

Mesita de los Ladrones 12-13 May 1983

Transects of 30 microplots each 2x5 dm.

TAXA	Plots:	% cover / % frequency			4 ^{1/}
		①	②	③	
Juniperus monosperma	15		10	15	3
Pinus edulis			+		
Stipa neomexicana	36/97				
Sitanion hystrix			+		0.1
Bouteloua gracilis	12/67		46/100	7/50	55
Bouteloua eriopoda	8/70		4/13	30/83	
Bouteloua curtipendula	2/20		4/53	7/23	3
Bouteloua hirsuta	1/13		1/7	3/30	
Aristida			2/33	.0/3	
Sporobolus cryptandrus	0.2/10		0.3/17	0.3/13	0.3
Lycurus phleoides	.0/3		0.4/17	0.2/3	
Muhlenbergia torreyi	0.5/3		0.6/17		0.1
Eragrostis intermedia				+	
Panicum obtusum					4
Ceratoides lanata					0.3
Opuntia imbricata	0/3		0.1/7	0.5/3	8
Opuntia phaeacantha			+		
Opuntia polyacantha			+	0.5/3	
Hymenoxys acaulis	0.5/7			0.1/3	
Gutierrezia sarothrae	1/7		0.2/10		
Lycium pallidum				0.1/3	
Rhus aromatica			+		+
Yucca glauca			+		
Yucca baccata					
Artemisia dracunculoides					4
Leucelene ericoides	0.1/10		+		
Cymopteris			0.2/7		0.1
Hymenopappus filifolia			0.3/17		
Lesquerella	1/53			0.5/20	
Melampodium leucanthum				0.6/17	
Sphaeralcea			0.2/7		
Selaginella				1/10	
Other forbs			0.4/23	0.5/17	
Cryptogams ^{1/}	5		2	15	
Basal area	9		27	10	
Litter	30		14	21	
Soil	33		57	43	
Gravels <3"	22			8	
Gravels 3-10"	1			2	
Cobbles >10"				1	
Bedrock				+	

FOREST SERVICE
Santa Fe National Forest
Santa Fe, New Mex.

MAY 35 1983

RECEIVED

^{1/} Cover only

TAXA	Plots:	% cover / % frequency			④ ^{1/}
		①	②	③	
Juniperus monosperma	15		10	15	3
Pinus edulis			+		
Stipa neomexicana	36/97				
Sitanion hystrix			+		0.1
Bouteloua gracilis	12/67		46/100	7/50	55
Bouteloua eriopoda	8/70		4/13	30/83	
Bouteloua curtipendula	2/20		4/53	7/23	3
Bouteloua hirsuta	1/13		1/7	3/30	
Aristida			2/33	.0/3	
Sporobolus cryptandrus	0.2/10		0.3/17	0.3/13	0.3
Lycurus phleoides	.0/3		0.4/17	0.2/3	
Muhlenbergia torreyi	0.5/3		0.5/17		0.1
Eragrostis intermedia				+	
Panicum obtusum					4
Ceratoides lanata					0.3
Opuntia imbricata	0/3		0.1/7	0.5/3	8
Opuntia phaeacantha			+		
Opuntia polyacantha			+	0.5/3	
Hymenoxys acaulis	0.5/7			0.1/3	
Gutierrezia sarothrae	1/7		0.2/10		
Lycium pallidum				0.1/3	
Rhus aromatica			+		+
Yucca glauca			+		
Yucca baccata					
Artemisia dracunculoides					4
Leucelene ericoides	0.1/10		+		
Cymopteris			0.2/7		0.1
Hymenopappus filifolia			0.3/17		
Lesquerella	1/53			0.5/20	
Melampodium leucanthum				0.6/17	
Sphaeralcea			0.2/7		
Selaginella				1/10	
Other forbs			0.4/23	0.5/17	
Cryptogams ^{1/}	5		2	15	
Basal area	9		27	10	
Litter	30		14	21	
Soil	33		57	43	
Gravels <3"	22			8	
Gravels 3-10"	1			2	
Cobbles >10"				1	
Bedrock				+	

^{1/} Cover only

Byrd's Masita Ladronec 12 May 1183

	10	20	30	Σ	P
Lilla	1 7 ²⁰ 15	1 8 7 18 59 42 6 78 4 26 60 60 47 10 55 59 65 23 80 35 16 10 20 10 16	30.1	Grass 23 24 19	7 0 1
BA	9 5 8 9	1 7 6 15 11 19 5 15 8 9 10 8 9 3 12 9 15 10 9 7 9 4 4 18 4 12 14	9.0	Forb 2 0 0	15 5 24
Cryplogams	25 3 15 35 2 0 3 2 3 6 1 1 9 5 0 2 0 4 0 2 4 10 3 4 1 1 6 2 2 10	5.1	Tree-shrub 7 0 1	0 2 4	
Gravel < 3"	8 10 1 20 85 80 30 40 4 12 20 3 45 30 4 15 4 50 3 15 8 35 50 4 15 17 10 14 5 15	21.7	Grass < 1"	12 17 14	
Soil	57 75 56 21 11 5 54 28 20 30 60 3 30 30 6 18 40 33 30 15 10 30 15 5 40 60 55 60 71 39	33.3	Grass 5-3"	8 4 0	
Gravel > 3"	—	2	Soil 3-10"	3 4 —	
Shipa	2 3 2 1	0 0 3 4 4 4 3 3 2 3 5 4 8 4 5 5 2 2 4 2 2 5 1 2 2 2	36 ✓	DR Gravel	2 3 0 1
Boer	3 1 2 3 2	2	Soil	22 30 33	
Bocu	1	1 1 1 1 1	Cryo	4 5 5	
Boer	1 1 2	1 1 3 2 2 4 2			
Boer	1 1 2	0 3 2			
Boer	1 1 0 1 1 1 0 1 1 1 1 1	2 2 3 3 0 2 3 2 3 1			
Boer	0	0			
Boer	3	0			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	2	2			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer	1	1			
Boer	0	0			
Boer					

Mesita bath was 13 May 23 Sandstone S. 11E Limestone Junio coronar

(3)

	5	10	15	20	25	30	
Bogr	3 4	2 1	2	1 1 2 1	2 1 2	1 1	1
Bogr	3 1 5 5 5	0 4 5 5 5	3 4 0	1 1 1 2 3 2 4 2 2 1	1	1	6.5
Bocu	4	4	2	3		2 4 2 1	29.6
Spec	1	1	1 1		1		7.0
Lymph	1						0.3
Bohr			1		1	1 3 2 0 2 2 1	0.2
Liffia	52 10 88 411 415 416 26 45 62 416 15 9 0 7 8 1 20 20 1 5 6 1 4						3.0
So.1	20 61 3 15 20 30 10 7 25 45 40 50 92 70 88 57 47 84 77 73 44 80 5 44 35 34 3 4 50						21.4
BA	25 20 6 12 9 17 12 12 6 6 3 6 7 4 1 8 11 4 11 4 3 9 1 16 10 4 32 110 5						43.0
Gravel <3	1	1 1 2 1 2	2 1 4 1 5 6 0 2 6 0 2 2 0 90 2 20 20 5 24 23				10.1
Stone >3						2 2 0 20 20 20 5 24 23	7.4
Cobbly 3-10						4 5 20 5 } 2 5	2.2
Crypt	3 8 3 25 25 6 50 35 5 3 40 35 4 7 13 4 15 20 5 7 15 50 5 - 8 10 15 11 20 2					5 5 5 12	15.0
Boulders >10							0.9
Evolutus	1	0	1 0	1		1	
Aristid							
Lycium pallidum		1					
Metamp			0	0	2 0	0	
Lesq			1 1 1 1 1 1 1				
Opstern				2			
Ilyac				1			
Maap					0		
Op polya					2		
Erin							
Selaginella						1 2 2	

* includes selaginella

at mid lower - Lithic Ustochapt, lo-sk, mixed

Carboniferous Sandstone and mixed sandstone

Type waterbought at start of tunnel

- Junco 15%
- Rhus atom
- Open
- Guan
- Asclepias (c)
- Lithospermum
- Mammal upright
- Yugl
- Leucane
- Yaba vata Junco

SITE DESCRIPTION

USDA-FS
R-3 12/6/82

SOIL Map symbol	Soil Type	Horizontals	Profile	Phase	Surf. rock frag. class	Slope gradient	Slope complexity	Sample	% by PP/OC/NE	Grad.	Date
CTimax cat.	Very stony			Rock outcrop class	—	Slope contour		concave			5/23/83
P.m. residual	stony			Erosion class	—	Shape slope		convex			
Elem. resid				Drainage class	3	Slope length		100 ft	100 m		
Pl. Place	(11/8)			Surf. runoff class	med.	Slope aspect		40°			
Horiz/Layer	text	R.F.	Soil Color	Mottling	Stru.	St. Amt.	Dist. Mun.	Conc.	Agent	St. d/m	
Symbol	Depth	Bound.	SOA	g.c.	S.D.	b/d	c/d	Co. Sh.	(d/m)	Sh.	Text. Kd. Loc. Sh. Com.
Thick.	(X%)										
A:	0-5	A3	50			1/8r					
	15					10YR 4/3					
Bt1	5-35	C3	30			10YR 4.5/3	10YR 5/3				
	30					10YR 4/3	10YR 4/3				
Bt2	35-53	C3	21			10YR 4.5/3	10YR 5/3				
	21					10YR 5/3	10YR 5/3				
Bt3	53-72	C3	21			10YR 4/3	10YR 5/3				
	21					10YR 4/3	10YR 5/3				
CR	72-80	—	—			10YR 7/2	10YR 5/3				
	—					10YR 5/3	10YR 5/3				

Classification: 7/6/82 *thin - heavy stony, mebic* Control section: to cm

Diag. Surf: ochric Thickness: 0 to 5 cm

Diag. Subsurf: argillic Thickness: 5 to 55 cm *aggray 25% clay*

Notes: Surface soil has a residual crust 2 mm thick

SITE DESCRIPTION

JSDA-FS
 R-3 12/6/82

SOIL	SOIL	Phase	Slope gradient	Slope complexity	Slope contour	Slope aspect	Position on slope	Conc.	Agent	St. d/m	IP. S.	Photo log	St. Ho.
Map symbol	SOIL												
CTimax cat.	Veg. <i>Junco</i>	Rock outcrop class	2	Shape slope									
P.m. procedure	Lime slake	Erosion class		Slope length									
Elev.		Drainage class		Slope aspect									
U.N.		Soil Temp. °C		Position on slope									
F.M.		Soil Temp. °C		Conc.									
Horiz/Layer	Text	Soil Color		Agent									
Symb. Depth Bound.	JSJA	g.c.		St. d/m									
Thick.	(XC)	s.b.		Text.Kd. Loc.									
cm		%/vol.		Sh. Conc.									
A	0-5	g		lvf-gr									
3w1	5-13	g		lvf-gr									
Bw2	13-28	g		lvf-gr									
Ck1	2f-43	g		lvf-gr									
Ck2	43-62	g		lvf-gr									
R	62+	g		lvf-gr									

Classification: *Uf, b, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100*

Diag. Surf: *Thin* Thickness: *5 to 28 cm*

Diag. Subsurf: *Calcic*

Notes: *...*

Control section: *...*

VEGETATION (375m² plot)

Trees	%C	Regn/#	Shrubs	%C	Forbs	%C	Graminoids	%C
Juncus	5%		Conium maculatum Asplenium	1%	Lesquerella pinnatifida Lonicera cricoides	3%	Bupleium aegyptium Sida acuta	3%
Pinus edulis			Platanus Glycyrrhiza Lythrum	1%	Trapa spp. Echinococcus jugoslavicus Gulierrezia saxatilis Melampodium leucanthum	2%	Bupleium aegyptium Sida acuta Eragrostis intermedia Suaeda frutescens	3%
			Eragrostis lanata		Viguiera spp.		Bupleium hirsutum	
Group Canopy Cover	5%							5%

Quercus in ...
Hemlock ...

prev. est → 600 lbs/ac

SHRUB COVER				WOODLAND				Forest			
Category	Hits	Pace Transect %	Ocular %	Species	Dist. Diam.	Species	Dist. Diam.	Forest Species	height	Avg. SI	Avg. SI
Graminoid (BA)	21	24	23								
Forb (BA)	0	0	2								
Tree/Shrub (BA)	0	0	7								
Litter	5	5	15								
Gravel (.2-.5cm)	2	2	0								
Gravel (.5-1.6cm)	17	17	12								
Cobble (7.6-25cm)	4	4	8								
Stone (25-60cm)	4	4	3								
Boulder (60cm+)	2	2	2								
Rock outcrop											
Bare soil			22								
Dir. from pedon	deg.	100	100	D+X Spacing		total average					

Section

Mesita de los Ladrones

12-13 May 1983

Transects of 30 microplots each 2x5 dm.

TAXA	Plots:	% cover / % frequency			
		①	②	③	④ ^{1/}
Juniperus monosperma		15	10	15	3
Pinus edulis			+		
Stipa neomexicana		<u>36/97</u>			
Sitanion hystrix			+		0.1
Bouteloua gracilis		12/67	46/100	7/50	<u>55</u>
Bouteloua eriopoda		8/70	4/13	30/83	
Bouteloua curtipendula		2/20	4/53	7/23	3
Bouteloua hirsuta		1/13	1/7	3/30	
Aristida			2/33	.0/3	
Sporobolus cryptandrus		0.2/10	0.3/17	0.3/13	0.3
Lycurus phleoides		.0/3	0.4/17	0.2/3	
Muhlenbergia torreyi		0.5/3	0.5/17		0.1
Eragrostis intermedia				+	
Panicum obtusum					4
Ceratioides lanata					0.3
Opuntia imbricata ^{imbricata}		0/3	0.1/7	0.5/3	<u>8</u>
Opuntia phaeacantha			+		
Opuntia polyacantha			+	0.5/3	
Hymenoxys acaulis		0.5/7		0.1/3	
Gutierrezia sarothrae		1/7	0.2/10		
Lycium pallidum				0.1/3	
Rhus aromatica			+		+
Yucca glauca			+		
Yucca baccata					
Artemisia dracunculoides					<u>4</u>
Leucelene ericoides		0.1/10	+		
Cymopteris			0.2/7		0.1
Hymenopappus filifolia			0.3/17		
Lesquerella		1/53		0.5/20	
Melampodium leucanthum				0.6/17	
Sphaeralcea			0.2/7		
Selaginella				1/10	
Other forbs			0.4/23	0.5/17	
Cryptogams ^{1/}		5	2	15	
Basal area		9	27	10	
Litter		30	14	21	
Soil		33	57	43	
Gravels <3"		22		8	
Gravels 3-10"		1		2	
Cobbles >10"				1	
Bedrock				+	

^{1/} Cover only

FOREST SERVICE
Santa Fe National Forest
Santa Fe, New Mex.

