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IDAHO NATURAL HERITAGE PROGRAM

Research Natural Area Recommendation for

BIG JUNIPER KIPUKA

Bureau of Land Management

Shoshone District, Idaho

October, 1983

INTRODUCTION

Big Juniper Kipuka, on State of Idaho land within the Great Rift Wilderness Study Area and also within the Great Rift National Natural Landmark, was suggested as a candidate Research Natural Area (RNA) by Bureau of Land Management (BLM) personnel during a meeting on May 17, 1983, of Edwin Tisdale and Charles Wellner of the Idaho Natural Areas Coordinating Committee (INACC) with Shoshone District BLM people. Edwin Tisdale and Steve Caicco of the Idaho Committee, along with Joe Carter of the Shoshone BLM, examined Big Juniper Kipuka on June 14, 1983, and decided that it was a very good candidate RNA.

Members of the Idaho Committee were working under an agreement with the Western Regional Office of The Nature Conservancy, San Francisco, to identify, describe, and propose needed RNAs on public lands administered by the BLM in southern Idaho.

This proposal is made to the BLM under the assumptions that the Wilderness Study Area will become an established wilderness, and State lands within the Study Area will be exchanged for BLM lands outside the area.

JUSTIFICATION

Big Juniper Kipuka (symbol: IDBIA) was selected to represent undisturbed examples of several major range habitat types that occur on the eastern Snake River Plain of southern Idaho. The most extensive of the types present are: 1) Wyoming big sagebrush/bluebunch wheatgrass, 2) Wyoming big sagebrush/Thurber's needlegrass, and 3) threetip sagebrush/bluebunch wheatgrass. In addition to these types, which occur within the kipuka, on the surrounding lavas can be found a Utah juniper woodland with a mixed shrub layer. Vegetative cover in this type is generally sparse. The site also contains the current state record Rocky Mountain juniper. All of these situations are needed in a RNA network to include the range of natural diversity in Idaho (Wellner and Johnson, 1974). The lack of significant disturbance due to general inaccessibility makes Big Juniper Kipuka an especially good choice.

PRIMARY FEATURES

Botanic: K-055 sagebrush steppe; K-023 juniper-pinyon woodland; SAF-239 pinyon-juniper. Idaho Natural Diversity Scorecard-eastern Snake Plain sage/grass; eastern Snake Plain juniper woodland. Other vegetation type-ARTRW?/AGSP; ARTRW/STTH; ARTR2/AGSP; JUOS/mixed shrub.

Zoologic: Bobcat, coyote, rattlesnake, pygmy rabbit.

Aquatic: None

Landforms: Cinder-and-spatter cone, volcanic crater, kipuka, lava flows.

Geologic: Igneous, basalt, Pahoehoe lava, Recent.

Alterations: None

LOCATION, SIZE, OWNERSHIP, ACCESS

District: Shoshone

Resource Area: Monument

County: Blaine

Latitude: 42°51'15" N

Longitude: 113°15'00" W

Section(s): E½ of Section 36, T6S, R27E.

Location: Big Juniper Kipuka is located approximately 14 air miles northeast of Minidoka, Idaho.

Size: 320 acres total (kipuka is about 40 acres)

