

Table S1. Characteristics of the study species (Klinka et al., 2000). Subscripts ‘c’ and ‘i’ indicate respectively coastal and interior ranges

Species	Tolerance							Range (Western North America)
	Shade	Fire	Frost	Heat	Drought	Water surplus	Snow	
Alaska-cedar	High	Low	Low	Low	Medium	High	Medium	Coastal
Amabilis fir	High	Low	Medium	Low	Low	High	High	Coastal
Black cottonwood	Low	Low	Medium	Medium	Low	High	Medium	Coastal to interior
Douglas-fir _c	Low	Medium	Low	Medium	Medium	Low	Low	Coastal
Douglas-fir _i	High	High	Medium	High	Medium	Low	Medium	Interior
Engelmann spruce	Medium	Low	High	Medium	Medium	High	High	Interior
Grand fir _c	Low	Low	Low	Medium	Medium	High	Medium	Coastal
Grand fir _i	Medium	Low	Medium	Medium	Medium	High	Medium	Interior
Lodgepole pine	Low	High	Medium	Medium	High	High	Low	Coastal and interior
Mountain hemlock _{c,i}	High	Low	Medium	Low	Low	Medium	Medium	Coastal and interior
Ponderosa pine	Low	High	Medium	High	High	High	Medium	Coastal to interior
Red alder	Low	Low	Low	Low	Low	High	Low	Coastal
Sitka spruce	Medium	Low	Low	Low	Low	High	Low	Coastal
Subalpine fir	High	Low	High	Medium	Medium	High	High	Interior
Western hemlock _c	High	Low	Low	Low	Low	Medium	Low	Coastal

Western hemlock _i	High	Low	Low	Low	Low	Medium	Medium	Interior
Western larch	Low	High	Medium	Medium	Medium	Low	High	Interior
Western redcedar _c	High	Low	Low	Medium	Medium	High	Low	Coastal
Western redcedar _i	High	Medium	Medium	Medium	Medium	High	Medium	Interior
Western white pine _c	Medium	Medium	Medium	Medium	Low	High	High	Coastal
Western white pine _i	Medium	High	High	Medium	Low	High	High	Interior

Table S2. Correlation coefficient between the continuous explanatory variables. AN_T = mean annual temperature, JJA_T = mean summer temperature between June to August, annual (PDSI_AN) and June-August PDSI (Palmer Drought Severity Index; PDSI_JJA). ED = establishment date.

Variables	AN_T (°C)	JJA_T (°C)	PDSI_AN	PDSI_JJA	ED	Latitude (°N)	Longitude (°W)	Elevation
AN_T (°C)								
JJA_T (°C)	0.848							
PDSI_AN	0.065	0.017						
PDSI_JJA	0.108	0.077	0.947					
ED	0.157	0.278	-0.026	0.084				
Latitude (°N)	-0.327	-0.432	0.029	-0.023	-0.306			
Longitude (°W)	0.156	-0.171	0.048	0.028	-0.329	0.721		
Elevation (m)	-0.460	-0.244	-0.079	-0.054	0.174	-0.661	-0.786	

Table S3. Average of the whole plots SI with standard deviation for each species.

Species	SI \pm SD
Alaska-cedar	8.48 \pm 3.02
Amabilis fir	16.84 \pm 7.39
Black cottonwood	21.66 \pm 7.02
Douglas-fir _c	27.66 \pm 7.92
Douglas-fir _i	17.21 \pm 7.25
Engelmann spruce	12.51 \pm 4.54
Grand fir _c	29.13 \pm 7.65
Grand fir _i	21.26 \pm 9.44
Lodgepole pine	14.98 \pm 4.96
Mountain hemlock _c	5.97 \pm 2.93
Mountain hemlock _i	10.69 \pm 3.24
Ponderosa pine	16.98 \pm 8.42
Red alder	27.18 \pm 4.99
Sitka spruce	24.28 \pm 8.63
Subalpine fir	12.15 \pm 4.90
Western hemlock _c	21.74 \pm 7.58
Western hemlock _i	16.05 \pm 4.57
Western larch	19.27 \pm 4.00
Western redcedar _c	17.95 \pm 5.90
Western redcedar _i	14.71 \pm 5.17
Western white pine _c	19.27 \pm 6.01

Western white pine; 20.71 ± 6.26

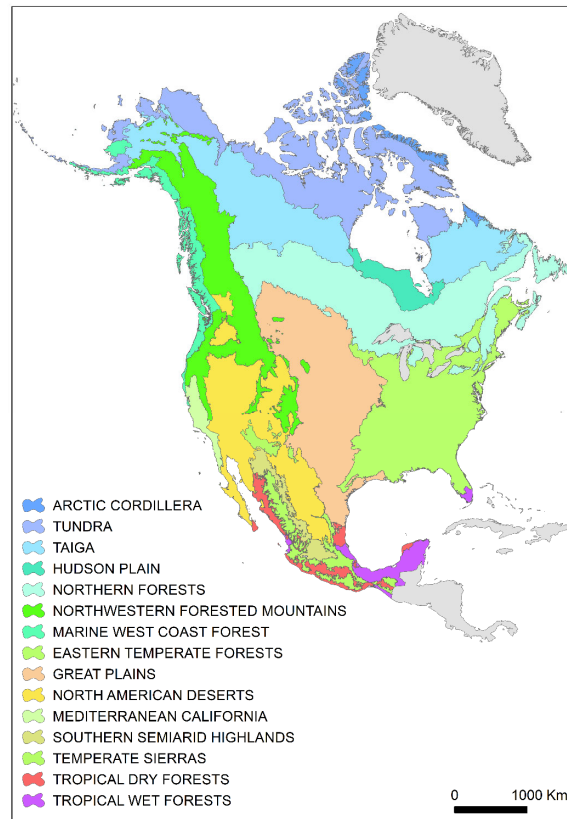


Figure S1. Major ecoregions of North America (http://ecologicalregions.info/htm/na_eco.htm).