

Research Natural Area

Name: Largo Mesa

Location:

State: NM County: Catron Forest: Gila District: Quemado
T. 1S R. 17W S. 34, 35

Geology:

Description:

Area underlain by older pediment deposits: siltstone, sandstone, gravel,
many volcanic fragments

Reference:

New Mexico State Highway Department, , Geology And Aggregate Resources
District 1; map 61: NM Hwy Dept., Santa Fe, NM

Climate:

TES Gradient: HSC 4/0

Eleu. 8000

Precipitation: ___ Annual: 16 in. Warm season (May - Oct.) = 72%
Cool Season (Nov. - Apr.) = 20%

Mean Annual Snow: 31 in.

Mean Temperature: Annual 48 °F Jul. 68 °F Jan. 30 °F

Freeze Free Period: 150 days

Mean Temperature: Annual ___ °F Jul. ___ °F Jan. ___ °F

Freeze Free Period: ___ days

Trewartha Climate Type: Bskw = Cold steppe with dry winter

Reference: Forest Service, 1986, Terrestrial Ecosystem Handbook
Appendix B: USDA FS R3

Soils:

ESTABLISHMENT RECORD

LARGO MESA RESEARCH NATURAL AREA

USDA FOREST SERVICE
SOUTHWESTERN REGION
GILA NATIONAL FOREST
QUEMADO RANGER DISTRICT
CATRON COUNTY, NEW MEXICO

Prepared by: William W. Dunmire Date Nov. 16, 1987
William W. Dunmire, The Nature Conservancy
Mollie S. Toll, Department of Biology,
University of New Mexico

Recommended by: Robert J. Leaverton Date 1/8/88
Robert J. Leaverton
Quemado Ranger District

Recommended by: David W. Dahl Date 1/29/88
^{6c} David W. Dahl, Forest Supervisor
Gila National Forest

Recommended by: John W. Russell Date 3/31/88
John W. Russell, Chairman
Southwestern Research Natural Area Committee

Recommended by: Sotero Muniz Date 4/15/88
Sotero Muniz, Regional Forester
Southwestern Region

Recommended by: Charles M. Loveless Date May 16, 1988
Charles M. Loveless, Station Director
Rocky Mountain Forest and Range Experiment Station

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Sotero Muniz, Regional Forester
Southwestern Region

Recommended by: Charles M. Loveless Date May 16, 1988
Charles M. Loveless, Station Director
Rocky Mountain Forest and Range Experiment Station

DESIGNATION ORDER

By virtue of the authority vested in me by the Secretary of Agriculture under regulations 7 CFR 2.60(a) and 36 CFR 251.23, I hereby designate as the Largo Mesa Research Natural Area the lands described in the following establishment record prepared by William W. Dunmire and Mollie S. Toll, dated November 12, 1987. These lands shall hereafter be administered as a research natural area subject to the above regulations and instructions issued thereunder.

Chief

Date

ESTABLISHMENT RECORD

for

LARGO MESA RESEARCH NATURAL AREA

within

Apache National Forest

Administered by the Gila National Forest

Catron County, New Mexico

INTRODUCTION

The Largo Mesa Research Natural Area (RNA) comprises approximately 300 acres (121.4 hectares) of pinyon-juniper woodland in west-central New Mexico. The proposed RNA is located in the Quemado Ranger District, Gila National Forest, in Catron County, and is all acquired National Forest land.

Pinyon-juniper woodland has been noted as an important ecosystem for protection within the RNA program (USFS Regional Guide, 1983: Table 3-1). Largo Mesa was selected as an excellent example of one manifestation of this important woodland type. Members of the Regional RNA Task Group visited the site and concurred in this recommendation. The gentle slopes of the summit are expressive of the kinds of landforms found in extensive acreages of woodland management lands in New Mexico. The vegetation is representative of the Pinus edulis-Juniperus monosperma-Bouteloua gracilis Subseries that is widespread in the Southwest, and therefore research here is widely applicable. Almost all pinyon-juniper ecosystems on National Forest lands in New Mexico are within grazing allotments committed for livestock production. If designated as an RNA, Largo Mesa will create less conflict than most other possible sites as it is relatively remote, has no developed water, and is seldom used by cattle at present.

Land Management Planning

The need for representation of this biotic community was identified in the Southwestern Regional Guide (August 1983). The Gila National Forest Plan (USFS 1986: 5-6,49) prescribes that approximately 300 acres (121.4 hectares) of the Largo Mesa in Management Area 9A has been designated for establishment as a Research Natural Area. The environmental analysis conducted as part of the planning process supports the recommendation to establish this Research Natural Area.

JUSTIFICATION STATEMENT FOR ESTABLISHMENT OF AREA

Largo Mesa Research Natural Area was identified primarily as an outstanding example of a pinyon-juniper ecosystem. The need to include such an ecosystem within the RNA network of the Southwestern Region has been stated in the Regional Guide (USFS 1983).

There is a strong research and management co-interest in any representative pinyon-juniper woodland set aside for primarily research purposes. This woodland type is one of the most pervasively utilized ecosystems in the Southwestern Region, with extensive demands for livestock production, fuelwood cutting, deer hunting, and rehabilitation. Because of widespread utilization demands, however, woodland of appropriate "minimally disturbed" quality, especially of those types that are intensively managed, are very difficult to locate. Largo Mesa is an excellent representation of a pinyon pine-one-seed juniper community on the ash flows of the Datil formation. Its remote location and steep surrounding topography have insured both low grazing impact on the

PRINCIPAL DISTINGUISHING FEATURES

The flat, 8000 foot (2440 m) summit of Largo Mesa is a geologically eroded remnant of volcanic ash flows. Geologic slope retreat resulted in a steep, 400 foot (122 m) scarp at the base of which is a dissected piedmont of both coarse detritus and fine-textured alluvial drainages. The scarp, its coarse-textured piedmont, and the mesa top all contain woodland, whereas the fine-textured drainages and surrounding lowlands are blue grama grasslands. The woodland consists of nearly stable-aged populations of both pinyon pine and oneseed juniper, with large, old specimens of both species common. Grass cover (chiefly blue grama) is continuous between and beneath trees. Along the northern border of the RNA, the upper portions of several small canyons harbor considerable additional plant and animal diversity. Among plants, grasses and forbs become notably more various. These canyons also provide habitats for many migratory birds.

LOCATION (Apache National Forest)

This area lies approximately 13 miles (20.9 km) southwest of Quemado, near the Arizona border in the west-central portion of New Mexico (Map 1). Largo Mesa is located in Catron County, on the ~~Canon Largo 4NE Quadrangle (USGS 7.5')~~, Township 1 S, Range 17 W, Sections 34 and 35, at longitude 108 degrees 35'W, latitude 34 degrees 10'N. A dry weather road leads to within an easy 1 mile (1.6 km) hike to the RNA atop Largo Mesa.

The boundaries (Map 3) are mostly defined by the 8000 ft contour which encompasses the western and central portions of the mesa top. However the north boundary is a straight line between the northeast and northwest points on this contour, and in this manner three small drainages are included in the boundary of the RNA. The total area is about 300 acres (121 ha), with elevations between 7760 ft (2360 m) and 8025 ft (2450 m).

If traveling from the north, drive on U.S. Highway 60 to Quemado (Maps 1 and 2). Turn south on New Mexico Highway 32, and travel 14.6 miles (23.5 km) to the gravel road on the right (west) leading to Largo Mesa. This turn-off is 0.6 miles (1.1 km) south of the junction of the spur road leading to Quemado Lake. If traveling from the south, the Largo Mesa gravel road turn-off is 26.4 miles (42.5 km) north of Apache Creek on New Mexico Highway 32.

Proceed 1.8 miles (3.1 km) west on this gravel road to a point immediately south of Largo Mesa, which is clearly visible from here. The mesa top can be reached from almost any side, but the southern approach from this road is probably easiest. It requires a hike of just over 1 mile (1.6 km) and a climb of about 500 feet (152.4 m) elevation. The mesa top is extremely flat and traversing it is an easy matter.

AREA BY COVER TYPES

The distribution of cover types was determined from field surveys conducted in the summer of 1986. Table 1 outlines the estimated total area of the single vegetation type based on the Society of American Foresters forest type system (Eyre 1980) and the Kuchler Potential Natural Vegetation system (Kuchler 1964). Map 4 depicts the distribution of SAF type 239 on the candidate research natural area.

Table 1. Estimated Areas of Vegetation Types in the Largo Mesa Research Natural Area.

<u>Type</u>	Society of American Foresters <u>Cover Type</u> ¹	<u>Kuchler PNV Type</u> ²	Surface Area	
			<u>Acres</u>	<u>Hectares</u>
Pinyon - Juniper	SAF 239	K-21 Juniper - Pinyon Woodland	300	121.4
		TOTAL:	300	121.4

¹Eyre 1980.

²Kuchler 1964.

PHYSICAL AND CLIMATIC CONDITIONS

Topography of Largo Mesa includes a nearly level mesa surface, making up most of the RNA. Steep scarps fall off from all sides of the mesa (those on the east do not border on the RNA). On the northern boundary of the RNA are the heads of several canyons, providing protected habitats for a diversity of plants and animals, in sharp contrast to the exposed mesa top.

The pinyon-juniper woodland of Largo Mesa, at nearly 8000' (2438 m) elevation, is still only slightly more humid than grasslands not far away. The nearest long range weather stations are at Luna (to the west) and Jewett (to the north); slightly higher elevation at the RNA results in a minor increase in precipitation levels, slightly lower temperatures, and shorter frost free season. Average annual rainfall for Largo Mesa reaches a moderate 16 inches (406 mm). Much of this (72%) falls in the warm season of May to October. Average annual snowfall at this elevation is 31 inches (78.7 cm). Mean annual temperature is 48° F (8.9° C), with a July average of 68° F (20.0° C) and a January average of 30° F (-1.1° C). The frost free period lasts an average of 150 days.

Abbreviated Plant List for Largo Mesa RNA¹

<u>Latin Name</u>	<u>Common Name²</u>	<u>Frequency³</u>
GRASSES AND GRASS-LIKE PLANTS:		
<u>Blepharoneuron tricholepis</u>	Pine dropseed	R
<u>Bouteloua gracilis</u>	Blue grama	C
<u>Bromus frondosus</u>	Weeping brome	R
<u>Carex</u> ssp.	Sedge	R
<u>Koeleria cristata</u>	Junegrass	C
<u>Muhlenbergia montana</u>	Mountain muhly	I
<u>Muhlenbergia pauciflora</u>	New Mexico muhly	R
<u>Muhlenbergia sinuosa</u>	Muhly	R
<u>Muhlenbergia wrightii</u>	Spike muhly	I
<u>Munroa squarrosa</u>	False buffalograss	R
<u>Oryzopsis micrantha</u>	Littleseed ricegrass	C
<u>Poa bigelovii</u>	Bigelow bluegrass	I
<u>Sitanion hystrix</u>	Bottlebrush squirreltail	C
<u>Sporobolus cryptandrus</u>	Sand dropseed	R
<u>Stipa columbiana</u>	Columbia needlegrass	R
FORBS:		
<u>Amaranthus</u> sp.	Pigweed	R
* <u>Androsace septentrionalis</u>	Rockjasmine	R
* <u>Antennaria parvifolia</u>	Rocky Mountain pussytoes	R
<u>Arabis fendleri</u> var. <u>fendleri</u>	Rockcress	R
<u>Arceuthobium divaricatum</u>	Dwarf mistletoe	R
<u>Arenaria confusa</u>	Sandwort	R
<u>Astragalus humistratus</u> var. <u>crispulus</u>	Enema weed	I
* <u>Astragalus lentiginosus?</u>	Specklepod loco	R
<u>Astragalus mollissimus</u>	Milkvetch	I
<u>Bahia dissecta</u>	Ragleaf bahia	I
<u>Bahia neomexicana</u>	New Mexico bahia	I
<u>Bidens heterosperma</u>	Bur beggarticks	R
<u>Chenopodium fremontii</u>	Goosefoot	I
<u>Chenopodium graveolens</u> var. <u>neomexicanum</u>	Ragleaf goosefoot	C
* <u>Cologania longifolia</u>	Cologania	R
<u>Commelina dianthifolia</u>	Birdbill dayflower	R
<u>Cryptantha jamesii</u>	James hiddenflower	R
<u>Cryptantha</u> sp.	Hiddenflower	R
<u>Drymaria fendleri</u>	Indian drymary	C
<u>Erigeron divergens</u>	Spreading fleabane	R
<u>Erigeron flagellaris</u>	Trailing fleabane	C
<u>Eriogonum alatum</u>	Winged buckwheat	C
<u>Eriogonum jamesii</u> var. <u>undulatum</u>	Wee Mary buckwheat	C
<u>Erysimum capitatum</u>	Western wallflower	R

<u>Euphorbia serpyllifolia</u>	Thymeleaf spurge		C
* <u>Hieracium</u> ssp.	Hawkweed	R	
<u>Hymenopappus filifolius</u>	White-ragweed	R	
<u>Hymenoxys richardsonii</u>	Pingue		C
<u>Lepidium montanum</u> var. <u>canescens</u>	Peppergrass		I
<u>Lesquerella intermedia</u>	Bladderpod		C
<u>Leucelene ericoides</u>	White aster	R	
<u>Linum puberulum</u>	Flax	R	
* <u>Lithospermum multiflorum</u>	Stoneseed	R	
<u>Lotus wrightii</u>	Deervetch		I
<u>Lupinus kingii</u>	Kingston lupine	R	
<u>Mirabilis multiflora</u>	Silvestre four o'clock		C
<u>Mirabilis oxybaphoides</u>	Four o'clock		C
<u>Nama dichotomum</u>	Nama		
<u>Oxybaphus linearis</u> var. <u>linearis</u>	Four o'clock	R	
<u>Oxytropis lambertii</u>	Lambert crazyweed	R	
<u>Pectis angustifolia</u>	Fetidmarigold		C
<u>Portulaca mundula</u>	Pursley		C
* <u>Potentilla concinna</u>	Elegant cinquefoil	R	
<u>Potentilla pennsylvanica</u>	Pennsylvania cinquefoil	R	
* <u>Pseudocymopterus montanus</u>	Mountain parsley	R	
<u>Sanvitalia abertii</u>	Sanvitalia	R	
<u>Schoenocrambe linearifolia</u>	Sisymbrium	R	
<u>Senecio spartioides</u>	Broom groundsel	R	
* <u>Silene laciniata</u>	Mexican silene	R	
<u>Silene scouleri</u>	Scours catchfly	R	
<u>Solanum fendleri</u>	Fiddle potato	R	
<u>Sphaeralcea digitata</u>	Globemallow	R	
<u>Tradescantia pinetorium</u>	Spiderwort	R	
<u>Verbena bipinnatifida</u>	Dakota verbena	R	
<u>Verbesina enceloides</u>	Golden crownbeard	R	
* <u>Vicia</u> ssp.	Vetch	R	
<u>Viguiera cordifolia</u>	Heartleaf goldeneye	R	
* <u>Woodsia mexicana</u>	Rockfern	R	

HALF-SHRUBS, SHRUBS, AND TREES:

* <u>Artemisia carruthii</u>	Flat sagebrush	R	
* <u>Artemisia frigida</u>	Fringed sagebrush	R	
<u>Artemisia ludoviciana</u> ssp. <u>albula</u>	Mexican sage	R	
* <u>Berberis repens</u>	Oregon grape	R	
<u>Cercocarpus montanus</u>	True cercocarpus	R	
<u>Chrysothamnus nauseosus</u> ssp. <u>sonsimilis</u>	Rubber rabbitbrush	R	
<u>Coryphantha vivipara</u>	Coryphantha	R	
<u>Gutierrezia sarothrae</u>	Broom snakeweed		C
<u>Ipomopsis multiflora</u>	Ipomopsis		I
<u>Juniperus monosperma</u>	One-seed juniper		C

<u>Lycium pallidum</u>	Pale wolfberry	R	
<u>Opuntia phaeacantha</u>	Pricklypear	R	
<u>Phoradendron juniperinum</u>	Juniper mistletoe		C
<u>Pinus edulis</u>	Pinyon		C
<u>Pinus ponderosa</u>	Ponderosa pine	R	
* <u>Ribes inebrians?</u>	Squaw currant	R	
<u>Yucca baccata</u>	Datil yucca		I

¹Observed by Reggie Fletcher (USFS Regional Botanist, Southwestern Region) on September 25 and October 2, 1986

²Common names follow USDA, Forest Service 1974.

³R = Rare

I = Infrequent

C = Common

*Encountered only on north slope of RNA

Fauna

No rare, endangered, or sensitive animal species are known to inhabit this area. Mule deer and an occasional elk use the mesa top, but it is not an important ungulate habitat. There is no perennial or open stream water on this RNA, and therefore riparian species are absent.

The following animal list was derived from the RUN WILD III computer-stored data base (Lehmkuhl and Patton 1982; Patton 1979) from the following habitat type, for Catron county, New Mexico:

Pinyon - juniper series

This habitat type currently in the data base most closely corresponds to that occurring in the proposed RNA.