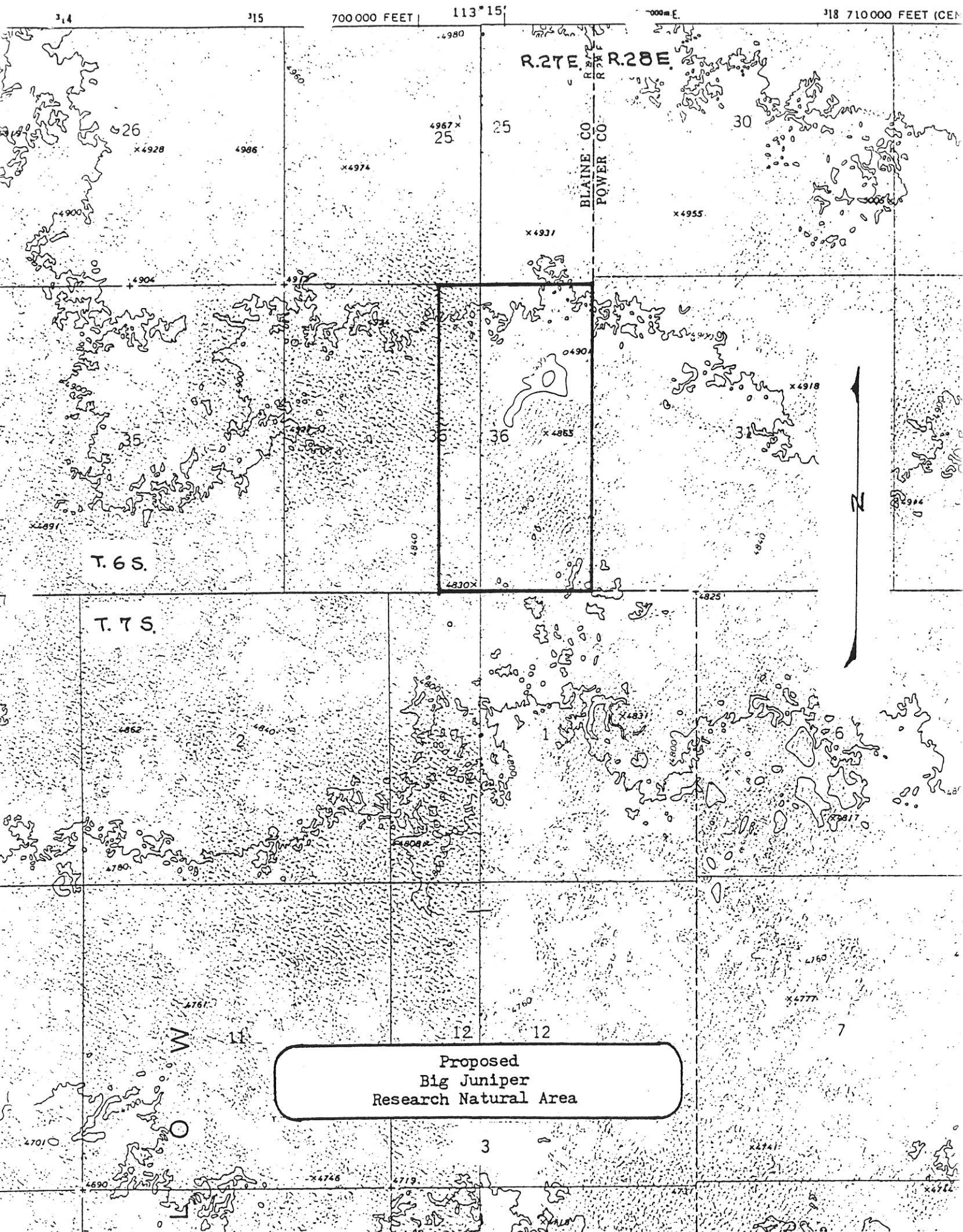
USGS Quad: Rattlesnake Butte, Idaho (7.5'), 1972

Aerial Photos: BLM Photo 01-13A-11 (1978)

Elevation: The lavas which surround the kipuka are at about 4,850 feet, while the summit of the kipuka slightly exceeds 5,000 feet.

Physical Boundaries: The proposed area is the E½ of Section 36, T6S, R27E (see map, page 3).

Access: Big Juniper Kipuka is reached by an arduous 3-hour hike over undulating Pahoehoe lava flows from due west of the kipuka. It can also be reached from the Wapi Park area to the northeast. Specific road information should be obtained from the Shoshone BLM District.



Ownership/Status: Surface and mineral rights are administered and managed by the BLM.

PHYSICAL AND CLIMATIC CONDITIONS

Climate: The weather station nearest to the site is located at Minidoka Dam (Station No. 10-5980); it is located approximately 18 air miles southwest of the kipuka at an elevation of 4,210 feet. Temperature and precipitation data are available for the period 1947-1981, and are summarized in Table 1 (Molnau, 1983).

