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David M. Forsyth, Deborah J. Wilson, Tomás A. Easdale, Georges Kunstler, Charles D. Canham, Wendy A. Ruscoe, Elaine F. Wright, Lora Murphy, Andrew M. Gormley, Aurora Gaxiola, and David A. Coomes. 2014. Century-scale effects of invasive deer and rodents on the dynamics of forests growing on soils of contrasting fertility. *Ecological Monographs* VOL:pp–pp.

APPENDIX I. Tables and figures summarizing the results of our field study investigating the effects of the presence and absence of deer on seedling growth and mortality rates in alluvial and marine terrace forests.

The figures and tables below show the seedling height growth and mortality rates observed in the presence (+) and absence (–) of deer in our field study. Figure I1 shows the annual seedling growth and mortality rates for the species growing in the alluvial terrace forest and Fig. I2 shows the annual seedling growth and mortality rates for the species growing in the marine terrace forest. The left panels of Figs. I1 and I2 are the seedling growth rates in the presence and absence of deer estimated using the modified Michaelis–Menten function (Eq. 3), and the right panels of Figs. I1 and I2 are the seedling mortality rates in the presence and absence of deer estimated using the negative exponential function (Eq. 4). Tables I1 and I2 are the parameter estimates for the alluvial terrace forest species' seedling growth and mortality functions shown in Fig. I1. Tables I3 and I4 are the parameter estimates for the marine terrace forest species' seedling growth and mortality functions shown in Fig. I2.

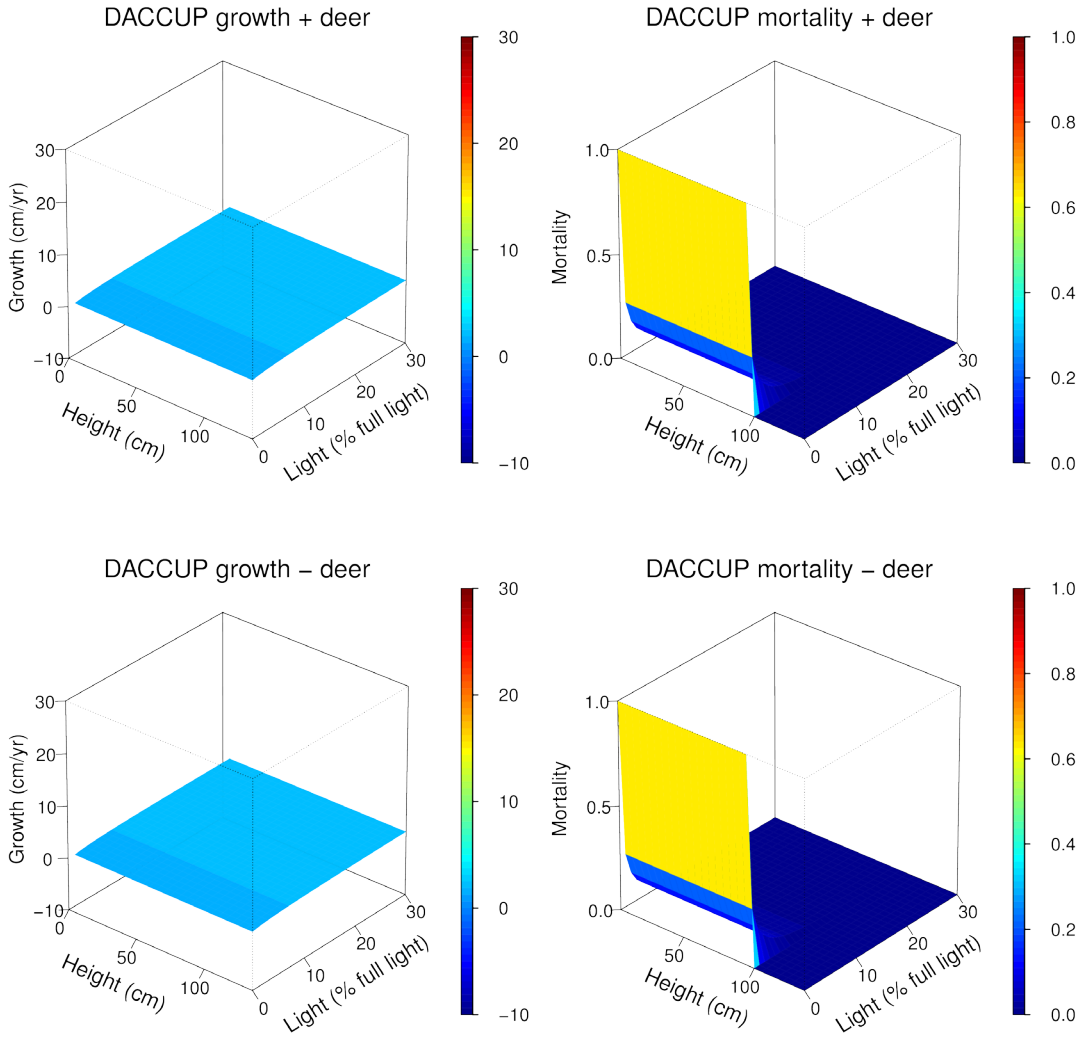
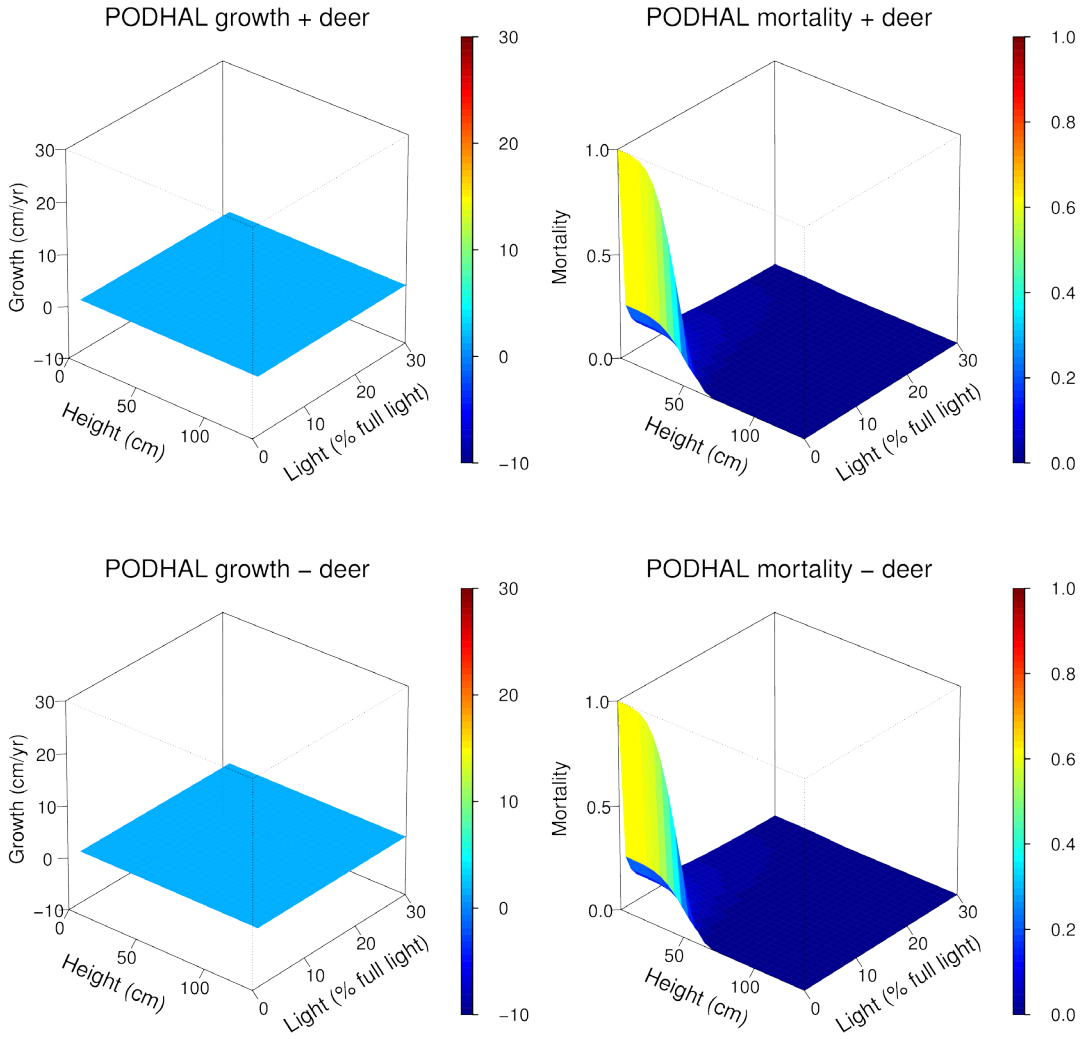


FIG. I1 (continued overleaf). Modeled annual seedling height growth and mortality rates for the 13 alluvial terrace forest tree species in the presence (+) and absence (−) of deer. For species acronyms see Table 1.