Potential Animal List for Largo Mesa RNA

<u>Common Name</u>	<u>Latin Name</u>
BIRDS:	
Bluebird, mountain	<u>Sialia currucoides</u>
Bluebird, western	<u>Sialia mexicana</u>
Chickadee, mountain	<u>Parus gambeli</u>
Finch, house	<u>Carpodacus mexicanus</u>
Flicker, northern	<u>Colaptes auratus</u>
Flycatcher, ash-throated	<u>Myiarchus cinerascens</u>
Flycatcher, gray	<u>Empidonax wrightii</u>
Flycatcher, vermilion	<u>Pyrocephalus rubinus</u>
Grosbeak, black-headed	<u>Pheucticus melanocephalus</u>
Hawk, ferruginous	<u>Buteo regalis</u>
Hawk, red-tailed	<u>Buteo jamaicensis</u>
Hawk, sharp-shinned	<u>Accipiter striatus</u>
Hummingbird, black-chinned	<u>Archilochus alexandri</u>
Jay, pinyon	<u>Gymnorhinus cyanocephalus</u>
Junco, dark-eyed	<u>Junco hyemalis</u>
Kingbird, Cassin's	<u>Tyrannus vociferans</u>
Nighthawk, common	<u>Chordeiles minor</u>
Nuthatch, pygmy	<u>Sitta pygmaea</u>
Oriole, Scott's	<u>Icterus parisorum</u>
Phoebe, black	<u>Sayornis parisorum</u>
Pygmy-owl, northern	<u>Glaucidium gnoma</u>
Raven, common	<u>Corvus corax</u>
Roadrunner, greater	<u>Geococcyx californianus</u>
Robin, American	<u>Turdus migratorius</u>
Shrike, loggerhead	<u>Lanius ludovicianus</u>
Siskin, pine	<u>Carduelis pinus</u>
Solitaire, Townsend's	<u>Myadestes townsendi</u>
Sparrow, black-chinned	<u>Spizella atrogularis</u>
Sparrow, black-throated	<u>Amphispiza bilineata</u>
Sparrow, Brewer's	<u>Spizella breweri</u>
Sparrow, chipping	<u>Spizella passerina</u>
Sparrow, lark	<u>Chondestes grammacus</u>
Swift, white-throated	<u>Aeronautes saxatalis</u>
Tanager, western	<u>Piranga ludoviciana</u>
Thrasher, Bendire's	<u>Toxostoma bendirei</u>
Titmouse, plain	<u>Parus inornatus</u>
Towhee, brown	<u>Pipilo fuscus</u>
Warbler, black-throated gray	<u>Dendroica nigrescens</u>
Waxwing, cedar	<u>Bombcilla cedrorum</u>
Woodpecker, Lewis'	<u>Melanerpes lewis</u>
Wood-pewee, western	<u>Contopus sordidulus</u>
Wren, Bewick's	<u>Thryomanes bewickii</u>
Wren, rock	<u>Salpinctes obsoletus</u>

MAMMALS:

Bear, black	<u>Ursus americanus</u>
Bobcat	<u>Felis rufus</u>
Chipmunk, cliff	<u>Tamias dorsalis</u>
Coyote	<u>Canis latrans</u>
Deer, mule	<u>Odocoileus hemionus</u>
Elk	<u>Cervus elaphus</u>
Fox, gray	<u>Urocyon cinereoargenteus</u>
Gopher, Botta's pocket	<u>Thomomys bottae</u>
Lion, mountain	<u>Felis concolor</u>
Mouse, brush	<u>Peromyscus boylii</u>
Mouse, cactus	<u>Peromyscus eremicus</u>
Mouse, deer	<u>Peromyscus maniculatus</u>
Mouse, northern grasshoper	<u>Onychomys leucogaster</u>
Mouse, pinyon	<u>Peromyscus truei</u>
Mouse, rock	<u>Peromyscus difficilis</u>
Mouse, western harvest	<u>Reithrodontomys megalotis</u>
Mouse, white-footed	<u>Peromyscus leucopus</u>
Porcupine	<u>Erethizon dorsatum</u>
Rat, banner-tailed kangaroo	<u>Dipodomys spectabilis</u>
Rat, Ord's kangaroo	<u>Dipodomys ordii</u>
Skunk, hog-nosed	<u>Conepatus mesoleucus</u>
Skunk, striped	<u>Mephitis mephitis</u>
Skunk, western spotted	<u>Spilogale gracilis</u>
Squirrel, golden-mantled ground	<u>Spermophilus lateralis</u>
Squirrel, rock	<u>Spermophilus variegatus</u>
Vole, Mexican	<u>Microtus mexicanus</u>
Weasel, long-tailed	<u>Mustela frenata</u>
Woodrat, Mexican	<u>Neotoma mexicana</u>
Woodrat, Stephen's	<u>Neotoma stephensi</u>
Woodrat, white-throated	<u>Neotoma albigula</u>

REPTILES:

Lizard, collared	<u>Crotaphytus collaris</u>
Lizard, crevice spiny	<u>Sceloporus poinsetti</u>
Lizard, side-blotched	<u>Uta stansburiana</u>
Lizard, tree	<u>Urosaurus ornatus</u>
Lizard, Yarrow's spiny	<u>Sceloporus jarrovi</u>
Whiptail, plateau striped	<u>Cnemidophorus velox</u>

Geology

Largo Mesa is situated on the Mogollon slope, or the southern part of the Colorado Plateau. Sedimentary rocks in this unit dip gently to the south (Fitzsimmons 1959). These older pediment deposits consist of siltstone, sandstone, and gravel (N.M. Highway Department n.d.). In the south end of the Mogollon slope where the RNA is found, volcanic ash flows of the Datil formation are thick, and cover the landscape. Largo Mesa, as other topographic features on the Mogollon slope, is chiefly constructional and due principally to volcanic accumulation of Tertiary age, with the mesa itself a remnant of basalt caprock.

Soils

Soils are dominantly Typic Ustochrepts, fine-loamy, mixed, mesic and Lithic Ustochrepts. Largo Mesa is at the upper end of the elevational range (6400 - 7900 feet or 1950.7 - 2407.9 m) for this soil association, which is found chiefly on gently sloping to rolling landscapes. The soils, which usually have fine sandy loam or loam surface layers and loamy subsoils, are forming dominantly in old alluvial sediments of mixed origin. Soil layers with high lime content are common at depths of 15 to more than 40 inches (38.1 to 101.6+ cm). These soils commonly support moderate to good stands of pinyon and juniper, with a grass understory that is almost exclusively blue grama.

Thin Cerrillos soils over a zone high in lime are predominant on level ridge top surfaces, such as the Largo Mesa surface making up most of the RNA. Both have thin brown to dark brown sandy loam surface layers over a sandy clay loam or clay loam subsoil.

Lands

Largo Mesa is currently a part of the Apache National Forest administered by the Gila National Forest. The area was originally created by proclamation #851 dated February 23, 1909, as part of the Datil National Forest.

Cultural

No survey has been conducted within the proposed RNA. The eastern portion of Largo Mesa was surveyed by the Prescott College Quemado Project in 1973. The distribution of sites recorded indicates that site density is not high within the RNA. Only one site, a sherd and lithic scatter probably dating to the Reserve-Tularosa period, has been reported on top of the mesa. Site density appears to have been greater in nearby lower elevation drainages. In 1948, Edward B. Danson conducted "extensive" surveys in the Agua Fria and Largo Canyon drainages on both sides of Largo Mesa. He reported that the 31 sites recorded represented only a small percentage of the total number of sites in the two drainages. All datable sites had at least a Pueblo II component (Reserve period), but most also included Pueblo I and III components. The likelihood of locating within the RNA a truly important site which is not duplicated elsewhere is low. Upon establishment as an RNA, all cultural resource values will be protected as provided for by the Antiquities Act of 1906, updated in 1979, Executive Order #593.

IMPACTS AND POSSIBLE CONFLICTS

Mineral Resources

No known mineral resources exist in this area and it is likely the potential is low. However, the entire area is within oil and gas lease #61663 issued to Sohio Petroleum Company as of September 1, 1985.

Grazing

The large majority of the area is within the Demetrio Allotment. The steep terrain and elevational differences between the mesa top and lowland grassland results in reduced grazing use of the summit woodland. Some modification in, and repair of the existing fence would be necessary to further control grazing use.

Timber

The woodland consists of pinyon pine and oneseed juniper. Canopy coverage varies from 30 per cent along the south rim to about 70 per cent on the north slope and drainages. There are few shrubs. The area is not suitable for commercial timber activity. The Telephone fuelwood sale is located approximately a mile (1.6 km) northeast of the RNA, but should not impact the RNA. Access to the mesa is limited, further reducing the potential for future fuelwood sales in the area.

Total forest: 300 acres (121.4 hectares)

Total commercial forest: 0

Watershed Values

The Largo Mesa RNA is contained within the Agua Fria Creek and the Largo-Mangus Creek watersheds. The western portion (about 20 per cent) of the RNA drains to the northeast into Telephone Tank two miles (3.2 km) downstream, and on into Largo Creek. The remaining, eastern portion drains to the north, south, and west from the mesa top into Agua Fria Creek.

Recreation Values

Access to the mesa is limited. There are no unique recreational characteristics that attract a measurable level of use to the area. The area is used for deer, elk, and antelope hunting.

Wildlife and Plant Values

No threatened or endangered plant or animal species are known to inhabit the area.

Wilderness, Wild and Scenic River, National Recreation Area Values

None of the above congressionally designated areas have been proposed for the Largo Mesa RNA or vicinity.

Transportation Plans

Largo Mesa is accessed from a spur road off Forest Road 1 on the Quemado District. The spurroad ends approximately one mile (1.6 km) east of the proposed RNA. There are no maintained trails in or adjacent to

the RNA. There are no transportation plans that would adversely affect the RNA.

Utility Corridor Plans

There are no existing or potential plans for utility corridors in the vicinity of this RNA.

MANAGEMENT PLAN

The Gila National Forest Plan prescribes that there will be no harvest of firewood or other wood products. The prescriptions also prohibit off-road vehicle travel. Low intensity, dispersed recreation activities are permitted provided they do not significantly modify the area, or threaten or impair the research or educational value of the area. No flora, fauna, or other materials may be collected other than for research approved by the Station Director. Minimal range improvements, such as boundary fences and appropriate interior fences, will be implemented, but no additional developments will be authorized which might change the existing character of the area.

1. Vegetation Management

The Forest Plan provides that unplanned ignitions will receive appropriate suppression action. Wildfires burning outside the area, which threaten the RNA, will be suppressed.

ADMINISTRATIVE RECORDS AND PROTECTION

Administration and protection of the Largo Mesa RNA will be the responsibility of the Gila National Forest. The District Ranger, Quemado Ranger District, Quemado, NM has direct responsibility.

The Director of the Rocky Mountain Forest and Range Experiment Station, or his designee, will be responsible for any studies or research conducted in the area, and requests to conduct research in the area will be referred to him. He, or his designee, will evaluate research proposals and coordinate all studies and research in the area with the District Ranger. All plant and animal specimens collected in the course of research conducted in the area will be properly preserved and maintained within university or federal agency herbaria and museums, approved by the Rocky Mountain Station Director.

Records for the Largo Mesa RNA will be maintained in the following offices:

- Regional Forester, Southwestern Region, Albuquerque, NM
- Rocky Mountain Station, Fort Collins, CO
- Gila National Forest, Albuquerque, NM
- District Ranger, Quemado Ranger District, Quemado, NM

REFERENCES

- DeVelice, Robert L., John A. Ludwig, William H. Moir, and Frank Ronco, Jr. 1986. A classification of forest habitat types of northern New Mexico and southern Colorado. U.S.D.A. Forest Service General Technical Report RM-131, 59 pp. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo.
- Eyre, F.H., ed. 1980. Forest cover types of the United States and Canada. Society of American Foresters, Washington, D.C. 148 pp.
- Federal Committee on Ecological reserves (F.C.E.R.) 1977. A directory of research natural areas on federal lands of the United States of America. USDA Forest Service, Washington, D.C. 280 pp.
- Fitzsimmons, J. Paul. 1959. The structure and geomorphology of west-central New Mexico: a regional setting. In Guidebook of west-central New Mexico, edited by James E. Weir, Jr., and Elmer H. Baltz. Tenth Field Conference, New Mexico Geological Society, Socorro.
- Küchler, A.W. 1964. Potential natural vegetation of the conterminous United States. American Geographical Society, Special Publication 36. 119 pp.
- Lehmkuhl, John F. and David R. Patton. 1984. Run Wild, Wildlife/Habitat relationships: user's manual for the Run Wild III data storage and retrieval system. USDA Forest Service, Southwestern Region, Wildlife Unit Technical Report. 68 pp.
- Little, Elbert L., Jr. 1979. Checklist of United States trees. USDA Forest Service, Agricultural Handbook 541. Washington, D.C.
- Martin, William C., and Charles R. Hutchins. 1980. A flora of New Mexico. J. Cramer, Braunschweig, West Germany.
- New Mexico State Highway Department. n.d. Geology and Aggregate Resources District 1, Map 61. Santa Fe.
- New Mexico State University, Agricultural Experiment Station, in cooperation with Water Resources Institute, Soil Conservation Service, and Bureau of Reclamation. 1972. Soil associations and land classification for irrigation: Catron county. Agricultural Experiment Station Research Report 229. Las Cruces. 49 pp.
- Patton, David R. 1979. RUN WILD II: a storage and retrieval system for wildlife data. Transactions of the North American Wildlife and National Research Conference 44:425-430.
- Tuan, Yi-Fu, Cyril E. Everard, Jerold G. Widdison, and Iven Bennett. 1973. The climate of New Mexico. New Mexico State Planning Office, Santa Fe. 197 pp.

- USDA Forest Service. 1974. Field guide to native vegetation of the Southwestern region. USDA Forest Service, Southwestern Region, Albuquerque. 65 pp.
- USDA Forest Service. 1983. Regional guide for the Southwestern Region. USDA Forest Service, Southwestern Region, Albuquerque, NM.
- USDA Forest Service. 1984. Progress report, Research Natural Areas: recommended representations for important ecosystems on National Forest System Land in the Southwestern Region. USDA Forest Service, Southwestern Region, Albuquerque. 90 pp.
- USDA Forest Service. 1986a. Gila National Forest plan. USDA Forest Service, Southwestern Region, Albuquerque. 324 pp.
- USDA Forest Service. 1986b. Forest and woodland habitat types (plant associations) of southern New Mexico and central Arizona (north of the Mogollon Rim). Edition 2. USDA Forest Service, Southwestern Region, Albuquerque. 71 pp.



Reply To: 4060

Date: October 19, 1993

Subject: Environmental Assessment for Establishment of
Largo Mesa, Turkey Creek and Rabbit Trap RNA's

To: Regional Forester

Enclosed is the Environmental Assessment and the Decision Notice, Finding of No Significant Impact and Designation Order for the Rabbit Trap, Turkey Creek and Largo Mesa Research Natural Areas. We have made contact with several individuals to insure that the level of concern regarding designation has not changed since the Forest Plan was adopted, and have found no major new issues regarding the establishment of these areas.

I recommend that each of the proposed Research Natural Areas be established.

MAYNARD T. ROST
Forest Supervisor

Range and Ecology

OCT 22 1993

Enclosure

cc:
S.Libby
R.Fletcher, RO

RANGELAND MGMT. AND ECOLOGY	
Initials	
Action X	
Info ✓	
Henke	
Hartison	✓
Fletcher	✓
McCutchen	
Miller	
Prendusi	
Sanchez	
Ayala	
Lewis	



Environmental Assessment

Rabbit Trap, Turkey Creek, and Largo Mesa Research Natural Areas Gila National Forest, Silver City, Quemado, and Wilderness Ranger Districts Grant and Catron County, New Mexico

Proposed Action

The proposed action is to establish the Rabbit Trap, Turkey Creek, and Largo Mesa proposed Research Natural Areas (RNA) identified in the Land and Resource Management Plan (Forest Plan) for the Gila Forest as the Rabbit Trap RNA, Turkey Creek RNA and Largo Mesa RNA, and to manage them according to the direction provided in the Forest Plan, pages 204. The proposed action, formal designation of the RNA by the Chief of the Forest Service, will amend the Forest Plan.

Purpose and Need for Action

The purpose of establishing the Rabbit Trap RNA, Turkey Creek RNA and Largo Mesa RNA is to contribute to a series of RNAs designated to "illustrate adequately or typify for research or education purposes, the important forest and range types in each forest region, as well as other plant communities that have special or unique characteristics of scientific interest and importance" (36 CFR 251.23). The Rabbit Trap RNA contributes to this series of RNAs by providing an example of a relatively dry scrub grassland habitat type. The Turkey Creek RNA contributes to this series of RNAs by providing an example of mixed broadleaf riparian forest. The Largo Mesa RNA contributes to this series of RNAs by providing an example of pinyon-juniper woodland. These RNAs are discussed in the Forest Plan, pages 204. An evaluation by the Regional RNA Committee, pursuant to direction in Forest Service Manual (FSM) 4063.04b, of the need for RNAs identified these types as suitable and desirable for inclusion in the national network. Establishment of these RNAs provide long-term protection and recognition of these types.

The Rabbit Trap, Turkey Creek and Largo Mesa areas were identified in the Forest Plan as "proposed" RNAs based on the relatively undisturbed conditions of these types in the area at that time. Comments received from interested and affected members of the public supported establishment of an RNA in the area. Site conditions and public concerns have been reviewed; no important changes have occurred. Conditions and environmental effects of designation are the same as described on pages 80 of the EIS for the Forest Plan. Designation of alternate RNAs for protection of this type was considered during Forest Plan development. Rabbit Trap, Turkey Creek and Largo Mesa were determined at that time to provide the most appropriate site for inclusion in the national network for protection of the types mentioned above.

Alternatives and Environmental Consequences

Alternative A, Proposed Action

Alternative A would designate Rabbit Trap, Turkey Creek and Largo Mesa as Research Natural Areas. The Rabbit Trap RNA would be designated at 280 acre. Rabbit Trap was estimated to be 297 acres in the Forest Plan; more precise measurement sets acreage at 280 as described on page 1 of the attached Establishment Record (ER). Management of the area limits recreation use to non-motorized use. There is no grazing on the area and has not been since it was fenced to exclude livestock in the mid 1940's. There is virtually no potential for fuelwood harvest and no commercial forest. No known mineral resources exist in the area and the potential for these resources is low. There are no threatened or endangered plant or animal species known to inhabit the area. (Establishment Report):

The Turkey Creek RNA would be designated at 1335 acres. This is the same as the acreage estimated in the Forest Plan. Most of the Turkey Creek area is within the Gila Wilderness. Management of wilderness areas limits recreation use to low intensity, dispersed activities. Due to wilderness designation, fuelwood and timber harvest are prohibited. There is no road access to the area. The area is not presently grazed by domestic livestock and is not within a grazing allotment that is being grazed. No active mineral claims exist within the area. Because of the wilderness designation, no new mineral claims can be made in the portion of the area in wilderness. The portion outside of wilderness has low mineral potential. There are no known threatened or endangered species in the area. The round-tailed chub (Gila robusta), a sensitive species occurs in Turkey Creek.

The Largo Mesa RNA would be designated at 300 acres. This is the same as the acreage estimated in the Forest Plan. Management of this area as an RNA would limit recreation use to dispersed, low intensity activities. There are no trails in the area and no trails would be constructed. Fuelwood harvesting would not be permitted. No fuelwood harvest occurred in the past because of the remoteness of the area. This area is presently part of the Demetrio Allotment. Because of topography, past use by domestic livestock has been light. Domestic livestock use would be eliminated. Fence repair and construction of gap fences between rock bluffs surrounding the mesa top will be needed. No known mineral resources exist in the area and the potential is low. There are no known threatened or endangered species in the area.

The primary environmental consequence of Alternative A, is the short-term losses of opportunities to change vegetation conditions through management. There are no significant cumulative effects of the establishing the RNA.

The direction in the Forest Plan for established RNAs also includes reasonably foreseeable actions such as withdrawal of the area from mineral entry. The general consequences of withdrawal are discussed in the Forest Plan EIS (pages 121). Site-specific consequences will be disclosed in more detail if or when mineral entry is proposed for withdrawal.

