

Article

Climatic Aridity Shapes Post-Fire Interactions between *Ceanothus* spp. and Douglas-Fir (*Pseudotsuga menziesii*) across the Klamath Mountains

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Supplementary Materials

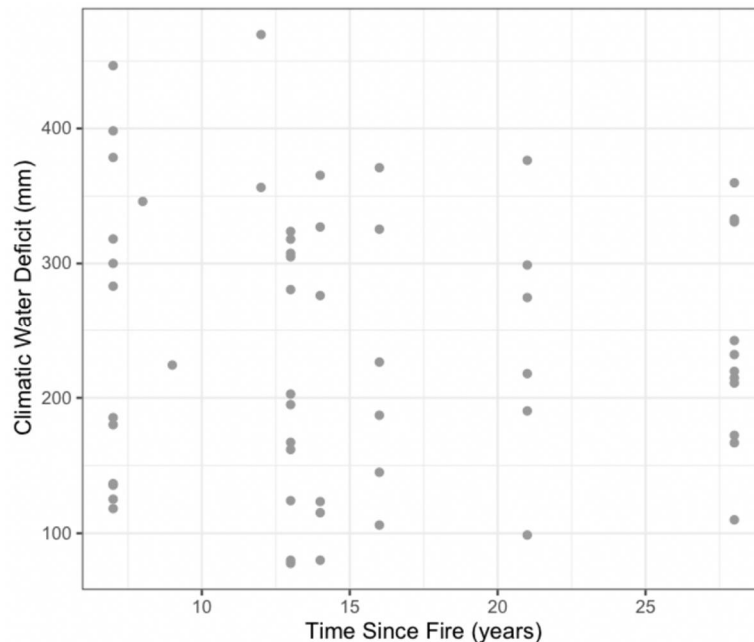


Figure S1. Climatic water deficit and time since fire. Scatter plot of climatic water deficit (78–470 mm) and time since fire (1985–2009) for 57 plots in the Klamath study region.

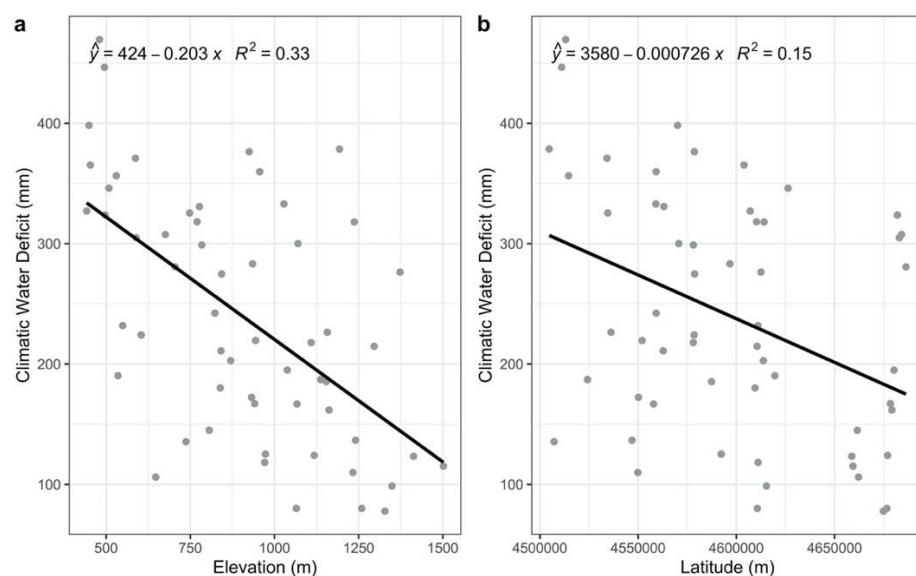


Figure S2. Elevation and latitude. Linear regressions of climatic water deficit (78–470 mm) of 57 plots in the Klamath study region for which site topographic variables of latitude (m) and elevation (m) have been assessed.