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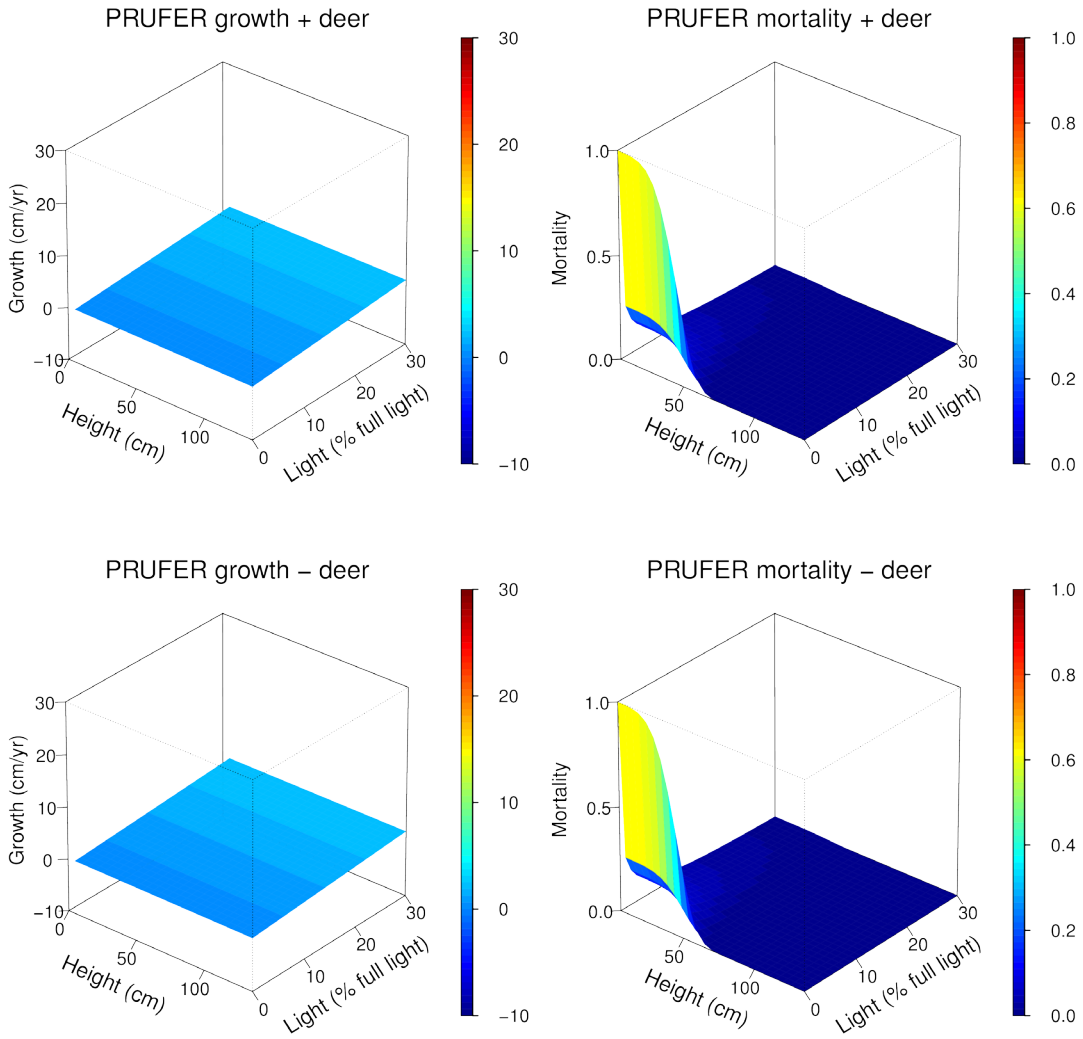

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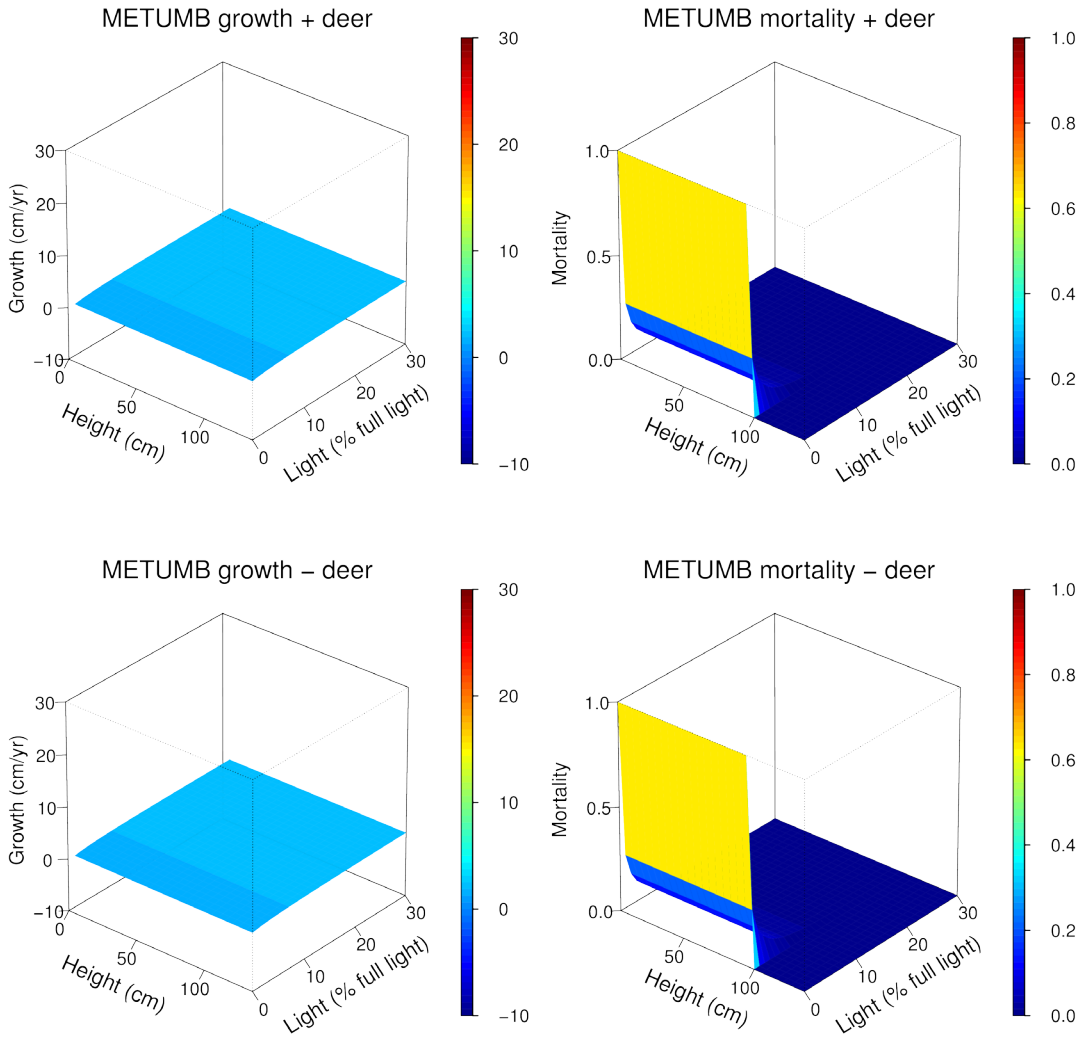

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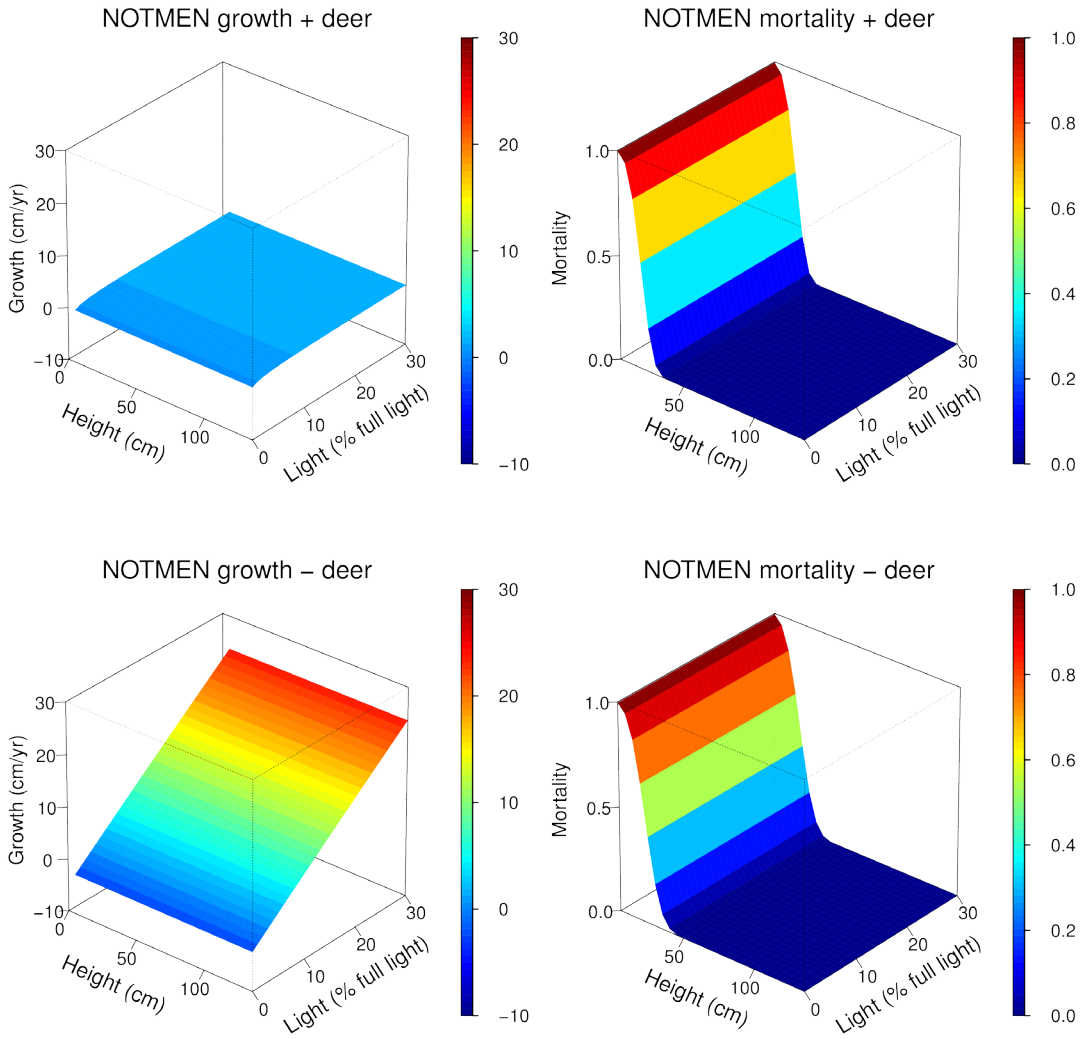