Alternative B, No Action

This alternative continues management according to direction in the Forest Plan (page 80, 249 and 255) for a "proposed" RNA. Management of the area limits recreation use to non-motorized use. There is no grazing on the Turkey Creek or Rabbit Trap areas and only light grazing on the Largo Mesa

area. There is virtually no potential for fuelwood harvest and no commercial forest. No known mineral resources exist in the area and the potential for these resources is low. There are no threatened or endangered plant or animal species known to inhabit the areas. (Rabbit Trap, Turkey Creek and Largo Mesa Establishment Reports.)

The only environmental consequences of Alternative B are the short-term losses of opportunities to change vegetation conditions through management and the possible loss of the opportunity to set aside representative RNAs of these three ecosystem types in the future.

Agencies and Persons Consulted

In the process of updating information to determine whether or not conditions had changed since adoption of the Forest Plan, the State Natural Heritage Program, Nature Conservancy, Livestockman's Association, adjacent range permittee, and local government (where commodity outputs could be effected) were contacted. The following comments were received:

Natural Heritage Program -- On August 13-14, 1992, John Humke, representing the national office of The Nature Conservancy and Rick Johnson and Bill Waldman, representing the New Mexico Chapter of The Nature Conservancy and the New Mexico Natural Heritage Program urged the Regional Forester to do what ever was necessary to complete the establishment process.

New Mexico Range Improvement Task Force - On February 18, 1993, Gerald Hinke, Regional Range, and Ecology Staff, spoke with John Fowler, Jim Knight, Kirk McDaneil, Lark Wood, Dean John Owens (Range Improvement Task Force representatives) and attendees David Kincade, Bill Ball, Stearling Carter, Ray Margo, and Linden Parker about designation of Research Natural Areas in the New Mexico. No objections were raised.

Demetrio Grazing Permittee - In August 1993, Dave Sire, District Ranger on the Quemado District spoke with Candy Chavez, the permittee on the allotment containing the Largo Mesa, regarding the establishment of the area as an RNA. No concerns were expressed. Mr. Chavez expressed an interest in seeing the results of any research conducted in the area.

Permittee adjacent to Rabbit Trap - In August 1993, Ralph Pope, Range Staff on the Silver City District, spoke with Dave Ogilvie regarding the Rabbit Trap RNA. Mr. Ogilvie did not have any concerns.

Catron County, County Manager - In late September 1993, Dave Sire, District Ranger on the Quemado District spoke with the Catron County Commission regarding designation of Research Natural Areas. On October 1, 1993 they sent the Forest a letter regarding the designation. The Commission did not have any specific issues regarding designation of the Largo Mesa area (the area in Catron County) since the area is small, bound on three sides by steep slopes and by an allotment boundary fence on the fourth side, but they could see no immediate need to establish the RNA. As a result they did not concur with the designation.

Decision Notice
Finding of No Significant Impact and
Designation Order

Rabbit Trap, Turkey Creek and Largo Mesa Research Natural Areas

By virtue of the authority vested in me by the Secretary of Agriculture under regulations at 7 CFR 2.42, 36 CFR 251.23, and 36 CFR Part 219, I hereby establish the Rabbit Trap, Turkey Creek and Largo Mesa Research Natural Areas (RNAs) on the Gila National Forest. The Rabbit Trap RNA shall be comprised of 280 acres of lands in Grant County, New Mexico, on the Silver City District of the Gila National Forest, as described in the section of the Establishment Record entitled "Location." The Turkey Creek RNA shall be comprised of 1,335 acres of lands in Grant County, New Mexico, on the Wilderness District of the Gila National Forest, as described in the section of the Establishment Record entitled "Location". The Largo Mesa RNA shall be comprised of 300 acres of lands in Catron County, New Mexico, on the Quamado District of the Gila National Forest, as described in the section of the Establishment Record entitled "Location".

The Regional Forester recommended the establishment of these RNAs in the Record of Decision for the Gila National Forest Land and Resource Management Plan (Forest Plan) in 1986. That recommendation was the result of an analysis of the factors listed in 36 CFR 219.25 and Forest Service Manual 4063.41. Results of the Regional Forester's analysis are documented in the Forest Plan and Final Environmental Impact Statement which are available to the public.

The Regional Forester has reexamined the Rabbit Trap, Turkey Creek and Largo Mesa areas to ensure that the environmental effects of establishing the areas as RNAs have not changed since 1986. This analysis is documented in the attached environmental assessment. Based on the analysis in the environmental assessment, it is my decision to adopt Alternative A, to establish Rabbit Trap, Turkey Creek and Largo Mesa areas as RNAs. Alternative A is selected because it provides long-term protection and recognition of a relative dry scrub grassland type, a broadleaf riparian type and a pinyon-juniper type. These Research Natural Areas will be managed in compliance with all relevant laws, regulations, and Forest Service Manual direction regarding RNAs, and in accordance with the management direction identified in the Forest Plan.

The alternative considered was Alternative B, the "No Action" alternative which would continue management of Rabbit Trap, Turkey Creek and Largo Mesa as "proposed" RNAs. Alternative B was not selected because it would only provide short-term protection of these areas.

Alternative B is consistent with the Forest Plan. Although the proposed action (Alternative A) is consistent with the management direction, it is not consistent with the land allocation for the Rabbit Trap, Turkey Creek and Largo Mesa areas in the Forest Plan. The Gila Forest Plan is hereby amended to change the allocation of the Rabbit Trap, Turkey Creek and Largo Mesa areas from "Proposed" to Established RNA. This is a non-significant amendment of the Forest Plan (36 CFR 219.10(f)).

Legal notice of this decision will appear in the Federal Register. The Forest Supervisor of the Gila National Forest shall notify the public of

this decision and mail a copy of the Decision Notice and Designation Order to all persons on the Gila Forest Plan mailing list.

It has been determined through the environmental assessment that the proposed action is not a major Federal action that would significantly affect the quality of the human environment; therefore, an environmental impact statement is not needed. This determination is based on the following factors (40 CFR 1508.27):

A. Context.

Although this is an addition to the national system of RNAs, both short-term and long-term physical and biological effects are limited to the local area.

B. Intensity.

1. There are no known effects on public health and safety.
2. There are no known effects on historic or cultural resources, actual or eligible National Register of Historic places sites, park lands, prime farmlands, wetlands, wild and scenic rivers. Effects on ecologically critical areas are minimal.
3. Effects on the human environment are not uncertain, do not involve unique or unknown risks, and are not likely to be highly controversial.
4. The action is not likely to establish a precedent for future actions with significant effects.
5. There are no known cumulative effects.
6. The proposed action would not adversely affect an endangered or threatened species or its critical habitat.
7. The proposed action is consistent with Federal, State, and local laws and requirements for the protection of the environment.

This decision is subject to appeal pursuant to 36 CFR Part 217. Two (2) copies of the Notice of Appeal must be in writing and submitted to:

The Secretary of Agriculture
14th & Independence Ave., S.W.
Washington, D.C. 20250

The Notice of Appeal prepared pursuant to 36 CFR 217 must be submitted within 45 days from the date of legal notice of this decision. Review by the Secretary is wholly discretionary. If the Secretary has not decided within 15 days of receiving the Notice of Appeal to review the Chief's decision, appellants will be notified that the Chief's decision is the final administrative decision of the U.S. Department of Agriculture.

Chief

Date

ESTABLISHMENT RECORD

for

LARGO MESA RESEARCH NATURAL AREA

within

Gila National Forest

Catron County, New Mexico

ESTABLISHMENT RECORD

LARGO MESA RESEARCH NATURAL AREA

USDA FOREST SERVICE
SOUTHWESTERN REGION
GILA NATIONAL FOREST
QUEMADO RANGER DISTRICT
CATRON COUNTY, NEW MEXICO

Prepared by: William W. Dunmire Date Nov. 16, 1987
William W. Dunmire, The Nature Conservancy
Mollie S. Toll, Department of Biology,
University of New Mexico

Recommended by: Robert J. Leaverton Date 1/8/88
Robert J. Leaverton
Quemado Ranger District

Recommended by: David W. Dahl Date 1/29/88
by David W. Dahl, Forest Supervisor
Gila National Forest

Recommended by: John W. Russell Date 3/31/88
John W. Russell, Chairman
Southwestern Research Natural Area Committee

Recommended by: Sotero Muniz Date 4/15/88
Sotero Muniz, Regional Forester
Southwestern Region

Recommended by: Charles M. Loveless Date May 16, 1988
Charles M. Loveless, Station Director
Rocky Mountain Forest and Range Experiment Station

INTRODUCTION

The Largo Mesa Research Natural Area (RNA) comprises approximately 300 acres (121.4 hectares) of pinyon-juniper woodland in west-central New Mexico. The proposed RNA is located in the Quemado Ranger District, Gila National Forest, in Catron County, and is all acquired National Forest land.

Pinyon-juniper woodland has been noted as an important ecosystem for protection within the RNA program (USFS Regional Guide, 1983: Table 3-1). Largo Mesa was selected as an excellent example of one manifestation of this important woodland type. Members of the Regional RNA Task Group visited the site and concurred in this recommendation. The gentle slopes of the summit are expressive of the kinds of landforms found in extensive acreage of woodland management lands in New Mexico. The vegetation is representative of the Pinus edulis-Juniperus monosperma-Bouteloua gracilis Subseries that is widespread in the Southwest, and therefore research here is widely applicable. Almost all pinyon-juniper ecosystems on National Forest lands in New Mexico are within grazing allotments committed for livestock production. If designated as an RNA, Largo Mesa will create less conflict than most other possible sites as it is relatively remote, has no developed water, and is seldom used by cattle at present.

LAND MANAGEMENT PLANNING

The need for representation of this biotic community was identified in the Southwestern Regional Guide (August 1983). The Gila National Forest Plan (USFS 1986: 5-6, 49) prescribes that approximately 300 acres (121.4 hectares) of the Largo Mesa in Management Area 9A have been designated for establishment as a Research Natural Area. The environmental analysis conducted as part of the planning process supports the recommendation to establish this Research Natural Area.

JUSTIFICATION STATEMENT FOR ESTABLISHMENT OF AREA

Largo Mesa Research Natural Area was identified primarily as an outstanding example of a pinyon-juniper ecosystem. The need to include such an ecosystem within the RNA network of the Southwestern Region has been stated in the Regional Guide (USFS 1983).

There is a strong research and management co-interest in any representative pinyon-juniper woodland set aside for primarily research purposes. This woodland type is one of the most pervasively utilized ecosystems in the Southwestern Region, with extensive demands for livestock production, fuelwood cutting, deer hunting, and rehabilitation. Because of widespread utilization demands, however, woodland of appropriate "minimally disturbed" quality, especially of those types that are intensively managed, are very difficult to locate. Largo Mesa is an excellent representation of a pinyon pine-one-seed juniper community on the ash flows of the Datil formation. Its remote location and steep surrounding topography have insured both low grazing impact on the natural vegetation and minimal future impact.

PRINCIPAL DISTINGUISHING FEATURES

The flat, 8,000 ft (2,438.4 m) summit of Largo Mesa is a geologically eroded remnant of volcanic ash flows. Geologic slope retreat resulted in a steep, 400 foot (121.9 m) scarp at the base of which is a dissected piedmont of both coarse

detritus and fine-textured alluvial drainages. The scarp, its coarse-textured piedmont, and the mesa top all contain woodland, whereas the fine-textured drainages and surrounding lowlands are blue grama grasslands. The woodland consists of stable stand structure of pinyon pine and oneseed juniper, with large, old specimens of both species common. Grass cover (chiefly blue grama) is continuous between and beneath trees. Along the northern border of the RNA, the upper portions of several small canyons harbor considerable additional plant and animal diversity. Here, grasses and forbs become notably more various. These canyons also provide habitats for many migratory birds.

LOCATION

This area lies approximately 13 miles (20.9 km) southwest of Quemado, near the Arizona border in the west-central portion of New Mexico (Map 1). Largo Mesa is located in Catron County, on the Largo Mesa 4NE Quadrangle (USGS 7.5'), Township 1 S, Range 17 W, Sections 34 and 35, at longitude 108° 35' W, latitude 34° 10' N. An all-weather road leads to within an easy 1 mile (1.6 km) hike to the RNA atop Largo Mesa.

If travelling from the north, drive on U.S. Highway 60 to Quemado (Maps 2 and 3). Turn south on New Mexico Highway 32, and travel 14.6 miles (23.5 km) to the gravel road on the right (west) leading to Largo Mesa. This turn-off is 0.6 miles (1.1 km) south of the junction of the spur road leading to Quemado Lake. If travelling from the south, the Largo Mesa gravel road turn-off is 26.4 miles (42.5 km) north of Apache Creek on New Mexico Highway 32.

Proceed 1.8 miles (3.1 km) west on this gravel road to a point immediately south of Largo Mesa, which is clearly visible from here. The mesa top can be reached from almost any side, but the southern approach from this road is probably easiest. It requires a hike of just over 1 mile (1.6 km) and a climb of about 500 feet (152.4 m) elevation. The mesa top is extremely flat and traversing it is an easy matter.

A boundary description of the proposed Largo Mesa RNA is as follows:

Beginning at a point at which is the SE sec. corner to section 34, T. 11 S., 17 W., NMPM, :

THENCE, N 46 deg. 51' E a distance of 2,023.09 ft. to the point of beginning at lat. 34 deg. 10' 18" N., long. 108 deg. 35' 09" W.

THENCE, N 5 deg. 11' W., 1,228.4 ft. to the point at lat. 34 deg. 10' 30" N., long. 108 deg. 35' 11" W.

THENCE, N 16 deg. 12' E., 1,264.5 ft. to the point at lat. 34 deg. 10' 42" N., long. 108 deg. 35' 07" W.

THENCE, S 83 deg. 47' W., 939.1 ft. to the point at lat. 34 deg. 10' 41" N., long. 108 deg. 35' 18" W.

THENCE, N 88 deg. 42' W., 785.6 ft. to the point at lat. 34 deg. 10' 42" N., long. 108 deg. 35' 27" W.

THENCE, S 81 deg. 50' W., 1,549.2 ft. to the point at lat. 34 deg. 10' 39" N., long. 108 deg. 35' 45" W.

THENCE, S 81 deg. 55' W., 1,005.6 ft. to the point at lat. 34 deg. 10' 38" N., long. 108 deg. 35' 57" W.

THENCE, S 22 deg. 29' W., 862.2 ft. to the point at lat. 34 deg. 10' 30" N., long. 108 deg. 36' 01" W.

THENCE, S 14 deg. 12' W., 1,061.1 ft. to the point at lat. 34 deg. 10' 20" N., long. 108 deg. 36' 04" W.

THENCE, S 32 deg. 33' E., 669.7 ft. to the point at lat. 34 deg. 10' 14" N., long. 108 deg. 36' 00" W.

THENCE, N 59 deg. 29' E., 1,242.8 ft. to the point at lat. 34 deg. 10' 20" N., long. 108 deg. 35' 47" W.

THENCE, N 84 deg. 16' E., 878.0 ft. to the point at lat. 34 deg. 10' 21" N., long. 108 deg. 35' 36" W.

THENCE, N 89 deg. 47' E., 969.3 ft. to the point at lat. 34 deg. 10' 21" N., long. 108 deg. 35' 25" W.

THENCE, S 75 deg. 12' E., 537.1 ft. to the point at lat. 34 deg. 10' 20" N., long. 108 deg. 35' 19" W.

THENCE, S 66 deg. 46' E., 545.3 ft. to the point at lat. 34 deg. 10' 18" N., long. 108 deg. 35' 13" W.

THENCE, N 85 deg. 06' E., 319.0 ft. to the point at lat. 34 deg. 10' 18" N., long. 108 deg. 35' 09" W. the point of beginning.

AREA BY COVER TYPES

The distribution of cover types was determined from field surveys conducted in the summer of 1986. Table 1 outlines the estimated total area of the single vegetation type based on the Society of American Foresters forest type system

(Eyre 1980) and the Kuchler Potential Natural Vegetation system (Kuchler 1964). Map 4 depicts the distribution of SAF type 239 on the candidate research natural area.

Table 1. Estimated Areas of Vegetation Types in the Largo Mesa Research Natural Area.

Type	Society of American Foresters		Surface Area	
	<u>Cover Type</u> ¹	<u>Kuchler PNV Type</u> ²	<u>Acres</u>	<u>Hectares</u>
Pinyon - Juniper	SAF 239	K-21 Juniper - Pinyon Woodland	300	121.4
		TOTAL:	300	121.4

¹Eyre 1980.

²Kuchler 1964.

PHYSICAL AND CLIMATIC CONDITIONS

Topography of Largo Mesa includes a nearly level mesa surface which makes up most of the RNA. Steep scarps fall off from all sides of the mesa (those on the east do not border on the RNA). On the northern boundary of the RNA are the heads of several canyons, providing protected habitats for a large diversity of plants and animals, in sharp contrast to the exposed mesa top.

The pinyon-juniper woodland of Largo Mesa, at nearly 8,000 ft (2438 m) elevation, is still only slightly more humid than surrounding grasslands. The nearest long range weather stations are at Luna (to the west) and Jewett (to the north); slightly higher elevation at the RNA results in a minor increase in precipitation levels, slightly lower temperatures, and shorter frost free season. Average annual rainfall for Largo Mesa reaches a moderate 16 inches (40.6 cm). Much of this (72%) falls in the warm season of May to October. Average annual snowfall at this elevation is 31 inches (78.7 cm). Mean annual temperature is 48° F (8.9° C), with a July average of 68° F (20.0° C) and a January average of 30° F (-1.1° C). The frost free period lasts an average of 150 days (Tuan, et al. 1973).

DESCRIPTION OF VALUES

Flora

A broad survey of habitat types (HT) was conducted during the 1986 field work. A brief review follows. The entire RNA keys out to Pinus edulis/Bouteloua gracilis habitat type, Juniperus monosperma phase according to Forest and woodland habitat types of southern New Mexico and central Arizona (USFS 1986b). The mesa top is depauperate in plant species, with only 71 taxa noted in two days of surveying. The north-facing slope below the mesa top yields at least another 20 plant species.

Pinyon (Pinus edulis) and oneseed juniper (Juniperus monosperma) are present in nearly equal numbers on the mesa, and the woodland consists of apparently stable age structure populations of both species. Taller pinyon attain heights around 25 - 30 ft (7.6 - 9.1 m). Large, old specimens of juniper are also seen. Canopy coverage of the trees varies from 30 per cent along the drier south rim of the mesa top to about 70 per cent on the gentle northerly slopes and minor drainages.

