

Table S1. Correlations of species and environmental variables with axes of the NMS ordination of 60 plots at Zena sampled over five years. Positive correlations indicate taxa that were more abundant in treated versus pre-treatment plots (Axis 1), more abundant later in succession after restoration treatments (Axis 2) and more abundant in shallow versus deep soil. Correlations are non-parametric  $\tau$ ; only those 0.20 and over are shown.

<b>Axis 1: Restoration</b>	<b><math>\tau</math></b>	<b>Axis 2: Succession</b>	<b><math>\tau</math></b>	<b>Axis 3: Shallow soil</b>	<b><math>\tau</math></b>
<i>Daucus carota</i>	0.32	<i>Bromus/Vulpia</i>	0.49	<i>Plantago lanceolata</i>	0.40
<i>Galium divaricatum</i>	0.28	Thatch	0.21	<i>Aira caryophylla</i>	0.38
<i>Geranium dissectum</i>	0.26	<i>Clarkia</i>	-0.20	<i>Bromus/Vulpia</i>	0.28
<i>Juncus bufonius</i>	0.26	<i>Geranium dissectum</i>	-0.21	<i>D. californica</i>	0.27
<i>Anthemis mollis</i>	0.25	<i>Cytisus scoparius</i>	-0.21	<i>Taeniatherum caputmedusae</i>	0.27
<i>Aphanes microcarpa</i>	0.24	<i>Senecio vulgaris</i>	-0.22	<i>Moenchia erecta</i>	0.26
<i>Sonchus</i>	0.24	<i>Cerastium glomeratum</i>	-0.22	<i>Linum bienne</i>	0.25
Gravimetric moisture	0.21	<i>Juncus bufonius</i>	-0.23	<i>Trifolium dubium</i>	0.21
<i>Agrostis</i>	-0.54	<i>Acmispon parviflorus</i>	-0.23	Moss	0.24
		<i>Epilobium ciliatum</i>	-0.25	<i>Cynosurus echinatus</i>	0.20
		Bare soil	-0.26	<i>Sonchus</i>	-0.22
		<i>Galium divaricatum</i>	-0.31	<i>Vicia spp.</i>	-0.29
		<i>Myosotis discolor</i>	-0.34	<i>Cirsium spp.</i>	-0.31
		<i>Sonchus spp.</i>	-0.40	<i>Rubus bifrons</i>	-0.35
				<i>Myosotis discolor</i>	-0.35
				<i>Holcus lanatus</i>	-0.37
				Soil depth	-0.41

Table S2. Correlations of species and environmental variables with axes of the NMS ordination of final composition of 292 plots at Zena and Jefferson. Positive correlations reflect higher abundance at Zena and in xeric versus mesic plots (Axis 1), and in *F. roemerii* dominated plots (Axis 2). Correlations are non-parametric *tau*; only those 0.17 and over are shown.

<b>Axis 1: Jefferson vs. Zena</b>		<b>Axis 2: Native forbs versus grass.</b>	
<b>Mesic vs. xeric</b>	<b><i>tau</i></b>		<b><i>tau</i></b>
<i>Vulpia myuros</i>	0.51	<i>Festuca idahoensis roemerii</i>	0.48
<i>Agrostis</i> spp.	0.42	<i>Vicia</i> spp.	0.21
<i>Hypochaeris guild</i>	0.40	Native perennial forbs	-0.17
<i>Aira caryophylla</i>	0.37	<i>Bromus sterilis</i>	-0.17
<i>Acmispon parviflorus</i>	0.36	<i>Epilobium brachycarpum</i>	-0.18
Bare soil	0.34	TDR	-0.18
<i>Plantago lanceolata</i>	0.33	<i>Rumex acetosella</i>	-0.18
<i>Sherardia arvensis</i>	0.31	<i>Daucus carota</i>	-0.20
<i>Cerastium glomeratum</i>	0.30	<i>Aquiligia formosa</i>	-0.21
TriDub	0.30	<i>Senecio jacobia</i>	-0.21
<i>Cytisus scoparius</i>	0.25	<i>Sidalcea campestris</i>	-0.21
<i>Linum bienne</i>	0.26	<i>Galium divaricatum</i>	-0.22
<i>Briza minima</i>	0.25	<i>Myosotis discolor</i>	-0.22
<i>Moenchia erecta</i>	0.22	<i>Leucanthemum vulgare</i>	-0.22
<i>Daucus carota</i>	0.21	<i>Cirsium</i> spp.	-0.26
<i>Taenatherium caput-medusae</i>	0.20	<i>Parentucellia viscosa</i>	-0.28
<i>Leucanthemum vulgare</i>	-0.17	<i>Holcus lanatus</i>	-0.29
TDR	-0.18		
<i>Holcus lanatus</i>	-0.19		
<i>Camassia</i> spp.*	-0.19		
<i>Prunella vulgaris lanceolata</i> *	-0.20		
<i>Galium aparine</i>	-0.21		
<i>Toxicodendron diversilobum</i>	-0.21		
<i>Achillea millefolium</i> *	-0.23		
<i>Hypericum perforatum</i>	-0.26		
<i>Cirsium</i>	-0.26		
<i>Potentilla glandulosa</i> *	-0.26		
<i>Arrhenatherum elatius</i>	-0.29		
<i>Eriophyllum lanatum</i> *	-0.31		
Degrees from South	-0.42		