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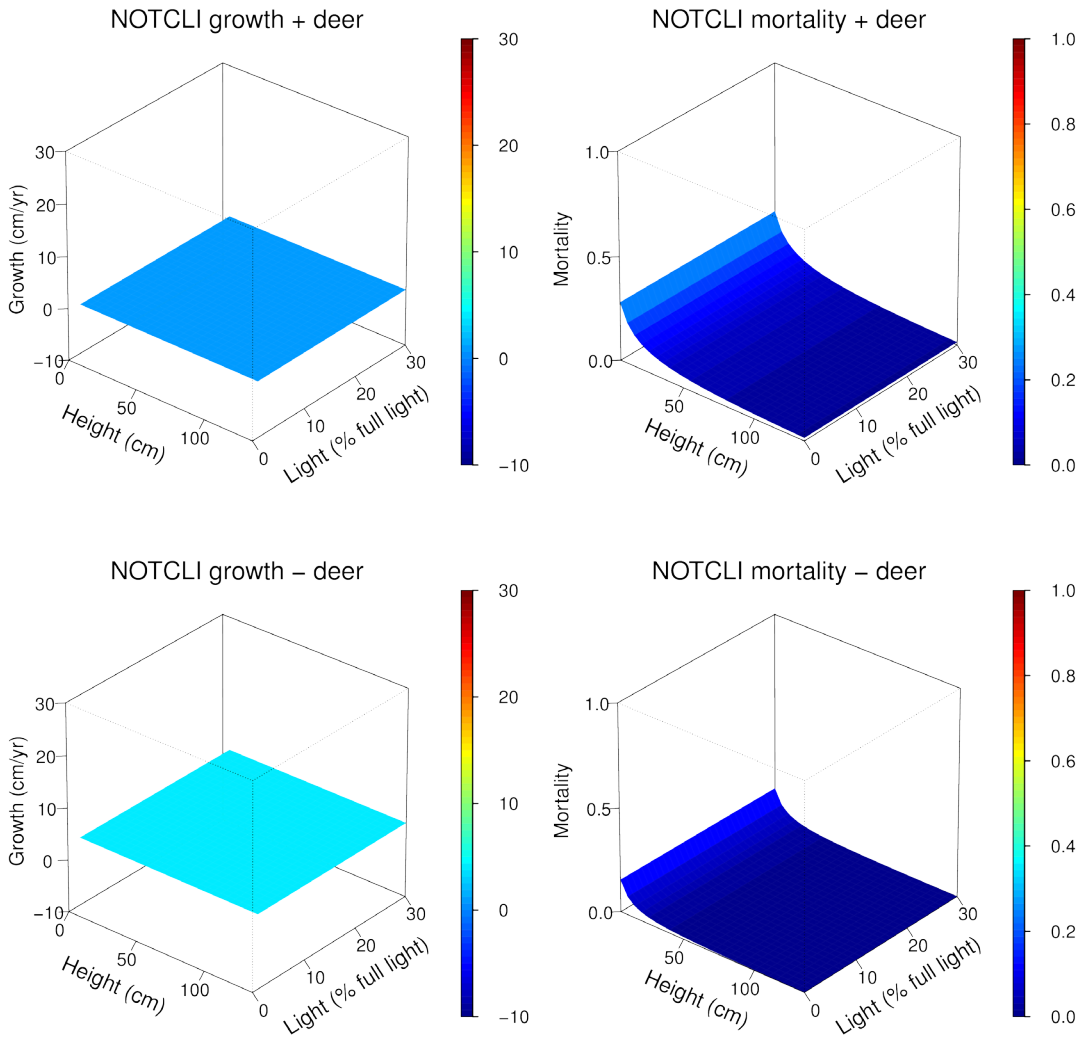

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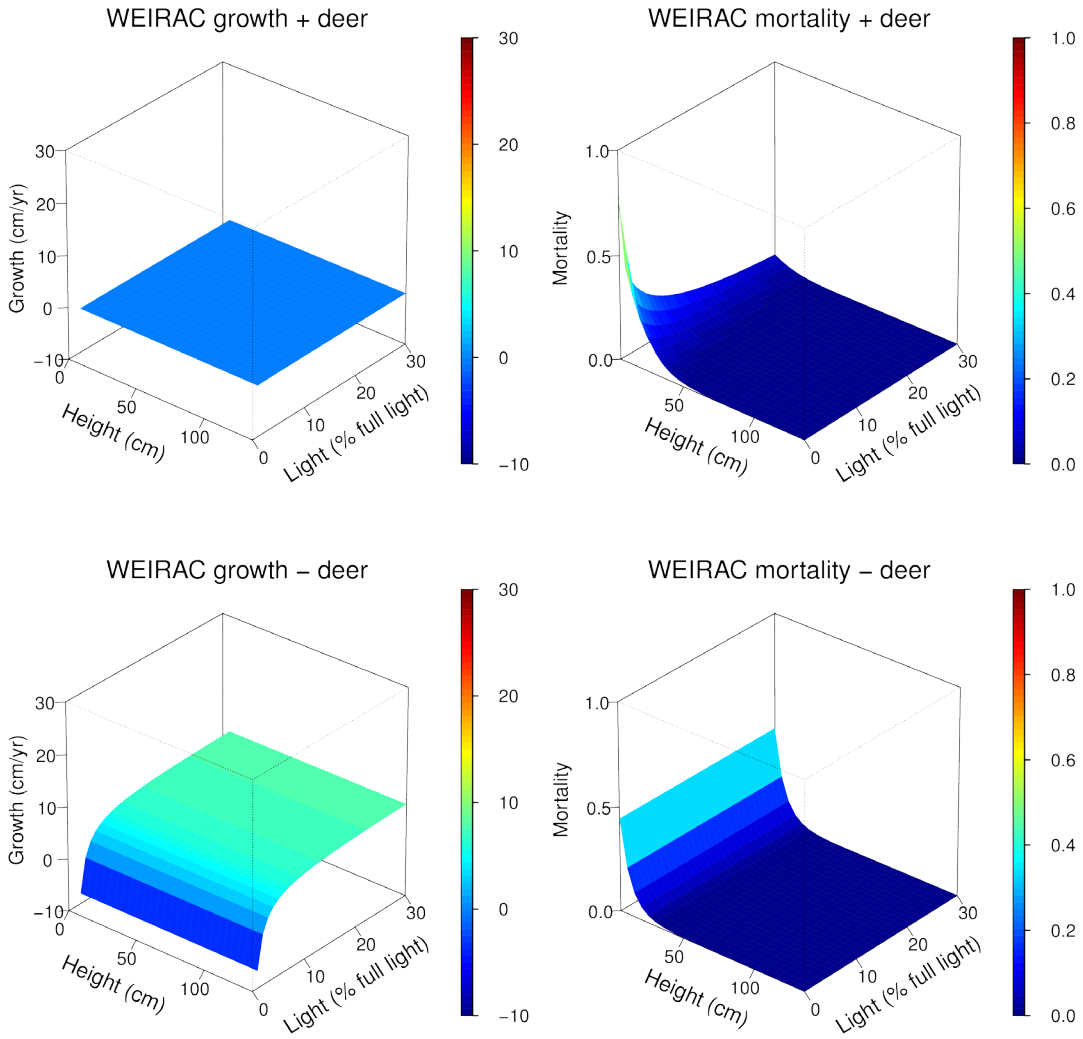

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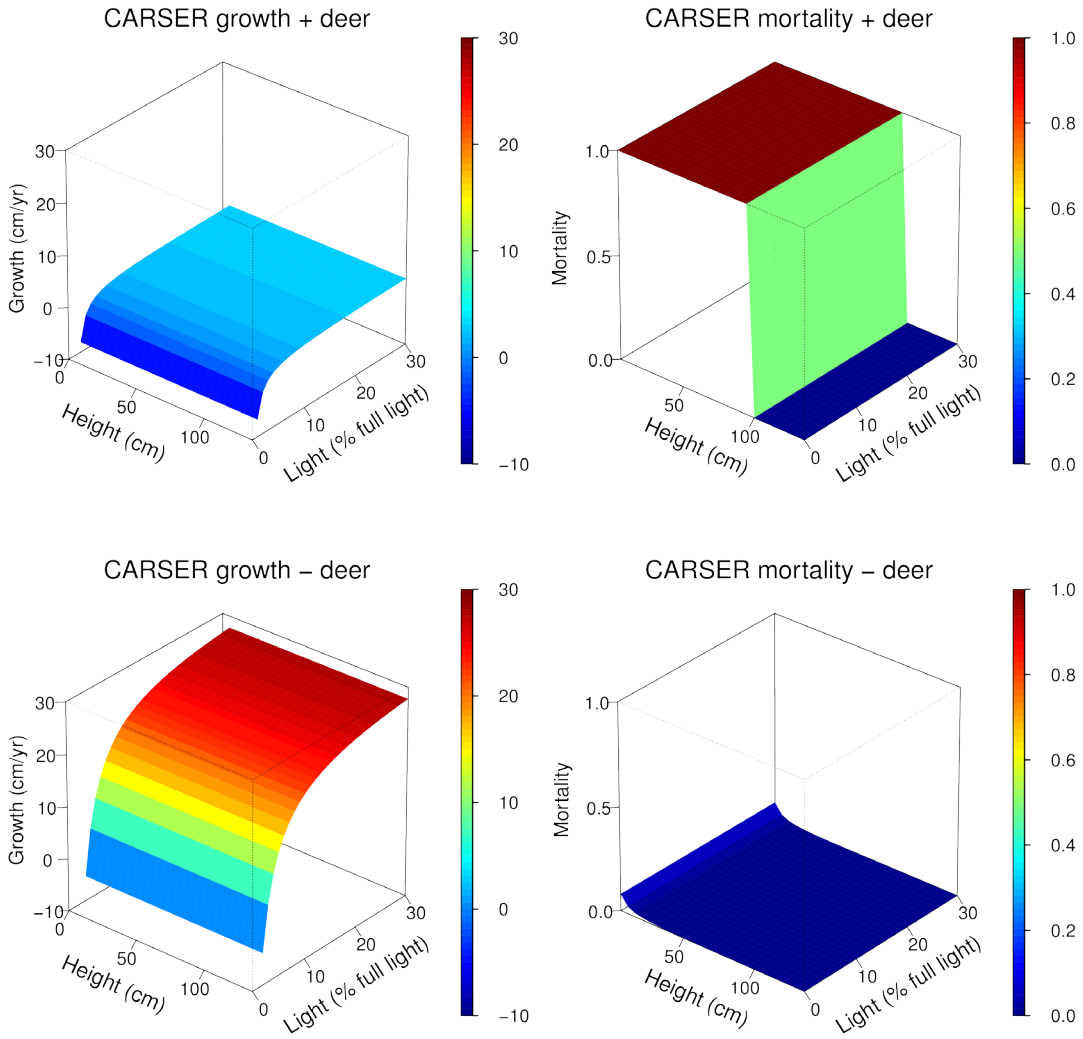