A rather uniform grass layer is continuous beneath and between the trees. Blue grama (Bouteloua gracilis) constitutes perhaps 85 per cent of the total coverage, while littleseed ricegrass (Oryzopsis micrantha) grows under many of the larger trees. Other grasses are infrequent, and include junegrass (Koeleria cristata), spike muhly (Muhlenbergia wrightii), mountain muhly (M. montana), Bigelow bluegrass (Poa bigelovii), and bottlebrush squirreltail (Sitanion hystrix).

Shrubs are uncommon. There is occasional mountain mahogany (Cercocarpus montanus), mostly in good browse condition. The few invader or increaser shrubs include rabbitbrush (Chrysothamnus nauseosus) and broom snakeweed (Gutierrezia sarothrae). Forbs generally are sparse here.

A patch of open grassland (about 5 acres or 2.0 hectares) exists at the west end of the mesa top in a slight, swale-like depression at the head of a draw which drains much of the mesa. This may be a natural opening, or the result of an old burn. The grass is virtually all Bouteloua gracilis, with Gutierrezia sarothrae

and a variety of annual forbs scattered throughout. There is evidence of heavy jackrabbit and rodent use of this swale which, no doubt, helps perpetuate the opening.

On the north-facing slope below the mesa top, the pinyons and junipers reach greater height. Grass cover is higher, up to 70 per cent, and Bouteloua gracilis makes up only about half the species composition. Among other grasses on these slopes are Muhlenbergia montana, Koeleria cristata, Sitanion hystrix, Bromus frondosus and Blepharoneuron tricholepis. More species of forbs are found here compared with the mesa top, as noted in the plant list.

There are no known threatened, endangered, or unique plant species on the proposed RNA.

The following plant list was compiled from field observations on September 25 and October 2, 1986.

Abbreviated Plant List for Largo Mesa RNA¹

<u>Latin Name</u>	<u>Common Name</u> ²	<u>Frequency</u> ³
GRASSES AND GRASS-LIKE PLANTS:		
<u>Blepharoneuron tricholepis</u>	Pine dropseed	R
<u>Bouteloua gracilis</u>	Blue grama	C
<u>Bromus frondosus</u>	Weeping brome	R
<u>Carex</u> ssp.	Sedge	R
<u>Koeleria cristata</u>	Junegrass	C
<u>Muhlenbergia montana</u>	Mountain muhly	I
<u>Muhlenbergia pauciflora</u>	New Mexico muhly	R
<u>Muhlenbergia sinuosa</u>	Muhly	R
<u>Muhlenbergia wrightii</u>	Spike muhly	I
<u>Munroa squarrosa</u>	False buffalograss	R
<u>Oryzopsis micrantha</u>	Littleseed ricegrass	C
<u>Poa bigelovii</u>	Bigelow bluegrass	I
<u>Sitanion hystrix</u>	Bottlebrush squirreltail	C
<u>Sporobolus cryptandrus</u>	Sand dropseed	R
<u>Stipa columbiana</u>	Columbia needlegrass	R
FORBS:		
<u>Amaranthus</u> sp.	Pigweed	R
<u>Androsace septentrionalis</u>	Rockjasmine	R
<u>Antennaria parvifolia</u>	Rocky Mountain pussytoes	R
<u>Arabis fendleri</u> var. <u>fendleri</u>	Rockcress	R
<u>Arceuthobium divaricatum</u>	Dwarf mistletoe	R
<u>Arenaria confusa</u>	Sandwort	R
<u>Astragalus humistratus</u>	Enema weed	I
var. <u>crispulus</u>		
<u>Astragalus lentiginosus</u> ?	Specklepod loco	R
<u>Astragalus mollissimus</u>	Milkvetch	I
<u>Bahia dissecta</u>	Ragleaf bahia	I
<u>Bahia neomexicana</u>	New Mexico bahia	I
<u>Bidens heterosperma</u>	Bur beggarticks	R
<u>Chenopodium fremontii</u>	Goosefoot	I

<u>Chenopodium graveolens</u>	Ragleaf goosefoot		C
var. <u>neomexicanum</u>			
<u>Cologania longifolia</u>	Cologania	R	
<u>Commelina dianthifolia</u>	Birdbill dayflower	R	
<u>Cryptantha jamesii</u>	James hiddenflower	R	
<u>Cryptantha sp.</u>	Hiddenflower	R	
<u>Drymaria fendleri</u>	Indian drymary		C
<u>Erigeron divergens</u>	Spreading fleabane	R	
<u>Erigeron flagellaris</u>	Trailing fleabane		C
<u>Eriogonum alatum</u>	Winged buckwheat		C
<u>Eriogonum jamesii</u>	Wee Mary buckwheat		C
var. <u>undulatum</u>			
<u>Erysimum capitatum</u>	Western wallflower	R	
<u>Euphorbia serpyllifolia</u>	Thymeleaf spurge		C
<u>Hieracium ssp.</u>	Hawkweed	R	
<u>Hymenopappus filifolius</u>	White-ragweed	R	
<u>Hymenoxys richardsonii</u>	Pingue		C
<u>Lepidium montanum</u>	Peppergrass		I
var. <u>canescens</u>			
<u>Lesquerella intermedia</u>	Bladderpod		C
<u>Leucelene ericoides</u>	White aster	R	
<u>Linum puberulum</u>	Flax	R	
<u>Lithospermum multiflorum</u>	Stoneseed	R	
<u>Lotus wrightii</u>	Deervetch		I
<u>Lupinus kingii</u>	Kingston lupine	R	
<u>Mirabilis multiflora</u>	Silvestre four o'clock		C
<u>Mirabilis oxybaphoides</u>	Four o'clock		C
<u>Nama dichotomum</u>	Nama		
<u>Oxybaphus linearis</u>	Four o'clock	R	
var. <u>linearis</u>			
<u>Oxytropis lambertii</u>	Lambert crazyweed	R	
<u>Pectis angustifolia</u>	Fetidmarigold		C
<u>Portulaca mundula</u>	Pursley		C
<u>Potentilla concinna</u>	Elegant cinquefoil	R	
<u>Potentilla pennsylvanica</u>	Pennsylvania cinquefoil	R	
<u>Pseudocymopterus montanus</u>	Mountain parsley	R	
<u>Sanvitalia abertii</u>	Sanvitalia	R	
<u>Schoenocrambe linearifolia</u>	Sisymbrium	R	
<u>Senecio spartioides</u>	Broom groundsel	R	
<u>Silene laciniata</u>	Mexican silene	R	
<u>Silene scouleri</u>	Scours catchfly	R	
<u>Solanum fendleri</u>	Fiddle potato	R	
<u>Sphaeralcea digitata</u>	Globemallow	R	
<u>Tradescantia pinetorium</u>	Spiderwort	R	
<u>Verbena bipinnatifida</u>	Dakota verbena	R	
<u>Verbesina enceloides</u>	Golden crownbeard	R	
<u>Vicia ssp.</u>	Vetch	R	
<u>Viguiera cordifolia</u>	Heartleaf goldeneye	R	
<u>Woodsia mexicana</u>	Rockfern	R	

HALF-SHRUBS, SHRUBS, AND TREES:

<u>Artemisia carruthii</u>	Flat sagebrush	R	
<u>Artemisia frigida</u>	Fringed sagebrush	R	
<u>Artemisia ludoviciana</u> ssp. <u>albula</u>	Mexican sage	R	
<u>Berberis repens</u>	Oregon grape	R	
<u>Cercocarpus montanus</u>	True cercocarpus	R	
<u>Chrysothamnus nauseosus</u> ssp. <u>sonsimilis</u>	Rubber rabbitbrush	R	
<u>Coryphantha vivipara</u>	Coryphantha	R	
<u>Gutierrezia sarothrae</u>	Broom snakeweed		C
<u>Ipomopsis multiflora</u>	Ipomopsis		I
<u>Juniperus monosperma</u>	One-seed juniper		C
<u>Lycium pallidum</u>	Pale wolfberry	R	
<u>Opuntia phaeacantha</u>	Pricklypear	R	
<u>Phoradendron juniperinum</u>	Juniper mistletoe		C
<u>Pinus edulis</u>	Pinyon		C
<u>Pinus ponderosa</u>	Ponderosa pine	R	
<u>Ribes inebrians?</u>	Squaw currant	R	
<u>Yucca baccata</u>	Datil yucca		I

¹ Observed by Reggie Fletcher (USFS Regional Botanist, Southwestern Region) on September 25 and October 2, 1986, Taxonomy follows Martin and Hutchins, 1980.

² Common names follow USDA, Forest Service 1974.

³ R = Rare
I = Infrequent
C = Common

*Encountered only on north slope of RNA

Fauna

No rare, endangered, or sensitive animal species are known to inhabit this area. Mule deer and an occasional elk use the mesa top, but it is not an important ungulate habitat. There is no perennial or open stream water on this RNA, and therefore riparian species are absent.

The following animal list was derived from the RUN WILD III computer-stored data base (Lehmkuhl and Patton 1982; Patton 1979) from the following habitat type, for Catron County, New Mexico:

Pinyon - juniper series

This habitat type currently in the data base most closely corresponds to that occurring in the proposed RNA.

Potential Animal List for Largo Mesa RNA

<u>Common Name</u>	<u>Latin Name</u>
Bluebird, mountain	<u>Sialia currucoides</u>
Bluebird, western	<u>Sialia mexicana</u>
Chickadee, mountain	<u>Parus gambeli</u>
Finch, house	<u>Carpodacus mexicanus</u>
Flicker, northern	<u>Colaptes auratus</u>
Flycatcher, ash-throated	<u>Myiarchus cinerascens</u>
Flycatcher, gray	<u>Empidonax wrightii</u>
Flycatcher, vermilion	<u>Pyrocephalus rubinus</u>
Grosbeak, black-headed	<u>Pheucticus melanocephalus</u>
Hawk, ferruginous	<u>Buteo regalis</u>
Hawk, red-tailed	<u>Buteo jamaicensis</u>
Hawk, sharp-shinned	<u>Accipiter striatus</u>
Hummingbird, black-chinned	<u>Archilochus alexandri</u>
Jay, pinyon	<u>Gymnorhinus cyanocephalus</u>
Junco, dark-eyed	<u>Junco hyemalis</u>
Kingbird, Cassin's	<u>Tyrannus vociferans</u>
Nighthawk, common	<u>Chordeiles minor</u>
Nuthatch, pygmy	<u>Sitta pygmaea</u>
Oriole, Scott's	<u>Icterus parisorum</u>
Phoebe, black	<u>Sayornis parisorum</u>
Pygmy-owl, northern	<u>Glaucidium gnoma</u>
Raven, common	<u>Corvus corax</u>
Roadrunner, greater	<u>Geococcyx californianus</u>
Robin, American	<u>Turdus migratorius</u>
Shrike, loggerhead	<u>Lanius ludovicianus</u>
Siskin, pine	<u>Carduelis pinus</u>
Solitaire, Townsend's	<u>Myadestes townsendi</u>
Sparrow, black-chinned	<u>Spizella atrogularis</u>
Sparrow, black-throated	<u>Amphispiza bilineata</u>
Sparrow, Brewer's	<u>Spizella breweri</u>
Sparrow, chipping	<u>Spizella passerina</u>
Sparrow, lark	<u>Chondestes grammacus</u>
Swift, white-throated	<u>Aeronautes saxatalis</u>
Tanager, western	<u>Piranga ludoviciana</u>
Thrasher, Bendire's	<u>Toxostoma bendirei</u>
Titmouse, plain	<u>Parus inornatus</u>
Towhee, brown	<u>Pipilo fuscus</u>
Warbler, black-throated gray	<u>Dendroica nigrescens</u>
Waxwing, cedar	<u>Bombycilla cedrorum</u>
Woodpecker, Lewis'	<u>Melanerpes lewis</u>
Wood-pewee, western	<u>Contopus sordidulus</u>
Wren, Bewick's	<u>Thryomanes bewickii</u>
Wren, rock	<u>Salpinctes obsoletus</u>

MAMMALS:

Bear, black	<u>Ursus americanus</u>
Bobcat	<u>Felis rufus</u>
Chipmunk, cliff	<u>Tamias dorsalis</u>
Coyote	<u>Canis latrans</u>
Deer, mule	<u>Odocoileus hemionus</u>
Elk	<u>Cervus elaphus</u>
Fox, gray	<u>Urocyon cinereoargenteus</u>
Gopher, Botta's pocket	<u>Thomomys bottae</u>
Lion, mountain	<u>Felis concolor</u>
Mouse, brush	<u>Peromyscus boylii</u>
Mouse, cactus	<u>Peromyscus eremicus</u>
Mouse, deer	<u>Peromyscus maniculatus</u>
Mouse, northern grasshoper	<u>Onychomys leucogaster</u>
Mouse, pinyon	<u>Peromyscus truei</u>
Mouse, rock	<u>Peromyscus difficilis</u>
Mouse, western harvest	<u>Reithrodontomys megalotis</u>
Mouse, white-footed	<u>Peromyscus leucopus</u>
Porcupine	<u>Erethizon dorsatum</u>
Rat, banner-tailed kangaroo	<u>Dipodomys spectabilis</u>
Rat, Ord's kangaroo	<u>Dipodomys ordii</u>
Skunk, hog-nosed	<u>Conepatus mesoleucus</u>
Skunk, striped	<u>Mephitis mephitis</u>
Skunk, western spotted	<u>Spilogale gracilis</u>
Squirrel, golden-mantled ground	<u>Spermophilus lateralis</u>
Squirrel, rock	<u>Spermophilus variegatus</u>
Vole, Mexican	<u>Microtus mexicanus</u>
Weasel, long-tailed	<u>Mustela frenata</u>
Woodrat, Mexican	<u>Neotoma mexicana</u>
Woodrat, Stephen's	<u>Neotoma stephensi</u>
Woodrat, white-throated	<u>Neotoma albigula</u>

REPTILES:

Lizard, collared	<u>Crotaphytus collaris</u>
Lizard, crevice spiny	<u>Sceloporus poinsetti</u>
Lizard, side-blotched	<u>Uta stansburiana</u>
Lizard, tree	<u>Urosaurus ornatus</u>
Lizard, Yarrow's spiny	<u>Sceloporus jarrovi</u>
Whiptail, plateau striped	<u>Cnemidophorus velox</u>

Geology

Largo Mesa is situated on the Mogollon slope, or the southern part of the Colorado Plateau. Sedimentary rocks in this unit dip gently to the south (Fitzsimmons 1959). These older sediment deposits consist of siltstone, sandstone, and gravel (N.M. Highway Department, n.d.). In the south end of the Mogollon slope where the RNA is found, volcanic ash flows of the Datil formation are thick, and cover the landscape. Largo Mesa, as other topographic features on the Mogollon slope, is chiefly constructional and due principally to volcanic accumulation of Tertiary age, with the mesa itself a remnant of basalt caprock.

Soils

Soils are dominantly fine-loamy, mixed, and mesic Typic Ustochrepts, and Lithic Ustochrepts. Largo Mesa is at the upper end of the elevational range (6,400 - 7,900 ft or 1,950.7 - 2,407.9 m) for this soil association, which is found chiefly on gently sloping to rolling landscapes. The soils, which usually have fine sandy loam or loam surface layers and loamy subsoils, are forming primarily in old alluvial sediments of mixed origin. Soil layers with high lime content are common at depths of 15 to more than 40 inches (38.1 to 101.6+ cm). These soils commonly support moderate to good stands of pinyon and juniper, with a grass understory that is almost exclusively blue grama.

Lands

Largo Mesa is part of the original Gila Forest created in 1899. There are no known outstanding rights or rights-of-way within the proposed boundaries.

Cultural

No survey has been conducted within the proposed RNA. The eastern portion of Largo Mesa was surveyed by the Prescott College Quemado Project in 1973. The distribution of sites recorded indicates that site density is not high within the RNA. Only one site, a sherd and lithic scatter probably dating to the Reserve-Tularosa period, has been reported on top of the mesa. Site density appears to have been greater in nearby lower elevation drainages. In 1948, Edward B. Danson conducted "extensive" surveys in the Agua Fria and Largo Canyon drainages on both sides of Largo Mesa. He reported that the 31 sites recorded represented only a small percentage of the total number of sites in the two drainages. All datable sites had at least a Pueblo II component (Reserve period), but most also included Pueblo I and III components. The likelihood of locating within the RNA a truly important site which is not duplicated elsewhere is low. Upon establishment as an RNA, the area would be withdrawn from any archeological research that would in any way modify the existing locale.

IMPACTS AND POSSIBLE CONFLICTS

Mineral Resources

No known mineral resources exist in this area and it is likely the potential is low. There have been no leases for mineral exploration. If Largo Mesa is designated an RNA, a recommendation will be made to withdraw the area from mineral entry.

Grazing

The large majority of the area is within the Demetrio Allotment. The steep terrain and elevational differences between the mesa top and lowland grassland results in reduced grazing use of the summit woodland. Some modification in, and repair of the existing fence would be necessary to further control grazing use.

Timber

The woodland consists of pinyon pine and oneseed juniper. Canopy coverage varies from 30 per cent along the south rim to about 70 per cent on the north slope and drainages. There are few shrubs. The area is not suitable for commercial timber activity. The Telephone fuelwood sale is located approximately a mile (1.6 km) northeast of the RNA, but should not impact the RNA. Access to the mesa is limited, further reducing the potential for future fuelwood sales in the area.

Total forest: 300 acres (121.4 hectares)
Total commercial forest: 0

Watershed Values

The Largo Mesa RNA is contained within the Agua Fria Creek and the Largo-Mangus Creek watersheds. The western portion (about 20 per cent) of the RNA drains to the northeast into Telephone Tank two miles (3.2 km) downstream, and on into Largo Creek. The remaining, eastern portion drains to the north, south, and west from the mesa top into Agua Fria Creek.

Recreation Values

Access to the mesa is limited. There are no unique recreational characteristics that attract a measurable level of use to the area. The area is used for deer, elk, and antelope hunting.

Wildlife and Plant Values

No threatened or endangered plant or animal species are known to inhabit the area.

Wilderness, Wild and Scenic River, National Recreation Area Values

None of the above congressionally designated areas have been proposed for the Largo Mesa RNA or vicinity.

Transportation Plans

Largo Mesa is accessed from a spur road off Forest Road 1 on the Quemado District. The spurroad ends approximately one mile (1.6 km) east of the proposed RNA. There are no maintained trails in or adjacent to the RNA. There are no transportation plans that would adversely affect the RNA.

