

CLASSIFICATION AND INVENTORY FOR THE
CONSERVATION AND MANAGEMENT OF
PINYON-JUNIPER ECOSYSTEMS

SUMMARY OF 1996 FIELD SEASON SAMPLING EFFORT¹

submitted by

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September, 1996

Introduction: Pinyon-juniper and juniper woodland² vegetation occurs at the northern extent of its range in Idaho. Principle descriptive work on plant communities dominated by Utah juniper (*Juniperus osteosperma*), Rocky Mountain juniper (*Juniperus scopulorum*), and pinyon pine (*Pinus monophylla*) has occurred in the Southern Rocky Mountains and Great Basin (e.g., Blackburn et al. 1969, Baker 1984, and others). Assessment of the conservation status of, and development of effective habitat conservation strategies for, juniper woodland communities in Idaho is inhibited by a lack of basic ecological descriptive work. In a nation-wide study (Grossman et al. 1994), seven juniper woodland communities are recognized as occurring exclusively in Idaho; all are ranked most rare. These Idaho-endemic juniper woodland communities are also all considered most poorly understood.

The objectives of this project are: (1) to assist with the identification and description of juniper woodland communities on Bureau of Land Management and National Forest System lands in the Snake River Basalts, Northwest Basin and Range, and Overthrust Mountains ecological regions of Idaho and (2) to assist in the determination of their conservation status. Data on woodland stand composition and structure was collected during June - September, 1996, on nearly 200 plots, at 11 sites. The purpose of this interim report is to summarize this sampling effort and initial field observations.³

Discussion: Juniper woodland sites visited during the 1996 field season are listed in Table 1 and shown in Figure 1. All formally designated natural areas on Burley Resource Area and National Forest System known to encompass stands of juniper woodland (Table 2) were visited. Previously un-recognized juniper woodlands were visited at Burton Canyon RNA. Sampling also occurred at four sites which occur throughout the range of *Pinus monophylla* (in Idaho), including City of Rocks RNA, Jim Sage Canyon RNA, Pine Knob, and Slide Canyon.

¹ A Cooperative Challenge Cost-Share Project between Idaho Department of Fish and Game and USDI Bureau of Land Management, Burley Resource Area; USDA Forest Service, Intermountain Region; and USDA Forest Service, Intermountain Research Station with additional assistance provided by The Nature Conservancy, Western Conservation Science Division; USDA Forest Service, Caribou National Forest; and Idaho Department of Parks and Recreation/USDI National Park Service, City of Rocks National Reserve.

² To ease discussion, all vegetation in which *Pinus monophylla*, *Juniperus osteosperma*, and/or *Juniperus scopulorum* are constituent species will be referred to in this report as 'juniper woodland'.

³ Please see the *Study Plan* for a description of the methods employed.

Plot locations and sampling sites are shown in Figures 2 - 13. At some natural areas the area identified for potential juniper woodland sampling extended beyond the designated boundary (indicated by a broken line in Figures 2 - 13). The legal description of each plot is listed in Table 3. The total number of plots located at each site is summarized in Table 4.

At a number of sites, woodland composition was different than expected, based on prior records of plant community occurrence (Table 2). In Table 4 samples taken at each site are classified (and summed) based on the presence of principle overstory species, according to the following hierarchy in tolerance to environmental stress and/or seral relationships: *Pseudotsuga menziesii* (PSME)>*Pinus monophylla* (PIMO)>*Juniperus scopulorum* (JUSC)>*Juniperus osteosperma* (JUOS)>*Cercocarpus ledifolius* (CELE) (for example, a plot with PSME and JUSC co-occurring is classified as PSME). Plots classified as OTHER are not classifiable by this scheme (they are usually non-woodland plots taken to document vegetation adjacent to woodland).

Juniper woodlands on the Wapi Flow (Big Juniper Kipuka and Sand Kipuka) are dominated by *Juniperus scopulorum*, rather than *Juniperus osteosperma*, as previously reported. *Pinus monophylla* co-occurs with both *Juniperus scopulorum* and *Juniperus osteosperma* (e.g., City of Rocks v. Jim Sage Canyon), rather than just *Juniperus osteosperma*, as previously reported.