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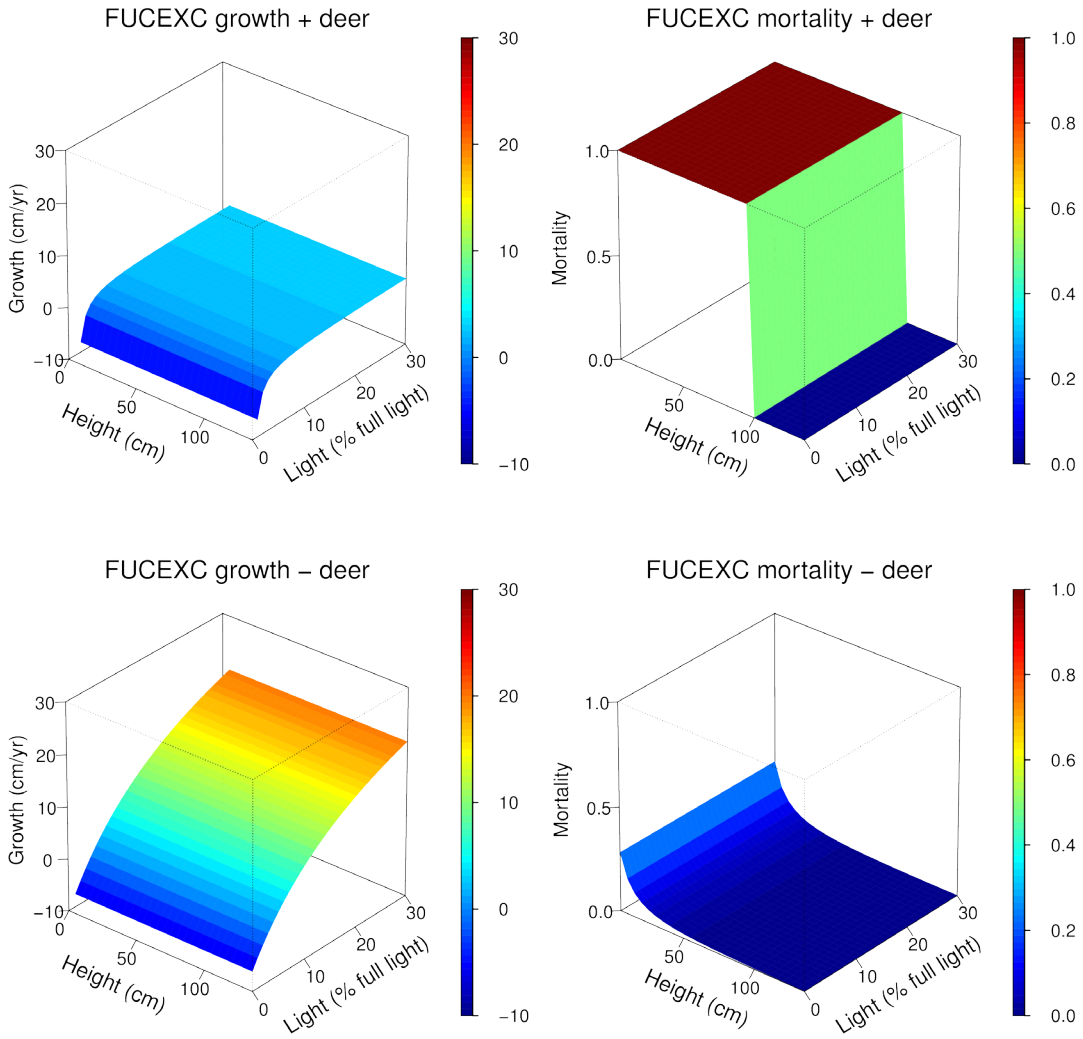

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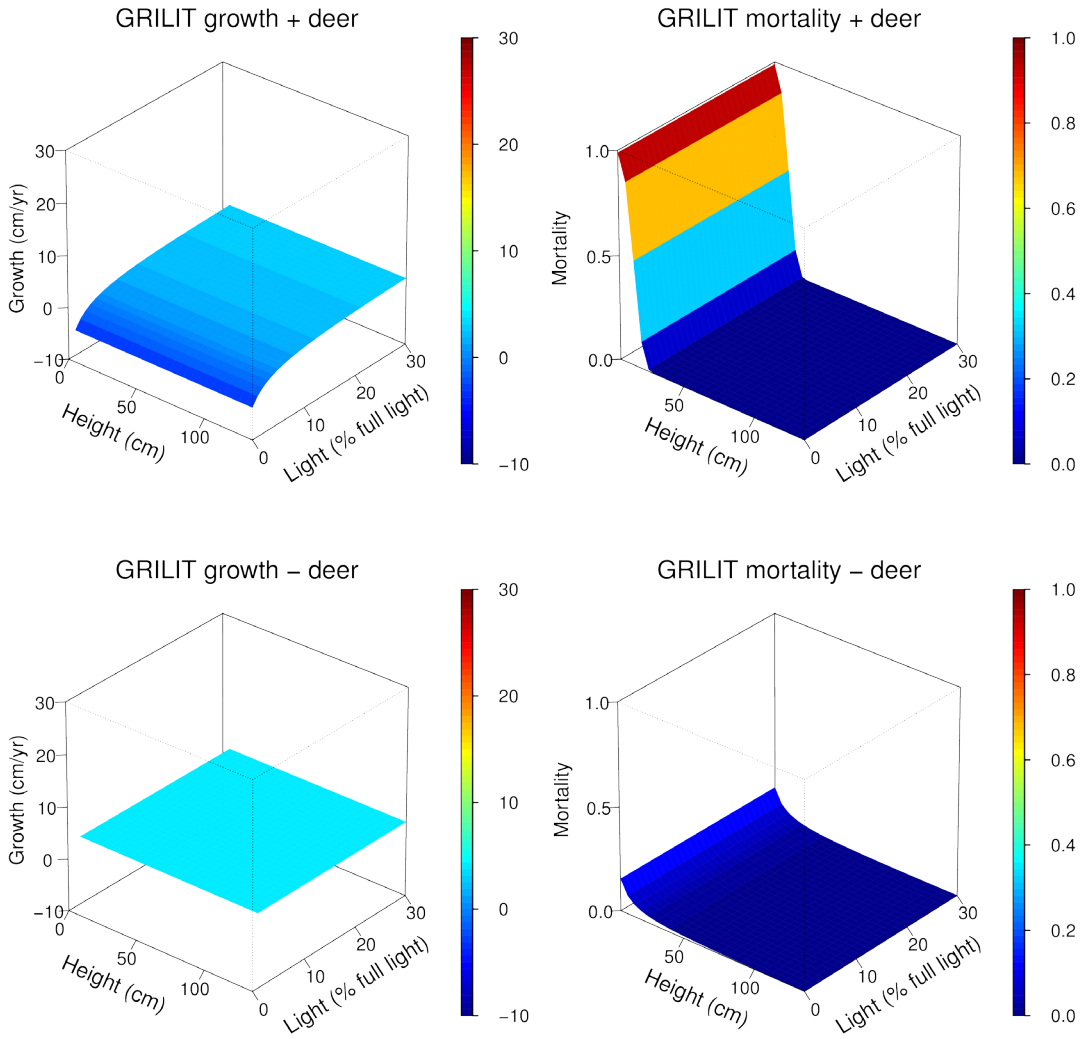

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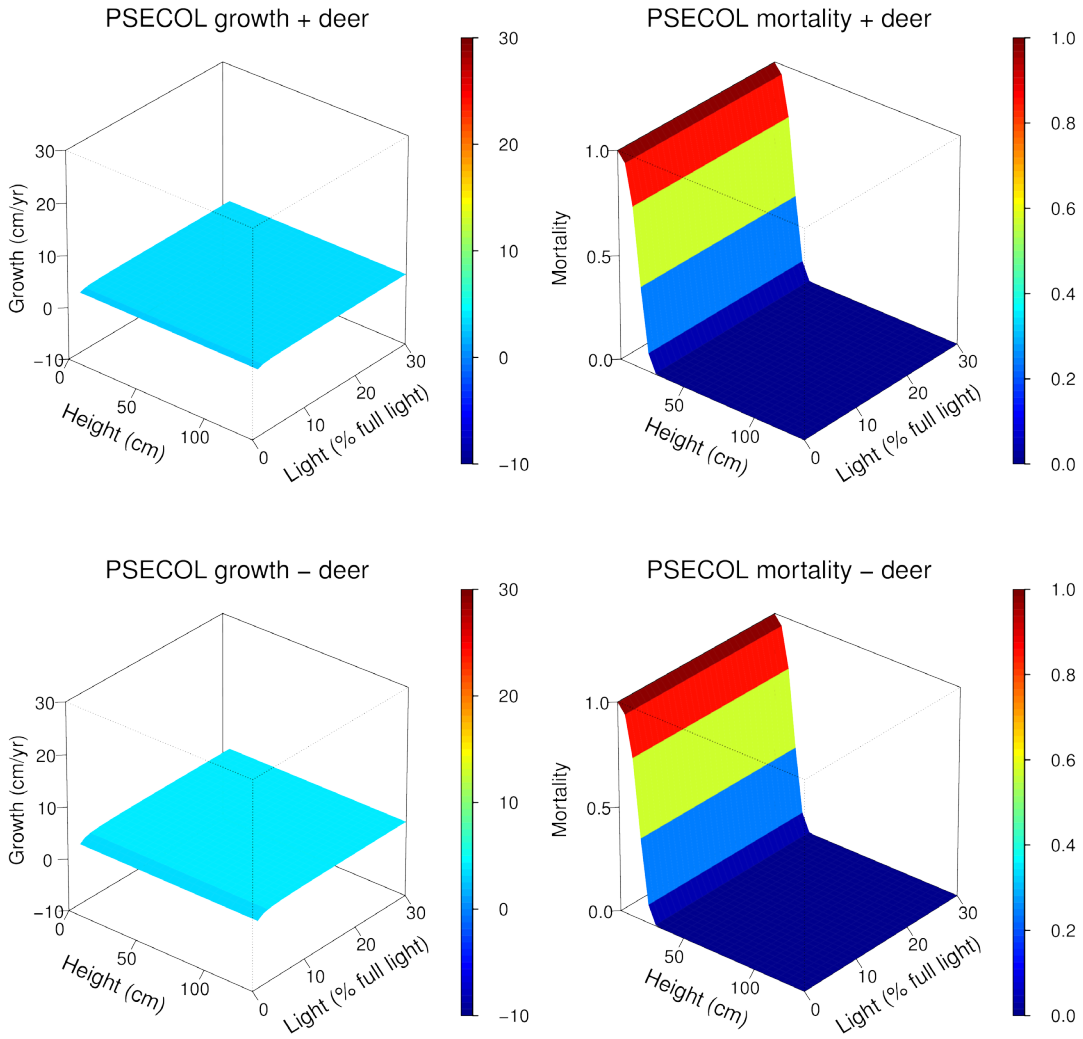