Table 1. Temperatures and precipitation for Minidoka Dam, Idaho, weather station (1947-1981).

Month	Temperature (°F)		Precipitation (in)	
	Average Maximum	Average Minimum	Mean Monthly	Percent Annual
January	33.8	16.0	1.08	11.5
February	40.6	21.4	0.65	7.0
March	48.5	26.5	0.79	8.5
April	58.8	33.3	0.86	9.3
May	68.6	41.5	1.15	12.3
June	78.0	48.9	0.92	9.8
July	88.3	56.3	0.34	3.7
August	86.1	54.4	0.48	5.2
September	76.8	45.7	0.54	5.8
October	63.7	36.1	0.68	7.4
November	47.4	27.6	0.89	9.5
December	37.1	20.5	0.93	10.0
Annual	61.1	35.9	9.31	100.0

Temperatures follow a predictable pattern throughout the year with maximum temperatures occurring in July and minimum temperatures in January. July is also the driest month of the year, and marks the beginning of a dry season which lasts into the late fall. Precipitation throughout the remaining months of the year is surprisingly uniform with rainfall exceeding 1.0 inch only in the months of January and May. The period between the last spring freeze (50 percent probability of 32° F) and the first fall freeze is estimated to be 140 days (Everson et al., 1978).

Physiography: Big Juniper Kipuka is located within the eastern Snake River Plain section of the Columbia Intermontane geomorphic province. It is a hill kipuka, that is, a previous volcanic terrain that rises above younger lavas which have flowed around it (Photo 1). Although the surface of the lavas which surround the kipuka is undulating, with the vertical distance from trough to peak of the pressure ridges at times exceeding 25 feet, the

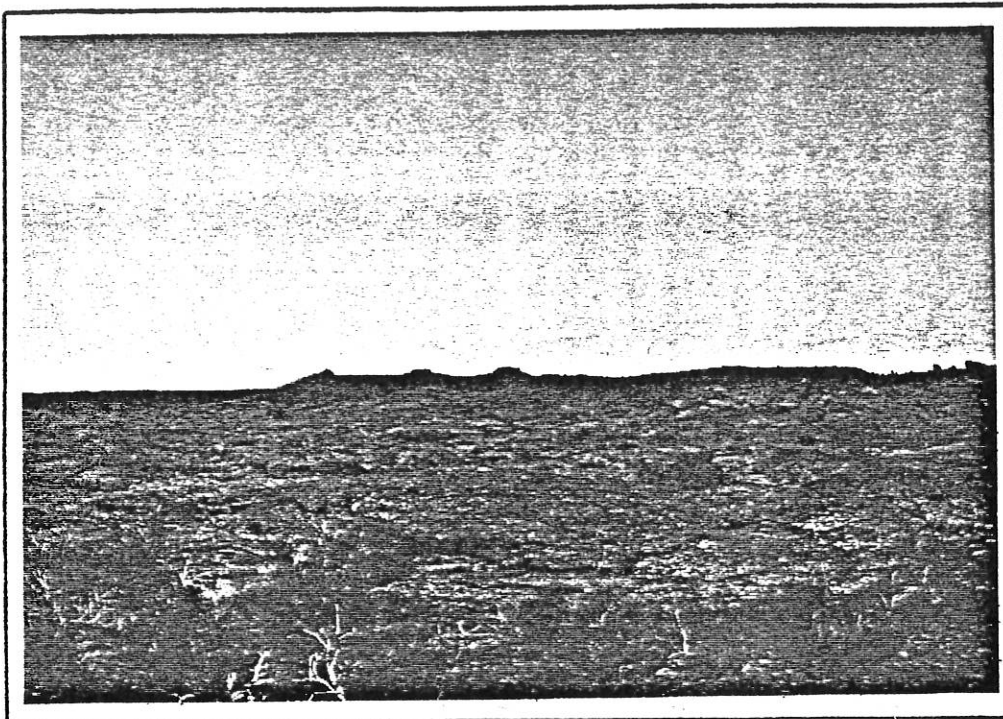


Photo 1. Lava flows with Big Juniper Kipuka in the distance.