Pinus monophylla, *Juniperus scopulorum*, and *Juniperus osteosperma* are becoming established in the understory of *Cercocarpus ledifolius*-dominated woodlands (most notably) at Slide Canyon and Burton Canyon. At Slide Canyon the distributions of *Juniperus scopulorum* and *Juniperus osteosperma* appear to separate on an elevational gradient. At Burton Canyon slope aspect appears to influence the distribution of the two *Juniperus* species. Mixed stands of *Juniperus scopulorum* and *Juniperus osteosperma* occur at Burton Canyon and West Fork Mink Creek. At these sites *Juniperus scopulorum* is most abundant on bedrock substrates; *Juniperus osteosperma* is most abundant on colluvial substrates.

Data analysis is planned for completion in December, 1996. Multivariate classification and ordination techniques will be employed in the description of plant communities observed. Important objectives of the analysis are (1) to assess how well the data represent the range of juniper woodland occurrences in Idaho (i.e., Which juniper woodland environmental settings were sampled? Which remain to be sampled?) and (2) to assess how well juniper woodland vegetation is currently represented in designated conservation sites. Biodiversity conservation database (BCD) files will be updated with current field observations and information resulting from the analysis.

Literature Cited:

- Baker, W. L. 1984a. A preliminary classification of the natural vegetation of Colorado. The Great Basin Naturalist 44(4):647-676.
- Blackburn, W. H., P. T. Tueller and R. E. Eckert Jr. 1969. Vegetation and soils of the Churchill Canyon Watershed. Nevada Agricultural Experiment Station Bulletin R-45. Reno. 157 pp.
- Grossman, D. H., K. L. Goodin, and C. L. Reuss, editors. 1994. Rare plant communities of the coterminous United States - an initial survey. Prepared for the USDI Fish and Wildlife Service. The Nature Conservancy, Arlington, VA. 620 p.

Table 1. Juniper woodland study sites. Sites visited during the 1996 field season are listed with the designation (Research Natural Area, RNA; REF, reference area) and the managing agency or ownership. Trapper Creek was visited in 1995.

Site	Designation	Agency/Ownership
Big Juniper Kipuka	RNA	USDI BLM
Burton Canyon	RNA	USDA NFS
City of Rocks	RNA	ID DOR/USDI NPS
Gibson Jack	RNA	USDA NFS
Goose Creek Mesa	RNA	USDI BLM
Jim Sage Canyon	RNA	USDI BLM
Pine Knob	REF	USDI BLM and Private
Sand Kipuka	RNA	USDI BLM
Slide Canyon	REF	USDA NFS and Private
Trapper Creek	RNA	USDA NFS
Two Mile Canyon	REF	USDA NFS
West Fork Mink Creek	RNA	USDA NFS

Table 2. Juniper woodland plant communities recognized as occurring at natural areas on the Burley Resource Area, National Forest System and National Park Service lands in Idaho.

Site	Plant Community
Big Juniper Kipuka	<i>Juniperus osteosperma/Purshia tridentata/Poa secunda</i>
Sand Kipuka	<i>Juniperus osteosperma/Purshia tridentata/Poa secunda</i>
West Fork Mink Creek	<i>Juniperus osteosperma/Purshia tridentata-Symphoricarpos oreophilus/Agropyron spicatum</i>
Trapper Creek	<i>Juniperus osteosperma/Festuca idahoensis</i> <i>Juniperus osteosperma/Artemisia arbuscula arbuscula/Festuca idahoensis</i> <i>Juniperus osteosperma/Artemisia tridentata vaseyana/Festuca idahoensis</i>
Jim Sage Canyon	<i>Juniperus osteosperma-Pinus monophylla/Artemisia tridentata vaseyana/Agropyron spicatum</i> <i>Juniperus osteosperma/Artemisia tridentata vaseyana/Agropyron spicatum</i>
Goose Creek Mesa	<i>Juniperus osteosperma/Artemisia nova/Poa secunda</i>
Gibson Jack Creek	<i>Juniperus osteosperma/Artemisia nova/Agropyron spicatum</i>
City of Rocks	<i>Juniperus osteosperma-Pinus monophylla/Artemisia tridentata vaseyana/Agropyron spicatum</i> <i>Juniperus osteosperma-Pinus monophylla/Elymus cinereus</i> <i>Juniperus osteosperma-Pinus monophylla/Prunus virginiana</i>

Table 3. The legal descriptions of juniper woodland study plots are list site.