MAY 35 1983

RECEIVED

TAXA	Plots:	% cover / % frequency			
		①	②	③	④ ^{1/}
Juniperus monosperma	15		10	15	3
Pinus edulis			+		
Stipa neomexicana	36/97				
Sitanion hystrix			+		0.1
Bouteloua gracilis	12/67		46/100	7/50	55
Bouteloua eriopoda	8/70		4/13	30/83	
Bouteloua curtipendula	2/20		4/53	7/23	3
Bouteloua hirsuta	1/13		1/7	3/30	
Aristida			2/33	.0/3	
Sporobolus cryptandrus	0.2/10		0.3/17	0.3/13	0.3
Lycurus phleoides	.0/3		0.4/17	0.2/3	
Muhlenbergia torreyi	0.5/3		0.5/17		0.1
Eragrostis intermedia				+	
Panicum obtusum					4
Ceratioides lanata					0.3
Opuntia imbricata	0/3		0.1/7	0.5/3	8
Opuntia phaeacantha			+		
Opuntia polyacantha			+	0.5/3	
Hymenoxys acaulis	0.5/7			0.1/3	
Gutierrezia sarothrae	1/7		0.2/10		
Lycium pallidum				0.1/3	
Rhus aromatica			+		+
Yucca glauca			+		
Yucca baccata					
Artemisia dracunculoides					4
Leucelene ericoides	0.1/10		+		
Cymopteris			0.2/7		0.1
Hymenopappus filifolia			0.3/17		
Lesquerella	1/53			0.5/20	
Melampodium leucanthum				0.6/17	
Sphaeralcea			0.2/7		
Selaginella				1/10	
Other forbs			0.4/23	0.5/17	
Cryptogams ^{1/}	5		2	15	
Basal area	9		27	10	
Litter	30		14	21	
Soil	33		57	43	
Gravels <3"	22			8	
Gravels 3-10"	1			2	
Cobbles >10"				1	
Bedrock				+	

^{1/} Cover only

Species	13 Aug 83	10 Feb 84	15	20	25	30	Σ	3° NE	Est. store of 53 can
Boer	13 14	5	10						
Bogor	3 2 3 1 4 4 3 5 4 3 2 2 3 4 3 3 2 3 4 4 4 4 4 4 3 4 4						46	Grassy Jumo corridor	
Aris	1 1						2	Jumo 10%	
Bacu	1		1 1 1 1				4	Ped t (unda Jumo)	
Lyrin	1 1 1						.4	Siny undu Opipi	
Spur	1						.3	Deam cool	
Bahi							1	Mamm. matacastia	
BA	9 15 8 14 25 25 10 45 30 13 18 14 12 20 17 22 11 31 50 45 55 40 25 30 50 14 66 30 39 40						27.2	Eki vir	
Litter	3 40 10 35 10 12 5 35 25 2 3 10 3 8 10 3 20 50 20 6 12 9 10 3 15 16 10 5 11 8						13.6	Opody	
Soil	BB 44 79 50 65 63 85 20 45 83 75 70 84 70 73 73 65 10 28 45 30 47 64 64 35 67 30 67 40 44						56.8	Op phae	
Cryp.	1 3 1 0		2 2 4 1 2		2 4 1 2 4 3 4 1 3 0 3		6 10 8	Allum	

Gaun	0						0 0	
Tregia	0						1	
Ery d.v.	1						1	
Op spin	0		1				1	
Hyfi	0		1				1	
Gusa	0		1				1	
Plantago	0		1				1	
Thale	0		0				0	
Heap	0		0				0	
Gymophita	0		0				1	
Sphaeroclea	0		0				1	
Astragalus m.	0		0				1	
Bogor pedakulidi 1-2 cm	0		0				1	

Evaluha 1 0 0 0 0

Op spinosior 1%
 Leer t
 Estium triplo. vad melaocastia
 Psfe
 Arlu - undu Jumo
 Phas axam P
 Yugi
 Mamm. matacastia
 Eki vir
 Siny undu Opipi
 Deam cool
 Opody
 Op phae
 Allum

BA 50 RF 27
 22 27

FD used for
 saved and
 off

Shop # 2

SITE DESCRIPTION

USDA-FS
R-3 12/6/82

Soil Map symbol	Soil Typic Haplustalf, Fine loamy, mearctic Tawno	Phase	Soil rock frag. class	Slope gradient	Slope complexity	Shape contour	Shape slope	Slope length	Slope aspect	C Position on slope	Conc.	Amt. qua.	Agent	St. d/m	Other	Pores	Roots	React.	Calcu	
				3	Simple	Concave	Convex	300 ft	100 m	90°										
Classification: <u>Thin</u> <u>loamy</u> <u>mealy</u> <u>mesic</u>																				
Diag. Surf: <u>ochric</u>					0 to 5 cm															
Diag. Subsurf: <u>argilic</u>					5 to 55 cm															
Notes: <u>Surface Soil has a vesicular crust - 2 mm thick</u>																				
Control section: to																				

VEGETATION (375m² plot)

Trees	%C	Regn//	Shrubs	%C	Fords	%C	Graminoids	%C
Juniperus Mo. 1.1.1.1	2	1	Opuntia imbricata	1	Hyemnopappus filifolius	5	Bouteloua gracilis	4.5
Pinus edulis	3		Yucca glauca	P	Cynopterus spp.	T	Bouteloua curtipendula	5
					Eriogonum divergens	1.5	Aristida spp	2
					Gaura coccinea	T	Lycurus phleoides	.5
					Sphaeralcea digitata K. dngil.	T	Bouteloua hisida	1
							Sporobolus cypharurus	.5
Group Canopy Cover	1.1%			1%		3%		5.5%

spec + pp (100 pieces)
 11/20/1981
 4/11/1981

SHRUB COVER

Category	Place	Transsect	Ocular	Species	Dist.	Diam.	Forest	Avg. SI	Avg. SI
Graminoid (BA)			48	22			Forest height		
Ford (BA)							age		
Tree/Shrub (BA)							Forest height	Avg. SI	
Litter			14	23			age		
Gravel (.2-.5cm)							SI		
Gravel (.5-1.5cm)			1				SI		
Cobble (1.5-2.5cm)							SI		
Stone (2.5-60cm)							SI		
Boulder (60cm+)							SI		
Rock outcrop							SI		
Bare soil			35	55			SI		
Dir. from pedon	deg.	100	100				SI		

Woodland

Forest

Accessory Information

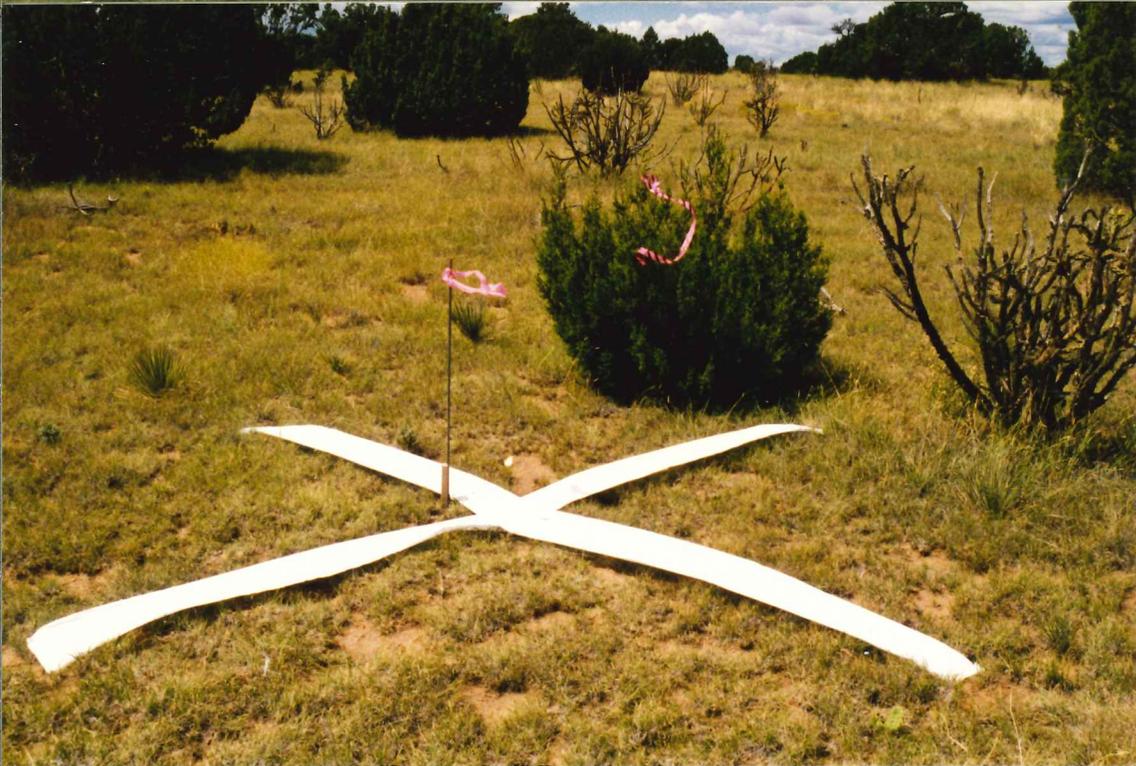
Overstorey cover (%)

1772-11
 slope # 2.

SITE DESCRIPTION

SOIL			SITE DESCRIPTION												
Map symbol	Soil	Phase	Surf. rock frag. class	Slope gradient	% By Joc. PP	RF	m/d	Date	5	grad.	S	For. Sign. I.c.	RD. loc.	12/6/82	
CT max cat.	veg.	cm	Rock outcrop class	Slope complexity	m	St./Co. NM				linear	5				
			Erosion class	Shape contour	(200 ft)	Area				convex	5				
			Drainage class	Slope length		St./Co. NM					5				
			Surf. runoff class	Slope aspect		Sec.					5				
			Soil Temp. @	Position on slope							5				
			Mottling	Stru.							5				
			Qu. St. Mun. Gr. St.	Amt. Qua.							5				
			Co. Sh. (d/m)	Text. Kd. Loc. Sh. Com.							5				
			r/m	11VF:GR							5				
			10YR 4/2								5				
			10YR 3/3								5				
			10YR 3/3								5				
			10YR 5.5/3								5				
			10YR 4/2								5				
			10YR 5.5/2								5				
			10YR 5/3								5				
			10YR 5.5/2								5				
			10YR 4/2								5				
			10YR 5.5/2								5				
			10YR 5/3								5				
			10YR 5.5/2								5				
			10YR 5.5/3								5				
			10YR 5.5/2								5				
			10YR 5.5/3								5				
			10YR 5.5/2								5				
			10YR 5.5/3								5				
			10YR 5.5/2								5				
			10YR 5.5/3								5				
			10YR 5.5/2								5				
			10YR 5.5/3								5				
			10YR 5.5/2								5				

Classification: Calcic Chernozem, skeletal, mixed, mesic
 Diag. Surf: Calcic thickness: 0 to 5 cm
 Diag. Subsurf: Calcic thickness: 5 to 28 cm
 Notes:
 The soil is 12 meters in length / rocks are clustered around plants / second ck horizon is
 thin calcic on rock fragments
 1772-11







MESITA DE LOS LADRONES SPECIES LIST

Collections made by Reggie Fletcher--1982, 1983

Allium perducle	R
Amaranthus viridus	R
Andropogon barbinoidis <i>spring fideleii</i>	I
Andropogon gerardii	I
Andropogon scoparius	I
Arabis fendleri var. spatifolia	R
Arabis perennans	R
Aristida adscensionis	R
Aristida arizonica	C
Aristida hamulosa <i>divaricata</i>	R
Aristida longiseta	R
Artemisia bigelovii	R
Artemisia carruthii	R
Artemisia dranunculoides	I
Artemisia ludoviciana	C
Asclepias asperula	R
Asclepias macrotis	R
Asclepias nyctaginifolia	R
Asclepias uncialis	R
Astragalus mollissimus var. mollissimus	I
Atriplex canescens	I
Baccharis pternoides	R
Baccharis wrightii	R
Bahia dissecta	I
Berlandiera lyrata	I
Bouteloua curtipendula	C
Bouteloua eriopoda	C
Bouteloua gracilis	C
Bouteloua hirsuta	C
Brickellia brachyphylla	I
Brickellia californica	R
Bromus purgans	R
Cassia roemeriana	R
Castilleja integra	R
Cercocarpus montanus	R
Cheilanthes eatonii	R
Chrysopsis canescens	C
Cirsium canescens	R
Commelina dianthifolia	C
Convolvulus incanus	R
Cryptantha crassisejala var. elachantha	I
Cryptantha jamesii	R
Cuscuta salina	R
Cymopterus montanus	C
Cyperus esculentus	I
Cyperus fendlerianus	I

<i>Cyperus rusbyi</i>	I	
<i>Dalea formosa</i>	R	
<i>Dalea jamesii</i>	R	
<i>Descurainia richardsonii</i> ssp. <i>viscosa</i>	R	
<i>Desmanthus cooleyi</i>	I	
<i>Drymaria fendleri</i>	R	
<i>Dyssodia papposa</i>	R	
<i>Echinocereus fendleri</i>	R	
<i>Echinocereus triglochidiatus</i> var. <i>triglochidiatus</i>	R	
<i>Echinocereus triglochidiatus</i> var. <i>melanacanthus</i>	R	
<i>Echinocereus triglochidiatus</i> var. <i>neomexicanus</i>	R	
<i>Echinocereus viridiflorus</i> var. <i>viridiflorus</i>	C	
<i>Eragrostis intermedia</i>	C	
<i>Erigeron bellidiastrum</i> var. <i>bellidiastrum</i>	R	
<i>Erigeron divergeus</i>	I	
<i>Erigeron flagellaris</i>	I	
<i>Erigeron nudiflorus</i>	C	
<i>Eriogonum jamesii</i>	I	
<i>Eriogonum tenellum</i>	I	
<i>Eupatorium herbaceum</i>	R	
<i>Euphorbia dentata</i> var. <i>dentata</i>	R	
<i>Euphorbia fendleri</i> var. <i>chaetocalyx</i>	R	
<i>Euphorbia fendleri</i> var. <i>fendleri</i>	R	
<i>Eurotia lanata</i>	I	
<i>Evovulus pilosus</i>	R	
<i>Evovulus sericeus</i>	R	
<i>Franseria confertiflora</i>	R	
<i>Gaillardia pinnatifida</i>	I	
<i>Gaura coccinea</i>	R	
<i>Gnaphalium wrightii</i>	I	
<i>Guilleminea densa</i> var. <i>aggregata</i>	R	
<i>Gutierrezia sarothrae</i>	I	
<i>Haplopappus spinulosus</i>	I	
<i>Hedyotis rubra</i>	R	
<i>Heterosperma bipinnata</i>	I	
<i>Hilaria jamesii</i>	I	
<i>Hybanthus verticillatus</i>	R	
<i>Hymenopappus filifolius</i> var. <i>cinereus</i>	I	
<i>Hymenoxys scaposa</i> var. <i>linearis</i>	C	
<i>Ipomoea costellata</i>	R	
<i>Ipomoea leptophylla</i>	R	
<i>Ipomopsis aggregata</i>	R	
<i>Ipomopsis longiflora</i> ssp. <i>longiflora</i>	R	
<i>Juniperus monosperma</i>	C	
<i>Kuhnia chlorolepis</i>	I	
<i>Lappula redowskii</i>	R	
<i>Leptochloa dubia</i>	R	
<i>Leptoloma cognatum</i>	R	
<i>Lesquerella fendleri</i>	C	
<i>Lesquerella praecox</i>	I	endemic to central NM
<i>Leuceleene ericoides</i>	C	