Utility Corridor Plans

There are no existing or potential plans for utility corridors in the vicinity of this RNA.

MANAGEMENT PLAN

The Gila National Forest Plan prescribes that there will be no harvest of firewood or other wood products. The prescriptions also prohibit off-road vehicle travel. Low intensity, dispersed recreation activities are permitted provided they do not significantly modify the area, or threaten or impair the research or educational value of the area. No flora, fauna, or other materials may be collected other than for research approved by the Station Director. Minimal range improvements, such as boundary fences and appropriate interior fences, will be implemented, but no additional developments will be authorized which might change the existing character of the area.

Vegetation Management

The Forest Plan provides that unplanned ignitions will receive appropriate suppression action. Wildfires burning outside the area, which threaten the RNA, will be suppressed.

ADMINISTRATIVE RECORDS AND PROTECTION

Administration and protection of the Largo Mesa RNA will be the responsibility of the Gila National Forest. The District Ranger, Quemado Ranger District, Quemado, NM has direct responsibility.

The Director of the Rocky Mountain Forest and Range Experiment Station, or his designee, will be responsible for any studies or research conducted in the area, and requests to conduct research in the area will be referred to him. He, or his designee, will evaluate research proposals and coordinate all studies and research in the area with the District Ranger. All plant and animal specimens collected in the course of research conducted in the area will be properly preserved and maintained within university or federal agency herbaria and museums, approved by the Rocky Mountain Station Director.

Records for the Largo Mesa RNA will be maintained in the following offices:

Regional Forester, Southwestern Region, Albuquerque, NM
Rocky Mountain Station, Fort Collins, CO
Gila National Forest, Albuquerque, NM
District Ranger, Quemado Ranger District, Quemado, NM

REFERENCES

- DeVelice, Robert L., John A. Ludwig, William H. Moir, and Frank Ronco, Jr. 1986. A classification of forest habitat types of northern New Mexico and southern Colorado. U.S.D.A. Forest Service General Technical Report RM-131, 59 pp. Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.
- Eyre, F.H., ed. 1980. Forest cover types of the United States and Canada. Society of American Foresters, Washington, D.C. 148 pp.
- Federal Committee on Ecological reserves (F.C.E.R.) 1977. A directory of research natural areas on federal lands of the United States of America. USDA Forest Service, Washington, D.C. 280 pp.
- Fitzsimmons, J. Paul. 1959. The structure and geomorphology of west-central New Mexico: a regional setting. In Guidebook of west-central New Mexico, edited by James E. Weir, Jr., and Elmer H. Baltz. Tenth Field Conference, New Mexico Geological Society, Socorro, NM.
- Küchler, A.W. 1964. Potential natural vegetation of the conterminous United States. American Geographical Society, Special Publication 36. 119 pp.
- Lehmkuhl, John F. and David R. Patton. 1984. Run Wild, Wildlife/Habitat relationships: user's manual for the Run Wild III data storage and retrieval system. USDA Forest Service, Southwestern Region, Albuquerque, NM. Wildlife Unit Technical Report. 68 pp.
- Little, Elbert L., Jr. 1979. Checklist of United States trees. USDA Forest Service, Agricultural Handbook 541. Washington, D.C.
- Martin, William C., and Charles R. Hutchins. 1980. A flora of New Mexico. J. Cramer, Braunschweig, West Germany.
- New Mexico State Highway Department. n.d. Geology and Aggregate Resources District 1, Map 61. Santa Fe, NM.
- New Mexico State University, Agricultural Experiment Station, in cooperation with Water Resources Institute, Soil Conservation Service, and Bureau of Reclamation. 1972. Soil associations and land classification for irrigation: Catron county. Agricultural Experiment Station Research Report 229. Las Cruces, NM. 49 pp.
- Patton, David R. 1979. RUN WILD II: a storage and retrieval system for wildlife data. Transactions of the North American Wildlife and National Research Conference 44:425-430.
- Tuan, Yi-Fu, Cyril E. Everard, Jerold G. Widdison, and Iven Bennett. 1973. The climate of New Mexico. New Mexico State Planning Office, Santa Fe, NM. 197 pp. USDA Forest Service. 1974. Field guide to native vegetation of the Southwestern region. USDA Forest Service, Southwestern Region, Albuquerque, NM. 65 pp.
- USDA Forest Service. 1983. Regional guide for the Southwestern Region. USDA Forest Service, Southwestern Region, Albuquerque, NM.

USDA Forest Service. 1984. Progress report, Research Natural Areas: recommended representations for important ecosystems on National Forest System Land in the Southwestern Region. USDA Forest Service, Southwestern Region, Albuquerque, NM. 90 pp.

USDA Forest Service. 1986a. Gila National Forest plan. USDA Forest Service, Southwestern Region, Albuquerque, NM. 324 pp.

USDA Forest Service. 1986b. Forest and woodland habitat types (plant associations) of southern New Mexico and central Arizona (north of the Mogollon Rim). Edition 2. USDA Forest Service, Southwestern Region, Albuquerque, NM. 71 pp.

SURVEYOR'S CERTIFICATION OF
RESEARCH NATURAL AREA BOUNDARY FOR THE FOLLOWING AREAS
LARGO MESA, RABBIT TRAP, TURKEY CREEK

The descriptions for the three Research Natural Areas have been reviewed by me for locating them. The three descriptions are adequate to determine their locations on the ground.

Rocky Hildebrand

ROCKY HILDEBRAND
Forest Land Surveyor

12/7/93

DATE



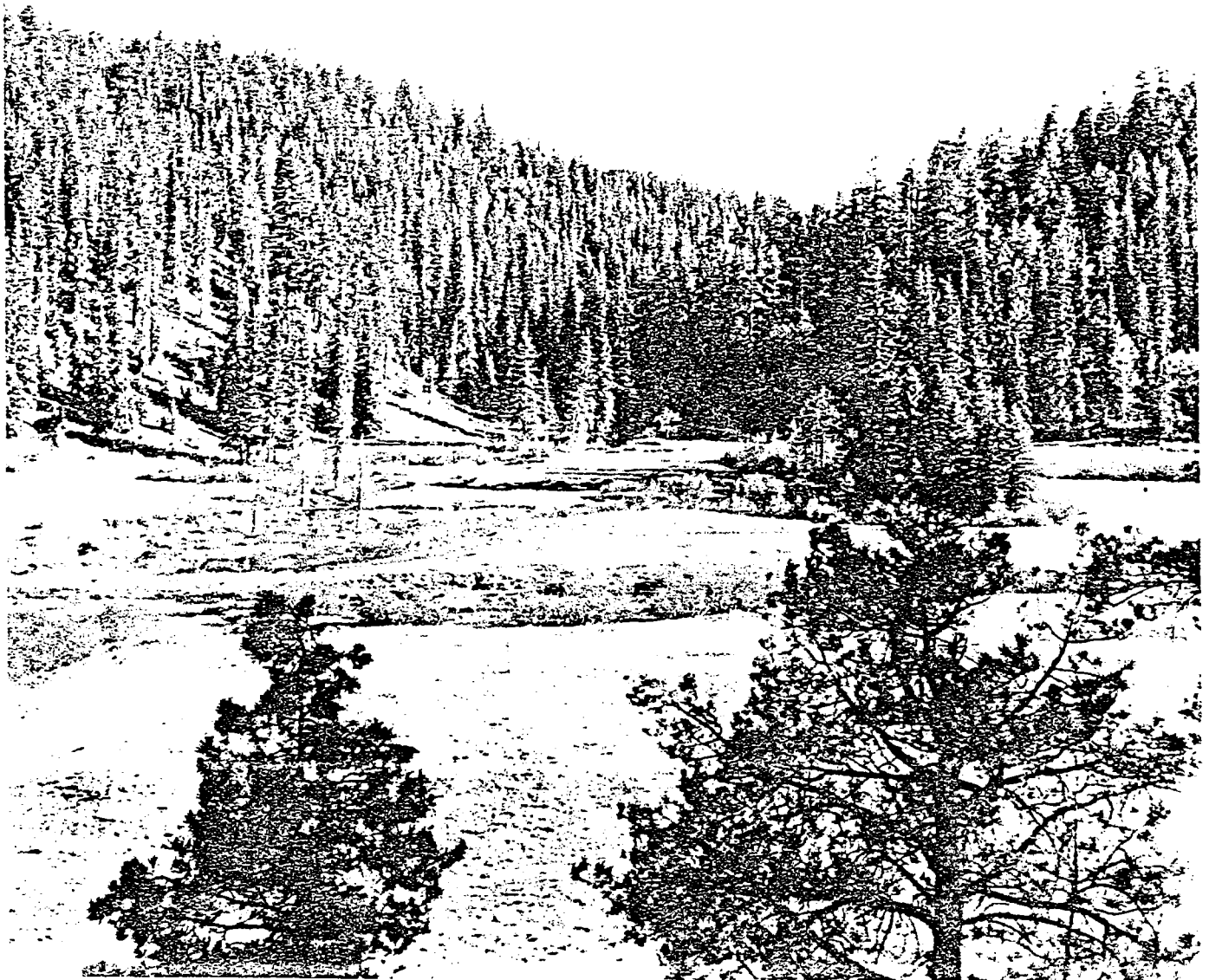
United States
Department of
Agriculture

Forest
Service

Southwestern
Region

September 1986

Environmental Impact Statement, Gila National Forest Plan



9/80

Table 1. Reader's Guide (Continued)

Headings and Evaluation Items Used In Chapters 2, 3, & 4	Unit of Measure*	Connection to ICO's & 36 CFR 219, 40 CFR 1500
TIMBER		
Land Suitability	Acres	219.13
Sawtimber Harvest	MBF	ICO (1), 219.12(g)(3)(ii) ICO (5)
Area Cable Logged	Acres	ICO (1), ICO (5)
Sawtimber Harvest Cable	MBF	ICO (1), ICO (5)
Merchantable Timber Vol. (ASQ)	MCF	219.16(a)
Long Term Sustained Yield	MCF	219.16(a)
Products	MCF	ICO (1), 219.12(g)(3)(ii)
Fuelwood Available	MBF	ICO (1), 219.12(g)(3)(ii) ICO (5)
Reforestation	Acres	ICO (1) 219.27(c)(3) 219.12(g)(3)(i)
Thinning	Acres	ICO (1), 219.27(c)(4) 219.12(g)(3)(i)
Timber Inventory	MCF	219.16(a)
Age Class	Acres	219.16(a)
Vegetation Manipulation	Acres	219.15, ICO (1), ICO (5)
Sale Volume, LTSYC & Growth	Narrative/ MBF, MCF	219.16
Silviculture	Narrative	219.15
DIVERSITY		
Plant & Animal	Narrative	219.26, 219.27(a)(5) 219.27(g)
Tree Species	Narrative	219.26, 219.27(a)(5) 219.27(g)
Timber Age Class	Acres By Age Class	219.26, 219.27(a)(5) 219.27(g)
SOIL AND WATER		
Water Yield Increase	Acre Feet	219.23(e) 219.12(g)(3)(ii)
Watershed Condition	Acres By Condition	219.23(e)
Water Quality	Narrative	219.23(d)
On Site Soil Loss	MTons & Narrative	219.23(e), ICO (1) 219.27(a)(1) 219.27(f), ICO (2) 219.27,(d)(2)(i)
CULTURAL & HISTORIC		
	Narrative	219.24
RESEARCH NATURAL AREAS		
	Area Name & Acres	219.25
MINERALS		
Probable Effects on Mineral Activity, Including Access	Narrative	219.22(f)
Withdrawals and Lease Recommendations	Narrative/ Acres	219.22(f)
FACILITIES		
Road Maintenance	Miles & Narrative	ICO (6) 219.12(g)(3)(i)
Facility Maintenance	Narrative	ICO (6) 219.12(g)(3)(i)
RESOURCE PLANNING ACT		
	Targets	219.12

Runoff from the Gila National Forest meets the State water quality standards approximately 90 percent of the time. Violations of State standards usually occur during periods of high flows in which sediment is the major pollutant. This nonpoint source pollution generally occurs during summer months during high intensity thunderstorms. Numerous unstable channels throughout the Forest add to the sedimentation problem.

Lakes on the Forest, such as Snow Lake and Quemado Lake, are susceptible to massive build ups of blue green algae during the summer months. This is jeopardizing both the fisheries and recreational resources. There is a concern for the possible effects of these algae toxins on the wilderness streams below Snow Lake.

There are numerous areas within the Gila National Forest which have a potential to endanger life and facilities due to flooding. Areas such as the Catwalk picnic area are managed to reduce this danger. This area is restricted to picnicking only. The major flood-prone areas are Whitewater Creek, the main stems of the Gila and San Francisco Rivers, Mogollon Creek, Sapillo Creek, Percha Creek, and the Mimbres River.

Future Trends

The demand for more water developments in the Forest will continue to increase as the public demands more commodities and amenities. Surface and ground water rights necessary to secure water for these uses will be difficult to appropriate. It may be necessary to purchase water rights or transfer water rights currently held by the Forest Service to obtain larger quantities of water.

Trends assume that overall demand for water will continue to exceed supply, and that watershed conditions, soil productivity, and water quality will improve.

RESEARCH NATURAL AREAS

Research Natural Areas (RNAs) are set aside to provide and protect natural diversity in all its forms. The areas typify important Forest, shrubland, and grassland ecosystems having special or unique characteristics of scientific interest or importance. Research natural areas are established for nonmanipulative research, observation, and study.

The Gila National Forest currently has one designated research natural area and four candidate research natural areas. The Gila River RNA is located in analysis area 7A and features 125 acres of pinyon-juniper woodland, 52 acres of riparian hardwood, and 225 acres of desert shrub for total size of 402 acres.

Potential or candidate RNAs are: Turkey Creek in analysis area 8B is 1,335 acres and features riparian hardwood as a major ecosystem; Rabbit Trap in analysis area 7A is 297 acres and features scrub grassland; Largo Mesa in analysis area 9A is 300 acres and features classic pinyon-juniper woodland; and Agua Fria Mountain in analysis area 9B is 350 acres and features mountain grassland as a major ecosystem.

RIPARIAN

These small zones along waterways make up approximately 0.5 percent of the Forest. In addition to being a vital wildlife habitat and diversity component, riparian areas attract recreation use and concentrations of livestock. Roads and trails are many times located within riparian zones because they usually provide easier travel routes.

Because the varied uses are not compatible, conflicts are common. Most recreationists do not like the noise and smell of concentrated livestock. Sensitive wildlife prefer riparian areas isolated from human use. Livestock sometimes compete with wildlife for forage and over time can alter habitat structure. Conflicting uses within sensitive riparian zones result in damage to vegetation, compacted soils, erosion, and stream sedimentation.

Current management has resulted in slow but consistent improvement in higher elevation riparian zones; however, conflicts still persist in many lower elevation riparian areas.



United States
Department of
Agriculture

Forest
Service

Southwestern
Region

September 1986



Gila National Forest Plan



Wildlife and Fish Habitat	<p>Manage for a diverse, well-distributed pattern of habitats for wildlife populations and fish species in cooperation with states and other agencies.</p> <p>Maintain and/or improve habitat for threatened or endangered species and work toward the eventual recovery and delisting of species through recovery plans.</p> <p>Integrate wildlife habitat management activities into all resource practices through intensive coordination.</p>
Minerals	Administer the mineral laws and regulations to minimize surface resource impacts while supporting sound energy and minerals exploration and development.
Soil and Water	<p>Protect and improve the soil resource.</p> <p>Provide for long-term quality waterflow needs through improved management technology.</p> <p>Restore lands in unsatisfactory watershed condition.</p>
Riparian	Improve all riparian areas to satisfactory or better condition.
Air Quality	Minimize air pollution from land management activities through application and timing of improved management practices.
Fire	Provide for fire management support services necessary to sustain resource yields while protecting improvements, investments, and providing for public safety.
Law Enforcement	Reduce risk or harm to visitors and damage to public and private property and natural resources through education, enforcement, and cooperation with other agencies.
Lands and Special Uses	Conduct landownership adjustment, right-of-way acquisition, land line location, and special-uses programs to promote efficient management.
Facilities	<p>Maintain transportation system to support resource goals.</p> <p>Construct, maintain, and regulate use of Forest Service facilities to protect natural resources, correct safety hazards, reduce disinvestment, and support management activities.</p>
Cultural Resources	<p>Inventory and prevent loss or damage of cultural resources until they can be evaluated for scientific study, interpretive services, or other appropriate uses.</p> <p>Enhance and interpret cultural resources so that the public may gain a better understanding and perspective of our heritage.</p> <p>Encourage and conduct scientific studies to gain knowledge about past human behavior.</p>
Land Management Planning	Provide coordination and insure interdisciplinary input for implementing, monitoring, and updating the Forest Plan.
Human Resources	Manage human resource programs to provide employment, and economic development opportunities while meeting natural resource goals.
Research Natural Areas	Protect RNA values and manage for scientific and baseline studies.

OBJECTIVES

An objective is defined as "a specific statement of measurable results to be achieved within a stated time period" [36 CFR 219.3 (w)]. Forest objectives are quantitative. They are time-oriented outputs that are associated with a given budget level. The objectives need to be achieved to accomplish goals.

Standards and guidelines to achieve the objectives are found in the management prescriptions section. Objectives for the Forest are shown in the following tables:

RESOURCE	ACTIVITY	APPLICABLE AREA	STANDARDS AND GUIDELINES
----------	----------	-----------------	--------------------------

D08

This analysis area contains one Research Natural Area (Gila River) and one proposed Research Natural Area (Rabbit Trap).

The Gila River Research Natural Area (402 acres) contains 125 acres of pinyon-juniper, 52 acres of riparian hardwood and 225 acres of desert shrub. It is located in E1/2 E1/2 Sec. 32; NW1/4 W1/2 SW1/4 Sec. 33, T17S, R17W, N.M.P.M. and will be maintained as a Research Natural Area in its natural condition.

The Rabbit Trap area consists of 287 acres of scrub grassland vegetative type located in Sec. 34, T17S, R 16W, and Sec. 3, T18S, R16W N.M.P.M. This area will be managed as a Research Natural Area and maintained in its present natural condition.

7A
TIMBER

ED8

Non-
Wilderness

PJ Fuelwood harvest will not exceed 1,500 acres in the first decade. Volume control for fuelwood will be on the per acre basis.

