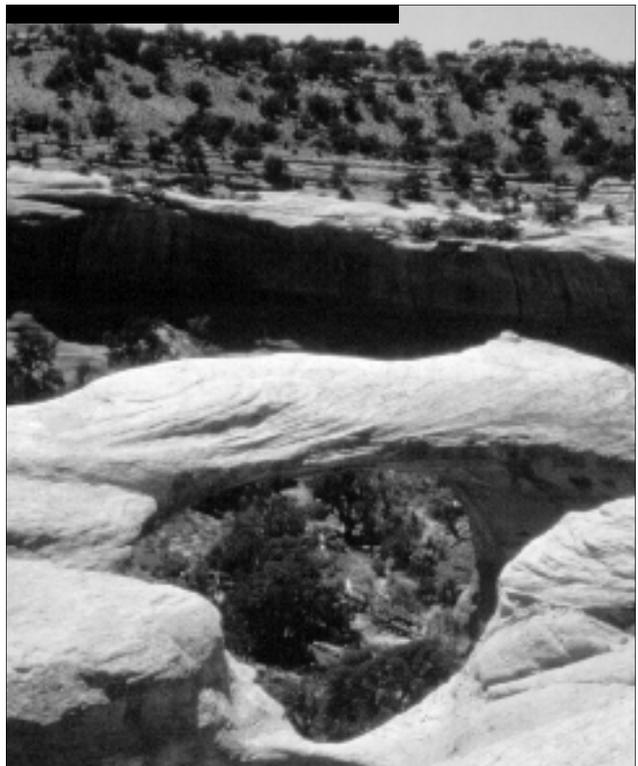


Photo courtesy of Colorado State Parks

**TABLE 3.0 EVALUATION CRITERIA SUMMARY**

Criteria	Criteria Description Summary
<p><b>Rarity</b>  <u>References:</u> Bass 1995, BC 1991, BOS 1995, CNHP 1995, USFS 1994, CNAP 1993, DNR/DOW 1993, CFC/NRD 1992, Noss &amp; Cooperrider 1994, NPS-NNLP 1992, CNPS 1989, GAG-USDI/BLM 1986, Pearson and Wallace (no date).</p>	<p><u>Biological Rarity:</u> few occurrences (localities and/or populations); number of already protected occurrences; ecological nodes of diversity; rare elements of biodiversity (critical wildlife habitat, habitat supporting rare, threatened, endangered species); federal and state lists.</p> <p><u>Geologic Rarity:</u> unusual geologic feature; statewide significance; outstanding examples of geologic process; significant fossil evidence illustrating the development of life; scenic grandeur/high aesthetic value; exhibits research or educational opportunity.</p>
<p><b>Representativeness</b>  <u>References:</u> Andrews 1996, USFS 1994 &amp; 1993, Noss &amp; Cooperrider 1994, CNAP 1993, GAG- USDI/BLM 1986.</p>	<p>Gaps in representation of plant community/habitat types in protected areas; condition relative to pre-European settlement; restoration potential under proper management; range of variability/distribution of community/habitat; existing level of conservation or protection; geologic process.</p>
<p><b>Ecological Integrity</b>  <u>References:</u> Andrews 1996, BOS 1995, USFS 1994 &amp; 1993, CNAP 1993 &amp; 1988, Noss &amp; Cooperrider 1994.</p>	<p>Functioning ecologic processes; ecologic processes restorable under proper management; successional and climax communities/habitats; self-sustaining; undisturbed or relatively so; full complement of native species present; no or few exotic species.</p>
<p><b>Threats</b>  <u>References:</u> Andrews 1996, Bass 1995, BC 1991, BOS 1995, CNHP 1995, USFS 1994, CNAP 1993, DNR/DOW 1993, Noss &amp; Cooperrider 1994, NPS-NNLP 1992, CNPS 1989, Pearson and Wallace (no date).</p>	<p>Adverse effect(s) to site or species integrity; human presence; development (including trails); site isolation/inadequate buffering; access; collecting; improper management; noise; air/water quality; absence/suppression of key natural processes, (e.g., fire, mass-wasting); permanent conversion from one type of ecosystem (e.g., emergent wetland) to another (e.g., open water pond); spread of exotic species.</p>
<p><b>Stewardship and Sustainability</b>  <u>References:</u> Bass 1995, CNAP 1993, GAG-USDI/BLM 1986, Noss &amp; Cooperrider 1994.</p>	<p><u>Stewardship:</u> management and restoration needs/plans; area use categories - scientific, interpretive, scenic, buffer; adjacent land use and management; compatible human activities.</p> <p><u>Sustainability:</u> management cost; ecological integrity; development threat; compatible land use on site; adjacent land use.</p>
<p><b>Value to Science, Education and Community</b>  <u>References:</u> Andrews 1996, Bass 1995, BC 1991, CNAP 1993, CNPS 1989, GAG- USDI/BLM 1986, Noss &amp; Cooperrider 1994.</p>	<p><u>Value to Science:</u> research, teaching or interpretive potential; application of research and monitoring results to management and understanding of like areas; prepare adequate baseline analyzes; support educators with factual information; provide research results as an amenity for community involvement.</p> <p><u>Value to Education:</u> environmental education and awareness; site interpretation; expand classroom experience to include an outdoor classroom for hands-on experience; include research and agency professionals in education process.</p> <p><u>Value to Community:</u> pride; protection of natural heritage; stewardship responsibility; human influence for conservation and protection and as potential threat; scenic values; include research and agency professionals in community activities.</p>