Photo 2. Vegetation on Big Juniper Kipuka is dominated by big sagebrush and bluebunch wheatgrass.

lavas have an average surface elevation of between 4,800 and 4,900 feet. Generally steep slopes rise about 100 vertical feet to the summit of the hill kipuka, which slightly exceeds 5,000 feet. A bowl-shaped crater lies about 40 vertical feet below the summit rim.

Geology: The entire area is included within the Wapi lava field, an area covered with Pleistocene Pahoehoe basalts. The basalts have a smooth rolling surface. A soil cover is generally lacking. No detailed geologic studies of the site have been conducted. The hill kipuka itself is a small cinder-and-spatter cone whose crater has been partly flooded by younger flows of the Wapi lava field. Although the Wapi lavas have not been dated, locally they flow over fissures of the King's Bowl rift set, which has been dated at $2,130 \pm 130$ years before present (Greeley and King, 1975).

Soils: Soils within the kipuka are generally poorly developed, and comprised largely of particles of cinders. On the steeper slopes, the surface is marked by a high degree of instability. The ridge is often of bedrock, or bedrock covered by loose cinders.

RESOURCES

Principal Resources: The principal feature of the Big Juniper Kipuka is the extensive ungrazed vegetation dominated by big sagebrush (*Artemisia tridentata*)^{1/} and bluebunch wheatgrass (*Agropyron spicatum*). It was not possible to determine which subspecies of big sagebrush was predominant, although it is certain that both ssp. *wyomingensis* and spp. *tridentata* are present. This type covers the deeper soils on the slopes and surrounding flat-lying areas of the kipuka (Photo 2). In addition to this range type, smaller areas of several other types are present (Hironaka et al., 1983). Information on these types is presented in the next section and in Appendix 1.

Biotic Systems: Although only one major range habitat type is well represented, several other types are also present. Size estimates and distribution of all the range types present on the site are as follows:

ARTRW?/AGSP h.t.: The predominant vegetation on the kipuka covers nearly 35 acres on the slopes and flat-lying areas below them. mapped as ARTRW (ØØ1)

ARTRW/STTH h.t.: This type is represented on only a small area of rocky soils at the foot of the northeast-facing slope of the kipuka (Photo 3). (ØØ1)
It covers less than an acre.

ARTR2/AGSP h.t.: This type covers the bottom and sides of the crater which occurs on the summit of the hill kipuka (Photo 4). It is well-developed, ØØ1
but covers only a few acres.

^{1/} Botanical nomenclature for the genus *Artemisia* follows Beetle (1960). The authority for all other taxa is Hitchcock and Cronquist (1973). Plant symbols follow Plummer et al. (1977).



Photo 3. Wyoming big sagebrush/Thurber's needlegrass habitat type on Big Juniper Kipuka.