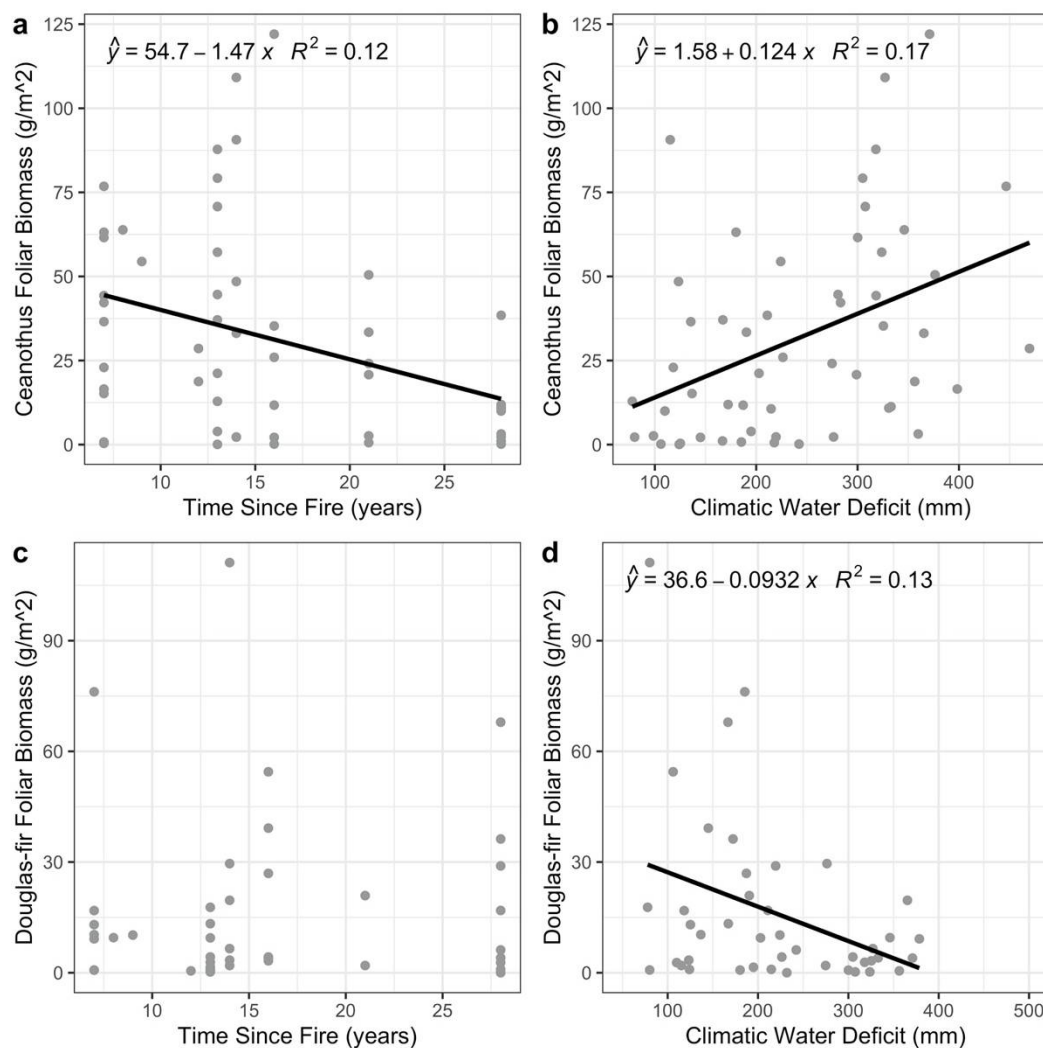


Figure S3. Foliar biomass regressions. Linear regressions of *Ceanothus* spp. and Douglas-fir foliar biomass with time since fire and climatic water deficit. Black regression lines demonstrate significant relationships ($p < 0.05$).

Table S1. Species' Latin names. List of species Latin names and abbreviations.

Abbreviation	Latin Name
ABCO	<i>Abies concolor</i>
ACCI	<i>Acer circinatum</i>
ACMA3	<i>Acer macrophyllum</i>
ALRU	<i>Alnus rubra</i>
AMAL2	<i>Amelanchier alnifolia</i>
ARCO3	<i>Arctostaphylos columbiana</i>
ARME	<i>Arbutus menziesii</i>
ARPA6	<i>Arctostaphylos patula</i>
ARVI4	<i>Arctostaphylos viscida</i>
CADE27	<i>Calocedrus decurrens</i>
CECO	<i>Ceanothus cordulatus</i>
CECU	<i>Ceanothus cuneatus</i>
CEIN	<i>Ceanothus integerrimus</i>
CEOC	<i>Cercis occidentalis</i>
CEPR	<i>Ceanothus prostratus</i>
CESA	<i>Ceanothus sanguineus</i>
CETH	<i>Ceanothus thyrsiflorus</i>
CEVE	<i>Ceanothus velutinus</i>
CHCH7	<i>Chrysolepis chrysophylla</i>
COCOC	<i>Corylus cornuta</i>
CONU4	<i>Cornus nutallii</i>
COSE	<i>Cornus sessilis</i>
FRCA	<i>Frangula californica</i>
GAFR	<i>Garrya fremontii</i>
GASH	<i>Gaultheria shallon</i>
HEAR	<i>Heteromeles arbutifolia</i>
HODI	<i>Holodiscus discolor</i>
KECO	<i>Keckiella corymbosum</i>
LIDE3	<i>Lithocarpus densifolius</i>
LOCI	<i>Lonicera ciliosa</i>
LOHE	<i>Lonicera</i> spp.
LOHI2	<i>Lonicera hispidula</i>
LOSP	<i>Lonicera</i> spp.
MAAQ2	<i>Mahonia aquifolium</i>
MANE	<i>Mahonia nervosa</i>
PHLE	<i>Philadelphus lewisii</i>
PHMA	<i>Physocarpus malvaceus</i>
PHME	<i>Physocarpus</i> spp.
PIAT	<i>Pinus attenuata</i>
PILA	<i>Pinus lambertiana</i>
PIMO	<i>Pinus monticola</i>
PINUS	<i>Pinus</i> , not identified to species
PIPO	<i>Pinus ponderosa</i>
PREM	<i>Prunus emarginata</i>
PSME	<i>Pseudotsuga menziesii</i>