## 3.2 RECOMMENDED CRITERIA FOR NATURAL AREAS

### 3.2

#### **Recommended Criteria for Natural Areas**

Six criteria were recommended by *Initiative* partners for presentation to the GOCO Staff and Board. In order of importance, the criteria formulated are: 1) Rarity, 2) Representativeness, 3) Ecological Integrity, 4) Threats, 5) Stewardship and Sustainability, and 6) Value to Science, Education and Community. From the original list of criteria prepared during the kickoff meeting, "Value to Community" was included with science and education values, thereby creating the expanded category of "Value to Science, Education and Community." "Management" was changed to "Stewardship and Sustainability" and "Feasibility" was eliminated; it is an element that needs to be considered before a proposal is submitted to GOCO.

Recommended criteria are summarized in Table 3.0 and discussed using ideas produced in meetings and summaries of definitions that have already been created by other programs and written into their literature. Key bibliographical references are cited in the summary table. These criteria may be weighted or used directly by GOCO when evaluating natural area site acquisition grant applications.

#### 3.2.1

##### **Rarity**

Whether or not a landscape or element within the landscape is rare may be viewed from different perspectives. Political boundaries often tend to decrease the geographic area of responsibility or interest. Rarity may be viewed as a special and unique piece of (or place in) federally-managed lands within a region, Colorado, within a county or other management unit within the state, within a city or within a private holding. To be considered under rarity criteria, sites should contain one or more rare or unique natural features considered at the appropriate scale.

Natural features include species and biological communities and/or geological structures, processes or formations. From a biological perspective, a site supporting populations of rare, endemic, threatened or endangered species, rare biotic communities, critical wildlife habitat or other rare elements of biodiversity would rate high for the rarity criterion.

The geological perspective includes unusual or outstanding formations and features illustrating

geologic processes, sites of statewide or national significance, significant fossil evidence illustrating the development of life, high aesthetic value/scenic grandeur, and potential for classic research or educational opportunities.

Biological rarity may be determined in terms of the number of known, distinct occurrences, both localities and populations. Occurrence data are factored with federal and state laws, information on size of geographic range, numbers of individuals, population and distribution trends, identifiable threats and the number of already protected occurrences. The ultimate goal is providing for rare species and habitats under a statewide framework of biodiversity protection and stewardship. With active protection of rare species and habitats, the need to "list" some species under the Endangered Species Act may be unnecessary. Another goal is protecting rare landforms, unique examples of geologic processes and paleontologic deposits.

#### 3.2.2

##### **Representativeness**

A representative state natural areas system should include high quality examples of all the plant communities and other natural features found in the state. In Colorado, representative sites in excellent condition resemble the landscape prior to about 1840; contrast this with "natural areas" in Indiana that support third-growth deciduous forests intensively managed since the 1700's. Generally, if a plant community is in good condition, it retains most natural characteristics or has the potential to be restored under proper management. Also, if the plant community is in good condition, the soils, hydrology and geology are probably representative of pre-settlement times.