<i>Linum lewisii</i>	R
<i>Linum puberulum</i>	I
<i>Lithospermum incisum</i>	R
<i>Lycium pallidum</i>	I
<i>Lycurus phleoides</i>	C
<i>Mammillaria meiacantha</i>	I
<i>Mammillaria wrightii</i>	R
<i>Melampodium leucanthum</i>	I
<i>Menodora scabra</i>	R
<i>Mirabilis multiflora</i>	C
<i>Muhlenbergia emersleyi</i>	R
<i>Muhlenbergia pauciflora</i>	R
<i>Muhlenbergia richardsonis</i>	R
<i>Muhlenbergia torreyi</i>	C
<i>Muhlenbergia wrightii</i>	R
<i>Nicotiana trigonophylla</i>	R
<i>Nolina microcarpa</i>	I
<i>Notholaena standleyi</i>	R
<i>Oenothera albicaulis</i>	R
<i>Opuntia erinacea</i>	I
<i>Opuntia imbricata</i>	C
<i>Opuntia phaeacantha</i>	C
<i>Opuntia polyacantha</i>	C
<i>Oryzopsis micrantha</i>	R
<i>Oxybaphus linearis</i> var. <i>subhispidus</i>	R
<i>Panicum hallii</i>	I
<i>Panicum obtusum</i>	C
<i>Pectis angustifolia</i>	I
<i>Penstemon barbatus</i>	R
<i>Penstemon fendleri</i>	I
<i>Penstemon jamesii</i> var. <i>jamesii</i>	R
<i>Petalostemum purpureum</i>	R
<i>Physalis</i> sp.	R
<i>Pinus edulis</i>	C
<i>Pinus ponderosa</i>	R
<i>Plantago purshii</i>	I
<i>Poa fendleriana</i>	R
<i>Polygala alba</i>	R
<i>Portulaca mundula</i>	I
<i>Portulaca retusa</i>	I
<i>Psoralea tenuiflora</i>	R
<i>Quercus grisea</i>	R
<i>Quercus undulata</i>	C
<i>Ratibida columnifera</i>	R
<i>Rhus trilobata</i> var. <i>pilosissima</i>	R
<i>Sanvitalia abertii</i>	R
<i>Sarcostemma crispum</i>	R
<i>Selaginella densa</i> var. <i>scopulorum</i>	C
<i>Senecio douglasii</i>	R

<i>Sisymbrium linearifolium</i>	I	diminutive variant possibly undescribed ssp.
<i>Sitanion hystrix</i>	I	
<i>Solanum eleagnifolium</i>	C	
<i>Solidago mollis</i>	I	
<i>Solidago wrightii</i>	I	
<i>Sorghastum nutans</i>	R	only 2nd spot I have seen this on NF in NM
<i>Sphaeralcea digitata</i> var. <i>digitata</i>	C	
<i>Sporobolus contractus</i>	R	
<i>Sporobolus cryptandrus</i>	C	
<i>Stephanomeria pauciflora</i>	R	
<i>Stipa neomexicana</i>	C	two forms, one with plumose awn and one little more than barbellate
<i>Thelesperma megapotamicum</i>	R	
<i>Thelypodium wrightii</i>	R	
<i>Tragia stylaris</i>	I	
<i>Tragopogon dubius</i>	R	
<i>Tridens pilosus</i>	I	
<i>Tridens pulchellus</i>	I	
<i>Verbena bipinnatifida</i>	R	
<i>Verbena plicata</i>	R	
<i>Vicia exigua</i>	R	
<i>Viguiera dentata</i>	I	
<i>Yucca baccata</i>	I	
<i>Yucca glauca</i>	I	

C = Common
I = Infrequent
R = Rare

	Mid Tree	need ip walk out		line slope 4
Pin	$350 + 5.9$	0	$+ 45 \text{ } 2 - 15 \text{ } 2$	5
Jun	$350 + 22.3$	12.3	$+ 19 - 10$	5

$$\begin{array}{r} 1 \\ 12 \\ 108 \\ \hline 176 \\ 184 \\ 575 \\ \hline 759 \end{array}$$

250 to (250 + 75) is a drainage. W to E slope. $\approx 6^\circ$.

Photo 1, 2 S from ≈ 250 .

3, 4 N " ≈ 250 (pink = 250 w. 2 flags)

PLOT Q93JT2001 Record _____ Read _____

PLOT Q93JT2002 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	14.6 7.1 7.3 (29)	16.0
PIED	3.5	10.0
Jumo	12.9	14.0

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	25.1 6.5 (31.6)	15.0
Jumo	19.3	15.5
Jumo	13.9 DEAD	12.0
Jumo	4.1	8.5
Jumo	3.5	8.5
Jumo	4.3 1.8 (6.1)	9.0
Jumo	2.9 2.8 1.0 5.1 (11.8)	9.0
Jumo	21.4	14.5

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	9.3	10.0
Jumo	3.2	7.5

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	9.3	10.0
Jumo	15.2	12.0
Jumo	10.3 2.1 3.2 (15.6)	10.5
Jumo	5.3	8.0
Jumo	3.6 2.4 1.3 (7.3)	11.0
Jumo	11.4	11.0

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT Q93JT2003 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PLOT Q93JT2004 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	4.0 12.6 (16.6)	10.0
Jumo	3.6	7.5
Jumo	7.8 2.6 7.1 (17.5)	9.0
Jumd	4.3	8.5
Jumo	4.2	7.0
Jumo	7.1 9.1 3.5 6.2 15.9	14.0
Jumo	11.8	13.0
Jumo	2.4	7.0
Jumo	5.8	9.5
Jumo	5.8	10.5
Jumo	4.5	6.5
Jumo	4.2	6.5
Jumo	4.0	8.0
Jumo	4.2	9.0

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES
CODE

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	12.8	9.0
Jumo	22.6	18.5
Jumo	3.3 8.6 3.2 (15.1)	11.5

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES
CODE

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

3

14

jt201

04-12-1994

AVE VOL PER PLOT 21.4	SAMPLING ERROR (AS A % OF MEAN) 88.2	COEF VAR (SD/MEAN) 1.3
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE 854.9	ESTIMATED TOTAL VOLUME 855
----------------------------------	-------------------------------

ESTIMATED TOTAL PINYON VOLUME 5.0	ESTIMATED TOTAL JUNIPER VOLUME 849.9
--------------------------------------	---

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	3.5	10
JUNIPER	4	13.6	12

jt202

04-12-1994

AVE VOL PER PLOT 52.0	SAMPLING ERROR (AS A % OF MEAN) 61.2	COEF VAR (SD/MEAN) 0.9
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE 2079.7	ESTIMATED TOTAL VOLUME 2080
-----------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME 2079.7
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	14	12.6	11

jt203

04-12-1994

AVE VOL PER PLOT 19.1	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
-----------------------------	--	------------------------------

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT Q95T2005 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	12.3	13.0
Jumo	5.6	7.5
Jumo	5.3 5.3 3.5 10.3	15.0 (26.4)
Jumo	10.2	13.0
Jumo	10.6	7.0

5

PLOT Q95T2006 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
⊙		

PIED < 1.5"

JUMO < 1.5"

PIED < 1.5"

JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	24.2 DEAD	19.0
Jumo	10.5 15.7 (26.2)	15.0
Jumo	4.1	6.0
Jumo	14.1	16.0
Jumo	8.8 7.2 (16)	11.5
Jumo	1.5	3.5

6

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	4.3 3.2 7.1 7.4 6.1 (28.1)	11.5
Jumo	7.9	11.5
Jumo	6.2	14.0
Jumo	9.0 9.1 (18.1)	11.0
Jumo	4.1 2.9 5.3 (12.3)	9.5

5

PIED < 1.5"

JUMO < 1.5"

PIED < 1.5"

JUMO < 1.5"

jt205

04-13-1994

AVE VOL PER PLOT	SAMPLING ERROR (AS A % OF MEAN)	COEF VAR (SD/MEAN)
54.7	37.8	0.5

AVERAGE VOLUME PER ACRE	ESTIMATED TOTAL VOLUME
2188.1	2188

ESTIMATED TOTAL PINYON VOLUME	ESTIMATED TOTAL JUNIPER VOLUME
0.0	2188.1

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	11	13.6	12

jt206

04-13-1994

AVE VOL PER PLOT	SAMPLING ERROR (AS A % OF MEAN)	COEF VAR (SD/MEAN)
19.3	97.5	1.4

AVERAGE VOLUME PER ACRE	ESTIMATED TOTAL VOLUME
770.9	771

ESTIMATED TOTAL PINYON VOLUME	ESTIMATED TOTAL JUNIPER VOLUME
0.0	770.9

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	5	14.5	12

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT Q93JT2007 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	15.8	18.5
Jumo	4.0 .1 2.8 DEAD (6.9)	9.5
PIED	2.9	8.5
Jumo	11.6 8.1 (19.7)	14.5
PIED	5.6	16.0
Jumo	8.1	11.0
Jumo	8.4	12.0
PIED	1.4	9.5
PIED	6.5	11.5
Jumo	2.4 2.5 3.5 3.6 2.8 (14.8)	10.0
Jumo	7.3 2.5 6.5 2.0 2.0 4.5	13.5
X	2.8 6.9 1.0 1.1 (36.6)	
Jumo	.9 .9 .5 (2.3)	2.5

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	6.3 5.9 2.8 (34)	16.5

PIED < 1.5"
JUMO < 1.5"

PLOT Q93JT2008 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	3.4 4.4 2.4 2.5 2.6 3.1 (16.4)	7.5
Jumo	18.2	15.0
Jumo	3.0 3.1 5.6 8.1 10.1 (29.9)	16.5

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

PIED < 1.5"
JUMO < 1.5"

2

3

jt207

04-13-1994

AVE VOL
PER PLOT
65.4

SAMPLING ERROR
(AS A % OF MEAN)
27.3

COEF VAR
(SD/MEAN)
0.4

AVERAGE VOLUME PER ACRE
%2617.3

ESTIMATED TOTAL VOLUME
2617

ESTIMATED TOTAL PINYON VOLUME
50.8

ESTIMATED TOTAL JUNIPER VOLUME
2566.5

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	4	4.1	11
JUNIPER	9	16.3	12

jt208

04-13-1994

AVE VOL
PER PLOT
28.7

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%1148.0

ESTIMATED TOTAL VOLUME
1148

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
1148.0

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	3	22.2	13

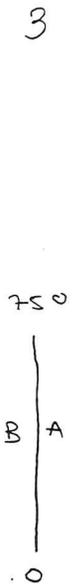
Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT 093JT2009 Record _____ Read _____

PLOT 093JT2010 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
PIED	7.8	12.0
PIED	3.3	12.0
Jumo	1.2 5.1 3.3 3.6 5.3 5.4	10.0
	(23.9)	

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		



PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES
CODE

QUAD B
SPECIES
CODE

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	14.6	17.0
Jumo	10.3 2.1 1.0 (13.4)	11.0
PIED	1.0	4.0
Jumo	9.4	13.0

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	7.9 9.3 3.1 2.9 2.8 3.1 (29.1)	11.5
Jumo	5.6 5.0 3.2 .5 (14.3)	13.0
PIED	1.4	6.5
Jumo	1.6 1.9 .4 .4 .1 .1	8.0
X	.4 (4.9)	
Jumo	9.7 2.0 (11.7)	13.0
Jumo	1.5	5.0
Jumo	2.8 1.5 (4.3)	7.0

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

4

7

jt209

04-13-1994

AVE VOL
PER PLOT
16.6

SAMPLING ERROR
(AS A % OF MEAN)
1.6

COEF VAR
(SD/MEAN)
0.0

AVERAGE VOLUME PER ACRE
663.5

ESTIMATED TOTAL VOLUME
664

ESTIMATED TOTAL PINYON VOLUME
41.5

ESTIMATED TOTAL JUNIPER VOLUME
622.0

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	3	4.0	9
JUNIPER	4	15.3	13

jt210

04-13-1994

AVE VOL
PER PLOT
18.1

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
723.1

ESTIMATED TOTAL VOLUME
723

ESTIMATED TOTAL PINYON VOLUME
-0.6

ESTIMATED TOTAL JUNIPER VOLUME
723.7

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	1.4	7
JUNIPER	6	11.0	10

PLOT 93JT2011 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	15.8	16
Jumo	1.5 2.1 .8 1.0 (5.4)	4.0
Jumo	1.1 .3 (1.4)	4.0
Jumo	3.2	9.0
PIED	4.2	9.0
Jumo	3.0 3.0 1.9 (7.9)	7.0
PIED	3.6	7.5

PIED < 1.5"
JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PLOT 93JT2012 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	7.2 3.4 7.5 7.8 (25.9)	13.5

PIED < 1.5"
JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	2.1 9.5 4.8 7.0 8.0 5.7	14
X	4.0 (41.1)	
Jumo	3.2 9.0 8.7 8.8 4.8 4.0	15.0
X	2.5 2.7 (43.7)	
Jumo	1.6	9.0

PIED < 1.5"
JUMO < 1.5"

jt211

04-13-1994

AVE VOL PER PLOT 6.1	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE 243.4	ESTIMATED TOTAL VOLUME 243
----------------------------------	-------------------------------

ESTIMATED TOTAL PINYON VOLUME 10.6	ESTIMATED TOTAL JUNIPER VOLUME 232.8
---------------------------------------	---

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	2	3.9	8
JUNIPER	5	6.7	8

jt212

04-13-1994

AVE VOL PER PLOT 74.2	SAMPLING ERROR (AS A % OF MEAN) 65.5	COEF VAR (SD/MEAN) 1.0
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE %2968.9	ESTIMATED TOTAL VOLUME 2969
------------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME 2968.9
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	4	28.1	13

