

**Online Resource 4** Results of the bivariate linear mixed effects models. Each row reports one model with the used response FD index in the first column and the predictor named in the second column. Reserve ID was included as random factor in each model. Significant correlations are marked in bold. Landscape-scale variables have grey background, while local predictors have white background.

response	Pc-axis	Predictor (Pc-Axis-Name)	t-value	p-value	Beta coefficient	Marginal R <sup>2</sup>	Conditional R <sup>2</sup>
FRic	Land 1	Habitat diversity	0.22	0.83	0.03	0.001	0.07
	Land 2	Anthropogenic influence	1.17	0.25	0.15	0.02	0.11
	Land 3	Landscape diversity	<b>3.75</b>	<b>&lt;0.001</b>	<b>0.44</b>	<b>0.19</b>	<b>0.19</b>
	Land 4	Landscape fragmentation	-0.39	0.70	-0.05	0.002	0.08
	Land 5	Open habitats	-1.80	0.08	-0.23	0.05	0.16
	Local 1	Shady, nutrient rich sites	<b>2.11</b>	<b>0.04</b>	<b>0.26</b>	<b>0.07</b>	<b>0.10</b>
	Local 2	Old, open forest	-0.54	0.59	-0.07	0.005	0.09
	Local 3	Plant diversity	<b>2.93</b>	<b>0.005</b>	<b>0.36</b>	<b>0.12</b>	<b>0.15</b>
	Local 4	Conifer sites	0.42	0.68	0.05	0.003	0.07
	Local 5	Tree health	-1.45	0.15	-0.19	0.03	0.14
Trait space occupancy	Land 1	Habitat diversity	0.05	0.96	0.01	<0.001	0.15
	Land 2	Anthropogenic influence	1.55	0.13	0.19	0.03	0.20
	Land 3	Landscape diversity	<b>2.81</b>	<b>0.01</b>	<b>0.34</b>	<b>0.12</b>	<b>0.17</b>
	Land 4	Landscape fragmentation	-0.50	0.62	-0.06	0.004	0.15
	Land 5	Open habitats	-1.82	0.07	-0.23	0.05	0.24
	Local 1	Shady, nutrient rich sites	1.73	0.09	0.22	0.04	0.15
	Local 2	Old, open forest	0.62	0.54	0.08	0.006	0.12
	Local 3	Plant diversity	<b>2.12</b>	<b>0.04</b>	<b>0.26</b>	<b>0.06</b>	<b>0.16</b>
	Local 4	Conifer sites	0.63	0.53	0.08	0.006	0.14
	Local 5	Tree health	<b>-2.35</b>	<b>0.02</b>	<b>-0.29</b>	<b>0.07</b>	<b>0.28</b>
Functional redundancy	Land 1	Habitat diversity	-0.71	0.48	-0.12	0.01	0.22
	Land 2	Anthropogenic influence	1.28	0.21	0.16	0.02	0.16
	Land 3	Landscape diversity	<b>2.88</b>	<b>0.01</b>	<b>0.35</b>	<b>0.12</b>	<b>0.16</b>
	Land 4	Landscape fragmentation	-0.05	0.96	-0.007	<0.001	0.10
	Land 5	Open habitats	-1.26	0.21	-0.16	0.02	0.17
	Local 1	Shady, nutrient rich sites	<b>3.00</b>	<b>0.004</b>	<b>0.36</b>	<b>0.13</b>	<b>0.19</b>
	Local 2	Old, open forest	-0.54	0.59	-0.07	0.005	0.14
	Local 3	Plant diversity	<b>2.20</b>	<b>0.03</b>	<b>0.27</b>	<b>0.07</b>	<b>0.15</b>
	Local 4	Conifer sites	0.01	0.99	0.001	<0.001	0.11
	Local 5	Tree health	<b>-1.52</b>	<b>0.13</b>	<b>-0.20</b>	<b>0.03</b>	<b>0.19</b>
FDis	Land 1	Habitat diversity	1.40	0.17	0.23	0.04	0.31
	Land 2	Anthropogenic influence	0.13	0.89	0.02	<0.001	0.10
	Land 3	Landscape diversity	0.35	0.73	0.05	0.002	0.12
	Land 4	Landscape	0.56	0.58	0.07	0.005	0.12

	Land 5	fragmentation Open habitats	-0.22	0.83	-0.03	<0.001	0.10
	Local 1	Shady, nutrient rich sites	-1.19	0.24	-0.15	0.02	0.11
	Local 2	Old, open forest	0.65	0.52	0.09	0.006	0.14
	Local 3	Plant diversity	1.79	0.08	0.22	0.05	0.19
	Local 4	Conifer sites	-0.03	0.97	-0.004	<0.001	0.10
	Local 5	Tree health	-0.40	0.69	-0.05	0.003	0.10
Weighted FEve	Land 1	Habitat diversity	0.57	0.57	0.09	0.007	0.20
	Land 2	Anthropogenic influence	-0.10	0.92	-0.01	<0.001	0.11
	Land 3	Landscape diversity	-1.82	0.07	-0.23	0.05	0.11
	Land 4	Landscape fragmentation	1.75	0.09	0.22	0.04	0.19
	Land 5	Open habitats	0.57	0.57	0.07	0.005	0.13
	Local 1	Shady, nutrient rich sites	-1.22	0.23	-0.15	0.02	0.11
	Local 2	Old, open forest	0.88	0.38	0.12	0.01	0.16
	Local 3	Plant diversity	-0.02	0.98	-0.002	<0.001	0.11
	Local 4	Conifer sites	-1.14	0.26	-0.14	0.02	0.13
	Local 5	Tree health	0.43	0.67	0.06	0.003	0.13
Unweighted FEve	Land 1	Habitat diversity	1.99	0.05	0.25	0.06	0.06
	Land 2	Anthropogenic influence	1.67	0.10	0.21	0.04	0.14
	Land 3	Landscape diversity	0.26	0.80	0.03	0.001	0.07
	Land 4	Landscape fragmentation	-1.13	0.26	-0.15	0.02	0.12
	Land 5	Open habitats	-1.75	0.08	-0.22	0.05	0.17
	Local 1	Shady, nutrient rich sites	<b>2.41</b>	<b>0.02</b>	<b>0.30</b>	<b>0.09</b>	<b>0.13</b>
	Local 2	Old, open forest	0.41	0.68	0.05	0.003	0.06
	Local 3	Plant diversity	1.94	0.06	0.24	0.06	0.10
	Local 4	Conifer sites	0.92	0.36	0.12	0.01	0.09
	Local 5	Tree health	-1.72	0.09	-0.22	0.04	0.17
FDiv	Land 1	Habitat diversity	1.93	0.06	0.32	0.08	0.32
	Land 2	Anthropogenic influence	0.60	0.55	0.08	0.01	0.03
	Land 3	Landscape diversity	-0.38	0.70	-0.05	0.002	0.03
	Land 4	Landscape fragmentation	0.32	0.75	0.04	0.002	0.04
	Land 5	Open habitats	-2.05	0.05	-0.26	0.07	0.07
	Local 1	Shady, nutrient rich sites	-1.16	0.25	-0.15	0.02	0.04
	Local 2	Old, open forest	0.48	0.63	0.06	0.004	0.06
	Local 3	Plant diversity	1.27	0.21	0.16	0.03	0.08
	Local 4	Conifer sites	1.51	0.14	0.19	0.04	0.07
	Local 5	Tree health	0.28	0.78	0.03	0.001	0.05