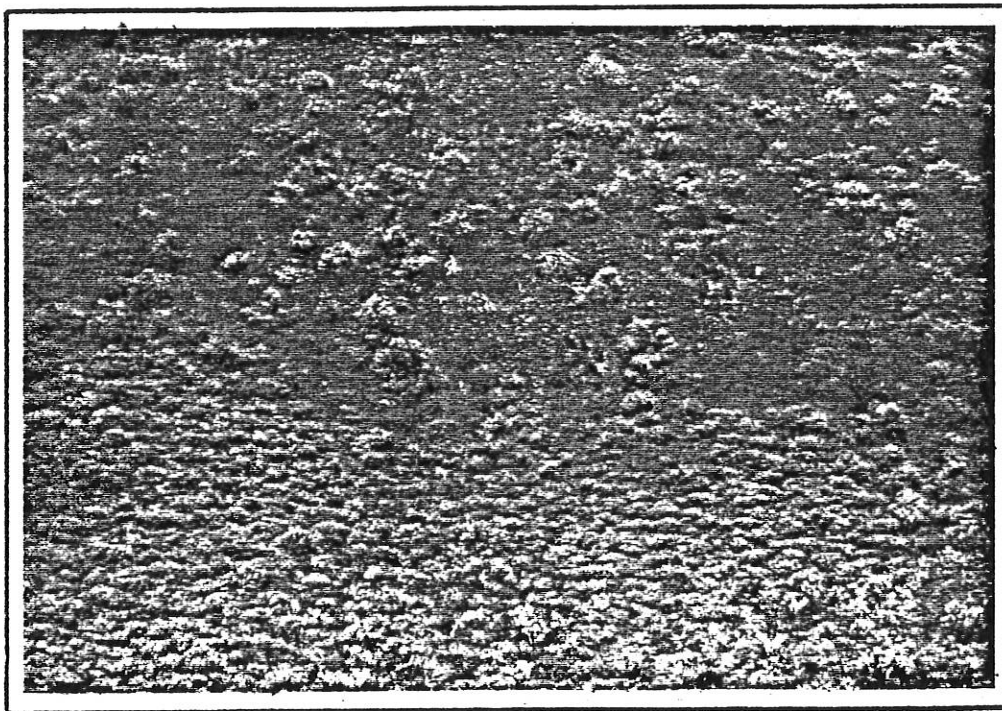


Photo 4. Looking into the crater of Big Juniper Kipuka. Threetip sagebrush in foreground and big sagebrush in background.

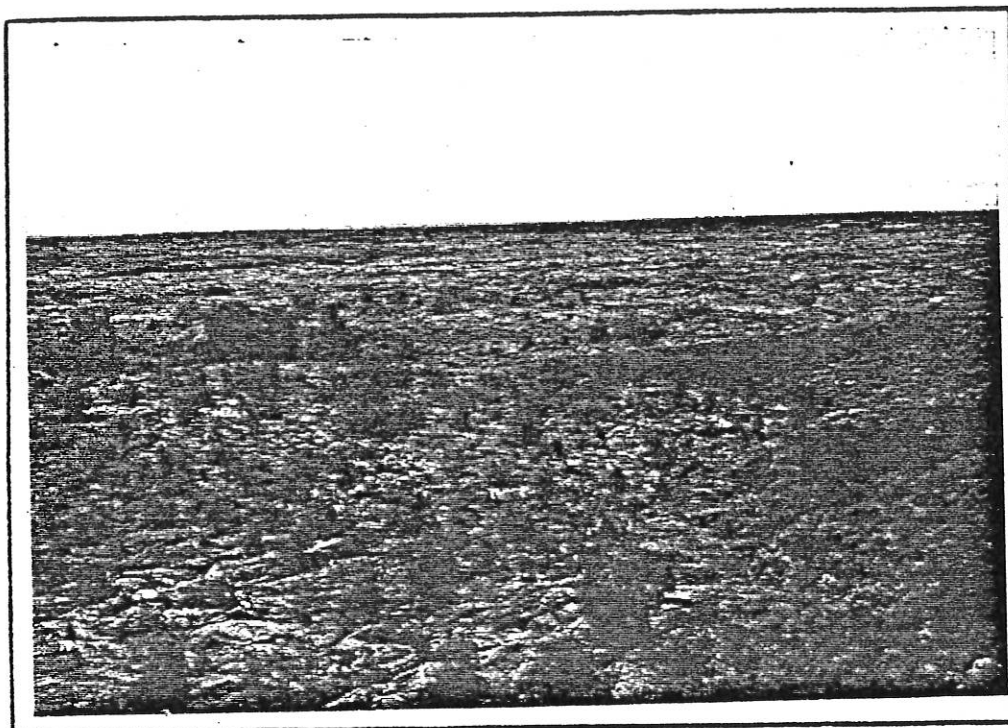


Photo 5. Utah juniper near Big Juniper Kipuka. The Idaho record Rocky Mountain juniper is at the far left.



Photo 6. Utah juniper - mixed shrub vegetation at edge of Big Juniper Kipuka.

Mineral Values: As of August, 1983, no mining claims had been established within the proposed area. The geology of the area makes it unlikely that any such claims will be established at a future date.

Grazing Values: Minimal due to lack of water and general inaccessibility because of the large expanse of rough lavas which surround it.

Timber Values: Minimal due to inaccessibility and low quantities.