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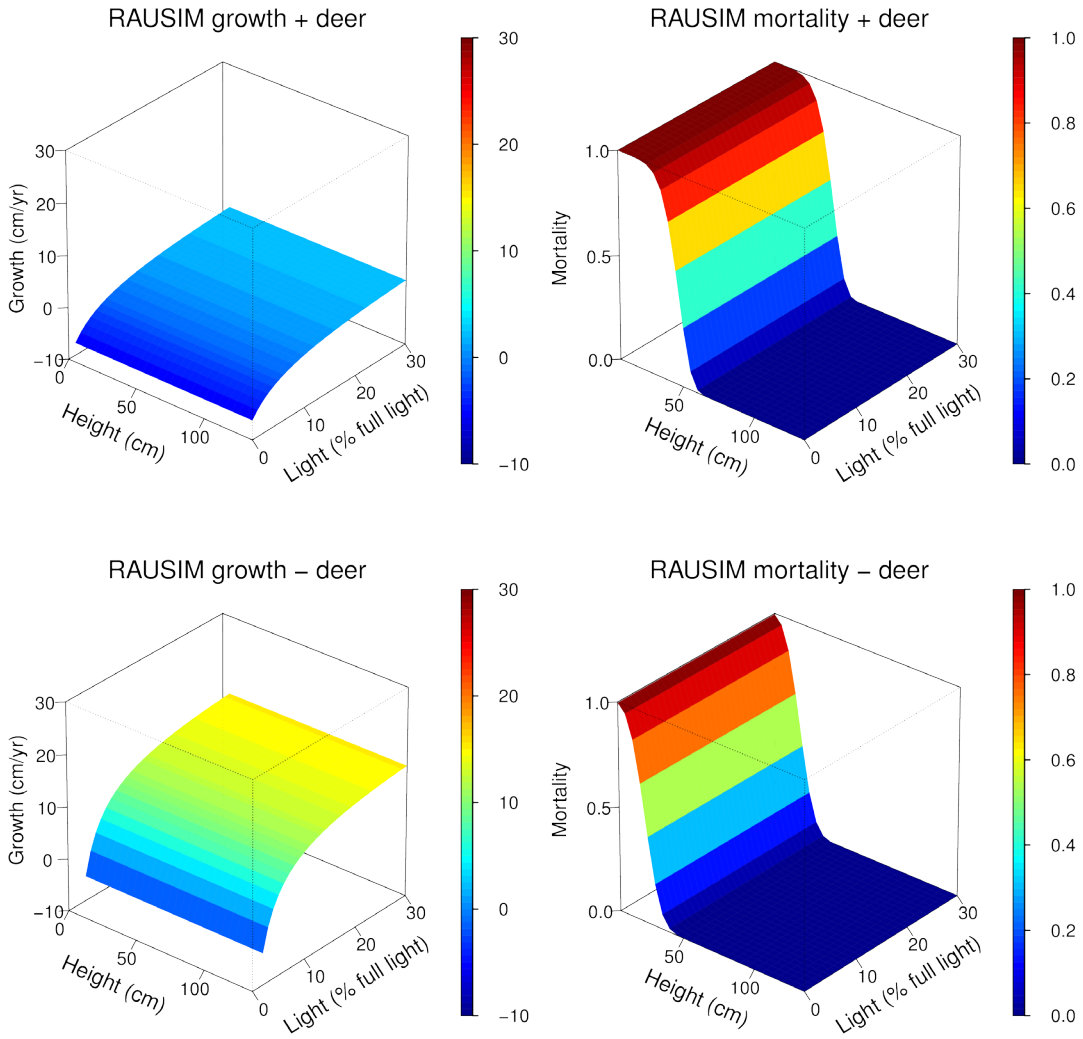

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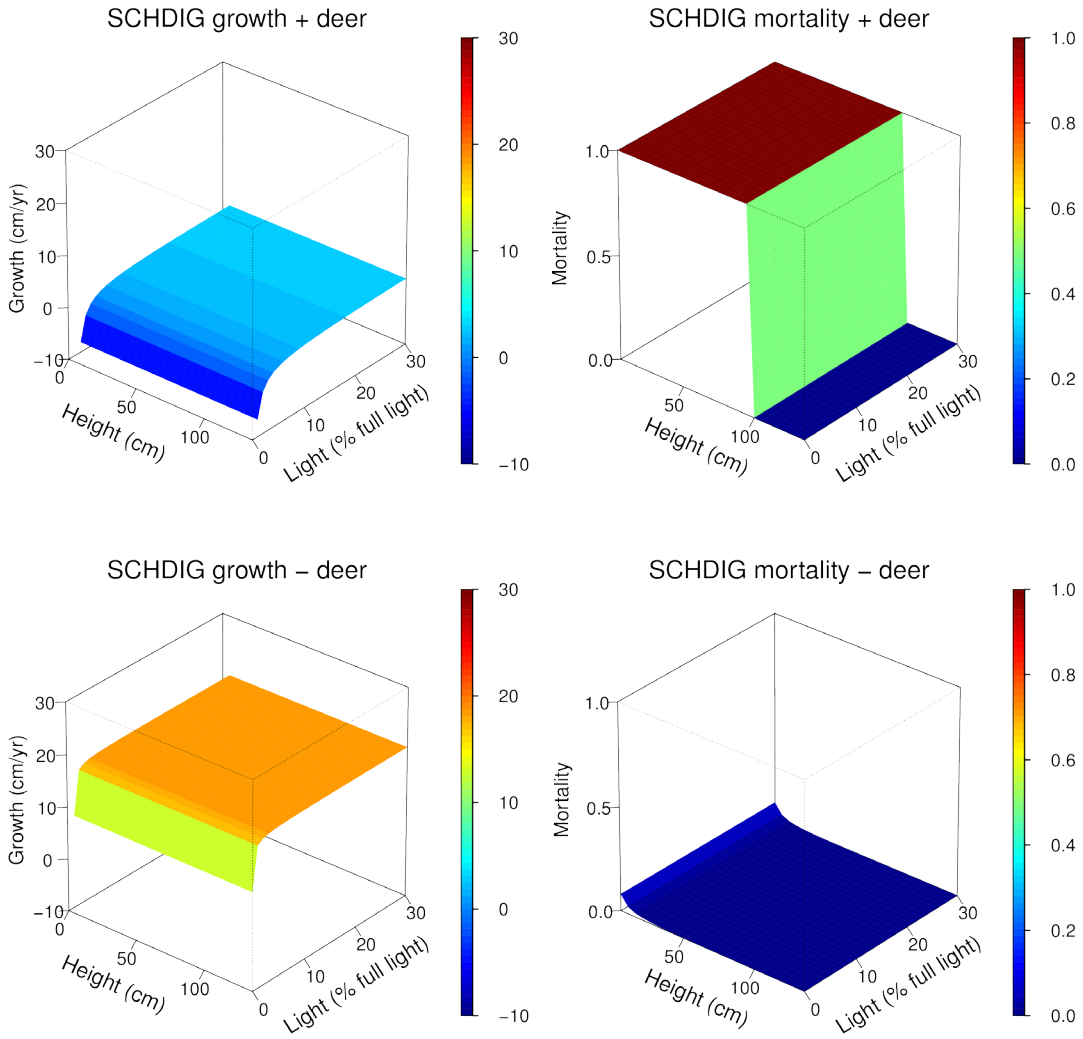


FIG. I1 (continued). Modeled annual seedling height growth and mortality rates for the 13 alluvial terrace forest tree species in the presence (+) and absence (−) of deer. For species acronyms see Table 1.

TABLE I1. Parameter estimates from the modified Michaelis–Menten model of annual seedling height growth rates in the presence (+) and absence (–) of deer for the 13 alluvial terrace forest tree species. SD, standard deviation. For species acronyms see Table 1.

Species	Deer	α	β	γ	SD	n	Surrogate
Conifers (canopy)							
DACCUP	+	1.184	0.196	−1.238	2.159	159	-
DACCUP	–	1.184	0.196	−1.238	2.159	-	DACCUP + deer
PODHAL	+	0.000	1.000	−1.280	1.955	5	-
PODHAL	–	0.000	1.000	−1.280	1.955	-	PODHAL + deer
PRUFER	+	3758.870	0.076	−0.207	2.286	508	-
PRUFER	–	3758.870	0.076	−0.207	2.286	-	PRUFER + deer
Angiosperms (canopy)							
METUMB	+	1.184	0.196	−1.238	2.159	-	DACCUP + deer
METUMB	–	1.184	0.196	−1.238	2.159	-	DACCUP + deer
NOTMEN	+	1.532	0.659	−0.075	3.133	638	-
NOTMEN	–	999.977	0.897	2.456	6.120	126	-
NOTCLI	+	0.000	1.000	−0.786	1.710	7	-
NOTCLI	–	0.000	1129.143	−4.319	4.420	-	GRILIT – deer
WEIRAC	+	16.241	2467.438	16.353	3.597	454	-
WEIRAC	–	54.940	144.682	46.507	5.780	109	-
Angiosperms (sub-canopy)							
CARSER	+	88.716	709.213	85.596	2.013	-	FUCEXC + deer
CARSER	–	100.507	93.107	69.212	10.810	13	-
FUCEXC	+	88.716	709.213	85.596	2.013	19	-
FUCEXC	–	44.624	2.058	6.183	5.690	107	-
GRILIT	+	7.449	2.004	3.809	0.739	15	-
GRILIT	–	0.000	1129.143	−4.319	4.42	128	-
PSECOL	+	24.578	797.036	20.961	3.560	159	-
PSECOL	–	14.449	119.198	10.042	2.42	150	-
RAUSIM	+	10.619	1.591	6.258	3.021	39	-
RAUSIM	–	43.372	21.493	25.533	5.290	17	-
SCHDIG	+	88.716	709.213	85.596	2.013	-	FUCEXC + deer
SCHDIG	–	9.797	49.312	−8.922	14.229	145	-

TABLE I2. Parameter estimates from the modified Michaelis–Menten model of annual seedling height growth rates in the presence (+) and absence (–) of deer for the seven marine terrace forest species. SD, standard deviation. For species acronyms see Table 1.