7A
LANDS

J12

ALL

Lands identified for acquisition for the Management Area are as follows:

LOCATION	ACRES
SW1/4, SW1/4 Sec. 9 T17S, R17W	40
N1/2, SW1/4 Sec. 9 T17S, R17W	80
SE1/4, NW1/4 Sec. 9 T17S, R17W	40
SW1/4, NE1/4 Sec. 9 T17S, R17W	40
SE1/4, SE1/4 Sec. 8 T17S, R17W	40
E1/2, NE1/4 Sec. 17 T17S, R17W	8
	<u>320</u>

7A
WITHDRAWALS

J05

ALL

Lands with withdrawals in effect recommended for revocation are as follows:

DESCRIPTION	LOCATION	ACRES
Power Site Reserve	T17S, R17W Sec. 8, 10, 18, 17, 21, 22, 27, 28, 32, 33	4,120
Water Power Designation	T17S, R17W Sec. 32	240
Gila River Bird Area	T17S, R17W Sec. 8, 10, 18, 17, 21, 27, 28, 32, 33	2,480
San Carlos Indian Irrigation Project	T18S, R17W Sec. 5, 6, 7, 8, 18	2,382
Water Power Designation	T18S, R17W Sec. 5, 6, 7, 8, 18	<u>1,078</u>
	Total	<u>10,300</u>

Lands with withdrawals in effect recommended for retention are as follows:

DESCRIPTION	LOCATION	ACRES
That portion of the Gila River Bird Area containing Gila River Research Natural Area	T17S, R17W Sec. 32 & 33	400

7A
FACILITIES

L01

Cooperate with the Continental Divide Trail Advisory Committee and the New Mexico State Trail Advisory Committee for designation of the Continental Divide Trail.

RESOURCE	ACTIVITY	APPLICABLE AREA	STANDARDS AND GUIDELINES						
	C05,C08		Threatened and endangered species habitat developments are projected at the following improvement levels: <u>Improvement Activity</u> Prescribed Fire 120						
	C03	Within Wilderness	Integrated historic wildlife habitat distributions with the Gila prescribed fire program and the Gila wilderness implementation program.						
	C11	Within Wilderness	Continue recovery of the Gila trout and maintain natural and recovered habitats for threatened and endangered species. Maintenance projected for the following: Man-made barriers 2 Structures Natural barriers 2 Structure						
	C12	Within Wilderness	Continue to cooperate with the New Mexico State Game and Fish Department on stocking of fry on West, Middle, and Main Forks of the Gila River during the first decade. Evaluate the need for restrictions of stocking and modification of angling impact at the end of the first decade.						
	C12	Within Wilderness	Require the New Mexico State Game and Fish Department to maintain wildlife trick tanks under permit in operable condition. When maintenance cost exceeds 50 percent of replacement cost, the improvements will be removed and the need for replacement evaluated. If needed, replacement will be an improvement that does not detract significantly from wilderness character.						
	C15,L01		During transportation planning trail densities will be evaluated within key wildlife habitat areas.						
88 RESEARCH NATURAL AREA	D08		The proposed Turkey Creek Research Natural Area, consisting of 1335 acres of riparian hardwood, is located in Sec. 9, 10, 15, and 18, T14S, R16W NMPM. This major ecosystem will be maintained in its present natural condition.						
88 LANDS	J04	Non-Wilderness	By the end of the first decade recommend for withdrawal all lands not currently withdrawn within the Highway 15 corridor. This corridor extends from the District boundary to the Gila Cliff Dwelling National Monument and includes the National Forest System lands outside the Wilderness boundary.						
	J12	ALL	Lands identified for acquisition for the Management Area are as follows: <table border="1"> <thead> <tr> <th>LOCATION</th> <th>ACRES</th> </tr> </thead> <tbody> <tr> <td>SW1/4, SW1/4 Sect. 15 T14S, R16W</td> <td>40</td> </tr> </tbody> </table>	LOCATION	ACRES	SW1/4, SW1/4 Sect. 15 T14S, R16W	40		
LOCATION	ACRES								
SW1/4, SW1/4 Sect. 15 T14S, R16W	40								
	J01	ALL	Game and Fish Department cabins at Prior and Miller Springs will be maintained at their present state of repair. No major reconstruction will be undertaken. A structure will not be replaced if structural damage exceeds 50 percent.						
	J04	ALL	Lands with withdrawals presently in effect recommended for revocation are as follows: <table border="1"> <thead> <tr> <th>DESCRIPTION</th> <th>LOCATION</th> </tr> </thead> <tbody> <tr> <td>Water Power</td> <td>T12S, R14W Sec. 13, 22, 23, 24, 26, 36</td> </tr> <tr> <td>Water Power</td> <td>T13S, R14W Sec. 24, 25, 26, 27, 33, 34, 35, 36</td> </tr> </tbody> </table>	DESCRIPTION	LOCATION	Water Power	T12S, R14W Sec. 13, 22, 23, 24, 26, 36	Water Power	T13S, R14W Sec. 24, 25, 26, 27, 33, 34, 35, 36
DESCRIPTION	LOCATION								
Water Power	T12S, R14W Sec. 13, 22, 23, 24, 26, 36								
Water Power	T13S, R14W Sec. 24, 25, 26, 27, 33, 34, 35, 36								

RESOURCE	ACTIVITY	APPLICABLE AREA	STANDARDS AND GUIDELINES														
Wildlife habitat development (Continued):																	
			Planting Browse 50 Acres Grass & Forb Seeding 200 Acres Control of Habitat Access 1 Mile Browse Pruning 15 Acres Wetland Development 1 Structure														
	CO5, CO8	ALL	Continue threatened and endangered species habitat improvements as identified through approved recovery plans. Objectives are to maintain T&E habitats and address recovery needs on a case by case basis. The Bald Eagle is the only T&E and sensitive species known within this area.														
	CO9, CO10, CO11		Provide maintenance of habitat improvements to sustain emphasized population levels. Maintenance priority is 1) T&E species, 2) game species, 3) other species. Habitat maintenance is projected at the following level by the first decade: <table style="margin-left: 40px;"> <tr> <td>Water Developments [trick tanks, rockheaders, spring developments, etc.]</td> <td>2 Structures</td> </tr> <tr> <td>Control of Habitat Access</td> <td>1 Mile</td> </tr> </table>	Water Developments [trick tanks, rockheaders, spring developments, etc.]	2 Structures	Control of Habitat Access	1 Mile										
Water Developments [trick tanks, rockheaders, spring developments, etc.]	2 Structures																
Control of Habitat Access	1 Mile																
SA RANGE	DO2	ALL	Grazing allotments generally will be managed to a level of C or above. Based on existing data, this is projected to result in a long term capacity of approximately 9,270 AUMs. Any additional forage capacity that becomes available after Management Area emphasized levels for livestock and wildlife have been attained will generally be allocated according to the long term management emphasis ratio.														
	DO2	ALL	Lands classified as full capacity rangeland include 61,510 acres, of which 42,695 acres are currently unsatisfactory. Approximately 37,273 acres are estimated to be unsatisfactory by the fifth decade.														
	DO4, DO3		Nonstructural range improvement needs have been identified to include 3,914 acres of reinvasion Pinyon/Juniper and 3,400 acres of new invasion Pinyon/Juniper. The treatment of these acres can be accomplished if funding becomes available through other means.														
	DO5	ALL	Reconstruct range improvements needed to manage at level C on a 40 year cycle. Priority for expenditure of funds on existing improvements is as follows: <table style="margin-left: 40px;"> <tr> <td colspan="2">Reconstruction:</td> </tr> <tr> <td>Allotment boundary fences.</td> <td>87 Miles</td> </tr> <tr> <td colspan="2">Water Developments</td> </tr> <tr> <td>Stock Tanks</td> <td>12</td> </tr> <tr> <td>Springs</td> <td>8</td> </tr> <tr> <td>Pipelines</td> <td>7 Miles</td> </tr> <tr> <td>Allotment Interior Fences</td> <td>32.8 Miles</td> </tr> </table>	Reconstruction:		Allotment boundary fences.	87 Miles	Water Developments		Stock Tanks	12	Springs	8	Pipelines	7 Miles	Allotment Interior Fences	32.8 Miles
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Pipelines	7 Miles																
Allotment Interior Fences	32.8 Miles																
	DO8	Largo Mesa	The proposed Largo Mesa Research Natural Area consists of 300 acres of pinyon-juniper woodland. Located in Sections 34 and 35, T1S, R17W, this major ecosystem will be maintained in its present natural condition.														
SA TIMBER	EO8	ALL	Timber will be harvested from the following LTMAs and slopes as indicated:														

LARGO MESA RESEARCH NATURAL AREA

Ecosystems: 122.41 Pinyon-juniper woodland

Woodland of pinyon (Pinus edulis) and one-seed juniper (Juniperus monosperma) occurs atop the flat, 8000-foot summit of Largo Mesa. The mesa is a geologically eroded remnant of volcanic ash flows of the Datil Formation. Geologic slope retreat resulted in a steep, 400 foot scarp at the base of which is a dissected piedmont of both coarse detritus and fine-textured alluvial drainages. The scarp, its coarse-textured piedmont, and the mesa top all contain woodland, whereas the fine-textured drainages and surrounding lowlands are blue grama grasslands. The generally steep terrain and elevational difference from mesa top to the grasslands results in lessened livestock grazing use of the woodland on the summit. About 300 acres along a portion of this mesa top are proposed as a pinyon-juniper research natural area (RNA).

There is a strong research and management co-interest in any representative pinyon-juniper woodland set aside for primarily research purposes. The New Mexico Interagency Woodland Committee has estimated that about 3.6 million acres of woodland occurs on National Forest lands. A significant part of this is pinyon-juniper woodland, one of the most pervasively utilized ecosystems in Region 3 with extensive demands for livestock production, fuelwood cutting, deer hunting, type conversion, and rehabilitation. As consequence, the Region 3 RNA Committee and the Regional Forest Plan have given high priority toward establishing suitable areas of pinyon-juniper woodland within the Federal RNA program. Yet, because of its widespread utilization demands such woodland of appropriate "minimally disturbed" quality and representative of the kinds of woodland that are intensively managed are very difficult to locate. As yet there are no pinyon-juniper ecosystems as a primary vegetation within the New Mexico RNA program.

The woodland on Largo Mesa may qualify for our RNA purposes. They consist of nearly stable-aged populations of both pinyon pine and one-seed juniper. Taller pinyon attain heights around 25-30 feet, and large, old specimens of both species are common. There has been no fuelwood or post cutting. Canopy coverage of the trees varies from 30% along the drier south rim of the mesa top to about 70% on the gentle northerly slopes and slight drainages. A grass layer is continuous between and beneath the trees. Blue grama (Bouteloua gracilis) constitutes over 95% of the total coverage, while little-seed ricegrass (Oryzopsis microantha) grows underneath many of the trees. The grass layer is remarkably uniform throughout the area. The only other grasses were usually infrequent: junegrass (Koeleria cristata), spike muhly (Muhlenbergia wrightii), needle-and-thread (Stipa speciosa), squirrel-tail (Sitanion hystrix), pine

dropseed (Blepharoneuron tricholepis), and a sedge (Carex sect. montanae). Absent or rare were such grasses as mountain muhly (Muhlenbergia montana), muttongrass (Poa fendleriana), side-oats grama (Bouteloua curtipendula), and three-awn (Aristida spp)

As for shrubs, there were occasional mountain mahogany (Cercocarpus paucidentata) generally in good browse condition. There were but few of such invader or increaser species as pinque (Hymenoxys richardsonii), rabbitbrush (Chrysothamnus sp.) or snakeweed (Gutierrezia sp).

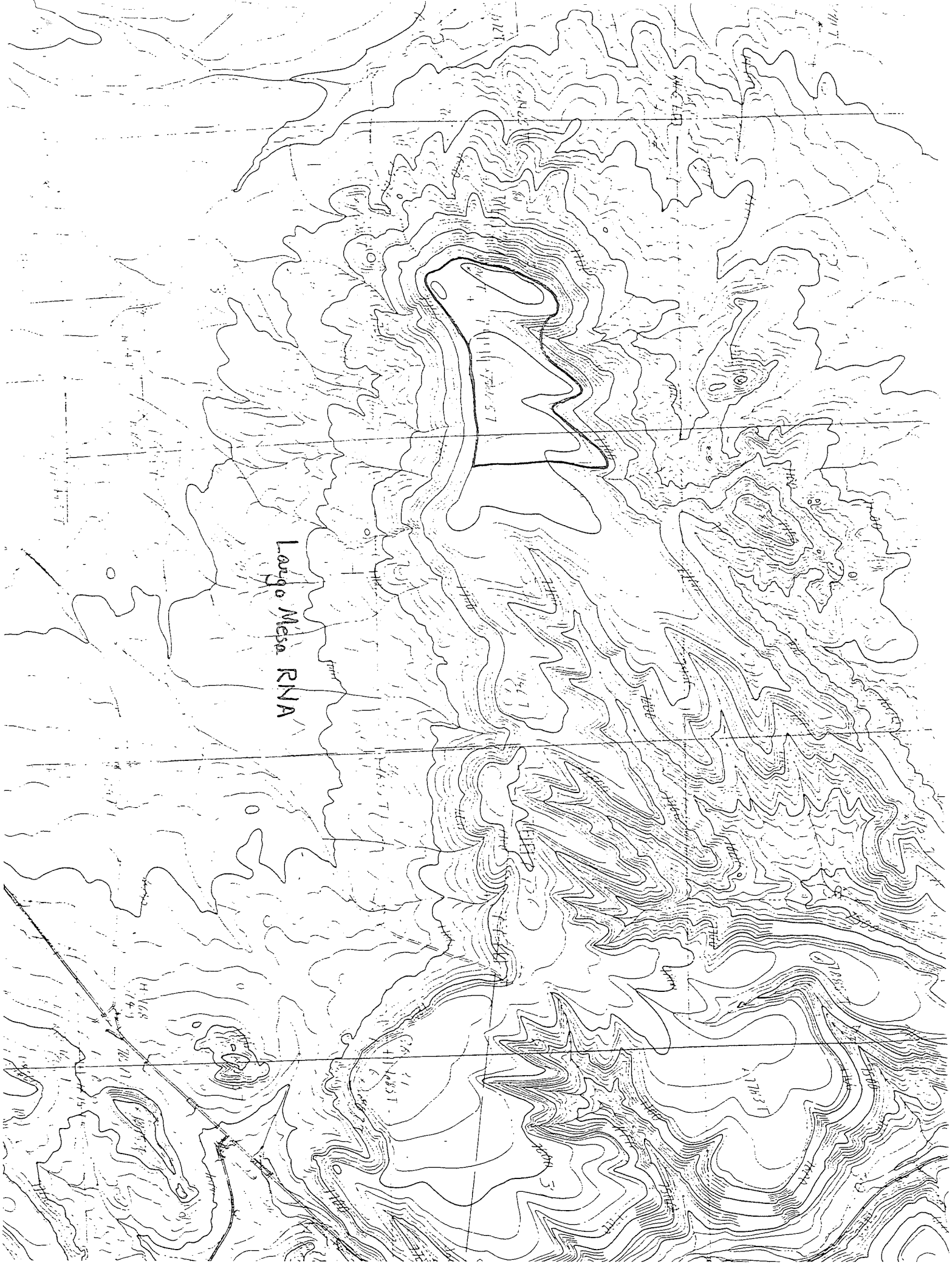
Concerning the natural area qualities of this woodland ecosystem on Largo Mesa, the Region 3 RNA Task Group gives the following pros and cons:

YES. There is good woodland structure and good coverage by grasses. The gentle slopes of the summit are expressive of the kinds of landforms and acreages over extensive acreages of our woodland management lands in New Mexico. (The soils need to be described so that we can relate the soil-vegetation ecosystem to mapped acreages on the Gila National Forest and elsewhere.) Erosion seems minimal. The vegetation is representative of the Pinus edulis-Juniperus monosperma-Bouteloua gracilis Subseries that is widespread in the Southwest, and therefore research here has widely applicable implications.

NO. There has evidently been a past history of heavy livestock use on this mesa top. Genetic diversity is low for this type of ecosystem.

OTHER CONSIDERATIONS (Yes or No). Almost all pinyon-juniper ecosystems on National Forest lands in New Mexico are within grazing allotments committed for livestock production. Mesa Largo may create less conflict than other possible sites if designated as an RNA because the acreage under consideration is relatively remote, has no developed water, and is used by cattle only lightly at present. To meet National and Regional RNA requirements will require about 300 acres to be fenced. Given the forage condition on Largo Mesa, this will imply about 10 AUMs of forage availability.

Mineral claims on the Mesa need to be checked out. Wildlife resources will be either unaffected or improved by RNA designation. Recreation use other than hunting is probably already minimal.



Largo Mesa RNA

Largo mesa location

EXHIBIT A
LARGO MESA R.N.A.

Remote location and steep surrounding topography have insured low grazing impact on the natural vegetation and minimal future impact once the established RNA is removed from the resource base for cattle production.

PRINCIPAL DISTINGUISHING FEATURES

The flat 8,000 ft. (2,438.4 m) summit of Largo Mesa is a geologically eroded remnant of volcanic ash flows. Geologic slope retreat result in a steep, 400 ft (121.9 m) scarp at the base of which is a dissected piedmont of both coarse detritus and fine-texture alluvial drainages. The scarp, its coarse-textured piedmont, and the mesa top all contain woodland, whereas the fine-texture drainages and surrounding lowlands are blue grama grasslands. The woodland consists of stable stand structure of pinyon pine and oneseed juniper, with large, old specimens of both species common. Grass cover (chiefly blue grama) is continuous between and beneath trees. Along the northern border of the RNA, the upper portions of several small canyons harbor considerable additional plant and animal diversity. Here grasses and forbs become notably more various. These canyons also provide habitats for many migratory birds.

LOCATION

This area lies approximately 13 miles (20.9 km) southwest of Quemado, near the Arizona border in the west-central portion of New Mexico (map 1). Largo Mesa is located in Catron County, on the Largo Mesa 4NE Quadrangle (USGS 7.5'), Township 1 S., Range 17 W. Sections 34 and 35, at longitude 108° 35' W, latitude 34° 10' N. An all-weather road leads to within an easy 1 mile (1.6 km) hike to the RNA atop Largo Mesa.

If traveling from the north, drive on U.S. Highway 60 to Quemado (Maps 2 and 3). Turn south on New Mexico Highway 32, and travel 14.6 miles (23.5 km) to the gravel road on the right (west) leading to Largo Mesa. This turn-off is 0.6 miles (1.1 km) south of the junction of the spur road leading to Quemado Lake. If traveling from the south, the Largo Mesa gravel road turn-off is 26.4 miles (42.5 km) north of Apache Creek on New Mexico highway 32.