Watershed Values: The kipuka has no external drainage.

Recreation Values: The site is of high scenic value and offers an opportunity for primitive recreation and solitude. Recreational use by foot travelers is unlikely to conflict with proposed RNA designation. No ORV usage has occurred on the site, and such usage is unlikely due to impassable terrain.

Transportation Plans: No roads exist within the proposed area, and no roads are currently being planned.

Wildlife Values: Pygmy rabbits, rattlesnakes, bobcats, and coyote were seen.

Other Values: The area is located within the recommended Great Rift Wilderness (33-1); the entire area is within a designated National Natural Landmark.

MANAGEMENT CONSIDERATIONS

The high quality of the vegetation in Big Juniper Kipuka suggests that conservation of the resource values is consistent with current management practices.

INFORMATION SOURCES

Shoshone BLM District
J. Butz, Idaho Falls BLM
S. Caicco, INACC
J. Carter, Shoshone BLM
E. Tisdale, INACC

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AUTHORS

This report was prepared by S.L. Caicco and C.A. Wellner.

APPENDIX 1

Plant species and abundance list by community for the proposed Big Juniper Kipuka RNA, Shoshone BLM District.

Scientific Name	Common Name	Abundance ^{1/} by Community ^{2/}			
		A	B	C	D
<u>Trees and Tall Shrubs</u>					
<i>Juniperus osteosperma</i>	Utah juniper				4-5
<u>Shrubs</u>					
<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	Basin big sagebrush		2?	2	
<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>	Wyoming big sagebrush	5	3		
<i>Artemisia tripartita</i>	Threetip sagebrush			5	
<i>Atriplex spinosa</i>	Spiny hopsage	2+			
<i>Chamaebataria millefolium</i>	Fern-bush				2
<i>Chrysothamnus nauseosus</i>	Gray rabbitbrush				3
<i>Chrysothamnus viscidiflorus</i>	Green rabbitbrush	2+	2	3	
<i>Eriogonum microthecum</i>	Slenderbush buckwheat	3+	2+	1	2
<i>Holodiscus dumosus</i>	Gland ocean-spray				2+
<i>Philadelphus lewisii</i>	Syringa				2
<i>Purshia tridentata</i>	Antelope bitterbrush				4
<i>Ribes aureum</i>	Golden currant		2		2+
<u>Grasses</u>					
<i>Agropyron spicatum</i>	Bluebunch wheatgrass		4-5	4	2
<i>Bromus tectorum</i>	Cheatgrass		3+	2	2+
<i>Elymus cinereus</i>	Great Basin wildrye		2	2	
<i>Koeleria cristata</i>	Junegrass			3	
<i>Poa sandbergii</i>	Sandberg bluegrass	4+	3+	4	3
<i>Sitanion hystrix</i>	Bottlebrush squirrel-tail	3+			2+
<i>Stipa thurberiana</i>	Thurber's needle-grass	4-5	3+	2+	
<u>Forbs</u>					
<i>Allium acuminatum</i>	Tapertip onion	2+	2+	2	
<i>Antennaria dimorpha</i>	Low pussy-toes	3	3		
<i>Arabis holboellii</i>	Holboell's rockcress	2			
<i>Balsamorhiza sagittata</i>	Arrowleaf balsamroot		3	4	
<i>Castilleja angustifolia</i>	Northwest paintbrush	2		2	
<i>Castilleja chromosa</i>	Desert paintbrush				2+
<i>Chaenactis douglasii</i>	Douglas' chaenactis	2+	2+		
<i>Crepis acuminata</i>	Long-leaved hawks-beard			3	
<i>Crepis</i> sp.	Hawksbeard	2	3		2+

APPENDIX 1 (Continued)