Species	Deer	α	β	γ	SD	n
Conifers (canopy)						
DACCUP	+	2.559	0.261	−0.834	1.759	1320
DACCUP	–	0.000	309.440	−2.135	1.840	98
PODHAL	+	0.000	437.61	−1.772	1.835	714
PODHAL	–	0.000	12.796	−0.721	1.263	55
PRUFER	+	0.003	499.444	−0.85	1.668	1595
PRUFER	–	0.000	156.445	−0.421	1.482	97
Angiosperms (canopy)						
METUMB	+	3.829	5.269	1.849	1.534	971
METUMB	–	0.000	267.059	−3.762	2.455	166
NOTMEN	+	22.191	0.022	−1.394	1.970	996
NOTMEN	–	0.000	413.753	−2.447	3.743	151
NOTCLI	+	4.808	67.702	2.844	1.600	1596
NOTCLI	–	12.947	14.583	9.583	1.131	46
WEIRAC	+	0.005	46.93	−0.748	1.888	778
WEIRAC	–	28.606	0.024	−4.192	5.394	169

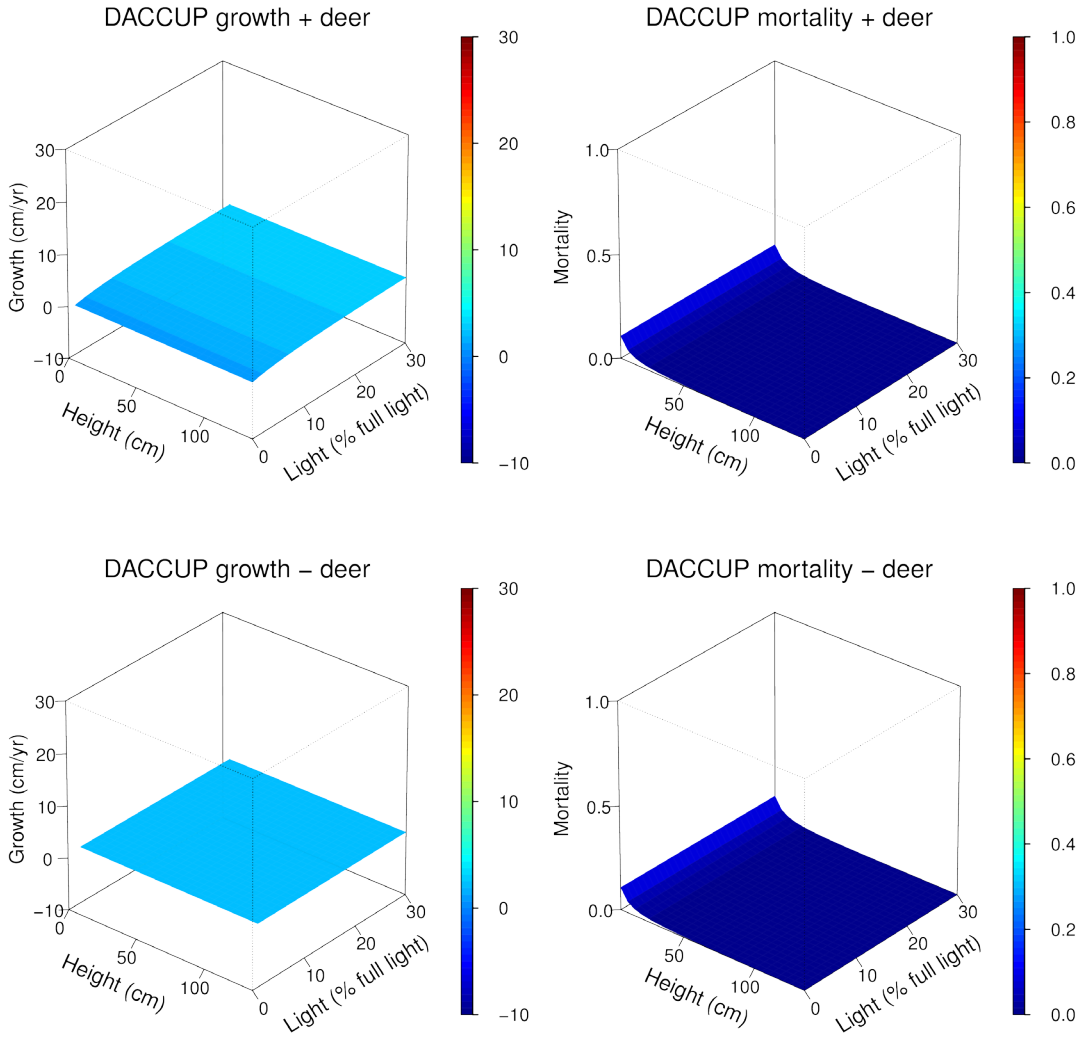
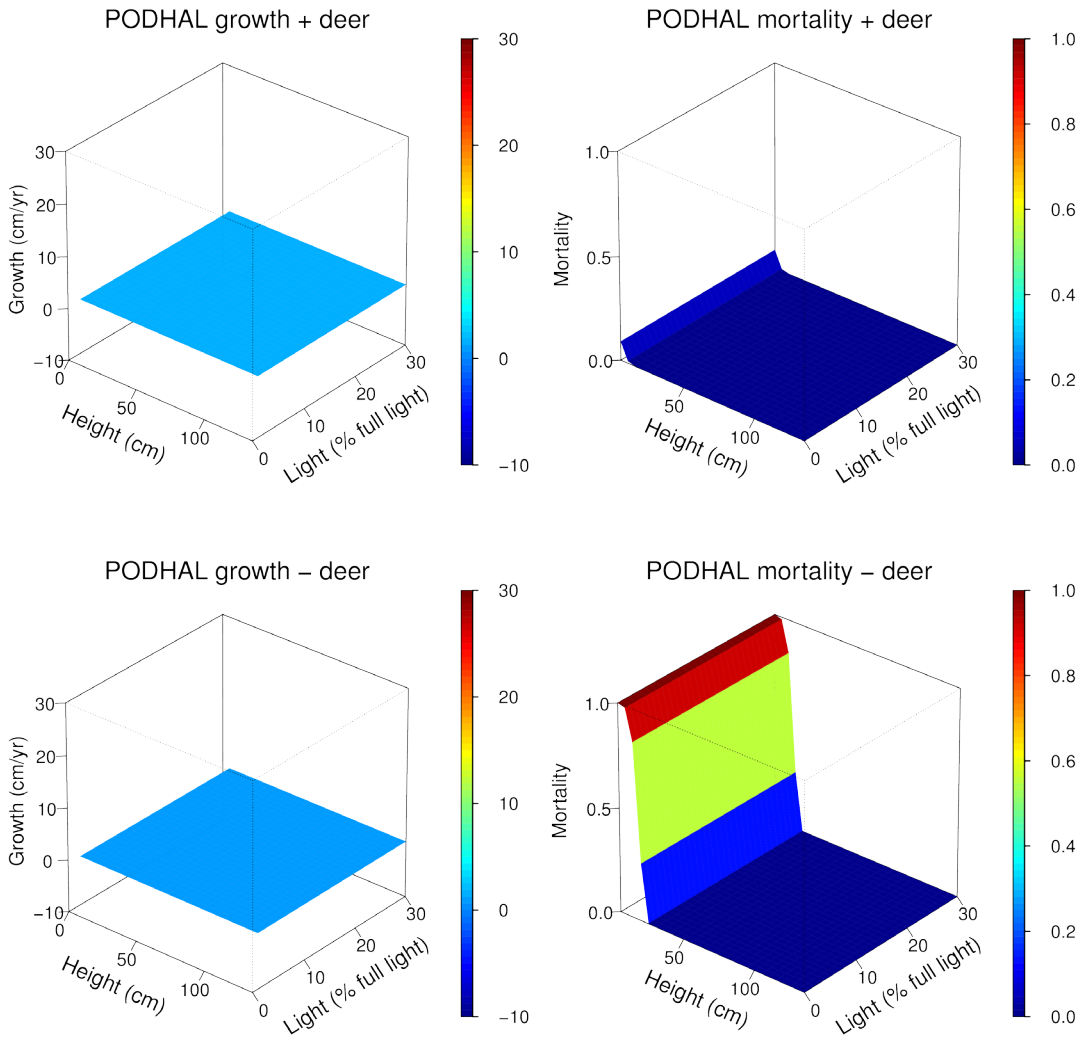


FIG. I2 (continued overleaf). Modeled annual seedling height growth and mortality rates for the seven marine terrace forest tree species in the presence (+) and absence (−) of deer. For species acronyms see Table 1.



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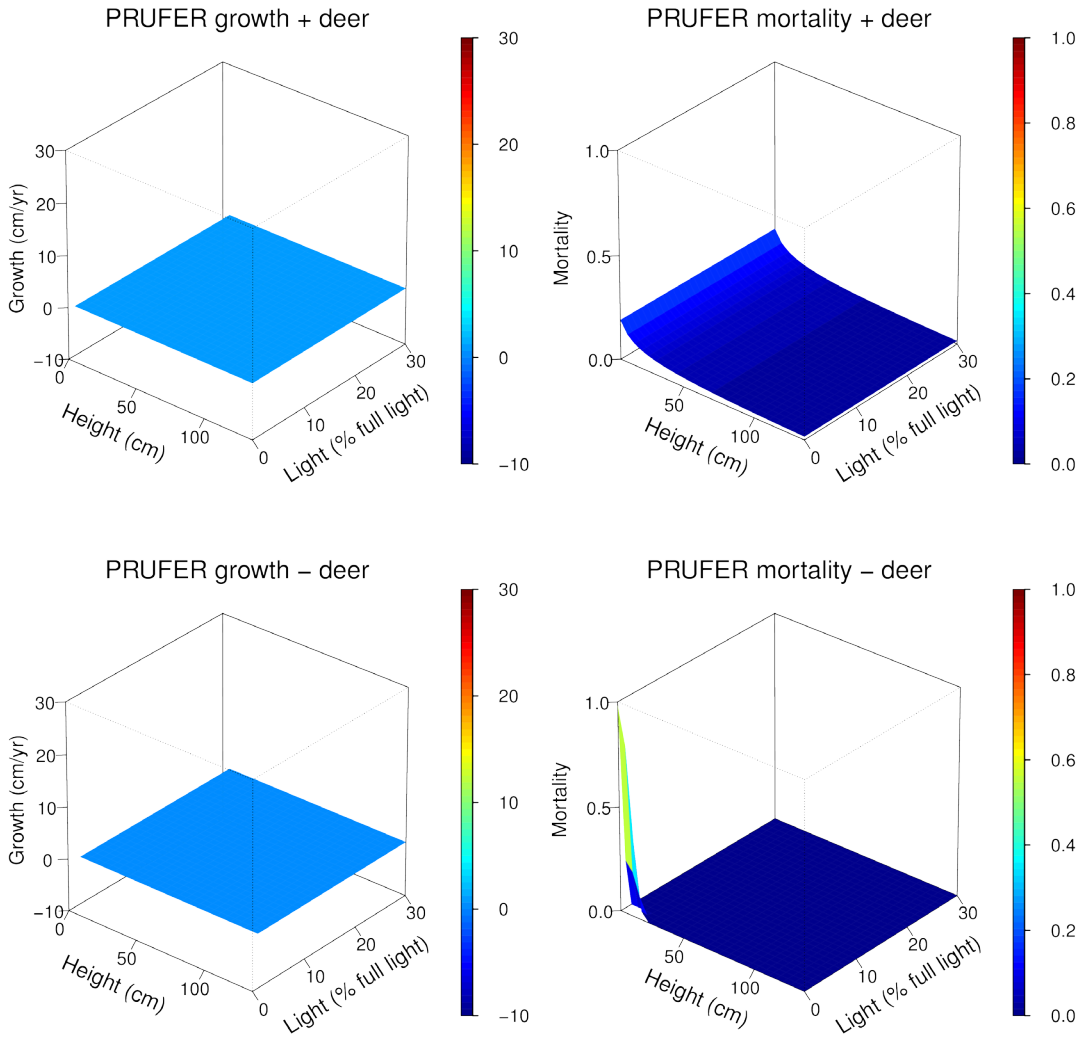

