

Forest: Manti-La Sal
District: Moab-Monticello

Allotment: Brumley Ridge
Pasture: Mill Creek

Oowah Bench

Exclosure constructed June 6, 2012

Transects read August 31, 2012

August 13, 2016

Exclosure NE corner: 648738E, 4262988N

Outside NE corner: 648729E, 4262970N



Like much of wet meadows on Brumley Ridge allotment, the Oowah Bench vegetation cage site is dominated by the native, rhizomatous *Iris missouriensis* (Rocky Mountain iris), which is unpalatable to ungulates, and therefore is an increaser.

The 16' X 16' vegetation cage was constructed on May 14, 2012, and two 15' transects were read August 31, 2012 and August 13, 2016, with each plant species and ground cover recorded at 1' intervals in 2012 and 6" intervals in 2016. The nails marking the corners and transects for the outside 16' X 16' transect were not visible above ground in 2016, but attempt was made to read the transect at the same GPS locations as in 2012.

The adjacent headcut (Figs. 7-8) and the small opening to the west of the vegetation cage (Figs. 9-10) remain heavily trampled and heavily grazed, respectively, in 2016. This may be due to lack of palatable forage in the immediate area.

Inside the exclosure between 2012 and 2016, iris has slightly decreased in cover from 53% to 45% (Tables A2 and B2) but this may be a factor of the transect intersecting a small open patch of Columbia needlegrass (*Achnatherum nelsonii*) inside the exclosure.

Outside, iris increased from 63% to 73% cover, and Kentucky bluegrass increased from 40% to 57% cover, but appears as small plants beneath iris. Bare ground increased outside 7% to 31% during

2012-2016 beneath the iris, with little present below the iris except small Kentucky bluegrass. Inside, by contrast, bare ground decreased from 23% to 0%, due entirely to litter, most of it iris litter.



Fig. 1 (5/14/2012) NE corner outside placement; looking S



Fig. 2 (5/14/2012) NE corner enclosure placement; looking S

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Fig. 3 (08/31/2012) Transect 1, outsid



Fig. 4 (08/13/2016) Transect 1 outside



Fig. 5 (08/31/2012) Transect 1 inside



Fig. 6 (08/13/2016) Transect 1 inside



Fig. 7 (08/31/2012) 2' headcut, near cage



Fig. 8 (08/13/2016) 2' headcut, near cage



Fig. 9 (08/31/2012) Heavily-grazed opening w. of cage



Fig. 10 (08/13/2016) Heavily-grazed opening w. of cage

Table A-1 Inside Oowah Bench Enclosure

August 13, 2016

Plants:	cover (%) - Top layer			cover (%) - All layers			# Species			Two most common species
	Native	Exotic	unk	Native	Exotic	unk	Native	Exotic	unk	
grass	7	0	0	8	0	0	1	0	0	<i>Achnatherum nelsonii</i>
forbs	60	3	3	80	5	3	5	1	2	<i>Iris missouriensis</i> , <i>Machaeranthera</i> sp.
Totals	67	3	3	88	5	3	6	1	2	
Ground cover %:	Bare			Rock			Litter			Moss, lichen, biol. crust
	0			0			100			0

Table A-2 Inside 2016

Species		% cover	type	# times intercepted	Rel.% of type	Rel.% of Total
Columbia needlegrass	<i>Achnatherum nelsonii</i>	8	g	5	100	9
Rocky Mountain iris	<i>Iris missouriensis</i>	45	f	27	51	47
Tansy aster	<i>Machaeranthera?</i>	22	f	13	25	22
Trailing fleabane	<i>Erigeron flagellaris</i>	7	f	4	8	7
Cinquefoil	<i>Potentilla</i> sp.	3	f	2	4	3
Yellow salsify	<i>Tragopogon dubius</i>	5	f	3	6	5
Yarrow	<i>Achillea millefolium</i>	3	f	2	4	3
Unknown forb (collected)	PF01	2	f	1	2	2
unknown forb	unknown forb	2	f	1	2	2

Table B-1 Inside Oowah Bench Enclosure
August 31, 2012

Plants:	Cover (%) - Top layer			Cover (%) - All layers			# Species			Two most common species
	Native	Exotic	unk	Native	Exotic	unk	Native	Exotic	unk	
<i>Poa pratensis</i>		13			50			1		<i>Poa pratensis</i>
grass-like plants	3		0.0	3			1			<i>Juncus sp.</i>
forbs	57	13	7	83	17	7	4	2	1	<i>Iris missouriensis</i> , <i>Achillea millefolium</i>
Totals	60	27	7	87	67	7	5	3	1	
Ground cover %:	Bare			Rock			Litter			
	23			0			77			

Table B-2 Inside 2012

Species		% cover	type	# times intercepted	Rel.% of type	Rel.% of Tot
Kentucky bluegrass	<i>Poa pratensis</i>	50	g	15	100	31
Rush	<i>Juncus sp.</i>	3.3	gl	1	100	2
Rocky Mountain iris	<i>Iris missouriensis</i>	53	f	16	50	33
Yarrow	<i>Achillea millefolium</i>	20	f	6	19	13
Yellow salsify	<i>Tragopogon dubius</i>	13	f	4	13	8
Fleabane	<i>Erigeron sp.</i>	6.7	f	2	6	4
unknown forb		6.7	f	2	6	4
Trailing fleabane	<i>Erigeron flagellaris</i>	3.3	f	1	3	2
Alfalfa	<i>Medicago sativa</i>	3.3	f	1	3	2