SITE	PLOT ID	QUAD	T	R	S	QS	QQS	QQQS
Big Juniper Kipuka	071796-1145	Rattlesnake Butte	6S	27E	36	NE	SW	NW
	071796-1215	Rattlesnake Butte	6S	27E	36	NE	SW	NW
	071796-1347	Rattlesnake Butte	6S	27E	36	NE	SE	SW
	071796-1447	Rattlesnake Butte	6S	27E	36	NE	SE	SW
	071796-1605	Rattlesnake Butte	6S	27E	36	NE	SE	NW
	071796-1755	Rattlesnake Butte	6S	28E	30	SW	NE	NW
	071796-1830	Rattlesnake Butte	6S	28E	30	SW	NE	NW
	071896-0853	Pillar Butte	6S	28E	19	SW	NE	SE
	071896-0930	Pillar Butte	6S	28E	19	SW	NE	SE
	071896-1013	Pillar Butte	6S	28E	19	SW	NE	SE
	071896-1055	Pillar Butte	6S	28E	19	SW	NE	NE
	071896-1150	Pillar Butte	6S	28E	19	NW	SE	NE
	071896-1223	Pillar Butte	6S	28E	19	NE	NW	SW
	071896-1242	Pillar Butte	6S	28E	19	NE	NW	SW
Burton Canyon	091196-1155	Grace	9S	41E	33	SW	SE	SW
	091196-1300	Grace	10S	41E	4	NW	NE	NW
	091196-1405	Grace	9S	41E	33	SW	SE	SW
	091196-1455	Grace	10S	41E	4	NW	NE	NW
	091196-1740	Grace	10S	41E	4	NE	NW	NW
	091196-1830	Grace	10S	41E	4	NW	NE	SE
	091196-1850	Grace	10S	41E	4	NW	NE	SE
	091296-1000	Grace	9S	41E	33	SE	SE	SW
	091296-1055	Grace	9S	41E	33	SE	SE	SW
	091296-1200	Grace	10S	41E	4	NE	NE	NW
	091296-1250	Grace	9S	41E	33	SE	SW	SE
	091296-1335	Grace	9S	41E	33	SE	SW	SE
	091296-1415	Grace	9S	41E	33	SE	SW	SW
	091296-1450	Grace	9S	41E	33	SE	SW	SW
	091296-1610	Grace	9S	41E	33	SE	SE	SE
	091296-1650	Grace	9S	41E	33	SE	SE	SE
	091296-1720	Grace	9S	41E	33	SW	SW	NW
	091296-1805	Grace	9S	41E	33	SW	NW	SW
	091296-1825	Grace	9S	41E	33	SW	NW	SE
	091296-1915	Grace	9S	41E	33	SW	SE	NW
City of Rocks	082196-1735	Almo	15S	24E	19	SW	NE	NW
	082196-1840	Almo	15S	24E	19	SW	NE	NE
	082296-0855	Almo	15S	24E	30	NW	NW	SE
	082296-1015	Almo	15S	24E	30	NW	NW	NW
	082296-1045	Almo	15S	24E	30	NW	NW	NW
	082296-1135	Almo	15S	24E	30	NW	NW	NW
	082296-1255	Almo	15S	24E	30	NW	NW	NW
	082296-1335	Almo	15S	24E	19	SW	SW	SW
	082296-1355	Almo	15S	23E	24	SE	NE	SE
	082296-1420	Almo	15S	24E	19	SW	SW	SW
	082296-1505	Almo	15S	23E	24	SE	SE	NE
	082296-1710	Almo	15S	23E	24	SW	NE	SE
	082296-1755	Almo	15S	23E	24	SE	NE	NE
	082296-1845	Almo	15S	24E	19	NW	SW	SW
	082296-1955	Almo	15S	24E	19	SW	NW	NE
	082296-2010	Almo	15S	24E	19	SW	NW	NE
	082396-0950	Almo	15S	24E	19	SW	SE	NW
	082396-1055	Almo	15S	24E	19	SW	SE	NW
	082396-1150	Almo	15S	24E	19	SW	NW	SW
	082396-1305	Almo	15S	24E	19	SW	NE	NW
	082396-1340	Almo	15S	24E	19	SW	NE	SW
	082396-1420	Almo	15S	24E	19	SW	NE	SW
	082396-1505	Almo	15S	24E	19	SW	SE	NE
	082396-1600	Almo	15S	24E	19	SE	SW	NW
	082396-1640	Almo	15S	24E	19	SW	SE	SE
	082396-1700	Almo	15S	24E	19	SW	SW	SW