PLOT QJT 2013 Record _____ Read _____

PLOT QJT 2014 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	15.0 6.3 6.0 18.0 11.0 <u>57.1</u>	13.0
PIED	2.0	11.0

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	4.8 2.0 1.9 1.5 1.0 2.3	6.5
X	2.4 1.0 1.8 <u>19.5</u>	

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

2

1

jt213

04-13-1994

AVE VOL
PER PLOT
50.6

SAMPLING ERROR
(AS A % OF MEAN)
86.9

COEF VAR
(SD/MEAN)
1.3

AVERAGE VOLUME PER ACRE
%2023.1

ESTIMATED TOTAL VOLUME
2023

ESTIMATED TOTAL PINYON VOLUME
1.0

ESTIMATED TOTAL JUNIPER VOLUME
2022.0

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	2.0	11
JUNIPER	2	38.3	10

jt216

04-13-1994

AVE VOL
PER PLOT
73.6

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%2944.5

ESTIMATED TOTAL VOLUME
2945

ESTIMATED TOTAL PINYON VOLUME
5.6

ESTIMATED TOTAL JUNIPER VOLUME
2938.9

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	3.0	15
JUNIPER	2	34.6	10

jt217

04-13-1994

AVE VOL
PER PLOT
49.1

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%1965.3

ESTIMATED TOTAL VOLUME
1965

ESTIMATED TOTAL PINYON VOLUME
16.5

ESTIMATED TOTAL JUNIPER VOLUME
1948.8

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	4.8	15
JUNIPER	1	55.6	14

2

PLOT QJT2017 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	7.8 5.0 6.1 3.0 5.0 11.2	14.0
X	2.1 4.2 2.0 9.2 <u>55.6</u>	
X		
PIED	4.8	15.0

PIED < 1.5"
JUMO < 1.5"

PLOT QJT2018 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES
CODE

DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES
CODE

DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	7.8 4.0 6.3 6.0 4.8 4.5 10.0
X	3.0 3.1 3.3 3.8 4.2 3.0
X	8.2 4.0 6.8 <u>72.8</u>
Jumo	1.5 5.5
PIED	1.5 1.0 <u>2.5</u> 8.0

PIED < 1.5"
JUMO < 1.5"

3

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QTT2019 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)						HEIGHT (Ft.)
PIED	3.1						8.0
PIED	1.5						5.5
Jumo	4.6	3.4	1.0	2.0	1.6	4.5	13.0
Jumo	2.2	3.2	1.5	(24)			
Jumo	1.7						6.0
Jumo	2.2	1.7	1.0	(4.9)			6.0
Jumo	9.0	4.2	6.3	5.0	3.8	3.0	13.0
Jumo	4.0	7.3	7.4	(50)			
Jumo	1.5	1.5		(3)			5.6
Jumo	1.5						5.0
Jumo	1.5						5.0

9



* Assumption buried equals NEW
INDIVIDUALS. Separation of >20cm

PIED < 1.5"

JUMO < 1.5"

PLOT QTT2020 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)						HEIGHT (Ft.)
Ø							

PIED < 1.5"

JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)						HEIGHT (Ft.)
Ø							

PIED < 1.5"

JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)						HEIGHT (Ft.)
Ø							

PIED < 1.5"

JUMO < 1.5"

jt218

04-13-1994

AVE VOL
PER PLOT
58.7

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%2347.4

ESTIMATED TOTAL VOLUME
2347

ESTIMATED TOTAL PINYON VOLUME
1.3

ESTIMATED TOTAL JUNIPER VOLUME
2346.1

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	2.5	8
JUNIPER	2	37.2	8

jt219

04-13-1994

AVE VOL
PER PLOT
47.8

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%1912.3

ESTIMATED TOTAL VOLUME
1912

ESTIMATED TOTAL PINYON VOLUME
2.1

ESTIMATED TOTAL JUNIPER VOLUME
1910.2

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	2	2.3	7
JUNIPER	7	12.4	8

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT ST2021 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PLOT ST2022 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
JUMO	2.5 7.5 6.0 8.1 4.2 8.3	14.5
X	2.0 5.0 5.0 (48.6)	
PIED	2.2	9.0

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
JUMO	3.7 4.7 2.0 4.3 2.1 4.0	12.0
X	1.5 4.0 1.6 5.0 5.0 1.5	
X	1.0 3.3 2.0 3.0 5.4 2.4	
X	4.0 4.1 2.2 2.4 (69.2)	

PIED < 1.5"
JUMO < 1.5"

2

1

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT2023 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Jumo	3.3 3.3 4.2 4.0 3.0 1.0	14.5
X	3.5 5.0 3.0 3.8 3.1 6.5	
X	6.9 2.8 4.0 2.4 2.0 4.1	
X	7.8	73.7
PIED	1.5	3.0

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Ø		

PIED < 1.5"
JUMO < 1.5"

PLOT QJT2024 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Ø		

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Ø		

PIED < 1.5"
JUMO < 1.5"

2

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT2027 Record _____ Read _____

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

PIED < 1.5"

JUMO < 1.5"

PLOT QJT2028 Record _____ Read _____

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

PIED < 1.5"

JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

PIED < 1.5"

JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

PIED < 1.5"

JUMO < 1.5"

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJ2029 Record _____ Read _____

PLOT QJ2030 Record _____ Read _____

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

SPECIES CODE	DRC/EDRC (Inches)						HEIGHT (Ft.)
JUMO	8.0	5.0	1.6	2.1	1.5	3.5	10.5
 	3.0	2.1	3.2	2.0	3.0	1.1	
 	1.0	4.0			(4.1)		
Jumo	3.8	1.0	4.0	3.6	5.0	3.9	9.5
 	1.0	9.0	2.4	2.5	2.7	2.0	
 	1.5				(42.4)		

2

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

SPECIES CODE	DRC/EDRC (Inches)						HEIGHT (Ft.)
∅							

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

jt223

04-13-1994

AVE VOL
PER PLOT
84.9

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%3394.3

ESTIMATED TOTAL VOLUME
3394

ESTIMATED TOTAL PINYON VOLUME
-0.9

ESTIMATED TOTAL JUNIPER VOLUME
3395.2

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	1.5	3
JUNIPER	1	73.7	15

jt230

04-13-1994

AVE VOL
PER PLOT
43.5

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%1741.4

ESTIMATED TOTAL VOLUME
1741

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
1741.4

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	2	41.8	10

PLOT QJT2033 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PLOT QJT²34 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
JUMO	6.5 1.0 3.0 3.6 7.4 5.0	13.0
X	3.4 (29.9)	
PIED	1.0	4.0

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES
CODE

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES
CODE

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

jt232

04-13-1994

AVE VOL
PER PLOT
29.0

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%1158.4

ESTIMATED TOTAL VOLUME
1158

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
1158.4

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	2	30.5	12

jt234

04-13-1994

AVE VOL
PER PLOT
15.3

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
610.4

ESTIMATED TOTAL VOLUME
610

ESTIMATED TOTAL PINYON VOLUME
-1.0

ESTIMATED TOTAL JUNIPER VOLUME
611.4

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	1.0	4
JUNIPER	1	29.9	13

PLOT JJT2035 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PLOT JJT2036 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PLOT QJT2037 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"

JUMO < 1.5"

PLOT QJT2038 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"

JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	20.8	15.0
PIED	1.0	4.0
Jumo	5.0 2.1 1.0 3.8 5.0 3.0	10.0
X	2.0 5.2 6.7 2.0 4.5 4.1	
	(44.4)	

PIED < 1.5"

JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"

JUMO < 1.5"

3

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT 2039 Record _____ Read _____

PLOT QJT 2040 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

jt237

04-13-1994

AVE VOL
PER PLOT
34.1

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%1362.4

ESTIMATED TOTAL VOLUME
1362

ESTIMATED TOTAL PINYON VOLUME
-1.0

ESTIMATED TOTAL JUNIPER VOLUME
1363.4

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	1.0	4
JUNIPER	2	32.6	13

jt241

04-13-1994

AVE VOL
PER PLOT
-0.0

SAMPLING ERROR
(AS A % OF MEAN)
-97.5

COEF VAR
(SD/MEAN)
-1.4

AVERAGE VOLUME PER ACRE
-0.6

ESTIMATED TOTAL VOLUME
-1

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
-0.6

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	1.0	2

PLOT QJT2043 Record _____ Read _____

PLOT QJT2044 Record _____ Read _____

QUAD A

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

QUAD A

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"

PIED < 1.5"

JUMO < 1.5"

JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	3.1 4.1 2.9 5.3 3.2 5.0	13.0
X	3.5 5.1 6.8 5.5 2.0 1.1	
X	4.6 (52.2)	

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"

PIED < 1.5"

JUMO < 1.5" 

JUMO < 1.5"

jt243

04-13-1994

AVE VOL
PER PLOT
40.7

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%1626.1

ESTIMATED TOTAL VOLUME
1626

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
1626.1

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	52.2	13

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT2045 Record _____ Read _____

QUAD A
SPECIES CODE

DRC/EDRC
(Inches)

HEIGHT
(Ft.)

∅		

PIED < 1.5"

JUMO < 1.5"

PLOT QJT2046 Record _____ Read _____

QUAD A
SPECIES CODE

DRC/EDRC
(Inches)

HEIGHT
(Ft.)

∅		

PIED < 1.5"

JUMO < 1.5"

QUAD B
SPECIES CODE

DRC/EDRC
(Inches)

HEIGHT
(Ft.)

∅		

PIED < 1.5"

JUMO < 1.5"

QUAD B
SPECIES CODE

DRC/EDRC
(Inches)

HEIGHT
(Ft.)

JUMO	16.1						13.0
JUMO	3.0	1.5	2.0	12.1	2.9	2.7	13.0
	0.7	4.0	3.4	(323)			
JUMO	1.5	0.5	1.5	2.0	2.6	2.0	7.0
X	2.5			(10.6)			
↑							
Jumos ARE	SPACED BY ~ 30 cm -						
good possibility	THAT THEY ARE SAME						
TREE							
JUMO	5.8	4.2	2.0	2.9	2.0	3.1	13.0
	3.3	4.5	2.0	4.0	9.9	5.2	
	2.0	1.4	2.1	5.6	(59)		

PIED < 1.5"

JUMO < 1.5"

Jrak
4
OR
2
= 2
7/20/61

jt246a

04-13-1994

AVE VOL PER PLOT 73.4	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE %2935.3	ESTIMATED TOTAL VOLUME 2935
------------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME 2935.3
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	4	29.5	12

jt246b

04-13-1994

AVE VOL PER PLOT 101.5	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
------------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE %4059.2	ESTIMATED TOTAL VOLUME 4059
------------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME 4059.2
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	2	59.0	13

PLOT JT 2047 Record _____ Read _____

QUAD A

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

PLOT JT 2048 Record _____ Read _____

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Ø	S. 1/2 2.0 2.1	

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Ø		

PIED < 1.5"
JUMO < 1.5"

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT JTT2049 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	1.5	2.5

PIED < 1.5"
JUMO < 1.5"

PLOT JTT2050 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
 		

PIED < 1.5"
JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	2.0 .5 .5 .5 (3.5)	3.0

PIED < 1.5"
JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	4.1 2.0 1.8 .8 .4 1.0	8.0
 	1.8 5.2 (17.1)	

PIED < 1.5"
JUMO < 1.5"

jt249

04-13-1994

AVE VOL PER PLOT -0.0	SAMPLING ERROR (AS A % OF MEAN) -44.8	COEF VAR (SD/MEAN) -0.7
-----------------------------	---	-------------------------------

AVERAGE VOLUME PER ACRE -1.5	ESTIMATED TOTAL VOLUME -1
---------------------------------	------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME -1.5
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	2	2.5	3

jt250

04-13-1994

AVE VOL PER PLOT 2.6	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE 103.2	ESTIMATED TOTAL VOLUME 103
----------------------------------	-------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME 103.2
--------------------------------------	---

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	17.1	8

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT 2051 Record _____ Read _____

QUAD A SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		13.0
		11.0
		11.0

PIED < 1.5" JUMO < 1.5"

QUAD B SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

PIED < 1.5" JUMO < 1.5"

PLOT QJT 2052 Record _____ Read _____

QUAD A SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	6.5	13.0
Jumo	11.9 4.4 4.6 4.2 (25.1)	
Jumo	5.2 4.9 4.3 2.8 1.0 3.0	
X	.9 .5 (22.6)	

PIED < 1.5" JUMO < 1.5"

QUAD B SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	4.1 4.8 6.4 2.8 3.1 3.1	11.0
X	4.1 4.0 (32.4)	

PIED < 1.5" JUMO < 1.5"

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT2053 Record _____ Read _____

QUAD A
SPECIES
CODE

DRC/EDRC
(Inches)

HEIGHT
(Ft.)

Ø

PLOT QJT2054 Record _____ Read _____

QUAD A
SPECIES
CODE

DRC/EDRC
(Inches)

HEIGHT
(Ft.)

JUMO 20.4 8.1 (28.5) 16.0

JUMO 3.4 6.8

PIED 3.0 1.5 (4.5) 7.0

PIED 3.8 11.0

4

PIED < 1.5"

JUMO < 1.5"

PIED < 1.5"

JUMO < 1.5"

QUAD B
SPECIES
CODE

DRC/EDRC
(Inches)

HEIGHT
(Ft.)

Ø

QUAD B
SPECIES
CODE

DRC/EDRC
(Inches)

HEIGHT
(Ft.)

