

## INTRODUCTION

Research Natural Areas (RNAs) are areas designated, in perpetuity, for non-manipulative research and educational purposes, as well as to help maintain ecological diversity on USFS lands. They also serve to assist in the implementation of certain provisions of special legislative acts, such as the Endangered Species Act (ESA) of 1973 and the National Forest Management Act (NFMA) of 1976.

The objectives of establishing RNAs are:

- to maintain a wide spectrum of high-quality areas that represent the major forms of ecological diversity on USFS-administered lands for research and education, and for the maintenance of biological diversity;
- to preserve and maintain genetic diversity (including in relation to threatened, endangered, and sensitive species);
- to protect against human-caused environmental disruptions;
- to serve as reference areas for the study of natural ecological processes (including in relation to disturbance);
- to provide on-site and extension educational activities;
- to serve as baseline areas for measuring long-term ecological changes;
- to serve as control areas for comparing results related to manipulative research; and
- to monitor the impacts of resource management techniques and practices (FSM 4063.02).

RNAs can play a key role in adaptive management of public lands. Managers must make decisions based on the best available information, and they must adjust, as necessary, when new information becomes available and as monitoring results reveal whether or not the desired effects of management actions are being achieved. RNAs represent relatively natural, unaltered ecosystems that serve as reference areas that allow managers to better assess the consequences of management actions on other similar lands.

## LEGAL AND ADMINISTRATIVE FRAMEWORK

### REGULATIONS AND POLICIES

- ***The Code of Federal Regulations (CFR)***: This states that forest planning shall provide for the establishment of RNAs. Planning shall make provision for the identification of examples of important forest, shrubland, grassland, alpine, aquatic, and/or geologic types that have special or unique characteristics of scientific interest and importance, and that are needed to complete the national RNA network.
- ***FSM 4063.03***: This states that the selection and establishment of RNAs is primarily to emerge from continuing land and resource management planning and associated environmental analyses (FSM 1920 and FSM 1950).

## AFFECTED ENVIRONMENT

### EXISTING CONDITIONS AND TRENDS

#### Existing and Potential RNAs

Currently, the planning area has 2 RNAs: Narraguinnep and Williams Creek. The process to identify and establish additional RNAs within the planning area would focus on selecting lands that would provide good representation of ecosystem types within public lands in the Rocky Mountain Region, specifically within the planning area. It would also focus on lands with few human impacts, and with few conflicts related to existing land uses (including livestock grazing, timber harvesting, motorized travel, oil and gas leases, and patented mining claims).

During the planning process for this DLMP/DEIS, 21 potential RNAs were initially identified within the planning area for consideration. Primarily, these were selected from inventoried roadless areas (IRAs), and vacant and closed grazing allotments. An attempt was made to include complete watersheds in potential RNAs, as well as to represent as much ecological diversity as possible (including vegetative, topographic, geologic, and climatic diversity).

**Table 3.28.1 – Potential and Existing RNAs**

Existing and Potential RNA	Acres	Elevation (feet)	KEY FEATURES
Narraguinnep*	1,900	6,690 to 8,000	old-growth ponderosa pine forests, pinyon-juniper woodlands, mountain shrublands, canyon topography
Williams Creek*	550	8,350 to 9,650	white fir-dominated cool-moist mixed-conifer forests, spruce-fir forests
Electra	2,200	7,400 to 8841	glacial topography, kettle ponds, old-growth ponderosa pine forests, mixed-conifer forests
Grizzly Peak	5,000	10,140 to 13,752	periglacial topography, alpine, fens, old-growth spruce-fir forests, willow carrs, wetlands, Thurber fescue grasslands
Hermosa	20,000	6,800 to 13,000	ponderosa pine forests, mixed-conifer forests, aspen forests, spruce-fir forests, wetlands, Thurber fescue grasslands
Hidden Mesas	4,400	6,600 to 8,320	old-growth ponderosa pine forests, pinyon-juniper woodlands, mountain shrublands, no historic livestock grazing
Martinez Creek	1,800	9,400 to 11,460	old-growth spruce-fir forests
Navajo River	7,000	9,200 to 12,727	alpine, Thurber fescue grasslands, volcanic geology, Colorado cutthroat trout, riparian areas, wetlands
Needle Mountains	10,000	8,400 to 14,000	alpine, riparian, wetlands, mixed-conifer forests, spruce-fir forests, aspen forests, granite and quartzite geology, high diversity
Piedra	6,900	7,560 to 10,471	old-growth warm-dry mixed-conifer and cool-moist mixed-conifer forests, spruce-fir forests, riparian areas
Porphyry Gulch	12,000	8,560 to 12,593	alpine, spruce-fir forests, wetlands, canyons

\*Existing RNA

After further analysis, 9 potential RNAs were selected and incorporated into this DLMP/DEIS for analysis under the alternatives. (They are listed in Table 3.28.1, along with the 2 existing RNAs). These RNAs were selected because they:

- represent most of the major vegetation types within the planning area;
- represent many of the vegetation types within the Rocky Mountain Region targeted for inclusion in the Regional RNA system;
- provide excellent research possibilities;
- preserve and maintain multiple biological diversity components, and
- include excellent reference areas for monitoring strategies and adaptive management.