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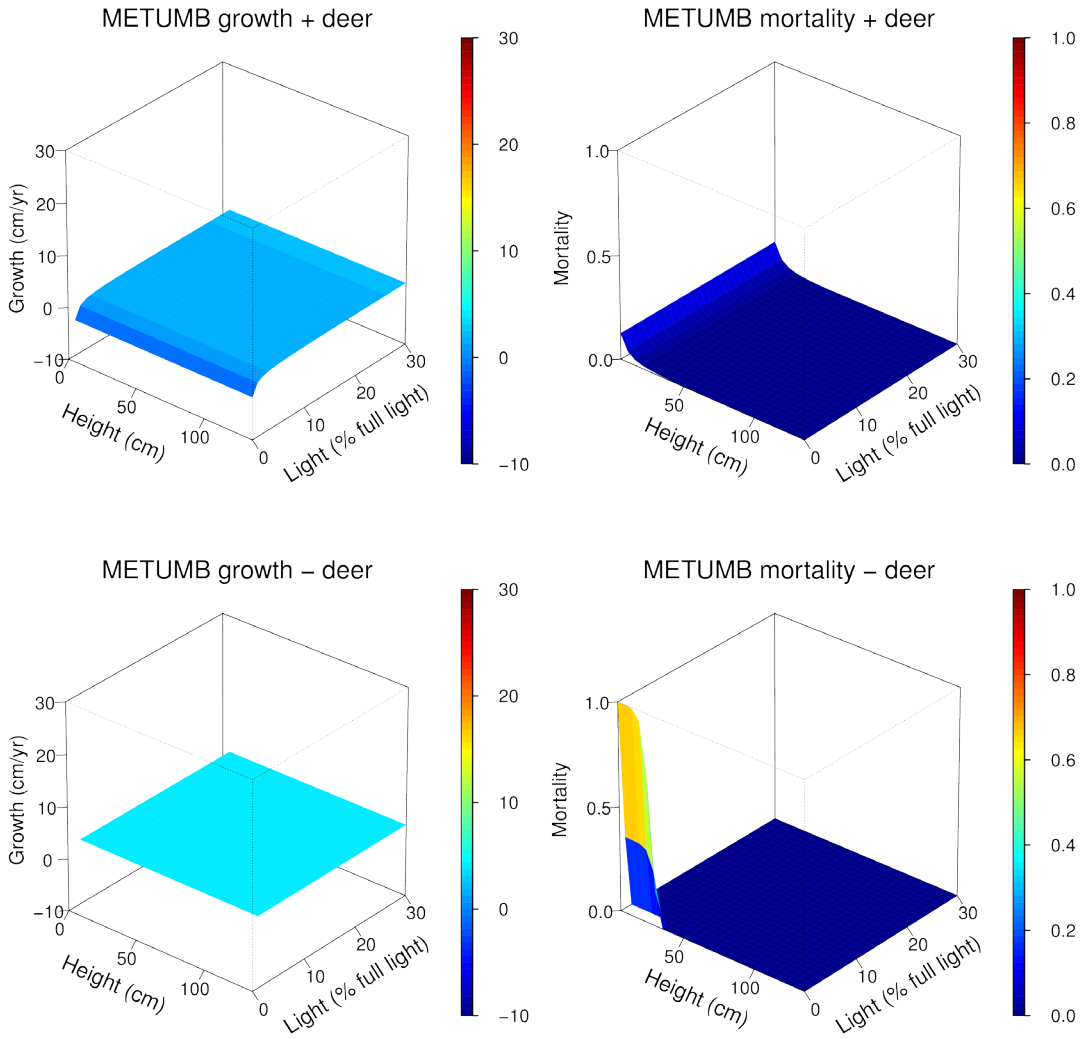

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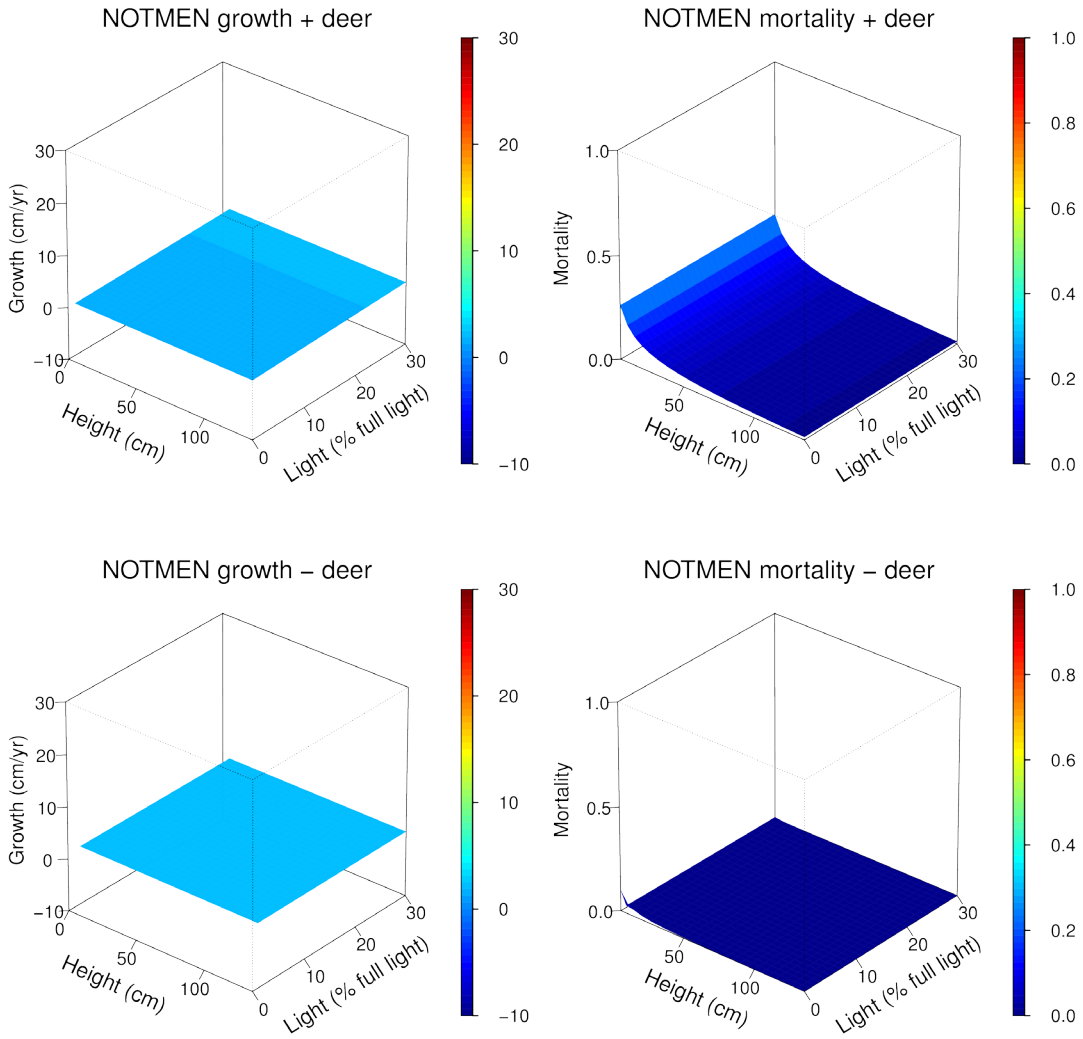