Proceed 1.8 miles (3.1 km) west on this gravel road to a point immediately south of Largo Mesa, which is clearly visible from here. The mesa top can be reached from almost any side, but the southern approach from this road is probably easiest. It requires a hike of just over 1 mile (1.6 km) and a climb of about 500 feet (152.4 m) elevation. The mesa top is extremely flat and traversing it is an easy matter.

A boundary description of the proposed Largo Mesa RNA is as follows:

Woodland

TOTAL

300

121.4



United States
Department of
Agriculture

Forest
Service

Southwestern
Region

517 Gold Avenue, SW
Albuquerque, NM 87102

Reply to: 4060

Date: November 10, 1956

Subject: Rabbittrap and Largo Mesa Research Natural Areas

To: Forest Supervisor, Gila National Forest

Enclosed are plant lists by Reggie Fletcher for the proposed Rabbittrap and Largo Mesa Research Natural Areas with additional comments on Largo Mesa.

for Robert Partida
W. R. SNYDER
Director of Range Management

Enclosures

cc:
Bill Dunmire, NC
Will Moir
Earl Aldon, RM



Comments on the Proposed Largo Mesa Research Natural Area

As delineated in the December 1983 "Southwestern Region Research Natural Area Program Status Report," the Largo Mesa Research Natural Area (RNA) consists of only the flat mesa top. The mesa top is exceedingly species depauperate both from a plant and animal standpoint. However, by modifying the northern boundary to include the upper portions of several small canyons, plant and animal diversity is augmented significantly. During my initial survey on September 25, 1986, and again on a survey with Bill Dunmire on October 2, 1986, most of the migratory bird activity was taking place on the north side of the mesa. Only 71 plant taxa were found on the mesa top. A quick overview of the north slope yielded an additional 20 plant species.

The recommended modification of the northern boundary should not add additional acreage to the RNA and would be accomplished as indicated in the accompanying map by running a straight line east-northeast from the northwestern most point across the tips of the next two ridges to the east. The northeastern arm of the 1983 delineation would be cut off by meeting the existing fence about a quarter mile south.

The pinyon and one-seed juniper mixture on the mesa is roughly 50/50. The inherent productivity on the mesa is not great as the pinyons mature and die before reaching more than moderate size. The composition of in excess of 95 percent of the cover is represented by Pinus edulis, Juniperus monosperma, Bouteloua gracilis, Gutierrezia sarothrae, and Oryzopsis micrantha. Of the grass cover, Bouteloua gracilis comprises over 85 percent of the mesa top with Oryzopsis micrantha about 10 percent, Koeleria cristata 1-2 percent, and Sitanion hystrix 1-2 percent. Overall, the canopy cover averages about 40 percent but varies significantly from one portion of the mesa to another.

Livestock use on the mesa is light but modifications in and repair of the existing fence is needed. A wing or drift fence from the existing fence to the mesa edge on the north and south sides of the mesa should adequately control livestock access without hampering wildlife movements significantly. These fences need not be more than about 50 yards in length and are marked on the enclosed map.

Largo Mesa is an excellent representation of a pinyon pine one-seed juniper community on the ash flows of the Datil Formation. However, it is of limited value for making generalizations or extrapolating to most of the Pinus edulis-Juniperus monosperma communities elsewhere in the Region. There is still a great need for obtaining representatives of most of the habitats represented by this widespread community.

Animals noted during the two surveys include cottontail, jackrabbit, elk, deer, kangaroo rat, rock squirrel, skunk, chipmunk, neotoma, coyote, Audubon's warbler (Yellow-rumped), Grace's warbler, flicker, Mountain Chickadee, White-breasted nuthatch, raven, pinyon jay, brown towhee, and ladder-backed woodpecker.

REGGIE FLETCHER
Regional Botanist

LARGO MESA RNA PLANT COLLECTIONS/NOTATIONS

made by Reggie Fletcher
September 25 and October 2, 1986

Amaranthus sp.	R
*Androsace septentrionalis	R
*Antennaria parviflora	R
Arabis fendleri var. fendleri	R
Arceuthobium divaricatum	R
*Arenaria confusa	R
*Artemisia carruthii	R
*Artemisia frigida	R
Artemisia ludoviciana ssp. albula	R
Astragalus humistratus var. crispulus	I
*Astragalus lentiginosus ?	R
Astragalus mollissimus	I
Bahia dissecta	I
Bahia neomexicana	I
*Berberis repens	R
Bidens heterosperma	R
Blepharoneuron tricholepis	R (c on n slope)
Bouteloua gracilis	C
*Bromus frondosus	R
Carex ssp.	R
Cercocarpus montanus	R
Chenopodium fremontii	I
Chenopodium graveolens var. neomexicanum	C
Chrysothamnus nauseosus ssp. consimilis	R
*Cologania longifolia	R
*Commelina dianthifolia	R
Coryphantha vivipara	R
Cryptantha jamesii	R
Cryptantha sp.	R
Cyperus fendlerianus	R
Drymaria fendleri	C
Erigeron divergens	R
Erigeron flagellaris	C
Eriogonum alatum	C
Eriogonum jamesii var. undulatum	C
Erysimum capitatum	R
Euphorbia serpyllifolia	C
Gutierrezia sarothrae	C
*Hieracium ssp.	R
Hymenopappus filifolius	R
Hymoxys richardsonii	C
Ipomopsis multiflora	I
Juniperus monosperma	C
Koeleria cristata	C
Lepidium montanum var. canescens	I
Lesquerella intermedia	C

Leucelene ericoides	R
Linum puberulum	R
*Lithospermum multiflorum	R
Lotus wrightii	I
Lupinus kingii	R
Lycium pallidum	R
Mirabilis multiflora	C
Mirabilis oxybaphoides	C
*Muhlenbergia montana	I
*Muhlenbergia pauciflora	R
Muhlenbergia sinuosa	R
Muhlenbergia wrightii	I
Munroa squarrosa	R
Nama dichotomum	I
Opuntia phaeacantha	R
Oryzopsis micrantha	C
Oxybaphus linearis var. linearis	R
Oxytropis lambertii	R
Pectis angustifolia	C
Phoradendron juniperinum	C
Pinus edulis	C
Pinus ponderosa	R (one tree)
Poa bigelovii	I
Portulaca mundula	C
*Potentilla concinna	R
Potentilla pennsylvanica	R
*Pseudocymopterus montanus	R
*Ribes inebrians ?	R
Sanvitalia abertii	R
Schoenocrambe linearifolia	R
Senecio spartioides	R
*Silene laciniata	R
Silene scouleri	R
Sitanion hystrix	C
Solanum fendleri	R
Sphaeralcea digitata	R
Sporobolus cryptandrus	R
Stipa columbiana	R
Tradescantia pinetorum	R
Verbena bipinnatifida	R
Verbesinia encelioides	R
*Vicia ssp.	R
Viguiera cordifolia	R
*Woodsia mexicana	R
Yucca baccata	I

*Encountered only on north slope of RNA.

Relative Abundance:

R = Rare

I = Infrequent

C = Common

LARGO MESA RESEARCH NATURAL AREA

Gila National Forest, Quemado District

Primary Ecosystem: 122.41 pinyon-juniper woodland

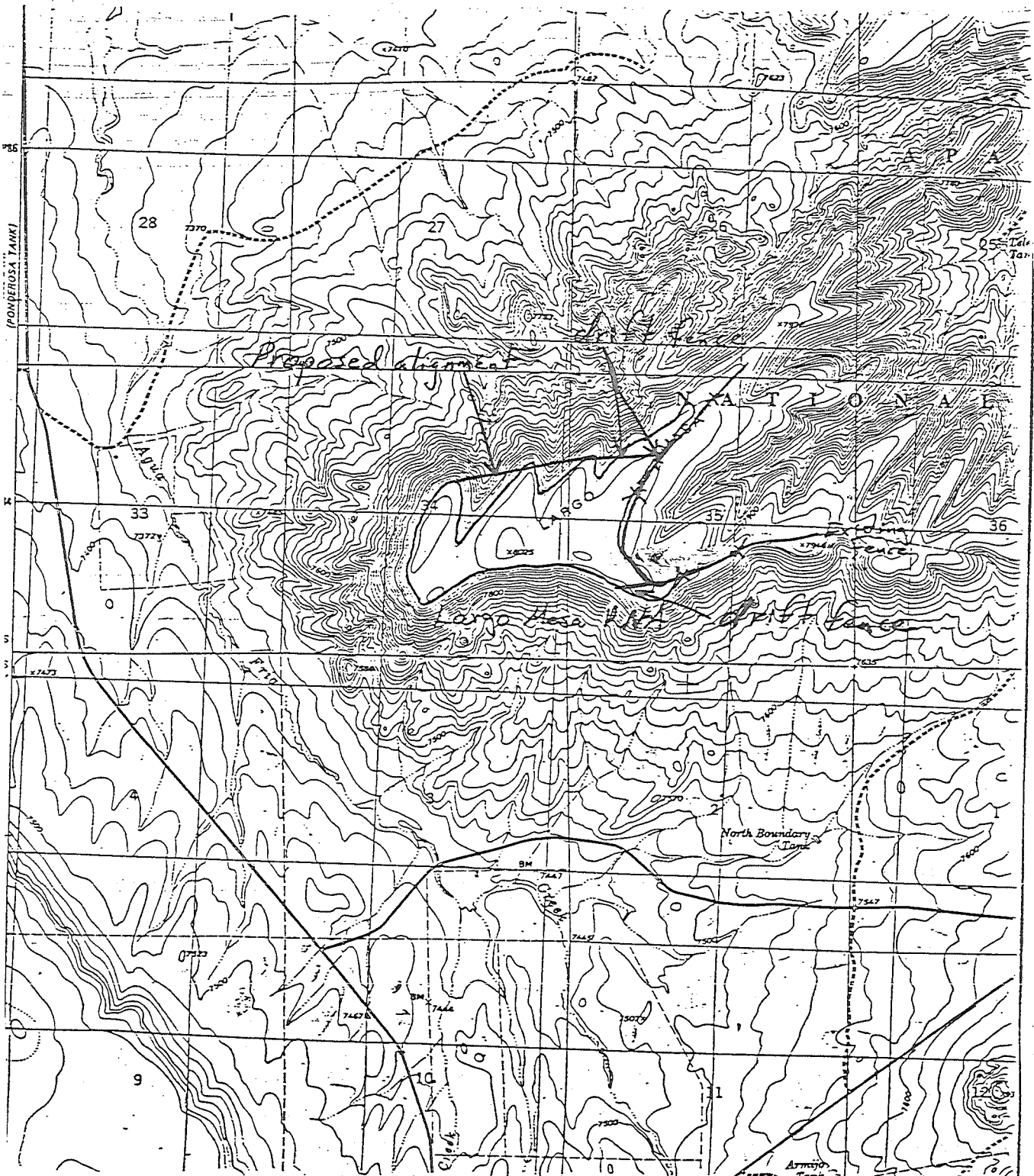
300 acres (122 ha)

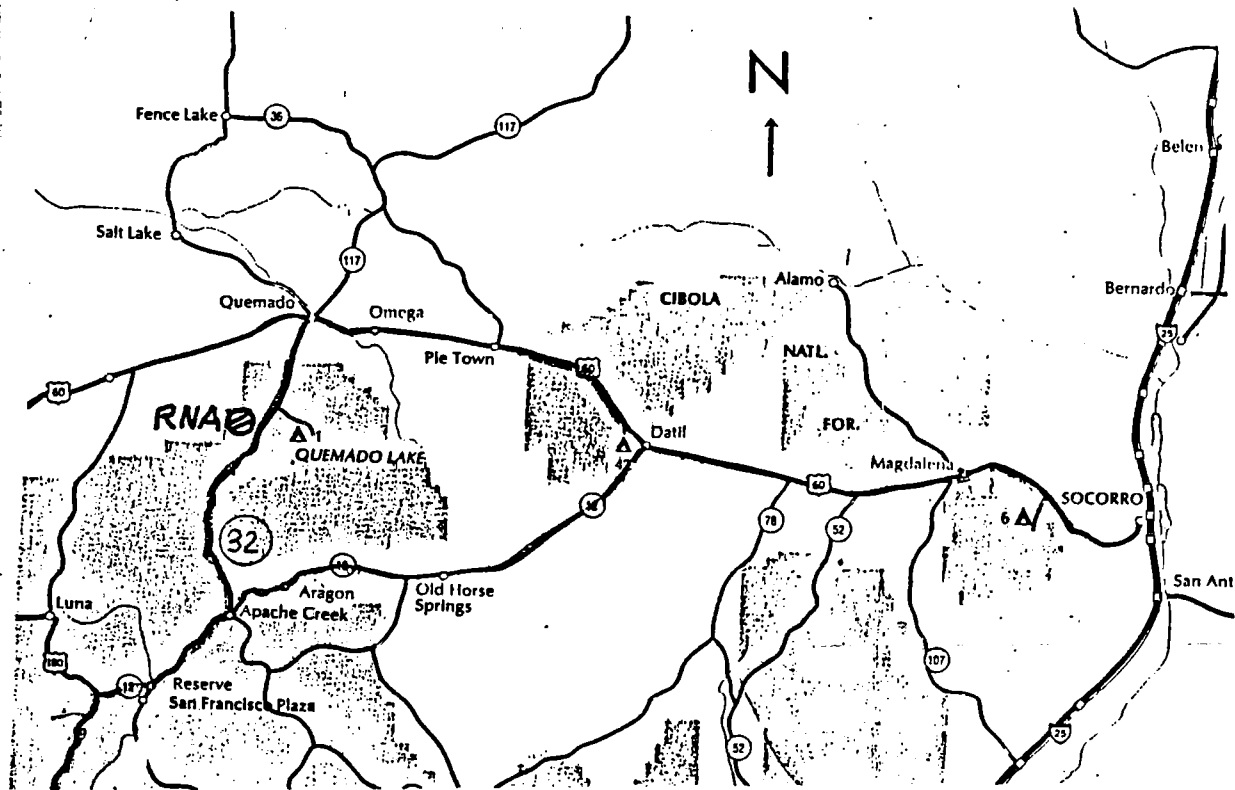
Woodland of pinyon (*Pinus edulis*) and one-seed juniper (*Juniperus monosperma*) occurs atop the flat, 8000-ft (2440 m) summit of Largo Mesa. The mesa is a geologically eroded remnant of ash flows of the Datil Formation. Geologic slope retreat resulted in a steep, 400-foot (120 m) scarp at whose base is a dissected piedmont of both coarse detritus and finer textured alluvial drainages. The scarp, its piedmont, and the mesa top all contain woodland, whereas the surrounding lowlands are blue grama (*Bouteloua gracilis*) grasslands. The generally steep terrain and elevational differences between the mesa top and lowland grassland results in lessened livestock grazing use of the summit woodland.

The woodland consists of apparently stable-aged populations of both pinyon pine and one-seed juniper. Taller pinyon attain heights around 25-30 feet (8-9 m), and large, old specimens of both species are seen. Canopy coverage of the trees varies from 30% along the drier south rim of the mesa top to about 70% on the gentle northerly slopes and slight drainages. A grass layer is continuous beneath and between the trees. Blue grama constitutes perhaps 95% of the total coverage, while little-seed ricegrass (*Oryzopsis micrantha*) grows under many of the trees. The grass layer is remarkably uniform throughout the area. Other grasses are infrequent, including junegrass (*Koeleria macrantha*), spike muhly (*Muhlenbergia wrightii*), needle-and-thread (*Stipa speciosa*), squirrel-tail (*Sitanion hystrix*), pine dropseed (*Blepharoneuron tricholepis*), and sedge (probably *Carex geophila*).

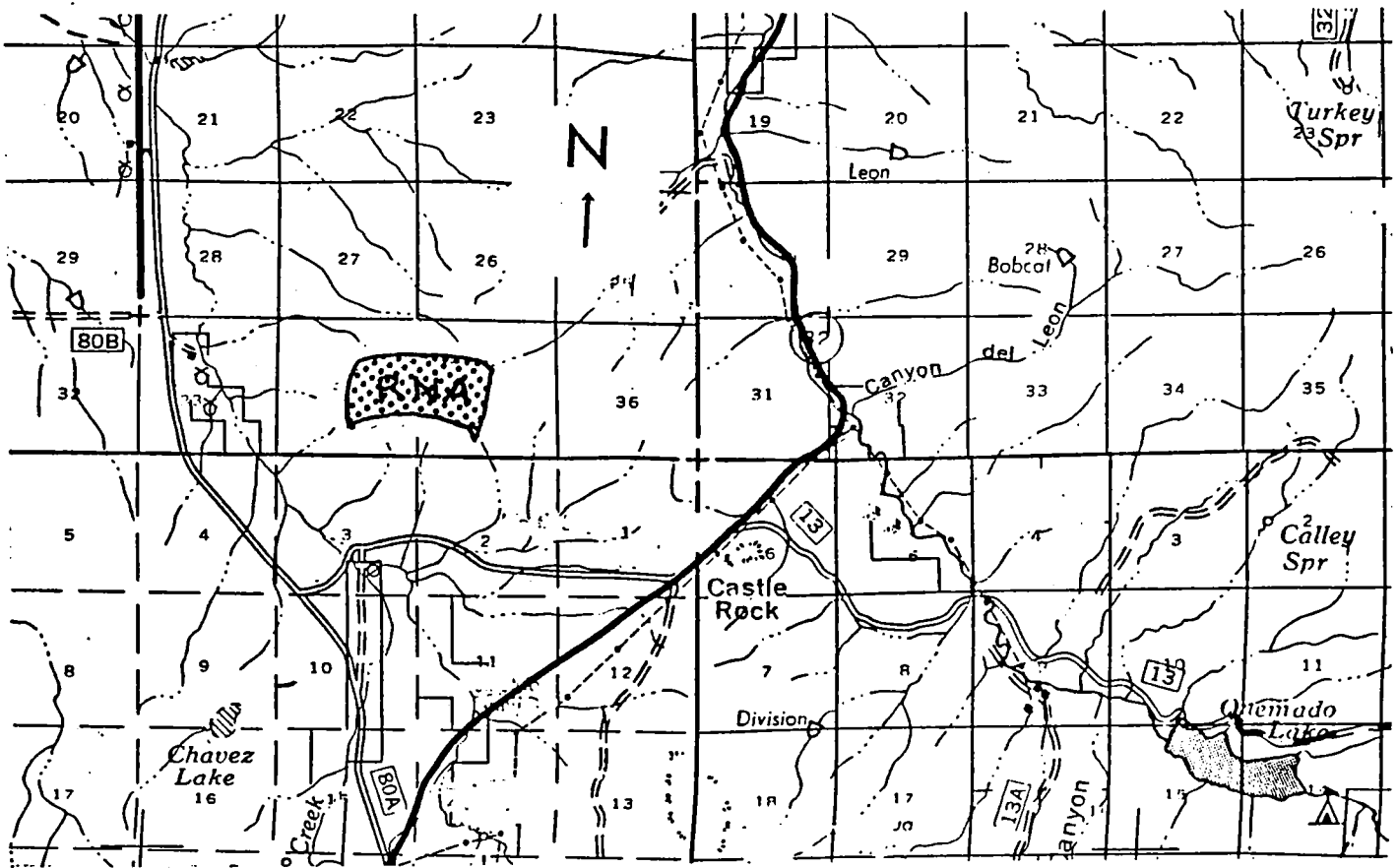
Shrubs are uncommon. There are occasional mountain mahogany (*Cercocarpus montanus* var *paucidentata*) mostly in good browse condition. There are but few invador or increasor shrubs as pingue (*Hymenoxys richardsonii*), rabbitbrush (*Chrysothamnus* sp.), and snakeweed (*Gutierrezia sarothrae*).