Table C-1 Outside Oowah Bench Enclosure
August 13, 2016

Plants:	cover (%) - Top layer			cover (%) - All layers			# Species			Two most common species
	Native	Exotic	unk	Native	Exotic	unk	Native	Exotic	unk	
<i>Poa pratensis</i>		12			57			1		<i>Poa pratensis</i>
grass-like plants	5	0	0	5	0	0	1	0	0	<i>Juncus arcticus balticus</i>
forbs	65	3	7	83	8	12	3	1	1	<i>Iris missouriensis</i> , (<i>Machaeranthera</i> ? AND <i>Taraxacum officinale</i> – Equal numbers)
Totals	70	15	7	88	65	12	4	2	1	
Ground cover %:	Bare			Rock			Litter			Moss, lichen, biol. crust
	31			0			69			0

Table C-2 Outside, August 13, 2016

Species		% cover	type	# times intercepted	Rel.% of type	Rel.% of Total
Kentucky bluegrass	<i>Poa pratensis</i>	57	g	34	100	34
Baltic rush	<i>Juncus balticus</i>	5	gl	3	100	3
Rocky Mountain iris	<i>Iris missouriensis</i>	73	f	44	71	44
Tansy aster	<i>Machaeranthera</i> sp.	8	f	5	8	5
Common dandelion	<i>Taraxacum officinale</i>	8	f	5	8	5
unknown forb		7	f	4	6	4
Unknown forb (PF01)		5	f	3	5	3
Yarrow	<i>Achillea millefolium</i>	2	f	1	2	1

Table D-1 Outside Oowah Bench Exclosure

August 31, 2012

Plants:	Cover (%) - Top layer			Cover (%) - All layers			# Species			Two most common species
	Native	Exotic	unk	Native	Exotic	unk	Native	Exotic	unk	
<i>Poa pratensis</i>		10.0			40.0			1		<i>Poa pratensis</i>
Other grass			3.3			3.3			1	Unknown grass
forbs	66.7	3.3		80.0	3.3		3	1		<i>Iris missouriensis</i> , <i>Machaeranthera</i> sp.
Totals	60.0	13.3	3.3	80.0	43.3	3.3	3	2	1	
Ground cover %:	Bare			Rock			Litter			Biological crust
	7			0			93			0

Table D-2 Outside, August 31, 2012

Species		% cover	type	# times intercepted	Rel.% of type	Rel.% of Total
Kentucky bluegrass	<i>Poa pratensis</i>	40	g	12	92	32
unknown grass		3.3	g	1	8	3
Rocky Mountain iris	<i>Iris missouriensis</i>	63	f	19	76	50
Tansyaster	<i>Machaeranthera</i> sp.	13	f	4	16	11
Yarrow	<i>Achillea millefolium</i>	3.3	f	1	4	3
Yellow salsify	<i>Tragopogon dubius</i>	3.3	f	1	4	3

Table E Oowah Bench Plant Species

Plant species (1) intercepted on transect; (2) present w/in 16'X16' areas inside and outside

August 13, 2016

Species Found:	Tree	Shrub	Grass	Grass-like	Forb
Intercepted INSIDE			<i>Achnatherum nelsonii</i>		<i>Iris missouriensis</i> , <i>Erigeron flagellaris</i> , <i>Potentilla</i> sp., <i>Tragopogon dubius</i> , <i>Achillea millefolium</i> , unknown forb, PF01
Intercepted OUTSIDE			<i>Poa pratensis</i>	<i>Juncus balticus</i>	<i>Iris missouriensis</i> , <i>Taraxacum officinale</i> , unknown forb, <i>Machaeranthera</i> sp., <i>Achillea millefolium</i>
Within INSIDE Transect Area (16' x 16')			<i>Bromus inermis</i>		<i>Symphoricarpos oreophilus</i> , <i>Galium</i> sp.
Within OUTSIDE Transect Area (16' x 16')					[Note: no additional species beyond those intercepted were seen within the 16' X 16' outside transect area]

August 31, 2012

Species Found:	Tree	Shrub	Grass	Forb
Intercepted INSIDE			<i>Poa pratensis</i>	<i>Iris missouriensis</i> , <i>Achillea millefolium</i> , <i>Tragopogon dubius</i> , <i>Potentilla</i> sp., Unknown forb, <i>Erigeron flagellaris</i> ,
Intercepted OUTSIDE			<i>Poa pratensis</i> , Unknown grass	<i>Iris missouriensis</i> , <i>Achillea millefolium</i> , <i>Tragopogon dubius</i>
Within INSIDE Transect Area (16' x 16').	<i>Populus tremuloides</i>	<i>Juncus balticus</i>	<i>Poa pratensis</i>	<i>Stenogonum salsuginosum</i> , <i>Erigeron</i> sp., <i>Viola</i> sp., <i>Machaeranthera</i> sp, <i>Taraxacum officinale</i> , <i>Potentilla</i> sp. <i>Galium</i> sp., <i>Medicago sativa</i>
Within OUTSIDE Transect Area (16' x 16').		<i>Juncus balticus</i>	<i>Poa pratensis</i> , <i>Poaceae</i> sp.	<i>Trifolium</i> sp., <i>Polygonum douglasii</i> , <i>Tragopogon dubius</i> , <i>Potentilla</i> sp., <i>Arabis</i> sp., <i>Viola</i> sp.