PIED 4.2 10.0

PIED < 1.5"

JUMO < 1.5"

PIED < 1.5"

JUMO < 1.5"

jt252

04-13-1994

AVE VOL
PER PLOT
32.3

SAMPLING ERROR
(AS A % OF MEAN)
5.6

COEF VAR
(SD/MEAN)
0.1

AVERAGE VOLUME PER ACRE
%1290.6

ESTIMATED TOTAL VOLUME
1291

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
1290.6

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	4	21.7	12

jt254

04-13-1994

AVE VOL
PER PLOT
17.5

SAMPLING ERROR
(AS A % OF MEAN)
95.3

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
698.3

ESTIMATED TOTAL VOLUME
698

ESTIMATED TOTAL PINYON VOLUME
20.6

ESTIMATED TOTAL JUNIPER VOLUME
677.7

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	3	4.2	9
JUNIPER	2	15.9	11

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

2

PLOT QJT2055 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
PIED	7.3	15.0
Jumo	4.0 6.1 5.4 5.0 4.4 (24.9)	8.0

PIED < 1.5"
JUMO < 1.5"

PLOT QJT2056 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	4.5 2.2 8.2 5.6 (20.5)	13.5
Jumo	14.0	13.0
JUMO	3.7	7.0
JUMO	1.5	2.0
Jumo	7.3 3.6 (10.9)	13.0
Jumo	3.0	4.0

PIED < 1.5"
JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
JUMO < 1.5"

6

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

3

PLOT QJT 2057 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
<u>PIED</u>	<u>6.6</u>	<u>17.0</u>
<u>Jumo</u>	<u>19.3 3.0</u> (22.3)	<u>13.5</u>
<u>Jumo</u>	<u>2.8 1.0</u> (3.8)	<u>5.5</u>

PIED < 1.5"

JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
\emptyset		

PIED < 1.5"

JUMO < 1.5"

PLOT QJT 2058 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
\emptyset		

PIED < 1.5"

JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
\emptyset		

PIED < 1.5"

JUMO < 1.5"

jt257

04-13-1994

AVE VOL
PER PLOT
9.9

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
395.9

ESTIMATED TOTAL VOLUME
396

ESTIMATED TOTAL PINYON VOLUME
37.6

ESTIMATED TOTAL JUNIPER VOLUME
358.3

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	6.6	17
JUNIPER	2	13.0	10

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT2059 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	1.5	2.0

PIED < 1.5"
JUMO < 1.5"

PLOT QJT2060 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	13.4 5.5 (18.9)	15.0
PIED	1.5	6.0
Jumo	1.0 2.0 (3)	4.5
Jumo	3.5 2.9 2.0 2.0 (10.4)	9.0
PIED	2.1 .5 (2.6)	5.5
Jumo	2.9	4.5
PIED	8.4	13.0
Jumo	3.1	11.0
Jumo	11.1	14.0
Jumo	7.2	12.5

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

PIED < 1.5"
JUMO < 1.5"

jt259

04-13-1994

AVE VOL
PER PLOT
-0.0

SAMPLING ERROR
(AS A % OF MEAN)
-97.5

COEF VAR
(SD/MEAN)
-1.4

AVERAGE VOLUME PER ACRE
-0.5

ESTIMATED TOTAL VOLUME
-0

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
-0.5

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	1.5	2

jt260

04-13-1994

AVE VOL
PER PLOT
11.8

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
471.3

ESTIMATED TOTAL VOLUME
471

ESTIMATED TOTAL PINYON VOLUME
47.5

ESTIMATED TOTAL JUNIPER VOLUME
423.8

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	3	4.2	8
JUNIPER	7	8.1	10

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT2061 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	7.1	9.0
Jumo	10.4	11.0
Jumo	5.4	13.5
Jumo	11.2	16.0
PIED	5.6	10.0

PIED < 1.5"
 JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"
 JUMO < 1.5"

PLOT QJT2062 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	9.8 2.8 2.5 6.2 (21.3)	15.0
Jumo	6.1 4.0 3.5 5.0 5.2 4.9	10.0
X	1.0 (29.7)	
Jumo	3.5 2.8 (6.3)	10.0
Jumo	4.5 4.9 2.3 4.5 3.6 (29.8) 10.0	15.5
Jumo	1.5	6.0
Jumo	2.2 2.0 (4.2)	5.0
Jumo	8.7	13.0
Jumo	9.0	13.0
Jumo	1.5 1.5 3.1 2.0 6.8 2.8	11.0
X	3.5 (21.2)	
PIED	3.3	11.0
Jumo	2.6	11.0
Jumo	3.3	9.5

PIED < 1.5"
 JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	IN B	
CONTINUATION OF QUAD A		
Jumo	20.8	16.0
Jumo	3.1	7.5
Jumo	2.8	7.0
Jumo	2.5 1.9 (4.4)	7.0

PIED < 1.5"
 JUMO < 1.5"

5

16

jt261

04-13-1994

AVE VOL PER PLOT 5.0	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE 199.6	ESTIMATED TOTAL VOLUME 200
----------------------------------	-------------------------------

ESTIMATED TOTAL PINYON VOLUME 14.9	ESTIMATED TOTAL JUNIPER VOLUME 184.8
---------------------------------------	---

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	5.6	10
JUNIPER	4	8.5	12

jt262

04-13-1994

AVE VOL PER PLOT 58.5	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE %2341.5	ESTIMATED TOTAL VOLUME 2341
------------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME 4.9	ESTIMATED TOTAL JUNIPER VOLUME 2336.6
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	3.3	11
JUNIPER	15	11.2	10

PLOT QJT 2063 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

PIED	2.2 .8	(3)	8.0
Jumo	7.7 7.0 4.4 7.7 8.1 7.6		
X	4.5 5.5 4.0	(56.5)	13.5
Jumo	2.0		7.0
PIED	4.1		11.5
PIED	3.8		13.5

PIED < 1.5"
JUMO < 1.5"

PLOT QJT 2064 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Jumo	4.5 4.8 4.6 5.9 5.0 4.5		12.0
X	7.5 6.3 4.0 1.0 1.5	(49.6)	

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Ø			

PIED < 1.5"
JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Ø			

PIED < 1.5"
JUMO < 1.5"

5

jt263

04-13-1994

AVE VOL PER PLOT 49.0	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE %1961.6	ESTIMATED TOTAL VOLUME 1962
------------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME 19.8	ESTIMATED TOTAL JUNIPER VOLUME 1941.8
---------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	3	3.6	11
JUNIPER	2	29.3	10

jt264

04-13-1994

AVE VOL PER PLOT 34.6	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE %1382.1	ESTIMATED TOTAL VOLUME 1382
------------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME 1382.1
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	49.6	12

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT 2JT065 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
\emptyset		

PIED < 1.5"
 JUMO < 1.5"

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	12.4 1.0 .6 (14)	10.5

PIED < 1.5"
 JUMO < 1.5"

PLOT 2JT066 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	9.1 7.1 6.9 9.6 6.5 3.0	17.0
X	9.0 19.1 (70.3)	
Jumo	1.5	3.5
Jumo	1.7	3.0
Jumo	1.7	3.0

PIED < 1.5"
 JUMO < 1.5" ~~X~~

QUAD B

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
\emptyset	in (B)	
X LARGE TRUNKED JUMO IS SPLIT IN MIDDLE BY PLOTS 66 AND 67 - QUAD A - DECIDED TO PUT JUMO IN QUAD A of PLOT 66		

PIED < 1.5"
 JUMO < 1.5"

4

jt265

04-13-1994

AVE VOL
PER PLOT
2.2

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
89.4

ESTIMATED TOTAL VOLUME
89

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
89.4

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	14.0	11

jt266

04-13-1994

AVE VOL
PER PLOT
90.2

SAMPLING ERROR
(AS A % OF MEAN)
97.5

COEF VAR
(SD/MEAN)
1.4

AVERAGE VOLUME PER ACRE
%3607.9

ESTIMATED TOTAL VOLUME
3608

ESTIMATED TOTAL PINYON VOLUME
0.0

ESTIMATED TOTAL JUNIPER VOLUME
3607.9

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	4	18.8	7

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QIT 2067 Record _____ Read _____

PLOT QIT 2068 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

PIED < 1.5"

PIED < 1.5"

JUMO < 1.5"

JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø	1.5	3.0
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
JUMO	1.5	3.0
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

PIED < 1.5"

PIED < 1.5"

JUMO < 1.5"

JUMO < 1.5"

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJ2069 Record _____ Read _____

PLOT QJ2070 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	7.8	7.0

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
∅		

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

jt268

04-13-1994

AVE VOL PER PLOT -0.0	SAMPLING ERROR (AS A % OF MEAN) -97.5	COEF VAR (SD/MEAN) -1.4
-----------------------------	---	-------------------------------

AVERAGE VOLUME PER ACRE -0.4	ESTIMATED TOTAL VOLUME -0
---------------------------------	------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME -0.4
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	1.5	3

jt269

04-13-1994

AVE VOL PER PLOT 0.4	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE 17.8	ESTIMATED TOTAL VOLUME 18
---------------------------------	------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME 17.8
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	7.8	7

PLOT QJT2071 Record _____ Read _____

PLOT QJT2072 Record _____ Read _____

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
PIED	1.5	4.5
JUMO	2.2 5.6 1.8 7.2 6.0 5.8	13.0
PIED	4.9 5.2 4.5 2.8 6.7 1.5	
JUMO	8.4 2.0 1.7 3.0 1.8 3.0	
	(74.1)	

QUAD A SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

2

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

QUAD B SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
JUMO	2.0	8.5

PIED < 1.5"
JUMO < 1.5"

PIED < 1.5"
JUMO < 1.5"

jt271

04-13-1994

AVE VOL PER PLOT 77.4	SAMPLING ERROR (AS A % OF MEAN) 97.5	COEF VAR (SD/MEAN) 1.4
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE %3094.4	ESTIMATED TOTAL VOLUME 3094
------------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME -0.7	ESTIMATED TOTAL JUNIPER VOLUME 3095.1
---------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	1	1.5	5
JUNIPER	1	74.1	13

jt272

04-13-1994

AVE VOL PER PLOT -0.0	SAMPLING ERROR (AS A % OF MEAN) -97.5	COEF VAR (SD/MEAN) -1.4
-----------------------------	---	-------------------------------

AVERAGE VOLUME PER ACRE -0.0	ESTIMATED TOTAL VOLUME -0
---------------------------------	------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME -0.0
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	1	2.0	4

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT QJT2073 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	1.0	3.0
Jumo	1.0	1.0
Jumo	.5 .5 .5 (1.5)	2.5

PIED < 1.5"

JUMO < 1.5"

PLOT QJT2074 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
PIED	2.3	11.5
Jumo	5.2 22.7 (27.9)	16.0
PIED	1.5	4.0
Jumo	7.1 4.5 7.5 3.8 3.9 9.2	14.5
Jumo	4.0 3.8 4.0 (47.8)	
PIED	6.1	16.0

PIED < 1.5"

JUMO < 1.5"

3

5

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Ø		

PIED < 1.5"

JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

SPECIES CODE	DRC/EDRC (Inches)	HEIGHT (Ft.)
Jumo	10.9 9.1 5.4 5.6 (31)	13.0
PIED	3.1	7.0

PIED < 1.5"

JUMO < 1.5"

2

jtt273

04-13-1994

AVE VOL PER PLOT -0.1	SAMPLING ERROR (AS A % OF MEAN) -97.5	COEF VAR (SD/MEAN) -1.4
-----------------------------	---	-------------------------------

AVERAGE VOLUME PER ACRE -3.5	ESTIMATED TOTAL VOLUME -3
---------------------------------	------------------------------

ESTIMATED TOTAL PINYON VOLUME 0.0	ESTIMATED TOTAL JUNIPER VOLUME -3.5
--------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	0	0.0	0
JUNIPER	3	1.2	2

jtt274

04-13-1994

AVE VOL PER PLOT 71.7	SAMPLING ERROR (AS A % OF MEAN) 53.0	COEF VAR (SD/MEAN) 0.8
-----------------------------	--	------------------------------

AVERAGE VOLUME PER ACRE %2866.6	ESTIMATED TOTAL VOLUME 2867
------------------------------------	--------------------------------

ESTIMATED TOTAL PINYON VOLUME 33.1	ESTIMATED TOTAL JUNIPER VOLUME 2833.5
---------------------------------------	--

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	4	3.3	10
JUNIPER	3	35.6	15

Mesita De Los Ladrones 1993 -- Tree Inventory - NMNHP

PLOT JT 2075 Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Jumo	26.2 20.2 3.1	(23.3)	14.5
Jumo	11.4		12.5
Jumo	4.9 1.0	(5.9)	12.0
PIED	3.9		6.0
Jumo	3.0 2.5	(5.5)	5.0
Jumo	3.1 5.6	(8.7)	9.0
Jumo	3.0 2.2 .5 1.0 1.9	(10.8)	7.0
Jumo	4.0 5.5 5.5 2.0 .9	(17.9)	9.0
Jumo	11.4		11.0
PIED	1.0		5.0
Jumo	3.8		9.0
Jumo	3.8		8.0
Jumo	2.7 1.0 2.8	(6.5)	8.0
Jumo	10.1		10.0

PIED < 1.5" 10.1

JUMO < 1.5"

PLOT _____ Record _____ Read _____

QUAD A
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

PIED < 1.5"

JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

Jumo	22.8		12.0
PIED	3.1		9.5
Jumo	3.1 5.2 4.1 5.2 1.6	(24) 7.8	10.5
Jumo	8.2 3.9 3.4 4.1 3.2 5.4		13.0
 	2.6	(30.8)	
Jumo	4.9 4.5 6.2	(15.6)	11.0
Jumo	4.1 3.6	(7.7)	10.0
Jumo	10.7		9.5
Jumo			14.5

PIED < 1.5"

JUMO < 1.5"

QUAD B
SPECIES CODE DRC/EDRC (Inches) HEIGHT (Ft.)

PIED < 1.5"

JUMO < 1.5"

14

7

not used

jt275

04-13-1994

AVE VOL
PER PLOT
59.3

SAMPLING ERROR
(AS A % OF MEAN)
28.4

COEF VAR
(SD/MEAN)
0.4

AVERAGE VOLUME PER ACRE
%2370.6

ESTIMATED TOTAL VOLUME
2371

ESTIMATED TOTAL PINYON VOLUME
5.9

ESTIMATED TOTAL JUNIPER VOLUME
2364.8

SAMPLE TREE AVERAGES

	NUMBER OF TREES	DIAMETER	HEIGHT
PINYON	3	2.7	7
JUNIPER	18	12.8	10

VEGETATION SURVEY HANDBOOK

NEW MEXICO NATURAL HERITAGE PROGRAM

DEPARTMENT OF BIOLOGY

UNIVERSITY OF NEW MEXICO

DRAFT

JUNE 1995

FORM II SITE CHARACTERISTICS INSTRUCTIONS NMNHP -- 1995

PLOT ID (seven-character alphanumeric code)

Record in order the year (2-digits), the first and second initial of the principal examiner (2-characters), and the plot ascension number (3-digits).

Example: The 33rd plot sampled in 1991 by Hank Gleason would be entered as 91HG033.

PROJECT. Enter project code -- for example: WSMR95R. If no code is available, enter temporary project designation.

MO DATE YEAR. Two digit month, day and year numbers.

FIELD NO. The field number from your field notebook or log; Field number form as follows: year (2-digits), the first three letters of your last name followed by a two digit sequential record number. Example : 94MUL23.

SURVEYORS. Last names of sampling personnel, lead by the person responsible for botanical determinations.

CT. Community Type - the plant association to which vegetation data refers to. Use six letter species acronyms. For example: PINPON/QUEGAM. Who ever makes the CT determination must date and initial the designation.

CT Comment . Comments about community type designations. Were there any specific *ad hoc* decision rules? Was a key used? If CT is questionable, make notes concerning the problem.