The wildlife present and their relative abundance may be altered on many sites, particularly those species drastically reduced or eliminated due to settlement (American bison, grizzly bear, prairie dog, peregrine falcon, greenback cutthroat trout, etc.). Many areas are managed for game species only or are co-managed for domestic livestock, and the plant communities, wildlife habitats or fisheries present reflect this management style. Typically, good recent and historic site data for wildlife and their habitat are lacking and provisions must be made to collect baseline information to support grant applications for natural area acquisition.

Areas that represent plant communities and other natural features which are lacking or inadequately represented in a natural area conservation system should receive greater acquisition or protection consideration than those already well-represented. It is also important to have natural areas that represent each plant community or ecosystem type across its range of variability in terms of elevation, slope exposure, soils and other environmental parameters in order to protect the full range of species and genetic variability in these ecosystems. Of course, plant communities in good condition, that have not received any form of conservation or protection, are of high acquisition value.

### 3.2.3

#### ***Ecological Integrity***

The ecological integrity and condition of a landscape or site depends on the presence of functioning or restorable ecologic processes. These processes include natural disturbances such as fire, native insect and disease outbreaks, landslides and floods, which often lead to natural landscapes that form a mosaic varying from early successional to climax communities. Sites with high ecological integrity are large enough to be self-sustaining, are intact or relatively undisturbed by humans, and support a full complement of native species, with few or no exotic species present. Areas can be assessed for site quality; areas that are good to excellent representatives of a particular ecologic feature merit increased consideration for acquisition. Site integrity and condition are the essence of most natural area designations. For example, a Colorado Natural Area "... either retains or has re-established its natural character, although it need not be completely undisturbed..." Ideally, potential natural areas are identified to preserve a wide spectrum of pristine or near-pristine areas representing important forest, shrubland, grassland, alpine, aquatic, geologic and similar natural situations. They are designated for conservation/preservation using various site protection vehicles, with the ultimate goal of management for long-term viability. In some instances, an important plant community or wildlife habitat that has undergone past disturbance may be considered for acquisition and placed under restoration management.

### 3.2.4

#### ***Threats***

A threat is anything that will adversely affect the integrity of a site that otherwise supports a functioning ecosystem. Naturally occurring threats to conserved sites are considered acceptable and are part of the ongoing geologic and ecologic process. Earthquakes, fires, avalanches, wildlife population peaks (including insects), strong winds, torrential rains, mass wasting, hydrologic shifts, climactic changes and a variety of other natural processes can affect sites conserved as natural areas. A site's response to natural processes is one of the driving forces fueling scientific discovery and aiding future site stewardship. Some researchers view threats resulting from human population growth and demographics as naturally occurring, however, for this report these effects will be considered separately.

Threats resulting from future human land use may be difficult to predict, e.g., those that are likely to occur in the face of continued population growth and demographic shifts. When evaluating threats, intensity must be considered, since intensity of a threat may be as important as the threat itself. Recently, the proposed Southdowns housing development at the Roxborough State Park and Designated CNA entrance was considered both imminent (construction ready to proceed) and intense (several hundred houses and condominiums), potentially bringing several thousand individuals and domestic pets permanently to the park's front gate.

Direct adverse effects include development of a parcel for residential or commercial reasons, e.g. housing, mining, water storage/harvesting, farming, recreation, corridor rights-of-ways, etc. Site integrity may also be adversely affected by adjacent land use which serves to isolate the natural values and reduce the ability of the site to function geologically or ecologically. For example, developing an adjacent prairie parcel reduces the pool of genetic variability, decreases the amount of wildlife habitat, provides corridors for invasive exotic species, increases potential for fire and results in pesticide use and wastewater runoff, etc.

Threats have also been addressed by wilderness researchers under "Development Potential", using six factors for site evaluation: 1) threat of development, 2) access, 3) physical suitability, 4) distance from utilities, 5) existing improvements and 6) type of ownership. Again, perceived threats are related to human population growth, land use and the support infrastructure.

