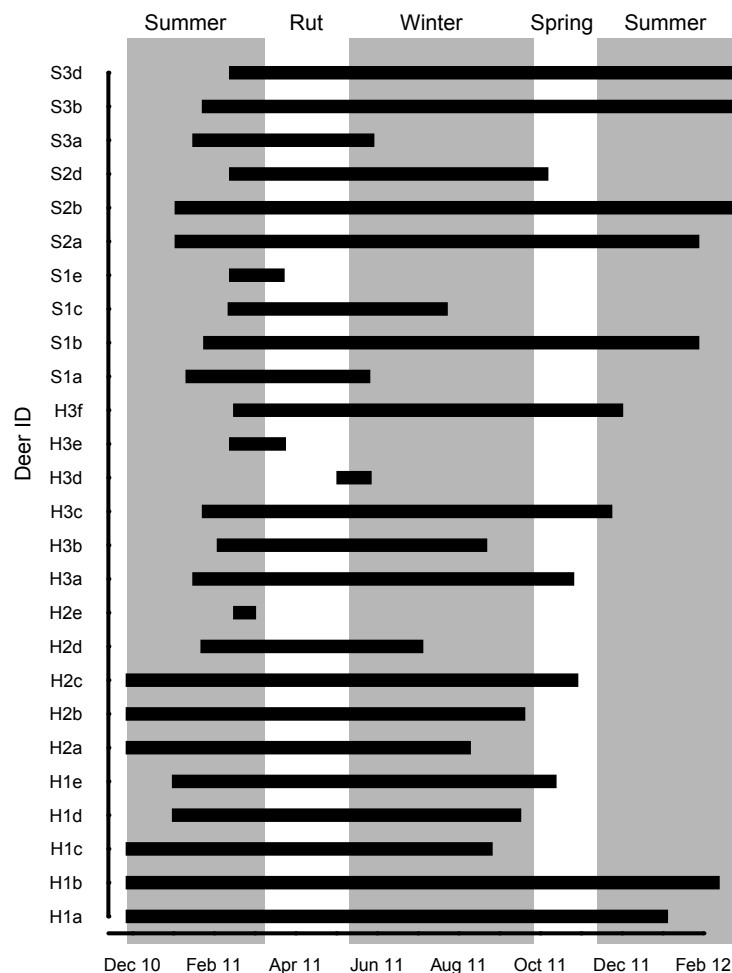**Appendix S1.** Monitoring periods for 26 GPS-collared sika deer (*Cervus nippon*) in the Kaweka Forest Park Recreational Hunting Area, central North Island, New Zealand, from December 2010 to March 2012. Animal IDs are shown on the y-axis, where S (stag) and H (hind) indicate the sex of each individual. Grey and white areas depict the different seasons (rut: 01 April – 31 May; winter: 01 June – 15 October; spring: 16 October – 30 November; summer: 01 December – 31 March) used to assess seasonal resource selection by sika deer

Appendix S2. Standardised parameter estimates (β) and standard errors (SE) for interaction terms between landscape variables and four harmonics of time of day included in a model describing resource selection by male sika deer (*Cervus nippon*) in the Kaweka Forest Park Recreational Hunting Area, central North Island, New Zealand, December 2010 – March 2012.

Variable[a]	Rut (n = 7955)		Winter (n = 14 935)		Spring (n = 2828)		Summer (n = 10 935)	
	β	SE	β	SE	β	SE	β	SE
D hollow * s_1	−0.0001	0.0002	0.0002	0.0002	−0.0013	0.0008	0.0004	0.0002
D hollow * s_2	0.0001	0.0002	−0.0002	0.0002	−0.0001	0.0008	−0.0002	0.0002
D hollow * c_1	0.0002	0.0002	0.0008	0.0002	−0.0002	0.0008	0.0011	0.0002
D hollow * c_2	−0.0001	0.0002	0.0004	0.0002	0.0006	0.0008	0.0003	0.0002
P alpine * s_1	−	−	−0.1042	0.0974	0.7557	0.6321	−	−
P alpine * s_2	−	−	−0.1416	0.0973	0.2008	0.6379	−	−
P alpine * c_1	−	−	−0.3845	0.0978	−1.4920	0.6507	−	−
P alpine * c_2	−	−	−0.1449	0.0975	−0.1570	0.6433	−	−
P tussock * s_1	−0.0359	0.0677	0.0577	0.0464	−0.0868	0.1348	−0.0243	0.0562
P tussock * s_2	−0.0197	0.0692	−0.0028	0.0469	−0.0981	0.1352	0.0017	0.0556
P tussock * c_1	0.2643	0.0715	0.3415	0.0475	0.5095	0.1351	0.0496	0.0552
P tussock * c_2	−0.0717	0.0691	−0.0666	0.0466	0.0308	0.1339	−0.0512	0.0556

[a]D = Distance to feature, in metres; P = Proportion within a buffer of varying radii (see Table 1) around a location; $s_1 = \sin(2\pi t/24)$; $s_2 = \sin(4\pi t/24)$; $c_1 = \cos(2\pi t/24)$; $c_2 = \cos(4\pi t/24)$.

Appendix S3. Standardised parameter estimates (β) and standard errors (SE) for interaction terms between landscape variables and four harmonics of time of day included in a model describing resource selection by female sika deer (*Cervus nippon*) in the Kaweka Forest Park Recreational Hunting Area, central North Island, New Zealand, December 2010 – March 2012.

Variable[a]	Rut ($n = 7955$)		Winter ($n = 14\,935$)		Spring ($n = 2828$)		Summer ($n = 10\,935$)	
	β	SE	β	SE	β	SE	β	SE
D hollow * s_1	−0.0003	0.0003	0.0001	0.0003	−0.0013	0.0005	−0.0001	0.0002
D hollow * s_2	−0.0004	0.0003	0.0002	0.0003	−0.0001	0.0005	−0.0005	0.0002
D hollow * c_1	0.0010	0.0003	0.0004	0.0003	−0.0018	0.0004	−0.0007	0.0002
D hollow * c_2	0.0003	0.0003	0.0001	0.0003	0.0011	0.0005	0.0002	0.0002
P alpine * s_1	–	–	0.2692	0.3794	0.3576	0.1765	–	–
P alpine * s_2			−0.0366	0.3798	−0.2297	0.1783	–	–
P alpine * c_1	–	–	−0.2385	0.3800	0.0184	0.1779	–	–
P alpine * c_2	–	–	0.0198	0.3820	−0.1549	0.1739	–	–
P tussock * s_1	0.0643	0.0692	0.0060	0.0644	0.1387	0.0958	0.0177	0.0616
P tussock * s_2	0.0437	0.0696	−0.0276	0.0650	0.0763	0.0960	0.0822	0.0596
P tussock * c_1	0.0359	0.0702	0.0863	0.0652	0.8595	0.0990	1.0040	0.0628
P tussock * c_2	−0.0370	0.0697	0.0200	0.0646	−0.0118	0.0960	0.1263	0.0599

[a]D = Distance to feature, in metres; P = Proportion within a buffer of varying radii (see Table 1) around a location; $s_1 = \sin(2\pi t/24)$; $s_2 = \sin(4\pi t/24)$; $c_1 = \cos(2\pi t/24)$; $c_2 = \cos(4\pi t/24)$.