Gibson Jack	082896-1640	Pocatello South	7S	34E	23	SW	NW	SW	
	082896-1740	Pocatello South	7S	34E	23	SW	NW	NE	
	082896-1905	Pocatello South	7S	34E	23	NW	SW	SW	
	082896-1935	Pocatello South	7S	34E	23	NW	SW	SW	
	082996-1010	Pocatello South	7S	34E	23	NW	SW	SE	
	082996-1105	Pocatello South	7S	34E	23	NW	SW	SE	
	082996-1225	Pocatello South	7S	34E	23	NW	SW	SW	
	082996-1330	Pocatello South	7S	34E	23	NW	SW	NW	
	082996-1440	Pocatello South	7S	34E	23	NW	SW	NW	
	082996-1510	Pocatello South	7S	34E	23	NW	NW	SW	
	082996-1545	Pocatello South	7S	34E	23	NW	NW	NW	
	082996-1645	Pocatello South	7S	34E	14	NW	NW	NW	
	082996-1805	Pocatello South	7S	34E	15	SE	NE	SE	
	082996-1855	Pocatello South	7S	34E	15	SE	SE	NE	
	083096-0940	Pocatello South	7S	34E	22	NE	SE	SE	
	083096-1025	Pocatello South	7S	34E	22	NE	SE	SE	
	083096-1055	Pocatello South	7S	34E	22	NE	SE	NE	
	083096-1130	Pocatello South	7S	34E	22	NE	SE	NW	
	083096-1300	Pocatello South	7S	34E	22	NE	SE	NW	
	083096-1350	Pocatello South	7S	34E	22	NE	NE	SW	
	083096-1425	Pocatello South	7S	34E	22	NE	NE	SW	
	083096-1500	Pocatello South	7S	34E	22	NE	NE	SW	
	083096-1625	Pocatello South	7S	34E	22	SE	NW	NW	
	083096-1650	Pocatello South	7S	34E	22	SE	NW	SW	
	083096-1730	Pocatello South	7S	34E	22	SE	NW	SW	
	083096-1820	Pocatello South	7S	34E	21	NE	SE	NW	
	Goose Ck Mesa	073196-1141	Ibex Peak	16S	21E	20	NE	SW	SW
		073196-1255	Ibex Peak	16S	21E	20	NE	NE	NW
		073196-1355	Ibex Peak	16S	21E	21	SW	NE	NW
		073196-1445	Ibex Peak	16S	21E	21	SW	NE	NW
073196-1555		Ibex Peak	16S	21E	17	SE	NE	SE	
073196-1630		Ibex Peak	16S	21E	17	SE	NE	SE	
073196-1715		Ibex Peak	16S	21E	17	SE	NE	SE	
073196-1755		Ibex Peak	16S	21E	17	SE	SE	NE	
073196-1855		Ibex Peak	16S	21E	17	NE	SW	SW	
073196-2015		Ibex Peak	16S	21E	16	SW	NE	SE	
073196-2040		Ibex Peak	16S	21E	16	SW	NE	SE	
081196-1035		Ibex Peak	16S	21E	17	NW	SE	NE	
081196-1145		Ibex Peak	16S	21E	17	NW	SE	SE	
081196-1235		Ibex Peak	16S	21E	17	NW	SE	SE	
081196-1325		Ibex Peak	16S	21E	17	NW	SE	NE	
081196-1450		Ibex Peak	16S	21E	17	NW	SE	NE	
081196-1615		Ibex Peak	16S	21E	8	SW	SE	SE	
081196-1700		Ibex Peak	16S	21E	17	NW	NE	NE	
081196-1820		Ibex Peak	16S	21E	8	SE	SE	SW	
081196-1900		Ibex Peak	16S	21E	17	NE	NW	SW	
081296-0915		Ibex Peak	16S	21E	17	NE	NW	SE	
081296-1010		Ibex Peak	16S	21E	17	NE	SW	NW	
081296-1100		Ibex Peak	16S	21E	17	NE	SW	NW	
081296-1155		Ibex Peak	16S	21E	17	NE	SW	SE	
081296-1215		Ibex Peak	16S	21E	17	NE	SW	SE	
081296-1245		Ibex Peak	16S	21E	17	NE	SW	SE	
081296-1350		Ibex Peak	16S	21E	17	NE	SW	NE	
081296-1425		Ibex Peak	16S	21E	17	NE	NE	SW	
081296-1500		Ibex Peak	16S	21E	17	NE	NE	SE	
081296-1545		Ibex Peak	16S	21E	16	NW	SW	SW	