SURVEY SITE

Name assigned to the plot site at the time it is sampled. In many cases, this name will be equivalent to the "Sitename" given on the Site Survey Form, except will include modifiers to differentiate this specific plot from the general site.

Example: A plot in the eastern portion of the block Mountain standard Site might have the Survey Site name "Block Mountain East".

A few standards in naming follow:

1. do not use element names in the site name
2. use local place names when available

3. use names of features on topographic maps when local names do not exist

COUNTY CODE

NMNHP code for the county -- assigned when entered into BCD

QUADNAME

USGS map name

QUADCODE

NMNHP USGS quadrangle code

MARGNUM

Margin number on the field map associated with the mapped plot position. Each plot position within the map is marked with a dot and associated margin number. The margin number for the plot is also placed along the margin of the topographic map. Associated with each margin number is a margin note indicating the Plotid, CT acronym and, in parentheses, the 10,10 (described below).

10,10 The 10,10 is an imaginary grid over the map, 10 ten cells across and ten cells down to facilitate locating the dot at a later time on the map. For example, (5,6) indicates 5 cells across from left to right and 6 cells down from top to bottom. This would be almost half way across the map, and more than half way down.

T R S 4/s

Township, Range Section and quarter section indicating location of occurrence

UTM

Enter Northing and Easting UTM coordinates

POS METH

Enter how position was determined:

MAP -- from topographic map.

GPSRAW -- from raw, uncorrected global positioning system (GPS).

GPSCOR -- from corrected GPS, either real time or post-processed.

OTHER -- specify under DIRECTIONS.

ACCURACY

Accuracy of plot location:

Radius in meters e.g. +/- 30 m

S Second - mappable within a three-second radius

M minute - mappable within a one-minute radius (approximately 2km or 1.5 miles)

G general - mappable to quad or place name precision only (precision within about 8 km or 5 miles)

GPS WPT's/FILE -- enter the Global Positioning System (GPS) file or waypoint numbers associated with the plot position.

TIME -- enter the GPS time and indicate if this local time or universal.

AERIAL PHOTO NO. If the plot has been located on aerial photos indicate the flight line and photo number and year. Locate plots on the back side of a aerial photo, or with a transparent stick-on dot, and indicate plot number on the back side of photo.

DIRECTIONS -- Directions to plot - enter precise directions to the plot using a readily locatable landmark (e.g., a city, a major highway, etc.) as the starting point on a state or local roadmap. Use clear complete sentences that will be understandable to someone who is unfamiliar with the area, needs to get to the plot, and has only your directions to follow. Cite distances as closely as possible to the 1/10 of a mile, use compass directions (N, S, E, and W), and be sure to specify the best access to the plot, such as where to park or which trail to use.

ELEV -- enter the elevation in feet unless otherwise noted

ASPECT (up to three-digits number)

Aspect - enter the direction of the slope on which the plot occurs in degrees azimuth, corrected for declination.

SLOPE % (up to three-digit number)

Enter the steepness of the slope on which the plot occurs in percent

HORIZON ANGLE (%) (up to three-digit numbers). -- Enter the angle from horizontal to the horizon at each cardinal direction from the plot.

LANDFORM (six number code) -- Enter the landform and code as classified in the NMNHP classification

SLOPE SHAPE (one-character code) -- enter one of the following codes to indicate the vertical shape of the slope on which the plot lies:

S - straight or even
 R - rounded or convex
 D - depression or concave
 P - patterned (micro-relief of hummocks and swales)
 U - undulating pattern or low ridges or knolls and draws
 X - other

IFSLOPE/VALLEY If the landform is a slope indicate distance from top of slope to upper edge of plot; indicate units of measurement and circle SLOPE.

If the landform is a valley, indicate the distance of the plot edge from either the mid valley point or the active channel edge, and circle VALLEY.

EROSION TYPE (two-character code)

Enter one of the following codes to indicate the dominant type of erosion occurring on the plot:

NO - none
 SE - sheet erosion
 RE - rill erosion
 GE - gully erosion
 DE - deposition
 WE - wind erosion
 SC - soil creep
 SL - slump (earth flow)
 TD - terrace development
 SL - slide

LANDFORM COMMENT -- additional comments, special features and description of the geomorphology of the site.

SURFACE ROCK TYPE (four-character code)

Enter the code for the dominant surface rock type:

Sedimentary
 SETU - type unknown

LIME - limestone
DOLO - dolomite
SAND - sandstone
CASA - calcareous sandstone
SILT - siltstone
CASI - calcareous siltstone
SHAL - shale
RESH - red shale
CASH - calcareous shale
CONG - conglomerate
CACO - calcareous conglomerate

Metamorphic

METU - type unknown
ARGI - argillite
CAAR - calcareous argillite
SILI - siltite
QUAR - quartzite
SLAT - slate
PHYL - phyllite
SCHI - schist
BISC - biotite schist
MISC - mica schist
GNBG - gneiss and biotite gneiss

Igneous

IGTU - type unknown
BASA - basalt (including obsidian)
ANDE - andesite
DIGA - diorite to gabbro
LATI - latite
QUMO - quartz monzonite
TRSY - trachyte and syenite
RHYO - rhyolite
GRBG - granite and biotite granite
WETU - welded tuf (tufa)
SCOR - scoria (porcelanite), clinker

Miscellaneous

GRAL - gravelly alluvium
SAAL - sandy alluvium
SIAL - silty alluvium
CLAL - clayey alluvium
MIAL - mixed alluvium

GLTI - glacial till, mixed origin
 ASHT - ash (of any origin)
 MISE - mixed sedimentary
 MIME - mixed metamorphic
 MIIG - mixed igneous
 LOES - loess
 MIRT - mix of two or more rock types
 DUNE - sand dunes

SOIL SURFACE TEXTURE indicate the soil texture by feel using standard SCS techniques and the soil triangle.

SUR SOIL COLOR indicate the Munsell Soil Color and code -- indicate if it is dry, moist ped or crushed and rubbed.

SOIL TAXON/MAP UNIT

Enter the taxonomic soil name to the family if possible, or the soil map unit the site falls within on a soil survey map. If not known, enter "-".

NSH # -- enter the National Soil Code for the soil taxon indicated above

EROSION POTENTIAL (two-character code)

Enter one of the following codes to indicate the potential for erosion on the plot:

SA - soil surface is stable with no evidence of accelerated erosion

UC - soil surface is unstable because of compaction

UD - soil surface is unstable because of displacement and/or churning of the soil

UP - soil surface is unstable because of lack of protective vegetation cover

UA - unable to assess

GROUND SURFACE

Enter % cover for each of the following types of ground cover:

S - bare soil (particles < 1/16 in. dia.)

G - gravel (particles 1/16 to 3 in. dia.)

R - rock (particles > 3 in. dia.)

L/BV - litter duff, and basal vegetation. Litter includes freshly-fallen leaves, needles, twigs, bark, fruits; duff is fermentation layer and humus layer. BV is the area occupied by root crowns and stems, not canopy cover. Values rarely exceed 30%, and are usually very low.

W - wood (downed fragments > 1/4 in. dia.)

M - moss component of cryptogams

LC - lichens and algae component of cryptogams.

DL (one-character code)

Dominant Life Form - enter one of the following codes to describe the dominant live life form currently present on the plot (Note: dominate life form = life form with the greatest foliar volume):

A - aquatic species dominate

B - broadleaf trees dominate

C - coniferous trees dominate

F - forbs dominate

G - graminoids dominate

H - herbs (graminoid/form mixture) dominate

M - moss or lichens dominate

N - non-vegetated soil

P - agricultural cropland

R - rock or scree

S - shrubs dominate

VEGETATION SUMMARY

Description (a "word picture") of the site and community sampled. Indicate stand dominants using common names, the structure and physiognomy of the community.

SITE FEATURES. Landscape position and site features narrative. Indicate any special features.

ADJACENT COMMUNITIES. Indicate the spatial relationship of the occurrence to surrounding communities in the landscape. Indicate the width of ecotones.

ANIMALS. Animal use evidence: sightings, bird calls, tracks, scat and animal disturbances such as beaver dens, gopher holes etc.

DISTURBANCE disturbances both natural and otherwise (fire, pests, roads, logging, grazing, obstructions etc.). Estimate frequency, and indicated degree of disturbance (light, moderate,

on this overall grade, i.e., EORANKCOM.

THREATS

Management Comments - comment on any management (new or additional) needed to ensure continued existence of the community occurrence, and chances (and means) of bringing it about. Any other pertinent comments go here as well, e.g., "... clearing of competing vegetation has been tried in the past but without success".

35 MM PHOTO -photo taken of plot? Roll # and Photo #, or N for no photo.

Indicate how many photos were taken of the plot and any details regarding the photo(s), e.g., "One photo taken looking N across entire plot".

SURVEY Method of locating plot. Enter one of the following:

- A - plot subjectively located to represent vegetation in occurrence (typically used in inventory)
- B - plot subjectively located to represent stand, and will be used to monitor vegetation change through time with or without treatment
- C - plot is part of series of replicated plots systematically or randomly located within occurrence to describe the occurrence
- E - plot is part of series of replicated plots systematically or randomly located in treatment or control area to measure vegetation change with treatment over time
- F - plot is part of predetermined stratified sampling design (e.g., gradsect)

FORMS

Plot documentation :

- S - Survey Site Designation and Description Form [Form1]
- C - Community Element Occurrence Survey [this form, Form2]
- R - Releve Vegetation Data Form [Form3]

- M - Microplot Vegetation Data Form [Form 3b]
- T - Tree Measurement Form
- E - Soil Characterization Form
- L - Litter/debris
- O - Other specify

ACCESS Date. entry date to MicroSoft ACCESS database and by whom.

EOR Date. entry date of data to BCD and by whom.

EOCODE (14-character alphanumeric code)

Element occurrence Code - enter this code in the field only if it's known. Record in order the NMNHP element code (10-characters), a period, and occurrence ascension number (3-digits).

Example: The 23rd occurrence of the Douglas-fir/little bluestem plant association would be entered as C2ABBABF0.

FORM III -- RELEVE VEGETATION DATA INSTRUCTIONS -- NMNHP 1995

Relevés are reconnaissance vegetation plots which are designed to quickly acquire floristic data on an occurrence of a vegetation community for classification and inventory purposes.

Header Information:

DATE. Date of vegetation inventory. Two digit month, day and year numbers.

SURVEYORS. Last names of sampling personnel, lead by the person responsible for botanical determinations.

PLOT ID (seven-character alphanumeric code) that corresponds to the Form2 -- Site characteristics form plot id,

CT. Community Type - the plant association to which vegetation data refers to. Use six letter species acronyms (you can write it out if you wish). For example: PINPON/QUEGAM. Who ever makes the CT determination must date and initial the designation.

Species List Conventions:

All species within the plot and in the stand are listed by Strata/lifeform categories. You can use accepted acronyms from the current NMNHP species list. If the species is not on the list, spell it out. Tree species can occur in several height strata. These should be listed separately under different acronyms representing different operating taxonomic units (OTU's). A number is attached to the end of the six-letter acronym to indicate which strata the OTU is from. For example: PINPON1 represents *Pinus ponderosa* seedlings, PINPON2 are saplings of the shrub layer, PINPON3 are mature trees of the tree layer

TREES: generally over 6 meters tall (but that is not an absolute).

SHRUBS: generally multi-stemmed woody species less than 6 meters, but also included are spiny rosettes (cacti, yuccas and agave etc.) greater than 0.1 meter). Suffrutescent species that are only woody at the base or at the root-crown are usually considered forbs.

GRAMINOIDS: grass-like plants including sedges and rushes, but not Iridaceae or Liliaceae.

FORBS: Non-woody perennial and annual species that are not grass-like (includes Iridaceae, Liliaceae, Commelineaceae)

Species number. Each species that is listed has a line number associated with it by strata/lifeform. (T1, S3, G10, F20, etc.). If a voucher specimen is taken for species, the species number **MUST** be associated with the tag or sheet of the voucher. **CIRCLE** each

species number for species that are vouchered. Blank species number lines are available on the forb side of the form for additions grasses, shrubs, and trees.

Total Cov. For each strata the total percent aerial cover is estimated.

CV. The percent cover (CV) is estimated for each species within the plot using cover classes listed below and at the bottom of the form. Species outside the plot, but within the stand are given a presence value of "+0".

HT Modal Height of each species is estimated using the following conventions (also at the bottom of the form):

Phenology. After each species acronym or name use a superscript "*" for flowering or "@" for fruiting (leave blank for vegetative).

WOODY DEBRIS IN UNDISTURBED PINYON-JUNIPER
WOODLANDS OF NEW MEXICO

Kristina A. Ernest, Earl F. Aldon, and Esteban Muldavin¹

Abstract--In pinyon-juniper woodlands, standing dead and down woody materials play significant ecological roles both physically and with respect to nutrient relationships. These semi-arid ecosystems have slow decomposition rates and woody debris may remain intact for extended periods of time. The presence of debris over long periods inhibits soil erosion directly by covering the surface and preventing sheet erosion and by creating debris dams that slow runoff. The purpose of this study was to describe the structure of two undisturbed, uneven-aged mature pinyon-juniper stands in New Mexico and to quantify the volume of standing dead and down pinyon and juniper wood in areas isolated from human disturbance. These data provide a baseline with which to determine more precisely the contribution of dead woody debris to the pinyon-juniper ecosystem and the impact of woody debris removal.

¹Department of Biology, University of New Mexico; Rocky Mountain Forest and Range Experiment Station; New Mexico Natural Heritage Program, University of New Mexico, Albuquerque, NM.

INTRODUCTION

In pinyon-juniper woodlands, standing dead and down woody materials may play significant ecological roles both physically and with respect to nutrient relationships. These semi-arid ecosystems have slow decomposition rates and woody debris may remain intact for extended periods of time. The presence of debris over long periods inhibits soil erosion directly by covering the surface and preventing sheet erosion and by creating debris dams that slow runoff. These micro-catchments may also provide microsites for germination and establishment of grasses and forbs. Standing dead snags provide shelter for cavity nesting birds. Standing dead and associated below-ground dead rooting systems also decay slowly. Thus, standing dead wood can act as a soil binder, slowing soil loss from disturbance. Despite slow decomposition rates, downed woody materials are important storage and recycling points for nutrients in these systems. This material is also important to ensure the colonization of ectomycorrhizal fungi by tree roots.

Pinyon-juniper woodlands are and historically have been subject to extensive resource use, particularly for fuelwoods. Much of the standing dead debris and intact downed debris is removed by fuelwood harvesters. Thus, in effect, an important component of the pinyon-juniper ecosystem may be removed, leading to long-term degradation of the resource.