### 3.2.5

#### ***Stewardship and Sustainability***

Site acquisition is an important step in assuring conservation and protection, however, short- and long-term management needs should be addressed in a stewardship component of acquisition plans. Management of sites is important to maintain long-term health and is multi-faceted, including fire, control of large ungulates, erosion control, exotic species, etc., particularly on smaller sites with little buffer area. Management needs should be considered in evaluating sites for acquisition, particularly where funding is limited or stretches only to the acquisition price, and where the sustainability of the site into the future is questionable. Areas with protective management planned or in place, may be given priority over areas with unresolved management conflicts (in some instances, acquisition may be the necessary conflict resolution) or areas which require intensive management to restore or sustain natural resources (plant communities, soils, geologic formations, paleontologic deposits, wildlife populations, hydrology, etc.). Of course, some sites may be considered very important to acquire and the stewardship component may not be considered at the time of acquisition, but prepared at a later time.

Site management and sustainability should be evaluated not only within site boundaries but also with a practical view to adjacent land use and management. That population of Canada thistle or leafy spurge at the fenceline or the headcut in the drainage one-hundred meters below may soon become a management concern on the acquired property. Conversely, property recently acquired as a natural area may be in violation of county or local weed management laws at the outset. In a good situation, adjacent property will be managed similarly to acquired property and the owner(s) may be willing to enter into a cooperative management agreement. Depending on the ecology of a recently acquired parcel, some income could be realized by using management practices such as leasing for controlled grazing or fees could be considered for appropriate uses, including passive recreation or research.

Use categories can be determined to assess the level of management required to conserve or protect a natural area and be assured of its future sustainability. Examples of use categories include: 1) scientific and biodiversity protection areas are of high quality and closely resemble

presettlement conditions and/or contain rare or threatened species or biotic communities; nonmanipulative scientific research is the only use encouraged, 2) interpretive areas are outstanding or rare natural features that can withstand moderate use for educational purposes, 3) scenic areas are of excellent scenic quality and are relatively undisturbed or are returning to a natural condition, and 4) buffer areas are of lesser natural value but provide protection for significant features. A natural area may contain any combination of sustainable use categories to support compatible activities, which often include research, education, wildlife observation, hiking, art and photography.

These use categories relate directly to the Characteristics and Need for the Project section of Land Conservation Projects (GOCO 1995). Generally, natural areas would fall under use categories 1, 2 and/or 3. Nongame wildlife habitats, inholdings and stream corridors could fall under any of the use categories, depending on their natural resources and condition. Agricultural lands, greenways, community separators and urban open space parcels may be considered under use categories 1 and 4 to define management needs.

An interesting management phenomenon to consider is having a site “loved to death” once it has been acquired for natural area conservation/preservation. Often the identification and designation process lead to a large amount of public interest and a desire by many people to visit. Such visitation may require a site to have a full-time manager and even though the site is considered protected, some interpretive trails and signs may need to be placed to preserve the most sensitive areas from overvisitation and inappropriate activities. This tends to be more necessary and prevalent in urbanized or rapidly urbanizing areas or in areas where access is convenient.

### 3.2.6

#### ***Value to Science, Education and Community***

Natural areas are valuable sites where ecologic and geologic processes can be explored, including research on rare and/or unique biota. They represent a yardstick against which similar but disturbed sites can be measured and a barometer for how restoration and other stewardship work should proceed to reach acceptable results. Long-term research focused on natural areas is repeatable and reveals trends which can be used to create predictive models which may answer questions related to site longevity/sustainability.

Natural areas can serve as outdoor classrooms for courses taught in biology, ecology, geology, paleontology, landscape architecture, art, psychology and planning. Some sites are suitable for larger groups of students, while others may require a very sensitive approach to non-manipulative scientific research, including extremely limited access. Natural areas located close to urban centers can be valuable for teaching conservation/preservation and other concepts to urban students, who may not otherwise be exposed to this type of information.

Community and community values are interesting to consider, because the concept can be broad - we are one state within a community of states, or narrow - I am one person in this community. Therefore, natural area identification and conservation is carried out on several levels simultaneously, e.g., on private lands which have personal and perhaps rural values, in cities such as Fort Collins and Boulder which have planning staffs and large community values, in counties with planning staffs such as Routt, Pitkin, La Plata, Larimer and Boulder, statewide distribution through government programs including CNAP and CNHP, regional distribution through land trusts in CCLT and nonprofit organizations such as TNC, TPL and TCF and regionally and nationally through federal agency designations. Natural areas often have value to communities as protected parts of our natural heritage and as a legacy communities leave to future generations.

