**Table S1.** Relationships among forest age structure (encroachment class), tree density and basal area, and the abundance of meadow species and *Carex* prior to experimental tree removal. An agglomerative hierarchical approach was used to classify 356, 10 × 10 m subplots by age structure based on the density of trees (>1.4 m tall) in each of 11, 20-yr age bins. Cover values for meadow species and *Carex* are medians. Encroachment class 0 represents residual meadow openings (no trees). Classes 1-5 represent younger forests (20th-century invasion; ~1920-1980) with progressively greater modal age and dominance (basal area) by *Abies grandis*. Class 6 represents 19th-century invasion (starting ~1820) with a bimodal age structure that reflects stratification of the overstory and understory layers (both dominated by *Abies grandis*). For details on methods of tree aging, classification of subplots, and the relationship between forest age structure and abundance of meadow species, see Halpern *et al.* (2010) and Haugo & Halpern (2007).

| Encroachment class | *n* | Trees (>1.4 m tall) | | | Meadow cover (%) | *Carex* frequency (%) | *Carex* cover (%) |
|---|---|---|---|---|---|---|---|
| | | Primary age bins (yr) | Density (trees/ha) | Basal area (m²/ha) | | | |
| 0 | 28 | — | 0 | 0.0 | 93.0 | 92.9 | 22.8 |
| 1 | 17 | 20, 40 | 188 | 12.5 | 104.5 | 88.2 | 20.0 |
| 2 | 42 | 40 | 1,959 | 20.3 | 45.7 | 97.6 | 15.0 |
| 3 | 70 | 40, 60 | 1,693 | 27.4 | 21.0 | 94.3 | 9.4 |
| 4 | 84 | 60, 40 | 1,532 | 42.3 | 8.3 | 83.3 | 5.5 |
| 5 | 77 | 60 | 1,251 | 41.2 | 4.6 | 77.9 | 1.7 |
| 6 | 38 | 140, 60 | 1,055 | 117.2 | 3.2 | 55.3 | 0.3 |

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