Table 10. Frequency of plant species in 25 x 25 cm frames on loamy ecological sites in 1988 and 2012 and their response to long term grazing. For many species the grazing response is more obvious when comparing intermediate years. Click on the plant name in this table to see a graph of the changes in abundance over time on each of the different treatments.

	Treatment										
	Ungrazed		Light		Moderate		Heavy		Extreme		
Scientific Name - Common name	1988	2012	1988	2012	1988	2012	1988	2012	1988	2012	Grazing Response
Poa pratensis L. - Kentucky bluegrass	86.00	100.00	84.67	99.33	92.67	99.33	75.33	96.67	82.00	96.67	decrease
Pascopyrum smithii (Rydb.) A. Löve - western wheatgrass	58.67	69.33	30.00	56.00	64.67	82.00	42.67	69.33	57.67	80.67	increase
Carex inops Bailey ssp. *heliophila* (Mackenzie) Crins - sun sedge	50.67	30.00	72.00	38.67	76.67	48.67	77.33	75.33	75.67	50.67	increase
Symphyotrichum ericoides (L.) Nesom var. *ericoides* - heath aster	29.33	60.00	45.33	62.67	38.67	57.33	39.33	49.33	35.00	44.67	increase-decrease
Artemisia ludoviciana Nutt. - cudweed sagewort	5.33	29.33	31.33	58.00	24.00	38.67	29.33	54.00	12.33	18.67	increase-decrease
Nassella viridula (Trin.) Barkworth - green needlegrass	36.67	12.00	34.67	10.00	48.67	60.00	30.00	67.33	41.00	55.33	increase
Carex obtusata Lilj. - obtuse sedge	16.00	44.67	16.67	67.33	15.33	41.33	8.67	52.67	6.67	19.33	
Achillea millefolium L. - western yarrow	4.00	41.33	1.33	18.00	7.33	48.00	3.33	42.00	3.67	84.67	increase
Taraxacum officinale F.H. Wigg. - common dandelion	0.67	44.67	0.00	11.33	0.00	48.00	0.00	52.00	0.00	94.00	increase
Bouteloua gracilis (H.B.K.) Lag. ex Griffiths - blue grama	49.33	1.33	24.67	4.00	42.00	28.00	45.33	56.67	30.33	45.33	increase
Oligoneuron rigidum (L.) Small var. *humile* (Porter) Nesom - stiff	0.67	54.67	0.00	42.67	0.67	92.67	0.00	74.00	1.00	41.33	
Artemisia frigida Willd. - fringed sagewort	8.67	4.00	2.67	1.33	4.67	14.00	6.67	40.67	3.33	21.33	increase
Vicia americana Muhl. ex Willd. - American vetch	0.00	8.00	0.67	2.00	2.67	8.00	1.33	9.33	1.67	24.00	increase
Grindelia squarrosa (Pursh) Dun. - curly-cup gumweed	0.67	6.67	0.67	2.67	0.00	21.33	0.00	43.33	1.00	49.33	increase
Cerastium arvense L. - prairie chickweed	0.00	7.33	0.00	1.33	0.00	30.67	0.00	32.67	0.00	62.67	increase
Ambrosia psilostachya DC. - western ragweed	3.33	59.33	2.00	60.67	3.33	74.00	0.67	31.33	0.00	0.67	increase-decrease
Hesperostipa curtiseta (Hitchc.) Barkworth - western porcupine grass	8.67	2.67	16.00	7.33	4.00	10.00	8.00	20.67	8.33	14.67	increase-decrease
Dichanthelium wilcoxianum (Vassey) Freckmann - Wilcox dichanthelium	0.00	3.33	2.00	9.33	3.33	45.33	2.67	54.67	2.00	35.33	increase-decrease
Astragalus agrestis Dougl. ex G. Don - field milk-vetch	2.67	4.67	1.33	6.67	2.00	20.00	3.33	16.67	7.33	40.00	increase
Cirsium flodmanii (Rydb.) Arthur - Flodman's thistle	0.00	22.00	6.67	24.67	6.67	22.00	4.00	20.00	1.33	8.67	increase-decrease
Elymus repens (L.) Gould - quackgrass	0.67	20.67	2.00	42.67	1.33	55.33	0.00	27.33	2.00	24.00	increase-decrease
Androsace occidentalis Pursh - western rock jasmine	0.00	0.67	0.00	0.67	0.00	2.00	0.00	2.00	0.00	4.00	increase
Koeleria macrantha (Ledeb.) J.A. Schultes - Junegrass	8.67	1.33	0.00	2.67	4.00	16.67	0.00	34.67	3.33	18.00	increase
Ratibida columnifera (Nutt.) Woot. & Standl. - prairie coneflower	3.33	2.00	1.33	7.33	2.00	18.67	2.00	25.33	2.00	9.33	increase-decrease
Hesperostipa comata (Trin. & Rupr.) Barkworth - needle-and-thread	14.67	0.67	17.33	0.00	14.67	8.00	29.33	18.00	28.67	2.00	
Carex eleocharis Bailey. - needle-leaved sedge	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.67	increase
Solidago missouriensis Nutt. - Missouri goldenrod	2.00	10.00	0.00	8.67	0.67	9.33	2.67	20.00	1.00	18.67	
Lotus purshianus (Benth.) Clem. & Clem. - deer vetch	0.00	18.67	0.00	4.00	2.00	16.67	0.00	2.67	0.00	5.33	decrease
Psoralea argophylla Pursh - silver-leaf scurf-pea	3.33	4.67	14.00	5.33	1.33	5.33	10.00	12.67	2.67	1.33	increase-decrease
Solidago mollis Bartl. - soft goldenrod	0.67	4.67	0.00	18.67	2.67	14.00	4.00	17.33	6.00	6.00	increase-decrease