When assessing criteria to establish community values, human presence and potential influence are primary considerations. Proximity to homes, accessibility, purpose for providing protection, community pride, scenic values and education values all deserve consideration in assessing community values and the level of potential support for site acquisitions. Often, significant sites within or adjacent to a community have the greatest potential for scientific research and education use; protected and managed natural areas such as Roxborough and Castlewood Canyon in Douglas County and Green Mountain in Boulder County are exceptional illustrations of this fact. Hundreds of thousands of visitors use and learn from these near-urban natural areas annually. Finally, nearly every set of criteria prepared for natural area evaluation includes environmental education and site interpretation parameters.

### 3.3

#### ***Incorporation of Initiative Criteria into Current GOCO Process***

Initiative criteria can be included on grant applications for Land Conservation or Legacy projects for acquisition or other considerations. Currently natural areas are evaluated as a type of open space by GOCO, primarily under Land Conservation Projects; the general headings are: 1) qualities of the resource to be protected, 2) need, 3) urgency/jeopardy and 4) direct impact of the project. Natural areas may also be an important component of Legacy Projects but they are usually not the focus of these larger landscape-oriented regional settings. Criteria developed for the *Initiative* respond to general headings as follows:

- ▶ Resource qualities: rarity, representativeness, ecological integrity, value to science, education and community.
- ▶ Need: rarity, representativeness and value to science, education and community.
- ▶ Urgency/Jeopardy: threats.
- ▶ Direct project impact: stewardship and sustainability and value to science, education and community.

Potential natural areas identified for acquisition by GOCO should have sufficient support information available for the above criteria. This can be accomplished by working with professional groups in government and the private sector, in addition to knowledgeable individuals and academicians. Supplying this information at the time of application will allow GOCO to prioritize sites for acquisition or other considerations.

## 4.0 SUMMARY AND GAP IDENTIFICATION

**T**he *Initiative* clearly demonstrates that although we have a good start on natural areas work in Colorado, much remains to be done. To summarize this effort is to express humility and appreciation for the number of groups, agencies and individuals, from all walks of life, who are interested in and actively pursuing open space and natural area conservation and preservation. These efforts range from well-established and staffed offices to new entities working from homes in their spare time. The cooperative spirit of land conservation and preservation organizations is truly gratifying.

To many groups contacted, the concept of “natural areas” was completely new or only vaguely known. Most have concentrated on and participated in the larger arena of open space conservation, particularly in the form of community buffer areas, agricultural land and outdoor recreation opportunities. One of the major accomplishments of this *Initiative* has been to introduce partners to natural area concepts and to pique the collective interest related to special landscapes in Colorado.

We should all be aware of and willing to work within regional efforts currently underway, such as the Summit on Smart Growth and Development (CDLA 1995). The summit resulted in the creation of task forces to address a number of growth-related issues, including natural resources and the environment. One of the key principles established is that most decisions regarding growth and development should be made at local and regional levels. This assertion is supported by Searns (1996), who contends that environmental management may be most effectively led from the local level.

## 4.1 GAP IDENTIFICATION

As with most efforts like this *Initiative*, many more gaps and needs were identified than questions answered and problems solved. It is our intent to identify the most important of these, while providing some possible ways to resolve them cooperatively. The following gaps and needs have been identified during our meetings and through written correspondence and some ideas for resolution have been identified.

### 4.1.1

#### ***Develop Memorandum of Understanding***

A future partnership with a natural areas focus would benefit from a memorandum of understanding or agreement signed by the partners. An MOU would fulfill the need to coordinate work efforts - currently natural areas protection work lacks cohesiveness. A framework to guide a cooperative approach is needed; MOU's set the common dialogue and general goals, while obtaining a level of commitment through the signature process. MOU's and MOA's may also assign oversight, regular meeting times, technical and volunteer responsibilities and in some instances have been used to obligate funding, usually under project-specific cooperative agreements.