Jim Sage Canyon	071996-1030	Jim Sage Canyon	15S	25E	15	SE	NW	NW	
	071996-1155	Jim Sage Canyon	15S	25E	15	SE	NW	NW	
	071996-1247	Jim Sage Canyon	15S	25E	15	SE	NW	NW	
	071996-1433	Jim Sage Canyon	15S	25E	15	NE	SE	NW	
	071996-1525	Jim Sage Canyon	15S	25E	15	NE	SE	NW	
	071996-1635	Jim Sage Canyon	15S	25E	15	NE	SW	NE	
	071996-1725	Jim Sage Canyon	15S	25E	15	NE	SW	NE	
	071996-1850	Jim Sage Canyon	15S	25E	15	NE	NW	SE	
	071996-1948	Jim Sage Canyon	15S	25E	15	NE	NW	SE	
	072096-0910	Elba	15S	25E	15	NE	NW	NE	
	072096-1045	Elba	15S	25E	10	SE	NW	NE	
	072096-1130	Elba	15S	25E	10	SE	NW	SW	
	072096-1233	Elba	15S	25E	10	SE	NW	SW	
	072096-1355	Elba	15S	25E	10	SE	NE	NW	
	072096-1445	Elba	15S	25E	10	SE	NE	NW	
	072096-1535	Elba	15S	25E	10	SE	NE	NW	
	072096-1625	Elba	15S	25E	11	NW	SW	SW	
	072096-1650	Elba	15S	25E	11	NW	SW	SW	
	072096-1715	Elba	15S	25E	11	SW	NW	NW	
	072096-1800	Elba	15S	25E	11	SW	NW	NW	
	072096-1825	Elba	15S	25E	11	SW	NW	NW	
	072096-1900	Elba	15S	25E	11	SW	NW	SE	
	072096-2000	Elba	15S	25E	11	SW	SW	NW	
	072196-0640	Elba	15S	25E	11	SW	SW	NW	
	072196-0755	Jim Sage Canyon	15S	25E	14	NW	NE	NW	
	072196-0845	Jim Sage Canyon	15S	25E	14	NW	NW	NW	
	072196-1010	Jim Sage Canyon	15S	25E	15	SE	SW	NE	
	072196-1100	Jim Sage Canyon	15S	25E	15	SE	NE	SE	
	Pine Knob	081296-1840	View	12S	24E	3	NW	SW	NE
		081296-2000	View	12S	24E	3	NW	SW	NE
		081396-0855	View	12S	24E	3	NW	SW	SE
081396-0940		View	12S	24E	3	NW	SW	SW	
081396-1010		View	12S	24E	3	NW	SW	NW	
081396-1050		View	12S	24E	3	NW	SW	NW	
081396-1140		View	12S	S4E	3	NW	NW	SW	
081396-1225		View	12S	24E	3	NW	NW	SW	
081396-1350		View	12S	24E	3	NW	NW	SE	
081396-1425		View	12S	24E	3	NW	NW	SW	
Sand Kipuka	061996-1250	Lake Walcott East	8S	27E	10	SE	SE	SW	
	061996-1530	Lake Walcott East	8S	27E	10	SE	SE	SW	
	061996-1630	Lake Walcott East	8S	27E	10	SE	SE	SW	
	061996-1915	Lake Walcott East	8S	27E	10	SE	SE	SW	
	061996-2010	Lake Walcott East	8S	27E	10	SE	SE	SW	
	062096-1005	Lake Walcott East	8S	27E	11	SE	SW	NW	
	062096-1145	Lake Walcott East	8S	27E	11	SE	SW	NW	
	062096-1220	Lake Walcott East	8S	27E	11	SE	SW	SW	
	062096-1310	Lake Walcott East	8S	27E	11	SE	SW	SE	
	062096-1340	Lake Walcott East	8S	27E	14	NE	NW	NE	
	062096-1455	Lake Walcott East	8S	27E	11	SE	SE	SE	
	062096-1547	Lake Walcott East	8S	27E	11	SE	NW	SE	
	062096-1620	Lake Walcott East	8S	27E	11	SE	NW	SE	
	062096-1655	Lake Walcott East	8S	27E	11	SE	NW	SE	
	062096-1740	Lake Walcott East	8S	27E	11	SE	NW	NW	
	062096-1845	Lake Walcott East	8S	27E	11	SE	NW	NW	
	062096-1945	Lake Walcott East	8S	27E	11	SE	NW	NW	
	071696-0935	Lake Walcott East	8S	27E	11	SW	NE	SW	
	071696-1035	Lake Walcott East	8S	27E	11	SW	NE	SW	
	071696-1207	Lake Walcott East	8S	27E	11	SW	NW	SE	