## ENVIRONMENTAL CONSEQUENCES

### DIRECT AND INDIRECT IMPACTS

RNAs are managed in order to maintain their relatively natural ecological conditions by allowing ecological processes to prevail with minimal human intervention. Proposed RNAs, which occur on lands that are relatively unaltered and have been managed for natural ecological processes, would continue to be managed in this manner. The existing vegetation types and associated ecosystems of the RNAs would proceed along their natural successional pathways. This may bring about changes in the composition and structure of vegetation communities, and changes in the abundance and distribution of individual plant species. Natural processes (including fire, disease, insect outbreaks) and weather events would continue to occur, and would continue to imprint their mark on the RNAs.

#### General Impacts

Within the planning area, most management activities (including timber harvesting, wood gathering, mechanical fuels treatments, recreation and facilities development, road construction, solid mineral development, oil and gas development with surface occupancy, and summer motorized use) would be prohibited in the proposed RNAs. These management activities would not occur in any of the RNAs under any of the alternatives; therefore, there may be no impacts to the RNAs as a result of management activities.

Under some circumstances, deliberate manipulation may be used in order to maintain the unique features for which the RNA was established. In such cases, there may be no major adverse impacts to the composition, structure, and/or function of the RNA ecosystems. Impacts described in this section may occur under all of the alternatives.

**DLMP/DEIS Alternatives:** Alternative C would propose the largest number of new RNAs; therefore, it may would contribute the most new sites and new vegetation types to the regional and national RNA systems. It would also provide the largest amount of total lands for research, education, reference sites, and maintenance of biological diversity. Alternative A would propose the least number of new RNAs; therefore, it would contribute the least number of new sites and new vegetation types to the regional and national RNA systems. It would provide the least amount of total lands for research, education, reference sites, and maintenance of biological diversity. Alternative B would propose the second largest number of new RNAs, followed by Alternative D. The No Leasing Scenario would have no ground-disturbing impacts, so it would have no adverse direct or indirect impacts to RNAs.

### **Impacts Related to Recreation**

The current levels of horseback riding, hiking, hunting, fishing, camping, Outfitter/Guide activities, and other low-impact uses of lands and resources would continue, unless the use(s) posed a threat to the values for which the RNA was established. Impacts associated with these activities may be minor, and may impact a very small percentage of the acreage within the RNAs. Existing trails would be maintained. This may include some minor vegetation clearing along trail corridors. However, the construction of new trails would be prohibited, unless they were considered necessary in order to correct resource damage or to provide access for research. No changes to the existing trail systems are anticipated within any of the proposed RNAs.

If new trails are built, impacts that occur with the associated vegetation removal and soil disturbance may be minor, and may impact a very small percentage of the acreage within the RNA.

**DLMP/DEIS Alternatives:** The impacts of related to recreation on RNAs may be similar under all of the alternatives.

### **Impacts Related to Livestock Grazing**

Livestock grazing would not occur in RNAs, unless the RNA's individual management plan allowed it. In such a case, grazing would be allowed to occur for short durations only during severe drought conditions, and would be closely monitored so that adverse ecological impacts resulting from livestock grazing would not occur.

**DLMP/DEIS Alternatives:** The impacts related to livestock grazing on RNAs may be similar under all of the alternatives.

### **Impacts Related to Invasive Plant Species Control**

Within the planning area, invasive plant species would be controlled, where feasible, in order to protect the unique features for which the RNA was established. The impacts of these treatments may not adversely impact native species and/or plant communities. Currently, there are no major infestations of invasive plant species that need treatment in any of the proposed RNAs.

**DLMP/DEIS Alternatives:** The impacts related to invasive species control on RNA may be similar under all of the alternatives.

### **Impacts Related to Fire Management**

Fire is a natural ecological process; therefore, wildland fire use (WFU) and prescribed burns would be used in order to maintain ecological conditions, and to accomplish the objectives of the proposed RNAs (including restoring a natural fire regime or reducing high fuel loads). As a management practice, WFU would occur – except where there is a substantial threat to human life or property adjacent to the RNA, or where fire threatens values for which the RNA was designated.

Impacts related to fire management on the vegetation within the RNAs may vary, depending upon such factors as fire intensity and severity, vegetation type, fuel loads, weather conditions, moisture content of fuels and soils, and topographic features (including slope and aspect). High-intensity fire usually results in stand replacement and loss of all the above-ground vegetation. This may change the species composition of the vegetation types within the burned area, change the vegetation to an earlier seral stage, and change the development stage of the vegetation type. All of these factors may change the vegetation pattern of the RNA. Native shrubs and herbs (including species of concern and species of interest, if present) are likely to survive these fires, except where severe soil burning occurs. Prescribed burns, which are usually low-intensity ground fires, would burn shrubs, herbs, small trees, and the forest litter layer. It usually does not change the species composition, seral stage, or development stage of the vegetation types in which it occurs.

Other possible impacts to RNAs related to fire management (WFU and prescribed burns) may include those associated with fire-suppression efforts (including creating firelines, trails, roads, and camps). These activities remove vegetation and expose soils, which may, in turn, result in soil erosion and compaction, and may increase invasive plant species. Stabilization and rehabilitation efforts designed to protect and sustain soils, plants, and ecosystems within RNAs may also be needed. These may result in short-term impacts to soils and plants.

**DLMP/DEIS Alternatives:** The impacts related to fire management on RNAs may be similar under all of the alternatives.

## CUMULATIVE IMPACTS

The planning area currently has 2 RNAs. Alternatives B, C, and D would increase the number of RNAs. Additional RNAs may be established within the planning area in the future. There are no adverse ecological impacts related to the establishment of RNAs; therefore, there would be no adverse cumulative impacts associated with establishing RNAs within the planning area.