With an MOU in place, tasks and goals which could be accomplished by land trusts and preservation partners, that would be otherwise more difficult or impossible, include:

- ▶ Cooperative statewide, regional and local inventories,
- ▶ Site evaluations to determine natural resource quality,
- ▶ Planning needs and focus,
- ▶ Acquisition application, and
- ▶ Stewardship needs identification and enactment.

### 4.1.2

#### ***Complete Baseline List***

A partial baseline list of currently protected sites and the type of protection vehicle in place is one of the major products in this report. The completeness of this list must be assured by *Initiative* partner contributions, allowing GOCO to consider site types

and location as part of the grant evaluation process. This list of known natural areas and their level of protection contributes to GOCO understanding, as follows: 1) it represents the "non-gaps" in the system, 2) it shows the ownership pattern of protected areas, 3) it shows that only a few of our most treasured natural resources are in a truly protected category, and 4) it demonstrates the pioneer work accomplished by our predecessors who worked with diligence, but with fewer financial resources and conservation vehicles available.

### 4.1.3

#### ***Conduct Inventories in Each County***

Only a few counties have conducted inventories for natural resources, from which natural areas of statewide, regional and/or local significance can be identified. The most intensive inventories have occurred in rapidly-growing counties, including those of the Front Range (Boulder, Larimer, Jefferson, Douglas and Denver) and the west and southwest (Mesa, La Plata, Eagle). Several counties have no inventory at all (Sedgwick, Costilla, Phillips) or extremely limited inventories.

Good information exists for game species of wildlife and their habitat needs from the CDOW and federal land management agencies. Several inventories were based on evaluations of lands contemplated for development, such as oil-bearing shale of the Piceance Basin. Some counties contain large acreages of federally-managed land, which may have been inventoried in the past, however, inventory criteria from earlier studies should be evaluated to determine if more intense investigations are necessary.

### 4.1.4

#### ***Provide Assistance***

Technical and professional assistance is required by many public and private entities involved with natural area protection and evaluation. In particular, many land trusts in Colorado lack the resources to include technical expertise on staff. With funding, they could purchase services for inventory and

evaluation work from state entities, including CNAP (evaluation and stewardship), CNHP (inventory assistance) or private consultants. A resource list of qualified specialists could be prepared, some of whom may be willing to contribute volunteer assessments of certain sites and/or features. A mechanism to fund expenses is necessary to increase participation in volunteer efforts.

It would be cost-effective to fund a team of natural resource experts from Colorado state government agencies to advise land trusts and local governments of the natural resource values and stewardship needs for land parcels being considered for acquisition. Such a team would provide a comparable level of information for each site, to include with grant requests.

#### **4.1.5**

#### ***Data Storage and Update***

Natural area data are currently stored in a variety of manual and electronic files which are largely unavailable to potential outside users. Larger agencies and entities with access to geographic information technology have developed layers of land use data including sites with special management status. An existing system should be expanded to include all data relating to natural areas, so that regular updates can be performed; retrieval and access could be relatively easy via Internet, for example. In this way it will be possible to more effectively prepare and evaluate acquisition requests, based on the values of the resource to be protected relative to other sites already protected.

#### **4.1.6**

#### ***Professional Advisory Teams***

Resource professionals can provide expertise in identifying important areas to preserve. A very successful model of such a team was the Geological Advisory Group, formed by CNAP and BLM to evaluate and recommend for special management important geologic and paleontologic sites on BLM lands in Colorado. Professional advisory teams for ecology, geology, etc., should be formed and supported with funding to defray expenses related to site evaluation.



Photo courtesy of Colorado State Parks

## 4.2 FUTURE OF THE *Initiative*

The Natural Areas Partnership *Initiative* is a good beginning, and if continued, could be an increasingly valuable partnership. One way to achieve an ongoing partnership is to prepare and sign an MOU.

### 4.2.1

#### ***Information Sharing***

An annual forum for natural area issues should be held as part of a larger forum on open space planning and acquisition. Such a forum could be hosted by a new entity, such as the Colorado Lands Forum or an established entity such as the Colorado Coalition of Land Trusts. Interim information collection, collation and dissemination could be performed by the CNAP, but would require additional staffing. Mailing lists should be updated annually to insure that interested parties are receiving the most up-to-date information. Proceedings from annual workshops/symposia should be published for all partners and interested parties.