Scientific Name	Common Name	Abundance ^{1/} by Community ^{2/}			
		A	B	C	D
<u>Forbs (Continued)</u>					
<i>Cryptantha</i> sp. (perennial)	Cryptantha				2+
<i>Delphinium</i> sp.	Larkspur			1+	
<i>Epilobium</i> sp. (annual)	Willow-herb	2+			
<i>Erigeron pumilus</i> ?	Shaggy fleabane		3		
<i>Erigeron</i> sp. (low, white rays)	Daisy; fleabane				2+
<i>Haplopappus nanus</i>	Rubberweed				2+
<i>Haplopappus</i> sp.?	Haplopappus				2+
<i>Lactuca</i> sp.	Lettuce	2+			
<i>Leptodactylon pungens</i>	Prickly phlox				2+
<i>Lithospermum ruderale</i>	Stoneseed			1	
<i>Lomatium triternatum</i> ?	Nine-leaf lomatium			2	
<i>Lomatium</i> sp. (finely dissected leaves)	Desert parsley	2+	2+		
<i>Opuntia polyacantha</i>	Starvation prickly-pear	2+			2+
<i>Penstemon cyaneus</i>	Dark-blue penstemon		3	2	
<i>Penstemon deustus</i>	Hotrock penstemon				3
<i>Phlox hoodii</i> ?	Hood's phlox	3		2	
<i>Phlox longifolia</i>	Long-leaf phlox			2	
<i>Potentilla glandulosa</i>	Sticky cinquefoil				2+
<i>Ranunculus testiculatus</i>	Hornseed buttercup	2			
<i>Senecio</i> sp.	Butterweed			3	2+

- ^{1/} 5 = very abundant
 4 = moderately abundant
 3 = abundant
 2 = occasional

- ^{2/} 1 = uncommon
 A = ARTRW/STTH h.t.
 B = ARTRW?/AGSP h.t.
 C = ARTR2/AGSP h.t. (in crater)
 D = JUOS/mixed shrub (on lava flows)

APPENDIX 2

Animal species of possible occurrence in the proposed Big Juniper Kipuka RNA^{1/}.

Scientific Name	Common Name	Possible Occurrence by Situation ^{2/}		
		A	B	C
<u>Mammals</u>				
<i>Taxidea taxus</i>	Badger	x	x	x
<i>Canis latrans</i>	Coyote	x	x	x
<i>Felis concolor</i>	Mountain lion	x	-	x
<i>Felix lynx canadensis</i>	Canada lynx	x	x	x
<i>Felis rufus</i>	Bobcat	x	x	x
<i>Marmota flaviventris</i>	Yellowbellied marmot	x	x	x
<i>Spermophilus townsendi</i>	Townsend ground squirrel	x	x	x
<i>Eutamias minimus</i>	Least chipmunk	x	x	x
<i>Thomomys talpoides</i>	Northern pocket gopher	x	-	x
<i>Perognathus parvus</i>	Great Basin pocket mouse	x	x	x
<i>Dipodomys ordii</i>	Ord kangaroo rat	x	x	x
<i>Onychomys leucogaster</i>	Northern grasshopper mouse	x	x	-
<i>Peromyscus crinitus</i>	Canyon mouse	x	x	x
<i>Peromyscus maniculatus</i>	Deer mouse	x	x	x
<i>Neotoma lepida</i>	Desert wood rat	x	x	x
<i>Neotoma cinerea</i>	Bushy-tailed wood rat	x	x	x
<i>Lagurus curtatus</i>	Sagebrush vole	x	x	x
<i>Erithizon dorsatum</i>	Porcupine	x	x	x
<i>Lepus townsendii</i>	White-tailed jack rabbit	x	x	x
<i>Lepus americanus</i>	Snowshoe rabbit	x	-	x
<i>Lepus californicus</i>	Black-tailed jack rabbit	x	x	x
<i>Silvilagus nuttallii</i>	Mountain cottontail	x	x	-
<i>Silvilagus idahoensis</i>	Pygmy rabbit	x	x	x
<i>Cervus elaphus</i>	Rocky Mountain elk	x	-	-
<i>Odocoileus hemionus</i>	Mule deer	x	x	x
<i>Antilocapra americana</i>	Pronghorned antelope	x	x	x
<u>Reptiles</u>				
<i>Gambelia wislizeni</i>	Leopard lizard	x	x	x
<i>Sceloporus occidentalis</i>	Western fence lizard	x	x	x
<i>Sceloporus graciosus</i>	Sagebrush lizard	x	x	x
<i>Phrynosoma douglassi</i>	Short-horned lizard	x	x	x
<i>Eumeces skiltonianus</i>	Western skink	x	x	x
<i>Chemidophorus tigris</i>	Western whiptail	x	x	x
<i>Coluber constrictor</i>	Racer	x	x	x
<i>Masticophis taeniatus</i>	Striped whit snake	x	x	x
<i>Pituophis melanoleueus</i>	Gopher or bull snake	x	x	x
<i>Rhinocheilus lecontei</i>	Long-nosed snake	x	x	x
<i>Hypsiglena torquata</i>	Night snake	x	x	x
<i>Crotalus viridis</i>	Western rattlesnake	x	x	x