Pinyon-juniper woodlands cover an extensive portion of the southwestern United States. Estimates range from 43 to 100

million acres (17-40 million ha) (Tueller et al. 1979). Dick-Peddie (1993) estimates 10.4 million (4.1 million ha) of coniferous and mixed woodlands in New Mexico alone with an additional 7.7 million acres (3.1 million ha) of the Juniper savanna ecotone. Despite their abundance, undisturbed uneven-aged mature pinyon-juniper woodlands are extremely rare due to heavy use by both people and domestic animals. The long history of intensive human use of pinyon-juniper woodlands has made undisturbed woodlands "one of the most significant and difficult ecosystems to represent" (USDA Forest Service 1983).

One of the first steps in understanding the importance of woody debris to the pinyon-juniper system is to quantify woody debris in undisturbed, uneven-aged mature pinyon-juniper woodlands. The purpose of this study was to describe the structure of these pinyon-juniper stands in New Mexico and to quantify the volume of standing dead and down pinyon and juniper wood in areas isolated from human disturbance. These data should provide a baseline with which to determine more precisely the contribution of dead woody debris to the pinyon-juniper ecosystem and the impact of woody debris removal.

STUDY AREAS

Two pinyon-juniper areas were chosen for study. Both are designated as candidate Research Natural Areas (RNAs). Because

of their relative isolation from human disturbance, these areas represent good examples of uneven-aged mature pinyon-juniper woodland.

Comanche Canyon

The proposed Comanche Canyon RNA, in the Carson National Forest of northern New Mexico, was identified as an outstanding example of pinyon-juniper woodland and was recommended for designation as an RNA (USDA Forest Service 1989). The extreme remoteness of Comanche Canyon has protected it from both fuelwood collecting and post cutting. The site is inaccessible to domestic livestock, and the last large fire in this area occurred more than 100 years ago (USDA Forest Service 1986).

The Comanche Canyon area is located approximately 10 miles (16 km) directly west of El Rito, Rio Arriba County, New Mexico. The center is located at latitude 36° 21' N., longitude 106° 21' W. Elevation ranges from 7200 feet (2182 m) to 7737 feet (2344 m). Annual precipitation at Abiquiu Dam, approximately 8 miles (12.8 km) southwest of the site, is highly variable, ranging from 12.7 to 21.9 inches (32.3 - 55.6 cm), and is divided between summer rains and winter snows. Frost-free days average about 160-180 per year, and annual insolation is 80% (Tuan et al. 1973). Average temperature ranges from 28-72° F (-2 to 22.2° C), with a low of -25° F (-31.6° C) and a high of 95° F (35° C).

The area covers approximately 450 acres (180 hectares) of pinyon-juniper forest. A distinctive mesa slopes down to a

gentle grade on the north side of the area, where thick pinyon-juniper forest is periodically interspersed with large flats of big sage (*Artemisia tridentata* Nutt.). The south side of the ridge drops off fairly steeply to a series of sandstone cliffs which lead down to an intermittent stream in the canyon bottom.

Pinyon pine (*Pinus edulis* Engelm.) is the dominant tree throughout the area of Comanche Canyon, with the exception of a few open stands of sagebrush and some small grassland meadows. Utah juniper (*Juniperus osteosperma* [Torr.] Little) is often co-dominant; one-seed juniper (*Juniperus monosperma* [Engelm.] Sarg.) and Rocky Mountain juniper (*Juniperus scopulorum* [Sarg.]) are present as well, but are less common. The pinyon-juniper vegetation type covers approximately 360 acres (144 ha), Great Basin sagebrush cover 76 acres (31 ha), and grama-galleta steppe covers 14 acres (5 ha). Most of the pinyon-juniper woodland at Comanche Canyon is closely associated with the *Pinus edulis* Engelm./*Bouteloua gracilis* (H. B. K.) Steud. habitat type of Dick-Peddie (1993).

Hymenoxys richardsonii (Hook.) Cockll. (pinque), *Bahia dissecta* (Greg) Britt., *Erysimum capitatum* (Dougl.) Greene are some of the principal forb species; *Boutelous gracilis* (H. B. K.) Steud. (blue grama) is the most common of the many grasses. *Yucca baccata* Torr. and various species of cacti (*Opuntia*, *Echinocereus*, *Coryphanthus*, and *Mammilaria* spp.) are also found here. Mountain mahogany (*Cercocarpus montanus* Raf.) becomes co-dominant with pinyon in the southwestern portion of the area.

Big sage is a common shrub occurring in both pinyon-sage woodland and in nearly pure stands of sagebrush, especially in the southwestern portion of the area.

Soils at the site, formed from sandstone and shale, are classified as Eutroboralfs. They are mesic, sandy-mixed, or sandy loam residuum (Hunt 1978) and are highly variable. The soil on the mesa top is very fine and is covered with a layer of small stones. The soils on the slopes and knolls are also fine, but these areas are very cobbly. Soils in the pinyon-juniper woodland and in the sagebrush areas are very fine and have a moderate organic material content (site description in more detail in Merola 1992).

Largo Mesa

The proposed Largo Mesa RNA is located in the Apache National Forest of west-central New Mexico, approximately 13 mi (21 km) SW of Quemado, Catron County, longitude 108° 35' W, latitude 34° 10' N. The elevation ranges from 7760 ft (2360 m) to 8025 ft (2450 m) on the mesa top. The average annual rainfall is 16 in (41 cm); most falls from May to October. Average annual snowfall in this region is 31 in (79 cm). The mean annual temperature is 48° F (8.9° C); approximately 150 days per year are frost-free.

The area encompasses approximately 300 acres (121 ha) of pinyon-juniper woodland. The vegetation is pinyon-juniper woodland surrounded by blue grama grassland. One-seed is the

only juniper species on the site. A grass layer is nearly continuous in the woodland. Shrub and forb cover is low. Mountain mahogany, rabbitbrush (*Chrysothamnus nauseosus* [Pall.] Britt.), and snakeweed (*Gutierrezia sarothrae* [Pursh.] Britt. and Rusby) are the most common shrubs. This pinyon-juniper woodland is more open than on the mesa top at Comanche Creek.

Largo Mesa derives from a Tertiary volcanic ash flow. The mesa top is flat, with steep scarps descending from all sides. Soils are Ustochrepts of generally fine, sandy loam or loam textures.

Largo Mesa is somewhat less isolated than Comanche Canyon from human disturbance. There is no developed water source and cattle rarely graze on the site, but past woodcutting may have occurred. More complete descriptions of the site are presented in USDA Forest Service (1992).

METHODS

Three sites were chosen for study at Comanche Canyon: mesa top, mesa slope, and sage-pinyon woodland. The flat mesa top was characterized by a relatively pure pinyon-juniper woodland. The steep northern slope was rocky; Gambel's oak (*Quercus gambelii* [Nutt.]) occurred in scattered patches. The sagebrush site runs along the toe-slope of the mesa, where pinyon-juniper woodland is interrupted by patches of big sagebrush. Only the flat mesa top was studied at Largo Mesa.

Two types of surveying methods were used in this study. First, woody debris (defined here as dead tree trunks and branches lying on the ground) was quantified along line transects. Standing trees, live and dead, and canopy characteristics were quantified within circular plots, the second surveying method. All measurements include only pinyon and juniper. One-seed juniper and Utah juniper, similar in habit and ecology, were lumped together for all measurements.

Methods for quantifying woody debris follow "Guidelines for Conducting Logged Area Analysis" (USDA Forest Service 1979). Fifteen 100-ft (328-m) transects were randomly oriented within each of the three sites at Comanche Canyon and on the top of Largo Mesa. Along each transect line, the diameter of each piece of pinyon and juniper debris that crossed the line was recorded. Diameter, perpendicular to the length of the debris, was measured at the point of intersection of the transect line with the central axis of the debris. Only debris ≥ 2.0 in (5 cm) diameter and ≥ 2.0 ft (0.6 m) long was included. On every fourth transect line, debris length and diameters at the small and large ends were also measured. Pinyon and juniper debris were difficult to differentiate and are combined for most analyses.

Debris volumes were calculated on a personal computer using the LAA program. This program calculates cubic foot

volume/acre, V , as $[\pi^2 (\Sigma D^2)/8L] * [43560/144]$, where D = debris diameter (inches), L = debris length (feet). Tons/acre (W) are calculated as $W = 11.6437 S (\Sigma D^2)/L$, where S = specific gravity (60% moisture content is assumed). Specific gravity of pinyon is 0.38, and of juniper is 0.36.

Standing dead and live mature trees, canopy characteristics, and regeneration (young trees) were quantified in 0.05-acre (0.02-ha) circular plots with a radius of 26.3 ft. (8.03 m). These overstory measurements approximately follow the methods of Gottfried (1989). One plot was established at the midpoint of every third transect line, for a total of five plots in each habitat. On each plot, the following were recorded: tree species, whether alive or dead, diameter at root collar (DRC) of all stems, number of stems, height, maximum canopy diameter, and canopy diameter perpendicular to the maximum diameter. Mature trees were defined as those with $DRC \geq 2.0$ in (5 cm). Numbers of seedlings ($DRC < 2.0$ in (5 cm), height < 4.5 ft (1.3 m)) and saplings ($DRC < 2.0$ in (5 cm) and height ≥ 4.5 ft (1.3 m)) of pinyon and juniper were recorded.

Density (number of stems/plot) and live and dead tree basal area were calculated for each species. Basal area is the sum of the cross-sectional areas (at the root collar) of all mature trees on the plot. For trees with stems divided at the root crown, the Equivalent Diameter at Root Collar (EDRC) was calculated as $\sqrt{\Sigma(DRC_i)^2}$ (Chojnacky 1985).

Cubic-foot volume/acre of standing trees was calculated based on equations for trees in the Colorado Plateau States (Colorado, eastern Utah, Wyoming). The following equations were used (from Chojnacky 1985):

Pinyon:

$$V = [-0.20296 + 0.150283(DRC^2 \times HT)^{1/3} + 0.054178(STEM)]^3,$$

Rocky Mountain juniper:

$$V = [0.02434 + 0.119106(DRC^2 \times HT)^{1/3}]^3,$$

Utah juniper:

$$V = [-0.08728 + 0.135420(DRC^2 \times HT)^{1/3} - 0.019587(STEM)]^3,$$

where: V = gross volume (cubic feet) of tree, including bark,
 DRC = diameter or equivalent diameter at root collar (in),
 HT = tree height (ft),
 STEM = 1 if single-stemmed, 0 if multiple-stemmed.

The equation for Utah juniper was used for the mixture of Utah and one-seed junipers. Chojnacky (1985) based his equations on measurements of all branches 1.5 inches (3.8 cm) or greater in diameter. In this study, a minimum branch diameter was 2.0 in (5 cm) was used. Adjustments can be made for these differences, but the overall trends are unlikely to change significantly. Another potential source of error is introduced when Chojnacky's

equations, which were derived from data collected in a wide geographic area, are applied to a local area (Chojnacky 1985). However, specific equations for the Comanche Canyon and Largo Mesa sites are not available, and the general equations should provide a reasonable estimate of volumes.

Data were logarithmic transformed and analysis of variance (ANOVA) was carried out on measurements of debris volume, stand density and volume, seedlings, saplings (as the dependent variables) and site (Comanche Canyon, Largo Mesa), species (pinyon, juniper), and status (living or dead) as the independent variables. The habitats within Comanche Canyon and between the Comanche Canyon mesa top and the Largo Mesa mesa top were compared. All measurements were calculated in English units and converted as needed to metric. Conversion values are listed in the tables.

RESULTS

Stand Characteristics

The total volume of mature, standing trees of both genera, live and dead, ranged from 1137.2 cubic feet/acre ($79.6 \text{ m}^3 \text{ ha}^{-1}$) on the mesa slope to 1631.6 cubic feet/acre ($114.2 \text{ m}^3 \text{ ha}^{-1}$) on the mesa top at Comanche Canyon (table 1). The overall ANOVA for total volume was significant ($p = 0.01$). The differences among sites were not significant, but both tree status (alive or dead) ($p = 0.01$) and species ($p = 0.01$) were significant. Standing dead trees contributed significantly less to total volume than

did living trees. The volume of pinyon was greater than that of juniper at Comanche Canyon, but less at Largo Mesa (Table 1).

Densities (number of stems/acre) of standing pinyon and juniper varied from 384 (949 stems ha⁻¹) at Largo Mesa to 876 (2165 ha⁻¹) on the mesa slope at Comanche Canyon (Table 1). Densities were significantly different among sites ($p = 0.05$), between live and dead trees ($p = 0.01$), and between species ($p = 0.01$). Density of living trees was greater than that of dead trees, as expected for a healthy stand. The density of pinyon was greater than that of juniper at Comanche Canyon, but less at Largo Mesa (table 1). Of the contrasts in densities among sites, the mesa slope and sage habitats at Comanche Canyon were significantly different ($p = 0.05$). The mesa top and mesa slope at Comanche Canyon were not significantly different. The mesa top and sage habitats at Comanche Canyon were not significantly different, nor were the mesa tops at Comanche Canyon and Largo Mesa.

Tree size also varied among habitats. Pinyons and junipers were largest (in diameter) and tallest on the mesa tops at both sites and smallest and shortest on the mesa slope at Comanche Canyon (table 2). The mean DRC of pinyon (all standing, mature trees) varied from 5.4 in (13.5 cm) on the mesa slope to 8.2 in (20 cm) on the mesa top at Comanche Canyon. Mean height varied from 12 to 16 ft (3.8 to 4.9 m). The mean DRC of juniper ranged from 6.8 in (17 cm) on the mesa slope at Comanche Canyon to 14.4 in (36 cm) at Largo Mesa. Mean height was between 10 and 14 ft

(3.1 to 4.2 m) (table 2). Distribution of basal area by tree diameter classes is shown in figure 1 for pinyon and in figure 2 for juniper.

Regeneration was occurring on all sites (table 3). Both site ($p = 0.01$) and species ($p = 0.01$) were significant for number of seedlings. Only species ($p = 0.01$) was a significant factor for number of saplings. More pinyon than juniper seedlings and saplings were growing in all surveyed areas. The mesa slope had significantly more seedlings (mean 1228/acre [3042 ha^{-1}]) than did the mesa top (mean 500/acre [1239 ha^{-1}]) ($p = 0.01$) or sage (mean 672/acre [1664 ha^{-1}]) ($p = 0.05$) sites. Sapling densities ranged from 8 to 56/acre (20 to 139 ha^{-1}) (table 3).

