

Table S1. Yearly models describing die-off of *Pinus edulis* in relation to climatic suitability and *J. monosperma* co-occurrence. Significance *P* values for each factor in GLMs (with a logit link function and a binomial distribution error structure) of die-off vs live *P. edulis* states in each year during the episode (2001-2007). For each year different models were run (columns), varying the estimation of the climatic suitability for pixels: the respective year (Year), the two previous years (Year-1, Year-2), the mean values of these three years and mean value since 2001 (*ECS*). Sign of the factor's estimate is in brackets. Values corresponding to interception, latitude and longitude are not shown as they were always significant ($P < 0.05$). N: number of die-off pixels. AIC: Akaike Information Criterion.

2001 (N = 32)					
Term	Year-2 1999	Year-1 2000	Year 2001	Mean 1999-2001	Since 2001 (<i>ECS</i>)
HCS	0.317	0.005(+)	0.006(+)	0.022(+)	0.073
EpisodeCS	<0.001(-)	0.868	0.522	0.029(-)	0.005(-)
HCS-SD	0.904	0.968	0.570	0.502	0.025(-)
HCS x EpisodeCS	0.474	0.683	0.509	0.640	0.008(-)
HCS x HCS-SD	0.943	0.878	0.785	0.842	0.667
EpisodeCS x HCS-SD	0.966	0.675	0.051	0.432	<0.001(-)
Juniperus occurrence	0.429	0.574	0.721	0.797	0.686
AIC	293.4	320.3	314.4	310.5	231.3

2002 (N = 183)					
Term	Year-2 2000	Year-1 2001	Year 2002	Mean 2000-02	Since 2001 (<i>ECS</i>)
HCS	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)
EpisodeCS	0.196	0.016(-)	0.446	0.682	<0.001(-)
HCS-SD	0.032(-)	0.425	0.332	0.130	0.193
HCS x EpisodeCS	0.636	0.586	0.602	0.929	0.086
HCS x HCS-SD	0.544	0.234	0.168	0.293	0.006(-)
EpisodeCS x HCS-SD	0.173	0.040(+)	0.054	0.575	0.010(+)
Juniperus occurrence	0.035(-)	0.127	0.080	0.061	0.512
AIC	1231.2	1223.3	1232.7	1236.3	1179.2

Table S1 (continue)

2003 (N = 1239)					
Term	Year-2 2001	Year-1 2002	Year 2003	Mean 2001-03	Since 2001 (ECS)
HCS	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)
EpisodeCS	<0.001(-)	0.085	<0.001(-)	0.334	<0.001(-)
HCS-SD	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)
HCS x EpisodeCS	0.803	0.724	<0.001(+)	0.096	0.029(+)
HCS x HCS-SD	0.041(-)	0.045(-)	0.018(-)	0.040(-)	0.002(-)
EpisodeCS x HCS-SD	0.399	0.149	0.860	0.114	0.664
Juniperus occurrence	0.173	0.046(-)	0.001(-)	0.063	0.597
AIC	4171.2	4191.7	4160.0	4192.3	4083.9

2004 (N = 628)					
Term	Year-2 2002	Year-1 2003	Year 2004	Mean 2002-2004	Since 2001 (ECS)
HCS	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)
EpisodeCS	0.288	0.050	0.204	0.388	0.516
HCS-SD	0.008(+)	0.003(+)	0.057	0.008(+)	0.021(+)
HCS x EpisodeCS	0.760	0.018(+)	0.017(+)	0.030(+)	0.043(+)
HCS x HCS-SD	0.243	0.181	0.439	0.250	0.254
EpisodeCS x HCS-SD	0.592	0.804	0.008(-)	0.393	0.084
Juniperus occurrence	0.098	0.030(-)	0.047(-)	0.069	0.089
AIC	2863.1	2847.3	2854.3	2857.3	2859.4

Table S1 (continue)

2005 (N = 272)					
Term	Year-2 2003	Year-1 2004	Year 2005	Mean 2003-05	Since 2001 (ECS)
HCS	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)
EpisodeCS	0.142	<0.001(-)	0.655	0.053	<0.001(-)
HCS-SD	0.001(+)	0.011(+)	0.005(+)	<0.001(+)	0.027(+)
HCS x EpisodeCS	0.021(+)	<0.001(+)	0.740	<0.001(+)	0.048(+)
HCS x HCS-SD	0.082	0.092	0.157	0.039(-)	0.033(-)
EpisodeCS x HCS-SD	0.164	0.519	0.276	0.717	0.081
Juniperus occurrence	0.374	0.600	0.637	0.639	0.576
AIC	1486.5	1483.4	1511.9	1496.5	1455.4

2006 (N = 64)					
Term	Year-2 2004	Year-1 2005	Year 2006	Mean 2004-06	Since 2001 (ECS)
HCS	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)	<0.001(+)
EpisodeCS	0.029(-)	0.096	0.477	0.023(-)	0.012(-)
HCS-SD	0.881	0.276	0.469	0.707	0.394
HCS x EpisodeCS	0.088	0.817	0.952	0.234	0.392
HCS x HCS-SD	0.970	0.723	0.612	0.951	0.770
EpisodeCS x HCS-SD	0.648	0.346	0.795	0.999	0.311
Juniperus occurrence	0.013(-)	0.044(-)	0.009(-)	0.014(-)	0.027(-)
AIC	512.5	511.6	516.3	511.6	507.4

Table S1 (continue)

2007 (N = 24)					
Term	Year-2 2005	Year-1 2006	Year 2007	Mean 2005-07	Since 2001 (ECS)
HCS	0.024(+)	0.002(+)	0.012(+)	0.002(+)	0.009(+)
EpisodeCS	0.660	0.096	0.799	0.346	0.931
HCS-SD	0.439	0.290	0.539	0.280	0.549
HCS x EpisodeCS	0.216	0.014(+)	0.005(+)	0.005(+)	0.562
HCS x HCS-SD	0.183	0.049(-)	0.076	0.034(-)	0.205
EpisodeCS x HCS-SD	0.615	0.331	0.520	0.207	0.677
Juniperus occurrence	0.285	0.159	0.159	0.132	0.161
AIC	262.9	259.2	251.7	255.1	256.0

Figure S1. Between-year variability of historical pre-episode (1972-2000) climatic suitability (*HCS-SD*) for *P. edulis* in all pixels where die-off was detected in the respective years and in live pixels that remained without die-off after 2007. Red line indicates mean value of live pixels. Significant effects of *HCS-SD* on GLMs explaining die-off in the respective years are shown (ns: no significant; *: $p < 0.05$; **: $p < 0.001$). Red line indicates mean value of live pixels.