QUCH2	Quercus chrysolepis
QUGA	Quercus garryana
QUKE	Quercus kelloggii
QUVA	Quercus vaccinifolia
RHPU	Rhamnus purshiana
RIRO	Ribes roezlii
RISA	Ribes sanguineum
ROGY	Rosa gymnocarpa
RUAR	Rubus ar
RULE	Rubus leucodermis
RUPA	Rubus parviflorus
RUUR	Rubus ursinus
SACE3	Sambucus cerula
SALIX	Salix spp.
SAME	Sambucus Mexicana
SARA	Sambucus racemose
SYAL	Symphoricarpos albiflorus
SYMO	Symphoricarpos mollis
TODI	Toxicodendron diversilobum
UMCA	Umbellularia californica
VACA	Vaccinium caespitosum
VAOV2	Vaccinium ovatum
VAPA	Vaccinium parvifolium

Table S2. Regression models. Summary of the regression models included in the analysis.

Response Variable	Explanatory Variable(s)	R ²	p-value	Coefficient(s)
Ceanothus biomass	Time since fire	0.1157	0.0136	−13.301
Ceanothus biomass	Climatic water deficit	0.08363	0.0376	0.8236
Ceanothus biomass	(1) Time since fire, (2) Climatic water deficit	0.1906	(1) 0.01415, (2) 0.03836	(1) −12.7994, (2) 0.7799
Douglas-fir biomass	Time since fire	0.003813	0.694	0.3667
Douglas-fir biomass	Climatic water deficit	0.1329	0.016255	−0.17055
Douglas-fir biomass	(1) Time since fire, (2) Climatic water deficit	0.1352	(1) 0.74326, (2) 0.01807	(1) 0.28814, (2) −0.16973
Soil C	Time since fire	0.03754	0.156376	0.1623
Soil C	Climatic water deficit	0.101	0.018	−0.018801
Soil N	Time since fire	0.01268	0.413	0.003011

Soil N		Climatic water deficit	0.03059	0.202	0.006884
Soil C:N	Time since fire	0.05566	0.0829	0.2446	
Soil C:N	Climatic water deficit	0.1724	0.00162	−0.030393	
Soil N	Ceanothus biomass	5.558e-05			
Soil C:N	Ceanothus biomass	0.2552	0.000183	−0.013232	
Soil C:N	(1) Ceanothus biomass, (2) Climatic water deficit, (3) Ceanothus biomass:Climatic water deficit	0.4278	(1) 0.001890, (2) 0.000699, (3) 0.033708	(1) −0.02784, (2) −0.04747, (3) 6.47e-05	
Soil C:N	Climatic water deficit	0.2179	0.000633	−0.034599	
Douglas-fir biomass	Ceanothus biomass	0.1582	0.0122	−0.05683	
Douglas-fir biomass	(1) Ceanothus biomass, (2) Climatic water deficit, (3) Ceanothus biomass:Climatic water deficit	0.3078	(1) 0.0112, (2) 0.0102, (3) 0.0331	(1) −1.697e-01, (2) −3.042e-01, (3) 5.098e-04	
Douglas-fir biomass residuals with CWD	Ceanothus biomass residuals with CWD	0.06819	0.108	−0.03783	
Douglas-fir foliar biomass	(1) Ceanothus foliar biomass, (2) Climatic water deficit, (3) Ceanothus	0.3309	(1) 0.00816, (2) 0.01188, (3) 0.03238	(1) −0.875897, (2) −0.151098, (3) 0.002516	

foliar biomass:Climatic water deficit				
Ceanothus foliar biomass	Time since fire	0.1215	0.0105	−1.469
Ceanothus foliar biomass	Climatic water deficit	0.1675	0.00234	0.12447
Douglas-fir foliar biomass	Time since fire	0.003057	0.725	0.1794
Douglas-fir foliar biomass	Climatic water deficit	0.1329	0.016230	−0.09323
Douglas-fir foliar biomass residuals with CWD	Ceanothus foliar biomass residuals with CWD	0.09263	0.0562	−0.2288