Slide Canyon	081496-1006	Cache Peak	14S	23E	1	SW	SE	NW
	081496-1100	Cache Peak	14S	23E	1	SW	SE	NW
	081496-1210	Cache Peak	14S	23E	1	SW	SW	NE
	081496-1325	Cache Peak	14S	23E	1	SW	SW	NW
	081496-1400	Cache Peak	14S	23E	2	SE	SE	SE
	081496-1500	Cache Peak	14S	23E	2	SE	SE	NE
Trapper Creek	072095-1205	Severe Spring	15S	21E	6	NW	NW	NW
	072095-1350	Severe Spring	14S	20E	36	NE	NE	SW
	072095-1440	Severe Spring	14S	20E	36	NE	NE	SE
	072095-1600	Severe Spring	14S	21E	31	NW	NW	SE
	072095-1645	Severe Spring	14S	21E	31	NW	NE	NW
	072095-1705	Severe Spring	14S	21E	31	NW	NE	NW
	072095-1740	Severe Spring	14S	21E	31	NE	NW	NW
	072095-1840	Severe Spring	14S	21E	31	NE	NW	NE
	072095-1855	Severe Spring	14S	21E	30	SE	SW	SE
	072095-1935	Severe Spring	14S	21E	31	NE	NW	NE
	072095-2005	Severe Spring	14S	21E	31	NE	NW	SW
	072095-2100	Severe Spring	14S	20E	36	NE	NE	SW
Two Mile Canyon	091396-1235	Malad City East	14S	36E	25	NW	SE	NW
	091396-1330	Malad City East	14S	36E	25	NW	SE	NW
	091396-1400	Malad City East	14S	36E	25	SW	NE	NW
	091396-1450	Malad City East	14S	36E	25	NW	SE	SW
	091396-1520	Malad City East	14S	36E	25	NW	SE	SE
	091396-1600	Malad City East	14S	36E	25	SW	NE	SW
	091396-1635	Malad City East	14S	36E	25	SW	NE	SW
W Fork Mink Ck	083196-1205	Clifton Creek	8S	34E	2	SE	SW	SW
	083196-1250	Clifton Creek	8S	34E	11	NE	NW	NW
	083196-1410	Clifton Creek	8S	34E	11	NE	NW	SE
	083196-1445	Clifton Creek	8S	34E	11	NE	NE	SE
	083196-1530	Clifton Creek	8S	34E	11	NE	NE	NE
	083196-1610	Clifton Creek	8S	34E	2	SE	SE	SW
	083196-1650	Clifton Creek	8S	34E	2	SE	SW	SE
	083196-1805	Clifton Creek	8S	34E	2	SE	SE	NE
	083196-1905	Clifton Creek	8S	34E	2	SE	SE	SE
	083196-1937	Clifton Creek	8S	34E	2	SE	SE	SE

Table 4. Initial summary of juniper woodland samples. Samples taken at each site are classified (and summed) according to the a hierarchy in tolerance to environmental stress and/or seral relationships of principle species (see text for further explanation). Plots classified as OTHER are usually non-woodland plots taken to document vegetation adjacent to woodland.

Site	PSME	PIMO	JUSC	JUOS	CELE	OTHER	TOTAL
Big Juniper Kipuka			7			7	14
Burton Canyon	3		10	1	4	2	20
City of Rocks		24	1			1	26
Gibson Jack	1			22		3	26
Goose Creek Mesa				27		3	30
Jim Sage Canyon		15		13			28
Pine Knob		10					10
Sand Kipuka			17			3	20
Slide Canyon		6					6
Trapper Creek				10		2	12
Two Mile Canyon				7			7
West Fork Mink Creek	1		5	4			10