APPENDIX 2 (Continued)

Scientific Name	Common Name	Possible Occurrence by Situation ^{2/}		
		A	B	C
<u>Amphibians</u>				
<i>Ambystoma macrodactylvin</i>	Long-toed salamander	x	x	x
<u>Birds</u>				
<i>Anas platyphynchos</i>	Mallard	x	x	-
<i>Anas strepera</i>	Gadwall	x	x	-
<i>Anas acuta</i>	Pintail	x	x	-
<i>Anas carolinensis</i>	Green-winged teal	x	x	-
<i>Anas cyanoptera</i>	Cinnamon teal	x	x	-
<i>Mareca americana</i>	American widgeon	x	x	-
<i>Spatula clypeata</i>	Shoveler	x	x	-
<i>Cathartes aura</i>	Turkey vulture	x	x	x
<i>Accipiter cooperii</i>	Cooper's hawk	x	-	-
<i>Accipiter striatus</i>	Sharpshinned hawk	x	-	-
<i>Buteo jamaicensis</i>	Red-tailed hawk	x	x	-
<i>Aquila chrysaetos</i>	Golden eagle	x	x	x
<i>Circus cyaneus</i>	Marsh hawk	x	-	-
<i>Falco mexicanus</i>	Prairie falcon	x	x	x
<i>Falco columbarius</i>	Pigeon hawk	x	-	-
<i>Falco sparverius</i>	Sparrow hawk	x	x	x
<i>Centrocercus urophasianus</i>	Sage grouse	x	x	-
<i>Alectoris graeca</i>	Chukar	x	-	-
<i>Perdix perdix</i>	Hungarian partridge	x	x	-
<i>Phasianus colchicus</i>	Ring-necked pheasant	x	x	-
<i>Branta canadensis moffitti</i>	Canada goose	x	x	-
<i>Zenaidura macroura</i>	Mourning dove	x	x	x
<i>Bubo virginianus</i>	Great-horned owl	x	x	x
<i>Ereomphila alpestris</i>	Horned lark	x	x	x
<i>Pica pica</i>	Black-billed magpie	x	-	x
<i>Corvus corax</i>	Common raven	x	x	x
<i>Corvus brachyrhynchos</i>	Common crow	x	x	x
<i>Oreoscoptes montanus</i>	Sage thrasher	x	-	-
<i>Lanius ludovicianus</i>	Loggerhead shrike	x	x	-
<i>Sturnella neglecta</i>	Western meadowlark	x	x	-
<i>Passerina amoena</i>	Lazuli bunting	x	x	-
<i>Junco oreganus</i>	Oregon junco	x	x	x
<i>Poocetes gramineus</i>	Vesper sparrow	x	x	-
<i>Chondestes grammacus</i>	Lark sparrow	x	x	-
<i>Spizella breweri</i>	Brewer's sparrow	x	x	-
<i>Amphispiza belli</i>	Sage sparrow	x	x	-
<i>Calamospiza melanocorys</i>	Lark bunting	x	x	-
<i>Phalaenoptilus nuttallii</i>	Poor Will	-	x	x

^{1/} From USDI BLM Shoshone Environmental Statement, Draft, 1979.

^{2/} A = *Artemisia tridentata* ssp. *wyomingensis* zone

B = *Artemisia tripartita* zone

C = Lava flow complex