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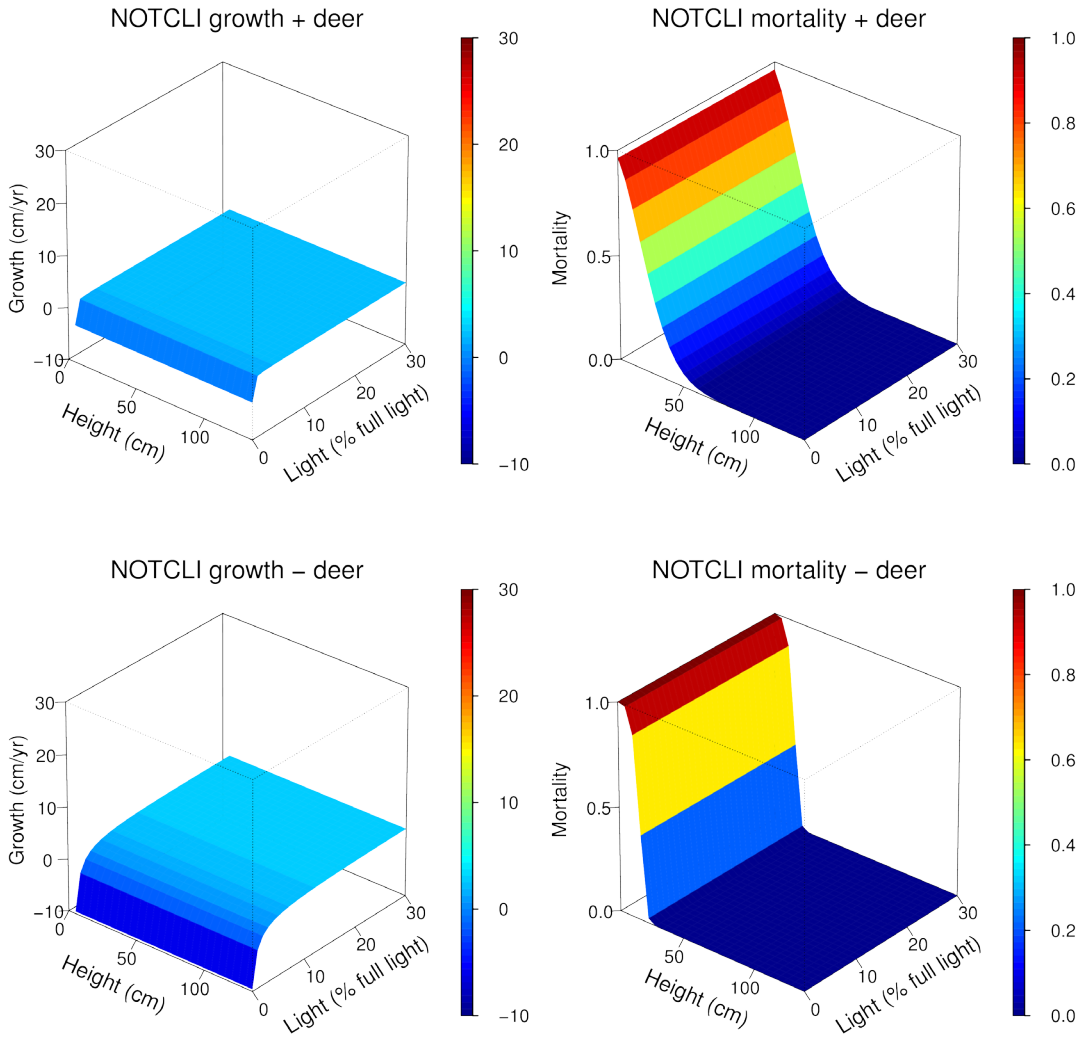

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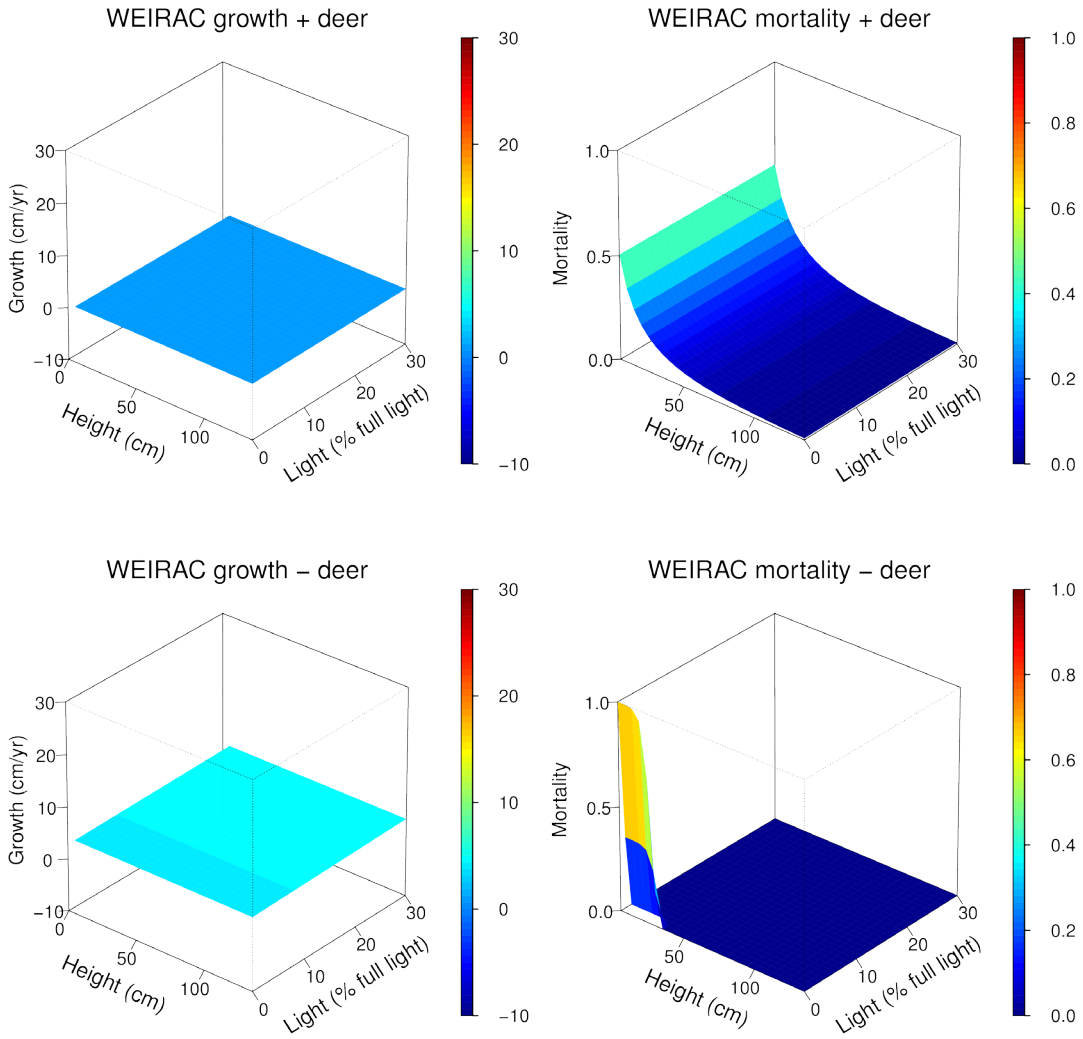

FIG. I2 (continued). Modeled annual seedling height growth and mortality rates for the seven marine terrace forest tree species in the presence (+) and absence (−) of deer. For species acronyms see Table 1.

TABLE I3. Parameter estimates from our model of annual seedling mortality in the presence (+) and absence (–) of deer for the 13 alluvial terrace forest tree species. For species acronyms see Table 1.

Species	Deer	M_{max}	*a*	*b*	*c*	*d*	*n*	Surrogate
Conifers (canopy)								
DACCUP	+	1.000	793.859	981.930	1.366	0.467	172	-
DACCUP	–	1.000	793.859	981.930	1.366	0.467	-	DACCUP + deer
PODHAL	+	1.000	33.080	4.814	1.413	0.341	-	PRUFER + deer
PODHAL	–	1.000	33.080	4.814	1.413	0.341	-	PRUFER + deer
PRUFER	+	1.000	33.080	4.814	1.413	0.341	597	-
PRUFER	–	1.000	33.080	4.814	1.413	0.341	-	PRUFER + deer
Angiosperms (canopy)								
METUMB	+	1.000	793.859	981.930	1.366	0.467	-	DACCUP + deer
METUMB	–	1.000	793.859	981.930	1.366	0.467	-	DACCUP + deer
NOTMEN	+	0.303	306.221	3.800	0.000	20.265	1062	-
NOTMEN	–	0.150	83.487	3.282	0.000	40.149	130	
NOTCLI	+	0.999	3.798	0.366	0.000	0.002	225	COPFOE + deer
NOTCLI	–	0.920	5.995	0.391	0.000	1.251	-	GRILIT – deer
WEIRAC	+	1.000	9.589	1.199	0.566	0.436	611	-
WEIRAC	–	0.982	11.831	0.896	0.000	49.316	109	-
Angiosperms (sub-canopy)								
CARSER	+	0.390	997.159	350.451	0.000	75.031	-	FUCEXC + deer
CARSER	–	1.000	8.848	0.421	0.000	14.352	-	SCHDIG – deer
FUCEXC	+	0.390	997.159	350.451	0.000	75.031	49	-
FUCEXC	–	1.000	5.488	0.491	0.000	30.771	115	-
GRILIT	+	0.575	958.347	3.817	0.000	198.921	79	-
GRILIT	–	0.920	5.995	0.391	0.000	1.251	139	-
PSECOL	+	0.143	941.931	4.296	0.000	196.503	163	-
PSECOL	–	0.143	941.931	4.296	0.000	196.503	163	PSECOL + deer
RAUSIM	+	0.169	146.488	6.855	0.000	190.075	62	-
RAUSIM	–	0.150	83.487	3.282	0.000	40.149	-	NOTMEN – deer
SCHDIG	+	0.390	997.159	350.451	0.000	75.031	-	FUCEXC + deer
SCHDIG	–	1.000	8.848	0.421	0.000	14.352	151	-

TABLE I4. Parameter estimates from our model of annual seedling mortality rate in the presence (+) and absence (–) of deer for the seven marine terrace forest species. For species acronyms see Table 1.

Species	Deer	M_{max}	*a*	*b*	*c*	*d*	*n*	Surrogate
Conifers (canopy)								
DACCUP	+	1.000	7.432	0.403	0.000	49.606	1320	-
DACCUP†	–	1.000	7.432	0.403	0.000	49.606	-	DACCUP + Deer
PODHAL	+	1.000	39.593	0.937	0.000	3.399	714	-
PODHAL	–	0.024	99958.980	6.997	0.000	48.673	57	-
PRUFER	+	1.000	3.823	0.279	0.000	3.688	1595	-
PRUFER	–	0.056	1629.857	3.867	1.455	45.099	101	-
Angiosperms (canopy)								
METUMB	+	0.999	9.374	0.504	0.000	12.837	971	-
METUMB‡	–	0.007	70774.262	8.775	1.073	44.129	-	WEIRAC – Deer
NOTMEN	+	1.000	3.883	0.355	0.000	6.266	996	-
NOTMEN	–	0.960	7.438	0.394	2.339	0.027	158	-
NOTCLI	+	0.333	10.217	1.878	0.000	5.056	1596	-
NOTCLI	–	0.064	31785.530	6.507	0.000	49.993	52	-
WEIRAC	+	0.454	4.078	0.597	0.000	17.349	778	-
WEIRAC	–	0.007	70774.262	8.775	1.073	44.129	171	-

† Mortality rates were unreasonably high for this species in the absence of deer. We therefore used the mortality parameters for DACCUP in the presence of deer as a surrogate.
‡ Mortality rates could not be estimated for METUMB in the absence of deer because no seedlings died. Based on Fig. B3 we used the mortality parameters for WEIRAC in the absence of deer as a surrogate.