

AGUA FRIA MOUNTAIN RESEARCH NATURAL AREA

Ecosystems: 142.4 montane grassland; 122.32 Ponderosa pine (Pinus ponderosa-P. edulis-Juniperus deppeana Subseries of Terrestrial Ecosystem Survey gradient 10)

This proposed research natural area (RNA) occupies the summit of a 8800 foot elevation mesa that is difficult of access by livestock and remote from stock water. The summit apparently consists of two volcanic substrates (basalt and rhyolite) which produce striking contrasts in soils and vegetation.

The primary resource of this proposed RNA is the montane grassland occupying about 150 acres on basalt caprock. Principal grasses are mountain muhly, junegrass, muttongrass, and pine dropseed. The condition is good, and production in 1982 averaged about 350-375 pounds/acre. Scattered within this park are small one-seed and alligator-bark junipers, seedling pinyon pine, and - very rarely - seedling ponderosa.

At both ends of the park are open, old-growth ponderosa pine stands. These exemplify the Pinus ponderosa-Pinus edulis/Muhlenbergia montana habitat type. The forest occurs on well-drained rhyolite soils (possibly Lithic Ustochrepts, warm, dry). Common grasses are mountain muhly, pine dropseed, junegrass, squirrel-tail, muttongrass, and big bluestem. Arizona fescue can be found here and there but is rare. Trees are in open, park-like structure characteristic of pristine yellowpine stands. In addition to ponderosa pine, there are edible nut pinyon, Rocky mountain and alligator bark junipers (one-seed juniper is infrequent), and a few gambel oak. These forests occupy about 200 acres of mesa top.

The major feature of this proposed RNA is its nearly pristine vegetation. The area receives only light livestock grazing because of inaccessibility and remoteness from water. The mountain meadow is therefore a benchmark of this soil-vegetation type uncomplicated by grazing. Similarly the ponderosa pine stands are climax. Since recurrent ground fires are a part of the natural process of ecosystem maintenance, this isolated mesa presents ideal topography for a "let burn" policy for lightning caused fires.

These ecosystems certainly meet criteria of the Region 3 Natural Area program. Research opportunities are plentiful under a wide range of forest or range subjects. For management these almost undisturbed ecosystems give models of vegetation potential and management perspective against which to gauge various range and "fringe pine" management practices

Management conflicts appear minimal. A very short fence will keep cattle off the mesa top completely. The boundary along the 8600 foot contour encloses about 350 acres buffered by steep topography from adjoin-

ing land. Because of its minimally disturbed ecosystems, its research and benchmark potentials, and the management opportunity for scientific and educational purposes, the RNA Task Group recommends Aqua Fria Mountain for priority consideration as a research natural area within the Gila National Forest Plan.

LOOP MEASUREMENTS

Cluster No. Pace transect Range Allotment _____
 Line Transect No. 1 Date Oct 21, 1982 By Hugh Thompson - Don Ward - Will Moir
 Location Agua Fria Mt. T2S R17W S13 8830 ft. elev.

LOOP MEASUREMENTS

1	2	3	4	5	6	7	8	9	10
MUMO	L	POFE	R	B	L	B	L	R	R
11	12	13	14	15	16	17	18	19	20
R	B	MUMO	R	B	R	L	R	KOCR	B
21	22	23	24	25	26	27	28	29	30
L	R	R	KOCR	KOCR	L	B	MUMO	L	B
31	32	33	34	35	36	37	38	39	40
B	L	B	R	R	MUMO	R	L	MUMO	BLTR
41	42	43	44	45	46	47	48	49	50
R	R	R	MUMO	L	R	R	MUMO	R	L
51	52	53	54	55	56	57	58	59	60
L	R	L	POFE	R	R	R	R	L	R
61	62	63	64	65	66	67	68	69	70
R	BLTR	R	L	MUMO	MUMO	R	R	L	B
71	72	73	74	75	76	77	78	79	80
L	MUMO	R	L	R	R	B	B	L	R
81	82	83	84	85	86	87	88	89	90
R	R	L	R	L	B	L	R	R	L
91	92	93	94	95	96	97	98	99	100
R	B	R	R	KOCR	R	B	B	KOCR	R

DOT TALLY & COMPOSITION

SPECIES	HITS	DOTS	TOTAL
MUMO	10	33	43
BLTR	2	21	23
POFE	2	15	17
KOCR	5	8	13
BOGR		2	2
MUWR		1	1
ANGE		1	1
TOTAL			100

SUMMARY OF HITS - Symbol
 Hits, All Plants 19
 Rock R 43
 Litter L 23
 Bare Soil B 15
 Total 100

