

New Phytologist Supporting Information

Article title: Extensive drought-associated plant mortality as an agent of type-conversion in chaparral shrublands

Authors: Jacobsen AL, Pratt RB

Article acceptance date: 21 March 2018

The following Supporting Information is available for this article:

Table S1. Maximum and mean rooting depth as reported by various sources for chaparral shrub species that were surveyed for mortality. Full references for sources are included in Note S1.

Species	Max. Rooting Depth (m; as reported by source)								Mean rooting depth (m) Feng et al. 2017 (calculated)	Rooting Depth (m) <i>Across study average</i>
	Canadell et al. 1996	Hanes 1965	Thomas and Davis 1989	Redfeldt and Davis 1996	Jarbeau et al. 1995	Davis et al. 1998	Hellmers et al. 1955 (Hydraulic excavation)	Hellmers et al. 1955 (Road cuts)		
<i>Adenostoma fasciculatum</i>	2.5	3.2		2.5		2.4	2.7	8.3		3.6
<i>A. sparsifolium</i>	2.4	2.3		13.0		6.0				5.9
<i>Arctostaphylos glauca</i>	2.6						2.8			2.7
<i>Ceanothus crassifolius</i>							1.5			1.5
<i>C. greggi</i>							1.5			1.5
<i>C. megacarpus</i>	2.4		2.2			2.4				2.3
<i>C. spinosus</i>	3.1		2.8							2.9
<i>Cercocarpus betuloides</i>							1.7			1.7
<i>Heteromeles arbutifolia</i>					2.2		2.2			2.2
<i>Malosma (Rhus) laurina</i>	13.2		5.3		13.0	13.2				11.2
<i>Quercus berberidifolia</i>	8.5						2.7	9.3		6.8
<i>Quercus cornelius-mulleri</i>									3.5	3.5
<i>Rhus ovata</i>									5.0	5.0

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Table S2. Rooting depth as qualitatively reported in sources and as inferred from the data reported in Table S1 for chaparral shrub species that were surveyed for mortality. Full references for sources are included in Note S1.

Species	Rooting Depth (category by source)				Mean Rooting Depth (Category)
	Reviewed in Meentemeyer et al. 2001 and Ochel et al. 1981	Poole and Miller 1975	Pratt et al. 2015 (personal observation)	Pratt et al. 2007 (personal observation)	<i>Estimated rooting depth category based on reported categories (left) and values (Table S1)</i>
<i>Adenostoma fasciculatum</i>	Deep	Intermediate	Intermediate		Intermediate
<i>A. sparsifolium</i>					Deep
<i>Arctostaphylos glauca</i>	Shallow	Shallow			Shallow
<i>Ceanothus crassifolius</i>	Shallow			Shallow	Shallow
<i>C. cuneatus</i>				Shallow	Shallow
<i>C. greggi</i>	Shallow	Shallow	Shallow		Shallow
<i>C. megacarpus</i>	Shallow			Shallow	Shallow
<i>C. spinosus</i>	Deep			Intermediate	Intermediate
<i>Cercocarpus betuloides</i>	Deep				Intermediate
<i>Heteromeles arbutifolia</i>	Deep	Intermediate			Intermediate
<i>Malosma (Rhus) laurina</i>	Deep	Deep	Deep		Deep
<i>Quercus berberidifolia</i>	Deep				Deep
<i>Quercus cornelius-mulleri</i>					Deep
<i>Rhamnus ilicifolia</i>				Intermediate	Intermediate
<i>Rhus ovata</i>	Deep	Deep	Deep		Deep

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Table S3. Reported chaparral shrub species mortality as reported by source and life history stage (adult or resprout). For each species, a species abbreviation (Abbev.) is reported as well as the life history type [R indicates resprouting (+) or non-resprouting (-) and S indicates fire-stimulated seedling recruitment (+) or not (-)]. Full references for sources are included in Note S1.

