**Publication**

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**Data File Descriptions**

There are seven files described in this document. Five contain cover, richness, or burn severity data for experimental subplots or reference meadow transects. Three contain compositional dissimilarity or structural distance values between experimental subplots and reference meadow transects, or values of within-plot heterogeneity in composition or structure.

**1. Species\_cover\_exp\_subplots.csv**. Species cover in unburned (UB) and burned (B) experimental subplots before (2004) and after (2007, 2009, and 2013) treatment. Includes 30 meadow species present in at least 1% of samples (subplots or transects x sampling dates).

Variable name Definition, units, and codes

Treatment Experimental treatment. Codes: UB = unburned (pile burned), B = broadcast burned.

Plot Unique code for the 1-ha experimental plot. Codes: 2, 3, 8, 10, 11, and 13.

Subplot Unique code for the 10 x 10 m subplot, derived from the plot number and the column and row numbers of the 10 x 10 m grid within each plot.

Year Sampling year. 2004 is pre-treatment. 2007, 2009, and 2013 are 1, 3, and 7 years after burning and 2, 4, and 8 years after tree removal.

Species Species code. Follows USDA Plants (2017). USDA and NRCS. 2017. The PLANTS Database, http://plants.usda.gov. National Plant Data Team, Greensboro, NC, USA.

Species\_name Species scientific name. Follows USDA Plants (2017).

Species\_cover Species cover (%) (mean of four 1 x 1 m quadrats).

**2. Species\_cover\_RM.csv**. Species cover in the 117 reference-meadow transects sampled in 2013. Includes 30 meadow species present in at least 1% of samples (subplots or transects x sampling dates).

Variable name Definition, units, and codes

RM\_name Reference meadow name. One of 16 areas of open (uninvaded) meadow near or adjacent to the experimental plots.

RM\_transect Unique transect code derived from RM\_name and transect number (sequential within each RM\_name).

Year Sampling year. Sampled in 2013 only.

Species Species code. Follows USDA Plants (2017). USDA and NRCS. 2017. The PLANTS Database, http://plants.usda.gov. National Plant Data Team, Greensboro, NC, USA.

Species\_name Species scientific name. Follows USDA Plants (2017).

Species\_cover Species cover (%) (mean of four 1 x 1 m quadrats).

**3. GF\_cover-richness\_exp\_subplots.csv**. Growth-form cover and richness in unburned (UB) and burned (B) experimental subplots before (2004) and after (2007, 2009, and 2013) treatment. Includes 30 meadow species present in at least 1% of samples (subplots or transects x sampling dates).

Variable name Definition, units, and codes

Treatment Experimental treatment. Codes: UB = unburned (pile burned), B = broadcast burned.

Plot Unique code for the 1-ha experimental plot. Codes: 2, 3, 8, 10, 11, and 13.

Subplot Unique code for the 10 x 10 m subplot, derived from the plot number and the column and row numbers of the 10 x 10 m grid within each plot.

Year Sampling year. 2004 is pre-treatment. 2007, 2009, and 2013 are 1, 3, and 7 years after burning and 2, 4, and 8 years after tree removal.

GF Growth form used in the principal components analysis (PCA) of community structure.

GF\_cover Summed cover (%) of species of the specified growth form, computed as the mean of four 1 x 1 m quadrats.

GF\_richness Number of species of the specified growth form (forb and grass only), computed as the cumulative number of species among the four 1 x 1 m quadrats; nc = not computed (sedge and subshrub).

**4. GF\_cover-richness\_RM.csv**. Growth-form cover and richness in the 117 reference-meadow transects sampled in 2013.

Variable name Definition, units, and codes

RM\_name Reference meadow name. One of 16 areas of open (uninvaded) meadow near or adjacent to the experimental plots.

RM\_transect Unique transect code derived from RM\_name and transect number (sequential within each RM\_name).

Year Sampling year. Sampled in 2013 only.

GF Growth form used in the principal components analysis (PCA) of community structure.

GF\_cover Summed cover (%) of species of the specified growth form, computed as the mean of four 1 x 1 m quadrats.

GF\_richness Number of species of the specified growth form (forb and grass only), computed as the cumulative number of species among the four 1 x 1 m quadrats; nc = not computed (sedge and subshrub).

**5. Burn\_severity.csv**. Post-burn estimates of burn severity.

Variable name Definition, units, and codes

Treatment Experimental treatment. Code: B = broadcast burned

Plot Unique code for the 1-ha experimental plot (B treatment only). Codes: 2, 8, and 11.

Subplot Unique code for the 10 x 10 m subplot, derived from the plot number and the column and row numbers of the 10 x 10 m grid within each plot.

Year Sampling year. 2007 only (1 year after burning).

Burn\_severity Burn severity expressed as the summed cover (%) of white ash, blackened duff, or charcoal (mean of four 1 x 1 m quadrats; maximum of 100%).

**6. Distance\_to\_RM.csv.** Mean compositional (Bray-Curtis) dissimilarity and structural (Euclidean) distance of experimental subplots to reference meadows before (2004) and after (2007, 2009, and 2013) treatment.

Variable name Definition, units, and codes

Treatment Experimental treatment. Codes: UB = unburned (pile burned); B = broadcast burned.

Plot Unique code for the 1-ha experimental plot. Codes: 2, 3, 8, 10, 11, and 13.

Subplot Unique code for the 10 x 10 m subplot, derived from the plot number and the column and row numbers of the 10 x 10 m grid within each plot.

Year Sampling year. 2004 is pre-treatment. 2007, 2009, and 2013 are 1, 3, and 7 years after burning and 2, 4, and 8 years after tree removal.

Compositional\_D Mean compositional (Bray-Curtis) dissimilarity between the experimental subplot and all reference meadow transects. Species cover was used as the measure of species abundance. nc = not computed (no meadow species present).

Structural\_D Mean structural (Euclidean) distance between the experimental subplot and all reference meadow transects based on the six growth-form (total cover and richness) variables. Prior to computing distances, growth-form cover and richness were log- and square-root transformed, respectively, then standardized (zero mean, unit variance). nc = not computed (no meadow species present).

**7. Within-plot\_heterogeneity.csv.** Within-plot heterogeneity of species composition (Bray-Curtis dissimilarity) and community structure (Euclidean distance) before (2004) and after (2007, 2009, and 2013) treatment.

Variable name Definition, units, and codes

Treatment Experimental treatment. Codes: UB = unburned (pile burned); B = broadcast burned.

Plot Unique code for the 1-ha experimental plot. Codes: 2, 3, 8, 10, 11, and 13.

Year Sampling year. 2004 is pre-treatment. 2007, 2009, and 2013 are 1, 3, and 7 years after burning and 2, 4, and 8 years after tree removal.

Compositional\_H Heterogeneity of species composition within a plot, computed as the mean Bray-Curtis dissimilarity among all pairs of experimental subplots.

Structural\_H Heterogeneity of structure (growth-form cover and richness) within a plot, computed as the mean Euclidean distance among all pairs of experimental subplots. Prior to computing distances, growth-form cover and richness were log- and square-root transformed, respectively, then standardized (zero mean, unit variance).