LARGO MESA RESEARCH NATURAL AREA
Largo Mesa Quadrangle (USGS 7.5')

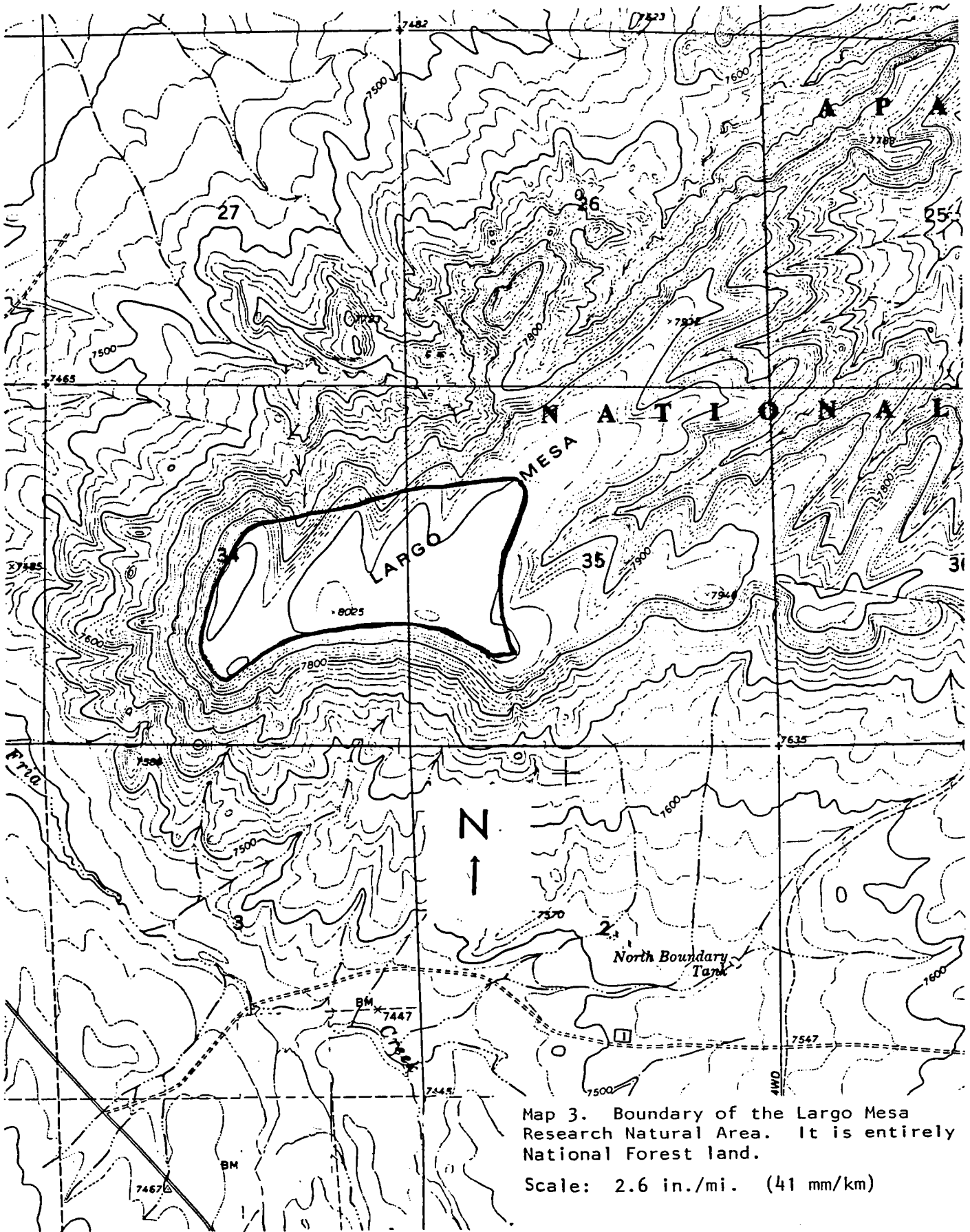




Map 1. Location of RNA (West Central New Mexico)

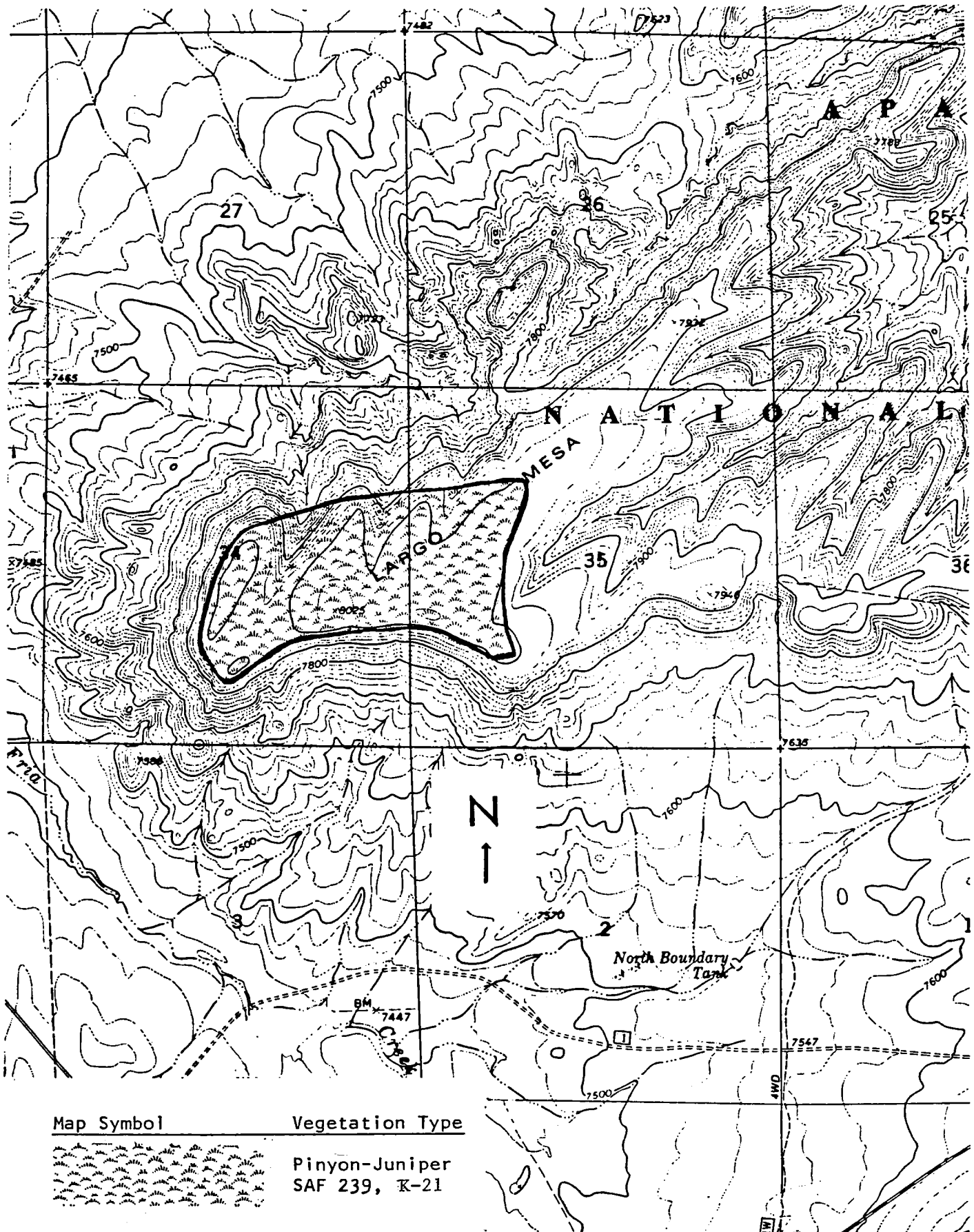


Map 2. Access Route to Largo Mesa RNA



Map 3. Boundary of the Largo Mesa Research Natural Area. It is entirely National Forest land.

Scale: 2.6 in./mi. (41 mm/km)



Map 4. Distribution of vegetation types in the Largo Mesa Research Natural Area.

PHOTOGRAPHIC RECORD

(See FSM 1643.52)

PHOTOGRAPHER

William W. Dunmire

DATE SUBMITTED

Nov. 16, 1987

HEADQUARTERS UNIT

LOCATION

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(1)	(2)	(3)	(4)	(5)	(6)	(7)
				<p><u>ALL:</u> New Mexico Gila NF Quemado Dist. Catron Co.</p>		<p><u>ALL:</u> 24x36mm color slides</p>
1.			10/2/86		South toward Largo Mesa from State Highway 32.	
2.			10/2/86		South to Largo Mesa from ranch road approximately 2 miles (3.2 km) north of mesa.	
3.			10/2/86		Pinon pine/one-seed juniper/blue grama community occurring throughout Largo Mesa RNA.	
4.			10/2/86		Littleseed ricegrass growing under one-seed juniper on Largo Mesa RNA.	
5.			10/2/86		Looking north across 5-acre (2.0 hectare) grassy opening at west end of Largo Mesa RNA.	
6.			10/2/86		East toward north-facing slope of Largo Mesa from northwest corner of Largo Mesa RNA.	

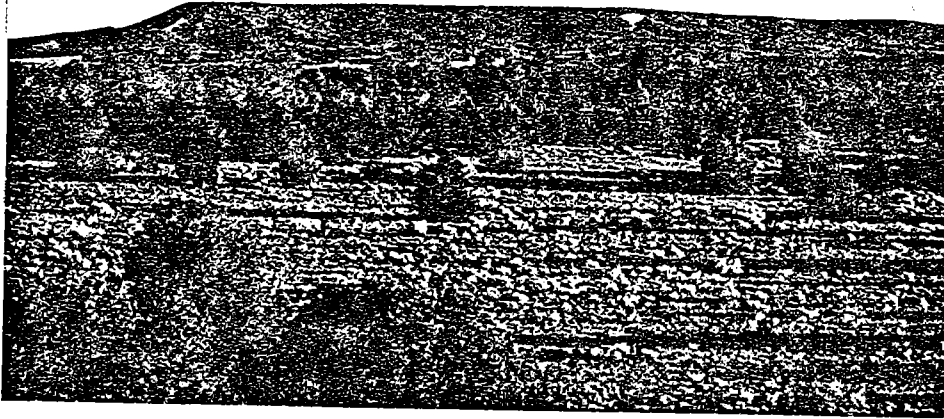


Photo 1. South toward Largo Mesa from State Highway 32. RNA is on mesa top from scar on right third of photo to left-hand skyline.

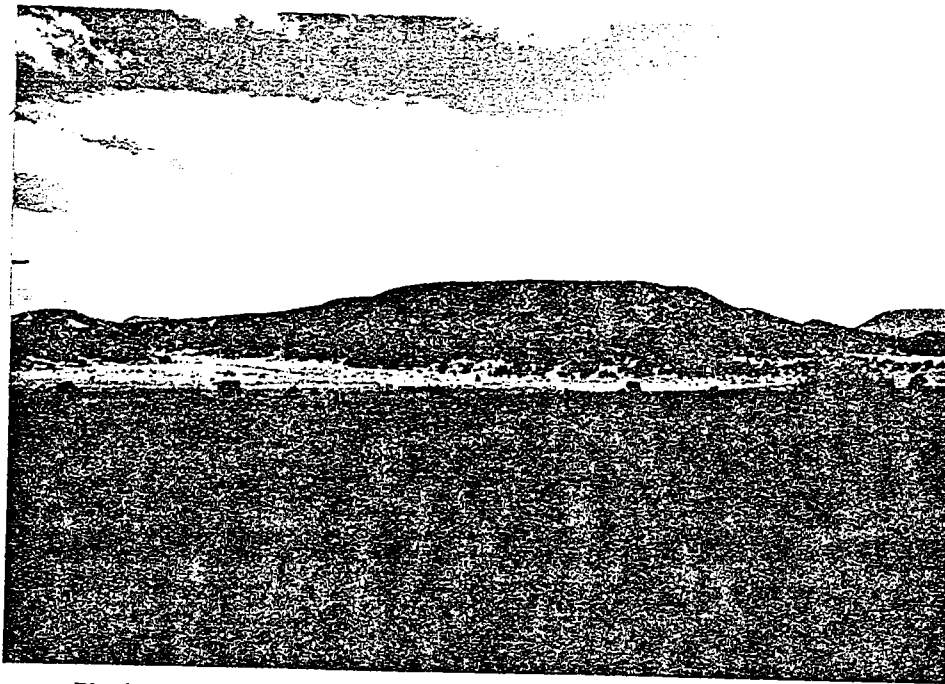


Photo 2. Largo Mesa from the north. Mesa is on distant skyline.



Photo 3. Pinus edulus/Bouteloua gracilis Habitat Type typical of mesa top. Juniperus monosperma is codominant here.



Photo 4. Littleseed ricegrass (Oryzopsis micrantha) grows under many of the larger junipers and piñons.

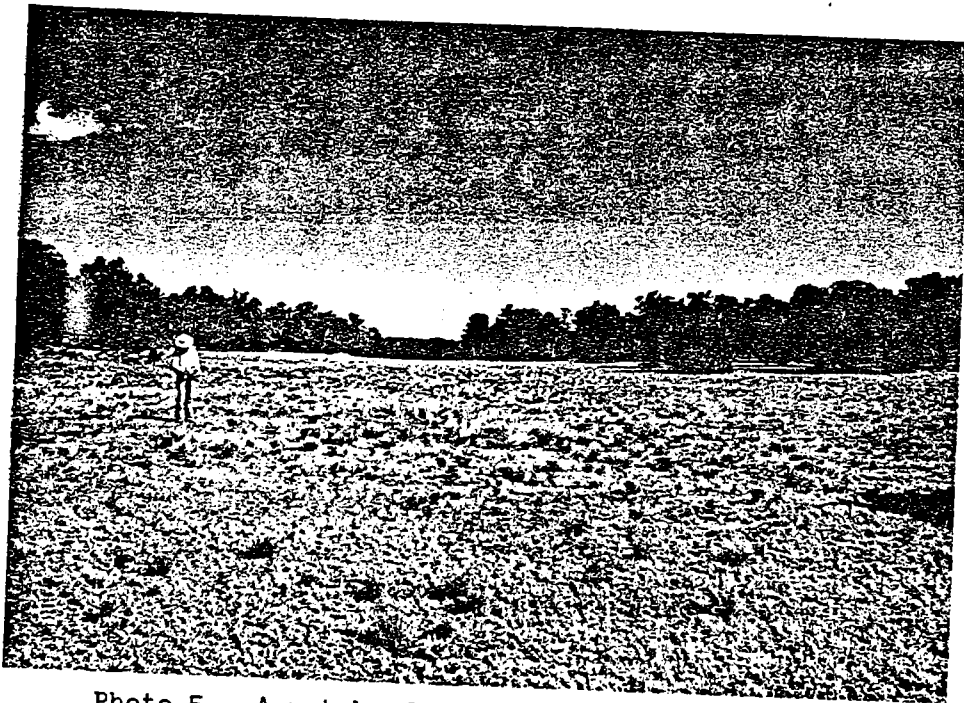


Photo 5. A patch of open grassland exists at the west end of the mesa top. The grass is virtually all Bouteloua gracilis with broom snakeweed and a variety of annual forbs scattered throughout.

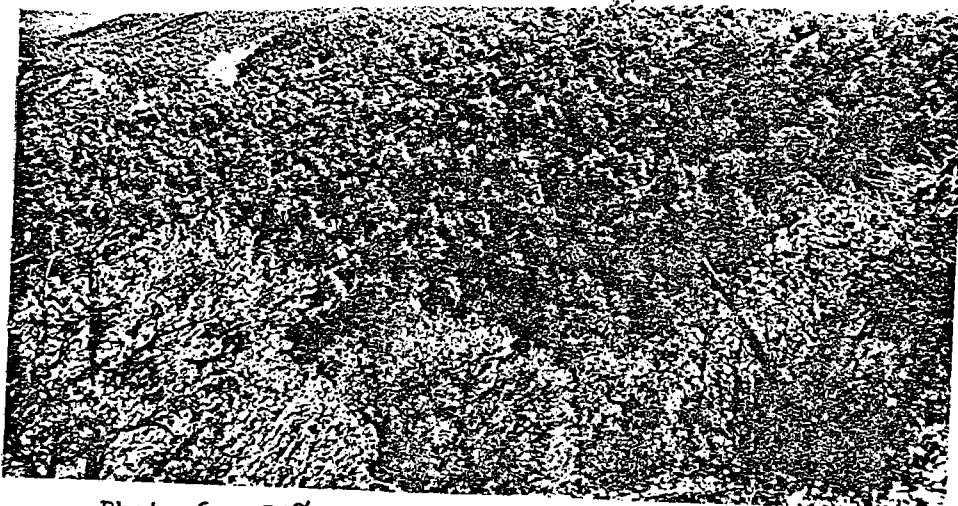


Photo 6. Piñon-juniper forest on north escarpment of Largo Mesa. The RNA extends to about the scar on the left side of the photo.



Photo 1. South toward Largo Mesa from State Highway 32. RNA is on mesa top from scar on right third of photo to left-hand skyline.



Photo 2. Largo Mesa from the north. Mesa is on distant skyline.



Photo 3. Pinus edulis/Bouteloua gracilis Habitat Type typical of mesa top. Juniperus monosperma is codominant here.



Photo 4. Littleseed ricegrass (Oryzopsis micrantha) grows under many of the larger junipers and piñons.



Photo 5. A patch of open grassland exists at the west end of the mesa top. The grass is virtually all Bouteloua gracilis with broom snakeweed and a variety of annual forbs scattered throughout.



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