### 4.2.2

#### ***Obtain Adequate Funding***

To continue and grow a partnership requires commitment from a dedicated core group of volunteers or a dedicated agency/entity. Commitment and dedication easily go by the wayside, however, when the groups' energy must be focused primarily on fund-raising. Base funding must be maintained to accomplish needs of a natural areas partnership program. The following were identified during this *Initiative*: 1) conduct an annual workshop for information exchange and progress reporting, 2) annual data collection and update of natural area databases, 3) summary report preparation, 4) site monitoring studies, 5) capacity building for long-term site stewardship, 6) restoration, rehabilitation and reintroduction efforts, and 7) integration of natural area values with other related projects, including open space and land trust acquisitions.

### 4.2.3

#### ***Increase Trust Participation***

The strongest ties with private landowners lie with local land trusts and it is on privately-owned lands where the natural areas system is most poorly represented. Local land trusts rarely have access to adequate staffing or complementary support services and equipment. It is important to prepare a mechanism for supporting local land trust efforts and including trusts in future partnership programs.

### 4.2.4

#### ***Prepare a Statewide Conservation Plan***

A Statewide Conservation Plan, developed among *Initiative* members would provide a much-needed framework of priorities for land trusts, agencies and GOCO. Such a document is needed to set the stage for long-term natural area identification, conservation and stewardship. The conservation plan must address inventory needs, but also be advanced enough to address priority areas. Initially, the plan would identify gaps in the natural areas system and would be prepared around areas of high biological diversity and/or rarity, high ecological integrity and geologic importance. To prepare this plan and conduct site conservation activities will require a full-time coordinator.

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## 6.0 APPENDICES

Appendices attached to the *Initiative* report are designed to further familiarize readers with natural areas conservation and protection work and organizations dedicated to it. This field is rapidly expanding and it is important that we all maintain contact in order to maximize our efforts and minimize potential conflict.

Appendix 6.1 provides the names and addresses of partners contacted during *Initiative* efforts. This list must be continually updated as organizations emerge into the land conservation/preservation arena.

Appendix 6.2 is a table listing natural area sites currently under some form of protected status. The table lists the following for each site: location, ownership, size (in acres), attribute and conservation vehicle. This table provides a baseline data list only and will need to be continually updated.

Appendix 6.3 provides a summary of responses to the questionnaire distributed to and returned by *Initiative* partners. The summary includes natural areas protection information, information on priorities, evaluation criteria, definitions and additional comments and information. Many of the definitions are bound to federal, state or local statute and must be used as stated. Others have drawn upon statutes for direction, but are more responsive and flexible to changing needs.

Appendix 6.4 provides the summaries of two meetings conducted to further *Initiative* goals. Both meetings were well-attended and spirited, providing good discussion and basic information for this report.

Appendix 6.5 is the list of acronyms, inevitable when working with a group as diverse as the *Initiative* partners, and definitions. Together, they will allow partners to speak a common language.

Appendix 6.6 provides information sent to us or given in other references, summarizing organization activities, including mission and achievements.

## 6.1 CONTACTED ORGANIZATIONS

### Table of Contents

- 6.1 Contacted Organizations
- 6.2 Natural Area Site Summary
- 6.3 Questionnaire Summary
- 6.4 Meeting Summaries
- 6.5 List of Acronyms and Definitions
- 6.6 Initiative Partner Summaries

### 6.1

#### **Contacted Organizations**

The following organizations and agencies were contacted during the course of preparing the *initiative* and contributed greatly to the information within this report. It is probable that not all groups and individuals were contacted, since many others are woven into the fabric of natural areas protection and conservation work. We would like to know of any exclusions to this list so that we may make it more complete, then keep it updated for the benefit of all who work in this field. This will also allow dissemination of information to all appropriate individuals and groups through the Great Outdoors Colorado Board.

##### **Great Outdoors Colorado Board**

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**Colorado Wildlife Heritage Foundation**

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**Conservation Partners, Inc.**

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**The Palmer Foundation**

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**The San Miguel Conservation Foundation**

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**The Wilderness Land Trust**

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**Three Rivers Land Trust**

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**Upper Arkansas & South Platte Project**

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**Colorado State Parks - North Region**

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## 6.2 NATURAL AREA SITE SUMMARY TABLE

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