No. DECREASESERS = _____

No. INCREASESERS = _____

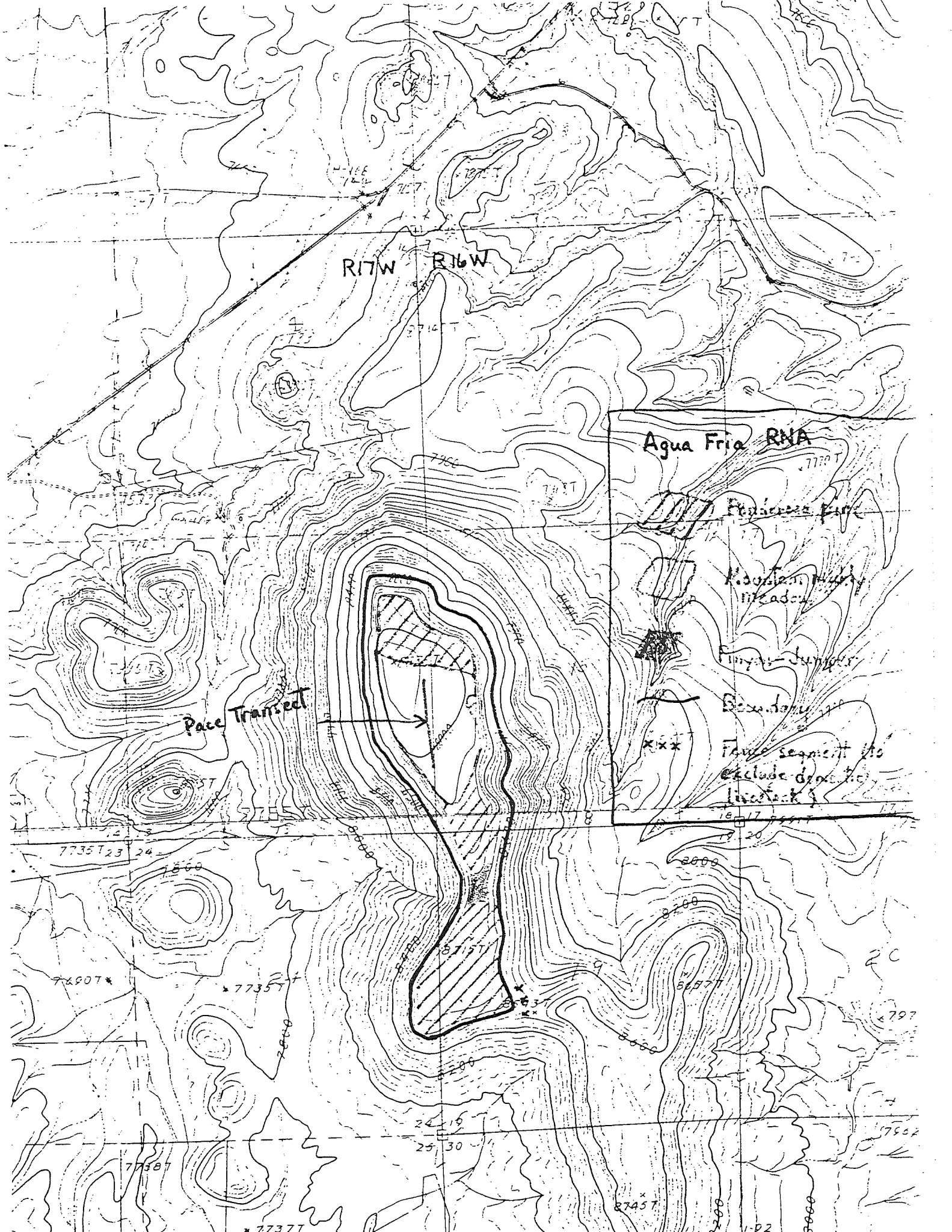
No. INVADERS = _____

No. COOL SEASON = _____

Hits, All Forage Plants (Decreasers
 & Increasesers) Erosion Hazard Index
 (Bare Soil) _____

Vigor Measurements

Plant	Species	
	Leaf Height	Leaf in flwr. Height
1	BLTR	16
2	KOCR	18
3	MUMO	18
4		20
5	↓	18
6	POFE	20
7		15
8	↓	15
9		
10		
Ave		



R17W R16W

Agua Fria RNA

Pace Transect

- ~~Redwood~~
- ~~Redwood~~
- ~~Juniper~~
- ~~Secondary~~
- xxx
- Four segment to include down to
- line

7735T 23 24

7737T

7738T

7739T

7740T

24 15 25 30

7745T

7746T

7747T

7748T

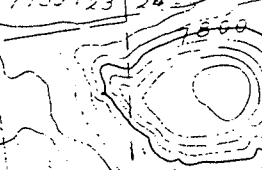
7749T

7750T

7751T

7752T

7753T



xxx

19 17 20 21

20

7754T

7755T

7756T

7757T