Volume and Weights

The volumes and weights of woody debris were variable among transect lines within and among sites (table 4). The mean volume of woody debris (segments ≥ 2.0 ft [0.6 m] long and ≥ 2.0 in [5 cm] diam.) of pinyon and juniper combined ranged from 66.2 (± 117.3 S. D.) cubic feet/acre ($4.6 \text{ m}^3 \text{ ha}^{-1}$) in the sage site to 469.5 (± 346.9 S. D.) cubic feet/acre ($32.8 \text{ m}^3 \text{ ha}^{-1}$) on the mesa slope at Comanche Canyon. The amount of debris was intermediate at Largo Mesa, with a mean of 231.8 (± 303.5 S. D.) cubic feet/acre ($16.2 \text{ m}^3 \text{ ha}^{-1}$). Site was a significant factor in the analysis of debris volume ($p = .01$). Volumes differed significantly between the mesa top and sage sites and between the

mesa slope and sage sites at Comanche Canyon, and between the mesa tops of Comanche Canyon and Largo Mesa ($p = .01$). All woody debris at Comanche Canyon was pinyon pine; juniper contributed a small amount of woody debris at Largo Mesa. Weight of debris followed the patterns of volume (table 4).

To better understand these values, stand volume ratios of live standing to dead standing, live standing to dead down, and dead down to dead standing have been calculated (table 5). Of these, the values of live standing to dead down is the more significant ratio. In this study the sage site had less dead down material in relation to live standing volume. Both mesa tops had similar ratios where for every 100 cubic feet per acre ($7 \text{ m}^3\text{ha}^{-1}$) of stand volume you could expect 20 to 25 cubic feet per acre ($1.4 - 1.8 \text{ m}^3\text{ha}^{-1}$) of down material.

DISCUSSION

Debris and overstory measurements showed considerable variability at all levels: among transect lines or plots, among sites at Comanche Canyon, and between the two locations. Pinyon-juniper woodland is not a uniform habitat (Aro 1971, cited in Ronco 1987). Variation in slope, aspect (Pieper and Lymbery 1987), elevation, soils, and other physical features contribute to variation in the biotic features.

Variability in the measurements was especially high on the mesa slope at Comanche Canyon. All transect lines and plots were located on the northwest slope, so aspect is not the source of

the variability. Understory vegetation did vary noticeably among survey units. The cover of Gambel's oak ranged from 0 to 30%. This could have increased the variability in debris quantity and density of mature trees along the slope. A similar patchiness was observed in the percent cover of big sagebrush in the sage site at Comanche Canyon.

Despite high variability, some general trends were seen. Several measures of debris quantity, overstory characteristics and regeneration differed significantly among sites at Comanche Canyon. The mesa top and mesa slope seemed to have much higher volumes of woody debris than did the sage site at Comanche Canyon. All of the woody debris at Comanche Canyon and most of it at Largo Mesa was pinyon, despite the conspicuous presence of junipers at both locations. Volume of standing trees in the overstory did not differ significantly among sites, but the density of trees was highest on the mesa slope at Comanche Canyon. Regeneration was also greatest on the mesa slope.

The density of live pinyons on the mesa slope at Comanche Canyon was 560/acre (1384 ha⁻¹). This compares very closely with the density of 555/acre (1371 ha⁻¹) on a northwestern slope of 11-20% in central New Mexico (Pieper and Lymbery 1987).

Regeneration may be higher in sites without debris removal. Survival of one-seed juniper seedlings planted near Grants, New Mexico was higher when mulched with wood chips than when no mulch was applied (Fisher et al. 1987). A similar enhancement of seedling survival may occur in undisturbed pinyon-juniper

woodlands, where woody debris breaks down and acts as a mulch.

This study has shown the importance and extent of dead and down material in these particular types of pinyon-juniper stands. For mesa tops and slopes in these stands, it would be reasonable to manage so that for every 15 or 20 cubic feet per acre (1.1 - 1.4 m³ha⁻¹) of live tree volume there would be 4 - 5 cubic feet per acre (.3 - .4 m³ha⁻¹) of dead and down material. Leaving material in place or adding material through slash disposal after cutting are important management components that should be used in this ecosystem.

Other sites (e.g., south slope, grass-woodland transition, mountain mahogany-pinyon) exist in the pinyon-juniper woodland at Comanche Canyon. In addition, 11 other pinyon, one-seed juniper habitat types are present in New Mexico (Dick-Peddie 1993). Surveying these habitats for debris and overstory traits would help better define the structure of pinyon-juniper woodlands. This study provides an undisturbed benchmark for a broader study.

LITERATURE CITED

- Aro, R. S. 1971. Evaluation of pinyon-juniper conversion to grassland. *Journal of Range Management*. 24:188-197. (not seen, cited in Ronco 1987).
- Chojnacky, D. C. 1985. Pinyon-juniper volume equations for the central Rocky Mountain states. USDA Forest Service, Intermountain Forest and Range Experiment Station. Research Paper INT-339. 27 p.
- Dick-Peddie, William A. 1993. *New Mexico Vegetation: Past, Present, and Future*. University of New Mexico Press. Albuquerque, New Mexico. p 244.
- Fisher, J. T.; G. A. Fancher; and R. W. Neumann. 1987. Germination and field establishment of juniper in the southwest. In: *Proceedings--Pinyon-juniper Conference*. USDA Forest Service, Intermountain Research Station. General Technical Report INT-216. 293-299.
- Gottfried, G. J. (unpublished document) Study Plan FS-RM-4351 1989. Effects of harvesting, grazing and slash disposal on pinyon-juniper regeneration and growth. Rocky Mountain Forest and Range Experiment Station. Flagstaff, Arizona.
- Hunt, Charles B. 1978. *Surficial Geology of North West New Mexico*. New Mexico Bureau of Mines and Mineral Resources. Geological Map 43.
- Merola, M. 1992. Site Establishment Report for Comanche Canyon RNA. USDA Forest Service, Region 3. Albuquerque, NM.

- Pieper, R. D. and G. A. Lymbery. 1987. Influence of topographic features on pinyon-juniper vegetation in south-central New Mexico. In: Proceedings--Pinyon-juniper conference. USDA Forest Service, Intermountain Research Station. General Technical Report INT-215. 53-57.
- Ronco, F. 1987. Stand structure and function of pinyon-juniper woodlands. In: Proceedings--Pinyon-juniper conference. USDA Forest Service, Intermountain Research Station. General Technical Report INT-215. 14-22.
- Tuan, Yi-Fu; Cyril E. Everard Jerold G. Widdison; and Iven Bennett. 1973. *The Climate of New Mexico*, revised edition. New Mexico State Planning Office. Santa Fe, New Mexico. 197 p.
- Tueller, P. T.; C. D. Beeson; R. J. Tausch; N. W. West; and K. H. Rea. 1979. Pinyon-juniper woodlands of the Great Basin: distribution, flora, vegetal cover. USDA Forest Service, Intermountain Forest and Range Experiment Station. Research Paper INT-229. Ogden, Utah. 22 p.
- USDA Forest Service. 1979. Logged Area Analysis Program. State and Private Forestry. USDA Forest Service. Region 1, Missoula, MT.
- USDA Forest Service. 1983. *Regional Guide for the Southwestern Region*. USDA Forest Service. Region 3, Albuquerque, New Mexico.
- USDA Forest Service. 1986. *Environmental Impact Statement, Carson National Forest Plan*. USDA Forest Service. Region 3, Albuquerque, New Mexico.

USDA Forest Service. 1989. *Decision Memo: Carson Forest Plan Amendment #3, October 1989.* USDA Forest Service. Carson National Forest, Rio Arriba County, New Mexico.

USDA Forest Service. 1992. Establishment record for Largo Mesa Research Natural Area within Apache National Forest. Unpublished document. USDA Forest Service, Region 3. Albuquerque, NM.

Table 1.--Densities (# stems/A), basal area (sq ft/A), and volume (cu ft/A) of standing trees (live and dead) at Comanche Canyon and Largo Mesa.

Measure	Species	Status	Site			
			Comanche Canyon			Largo Mesa
			Mesa Top	Mesa Slope	Sage	Mesa Top
Density	Pinyon	Alive	344 ¹	560	416	104
		Dead	24	92	24	24
	Juniper	Alive	208	208	52	252
		Dead	8	16	4	4
Basal Area	Pinyon	Alive	133.8 ²	101.0	116.1	43.5
		Dead	6.5	27.0	27.3	9.9
	Juniper	Alive	61.3	35.7	11.0	120.4
		Dead	0	5.0	0.1	9.5
Volume	Pinyon	Alive	1262.4 ³	739.2	967.2	420.8
		Dead	27.2	165.2	65.6	53.6
	Juniper	Alive	342.0	189.6	152.6	710.8
		Dead	0	43.2	0.1	53.2
Volume Total			1631.6	1137.2	1205.5	1238.4

¹To convert to stems ha⁻¹, multiply by 2.471.

²To convert to m² ha⁻¹, multiply by 0.2296.

³To convert to m³ ha⁻¹, multiply by 0.06997.

Table 2.--Average diameter (in) at root collar (DRC) and height (ft) of pinyon-juniper at two sites.

Species Species	Average Tree Size	Site			
		Comanche Canyon			Largo Mesa
		Mesa Top	Mesa Slope	Sage	Mesa Top
Pinyon	DRC	8.21 ¹	5.4	6.7	8.1
	Ht.	16.02 ²	12.0	14.0	16.0
Juniper	DRC	12.8	6.8	11.5	14.4
	Ht.	14.0	10.0	13.0	13.0

¹To convert to cm, multiply by 2.54.

²To convert to m, multiply by 0.305.

Table 3.--Regeneration (# of trees/A) of pinyon and juniper at two sites.

Size Class		Site			
		Comanche Canyon			Largo Mesa
		Mesa Top	Mesa Slope	Sage	Mesa Top
Seedlings [<4.5 ft ht <2.0 in DRC]	Pinyon	485 ¹	1180	636	428
	Juniper	16	48	36	16
Saplings [≥4.5 ft ht <2.0 in DRC]	Pinyon	24	52	32	8
	Juniper	0	4	16	0

¹To convert to trees ha⁻¹, multiply by 2.477.

Table 4.--Mean volume (ft³/A) and weight (tons/A) of dead and down pinyon and juniper at Comanche Canyon and Largo Mesa.

Debris Quantity	Species	Site			
		Comanche Canyon			Largo Mesa
		Mesa Top	Mesa Slope	Sage	Mesa Top
Volume	Pinyon and Juniper	422.2 ¹	469.5	66.2	231.8
Weight	Pinyon and Juniper	8.0 ²	8.7	1.2	4.3

¹To convert to m³ ha⁻¹, multiply by .06997.

²To convert to Mg ha⁻¹, multiply by 2.24.

Table 5.--Ratio of live standing (LS) to dead standing (DS) and dead down (DD) volume of pinyon and juniper at two sites.

Site		Ratio		
		LS/DS	LS/DD	DD/DS
Comanche Canyon	Mesa Top	59:1	4:1	16:1
	Mesa slope	4:1	2:1	2:1
	Sage	17:1	17:1	1:1
Largo Mesa	Mesa Top	11:1	5:1	2:1

Figure 1.--Distribution (%) of basal area by diameter classes and sites.

Pinyon

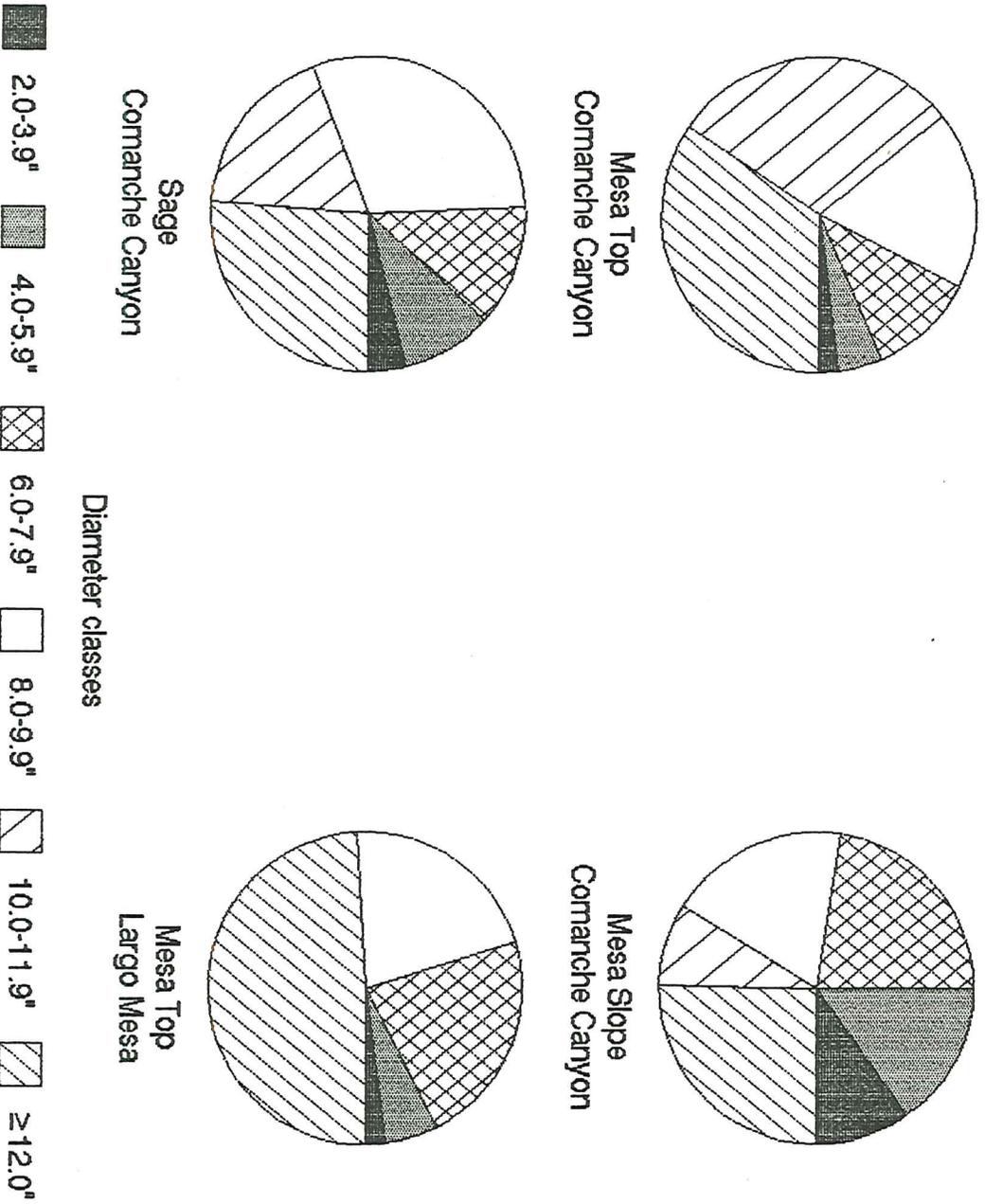


Figure 2.--Distribution (%) of basal area by diameter classes and sites.

Juniper