Species	Abbev.	Life history stage	Life history type	Mortality (% or observation)	Mortality data source
<i>Adenostoma fasciculatum</i>	Af	Adult	R+S+	62.8	Venturas et al. 2016
		Adult		37	Paddock et al. 2013
		Adult		low	Coates et al. 2015
		Resprout		73	Pratt et al. 2014
		Resprout		40	Pausas et al. 2015
<i>A. sparsifolium</i>	As	Adult	R+S+	8.7	Venturas et al. 2016
		Adult		12	Paddock et al. 2013
		Resprout		0	Pratt et al. 2014
<i>Arctostaphylos glauca</i>	Ag	Adult	R-S+	77.8	Venturas et al. 2016
		Adult		75	Paddock et al. 2013
<i>Ceanothus cuneatus</i>	Cc	Adult	R-S+	71.4	Venturas et al. 2016
		Adult		high	Coates et al. 2015
<i>C. greggi</i>	Cg	Adult	R-S+	67	Paddock et al. 2013
<i>C. megacarpus</i>	Cm	Adult	R-S+	high	Coates et al. 2015
<i>C. spinosus</i>	Cs	Adult	R+S+	high	Coates et al. 2015
		Adult		91.7-93.3	Venturas et al. 2016
		Resprout		64	Pratt et al. 2014
<i>Cercocarpus betuloides</i>	Cb	Adult	R+S-	0	Venturas et al. 2016
<i>Heteromeles arbutifolia</i>	Ha	Adult	R+S-	12.5	Venturas et al. 2016
		Resprout		27	Pratt et al. 2014
<i>Malosma laurina</i>	Ml	Adult	R+S+	0-3.6	Venturas et al. 2016
		Adult (+pathogen)		0-50	Aguirre et al. 2017
		Resprout		0	Pratt et al. 2014
<i>Quercus cornelius-mulleri</i>	Qc	Adult	R+S-	2	Paddock et al. 2013
<i>Rhamnus ilicifolia</i>	Ri	Adult	R+S-	33.3-100	Venturas et al. 2016
		Resprout		0	Pratt et al. 2014
<i>Rhus ovata</i>	Ro	Adult	R+S+	0	Venturas et al. 2016
		Adult		0	Paddock et al. 2013
		Resprout		0	Pratt et al. 2014

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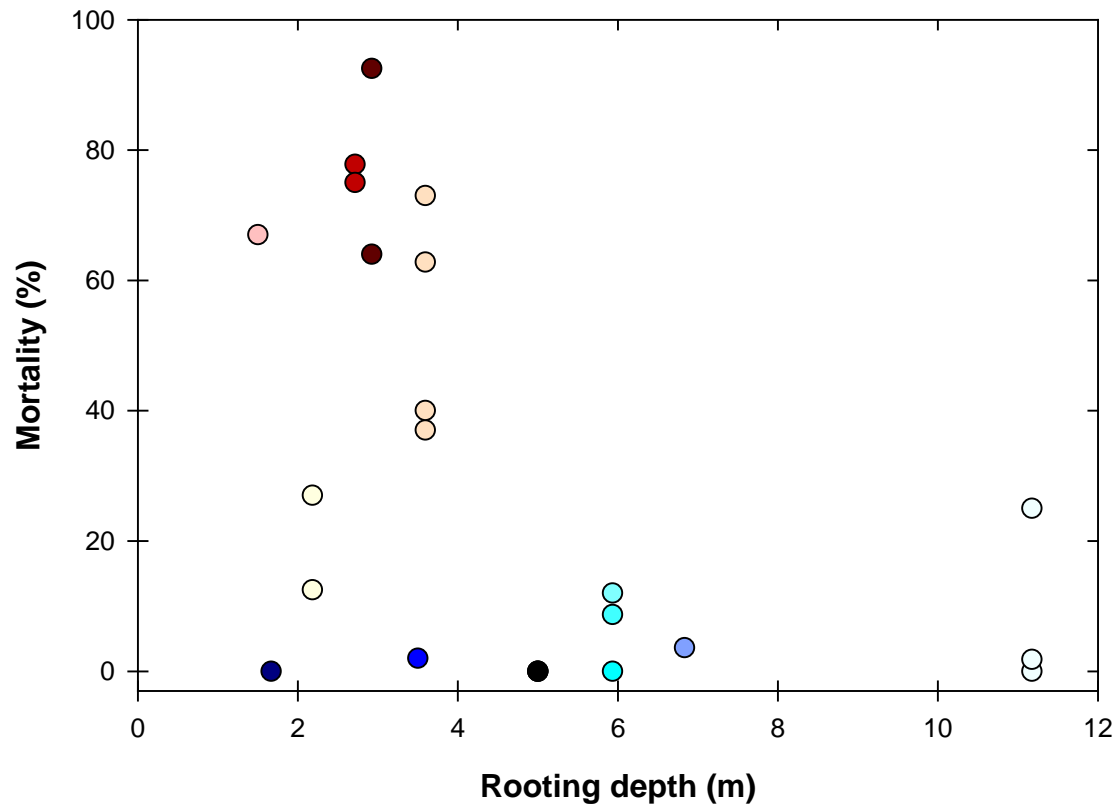


Figure S1. The relationship between rooting depth and mortality. All of the species that exhibited high levels of mortality had relatively shallow rooting depths (<4 m). Points that are the same color are from the same species and differ due to life stage or source. See Figure 2c for the key to species identities by color.

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