Helianthus pauciflorus Nutt. ssp. *pauciflorus* - stiff sunflower	0.00	32.67	10.67	10.67	0.00	14.00	6.67	8.67	4.67	0.00	decrease
Oxalis stricta L. - yellow wood sorrel	0.00	4.00	0.00	0.67	0.00	0.67	0.00	2.00	0.00	2.67	increase
Comandra umbellata (L.) Nutt. - comandra	0.00	1.33	8.00	14.00	7.33	18.00	0.67	12.00	0.00	0.00	increase-decrease
Euphorbia serpyllifolia Pers. - thyme-leaved spurge	0.00	0.67	0.00	0.00	0.00	4.67	0.00	8.00	0.00	6.67	increase
Rosa arkansana Porter - prairie rose	0.00	2.00	12.67	19.33	0.67	2.00	6.67	4.00	2.00	0.67	increase-decrease
Hedeoma hispidum Pursh - rough false pennyroyal	0.00	0.00	0.00	0.00	0.00	0.67	0.00	2.00	0.00	4.00	increase
Plantago patagonica Jacq. - wooly plantain	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	0.00	0.00	increase
Artemisia absinthium L. - wormwood	0.00	23.33	0.00	4.00	0.00	2.00	0.00	10.00	0.00	2.67	decrease
Bromus inermis Leyss. - smooth brome	0.00	4.67	1.33	28.67	1.33	10.00	0.00	1.33	0.00	0.00	increase-decrease
Potentilla pensylvanica L. - Pennsylvania cinquefoil	0.00	0.00	0.00	0.00	0.00	2.67	0.00	6.00	0.00	6.67	increase
Penstemon gracilis Nutt. - slender beardtongue	0.00	0.67	0.00	0.00	0.00	10.00	0.00	8.00	0.00	10.67	increase
Geum triflorum Pursh - prairie smoke	0.00	0.67	0.00	4.67	0.00	11.33	0.00	16.67	0.00	9.33	increase
Sphaeralcea coccinea (Pursh) Rydb. - scarlet globe mallow	14.67	0.67	3.33	0.00	7.33	1.33	4.00	0.67	10.33	2.67	increase
Medicago lupulina L. - black medic	0.00	4.67	0.00	0.67	0.00	2.00	0.00	3.33	0.00	51.33	invader
Tragopogon dubius Scop. - goat's beard	0.67	2.00	0.00	3.33	0.67	1.33	0.67	2.00	0.00	2.67	decrease
Agrostis hyemalis (Walt.) B.S.P. - ticklegrass	0.00	1.33	0.00	0.67	0.00	6.67	0.00	4.00	0.00	20.67	invader
Artemisia dracunculus L. - green sagewort	0.00	0.00	0.67	1.33	0.00	3.33	0.67	6.00	0.00	0.67	increase-decrease
Carex filifolia Nutt. - thread-leaved sedge	0.00	0.00	0.00	0.00	0.00	0.00	2.00	8.67	1.33	0.00	increase-decrease
Draba nemorosa L. - yellow whitlowort	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	increase
Anemone cylindrica A. Gray - candle anemone	0.00	1.33	0.00	2.00	0.00	10.67	0.00	12.00	0.00	8.00	increase-decrease
Bouteloua dactyloides (Nutt.) J.T. Columbus - buffalograss	0.67	0.00	0.00	0.00	0.00	1.33	0.00	7.33	0.00	11.33	increase
Antennaria neglecta Greene - field pussy-toes	0.00	0.67	0.00	2.00	0.00	3.33	0.00	2.00	0.00	13.33	increase
Lithospermum incisum Lehm. - yellow puccoon	0.00	0.00	0.00	0.00	2.00	2.00	0.00	12.00	0.00	0.00	increase-decrease
Sisyrinchium montanum Greene. - blue-eyed grass	0.00	0.67	0.00	0.67	0.00	2.00	0.00	4.00	0.00	0.00	increase-decrease
Calamagrostis montanensis (Scribn.) Scribn. - plains reedgrass	0.00	0.00	0.00	0.00	0.00	1.33	0.00	0.67	0.00	1.33	increase-decrease
Asclepias ovalifolia Dcne. - ovalleaf milkweed	0.00	2.67	0.67	4.67	0.00	0.00	0.00	0.00	0.00	0.00	increase-decrease
Erysimum asperum (Nutt.) DC. - western wallflower	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	increase-decrease
Arabis hirsuta (L.) Scop. var. *pycnocarpa* (Hopkins) Rollins - rock cress	0.00	0.67	0.00	0.67	0.00	2.00	0.00	0.00	0.00	0.67	increase-decrease
Lepidium densiflorum Schrad. - peppergrass	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	increase
Juncus interior Wieg. - inland rush	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.33	invader
Trifolium repens L. - white clover	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.00	invader
Chrysopsis villosa (Pursh) Nutt. - golden aster	0.00	0.00	1.33	0.67	0.00	0.00	2.00	8.00	0.00	1.33	increase-decrease
Potentilla norvegica L. - Norwegian cinquefoil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	increase
Erysimum inconspicuum (S. Wats.) MacM. - smallflower wallflower	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00	increase-decrease
Polygonum ramosissimum Michx. - bushy knotweed	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	invader
Orthocarpus luteus Nutt. - owl clover	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	increase-decrease
Psoralea esculenta Pursh - breadroot scurf-pea	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	decrease