

*Supplementary Information***Using ecological models to explore niche partitioning within a guild of desert felids**

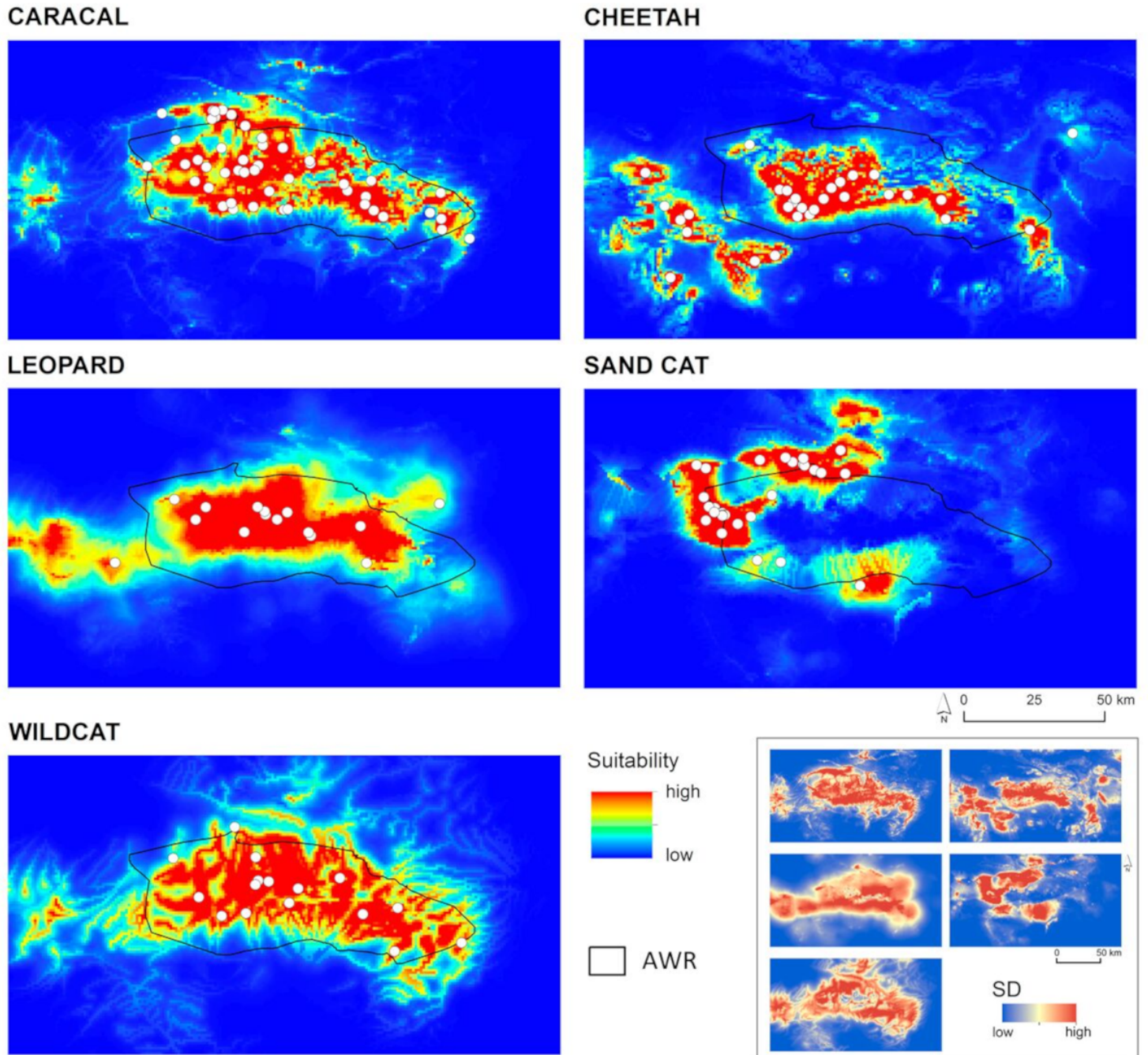
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**Table S1:** Number of records used to perform ecological niche-based models for the five felid species in central Iran. Numbers of total records (N), records detected by direct observation/field signs (DO/FS), records obtained by camera trapping (CT) and time periods of species collection are depicted. No camera trapping was conducted during 2008-2013

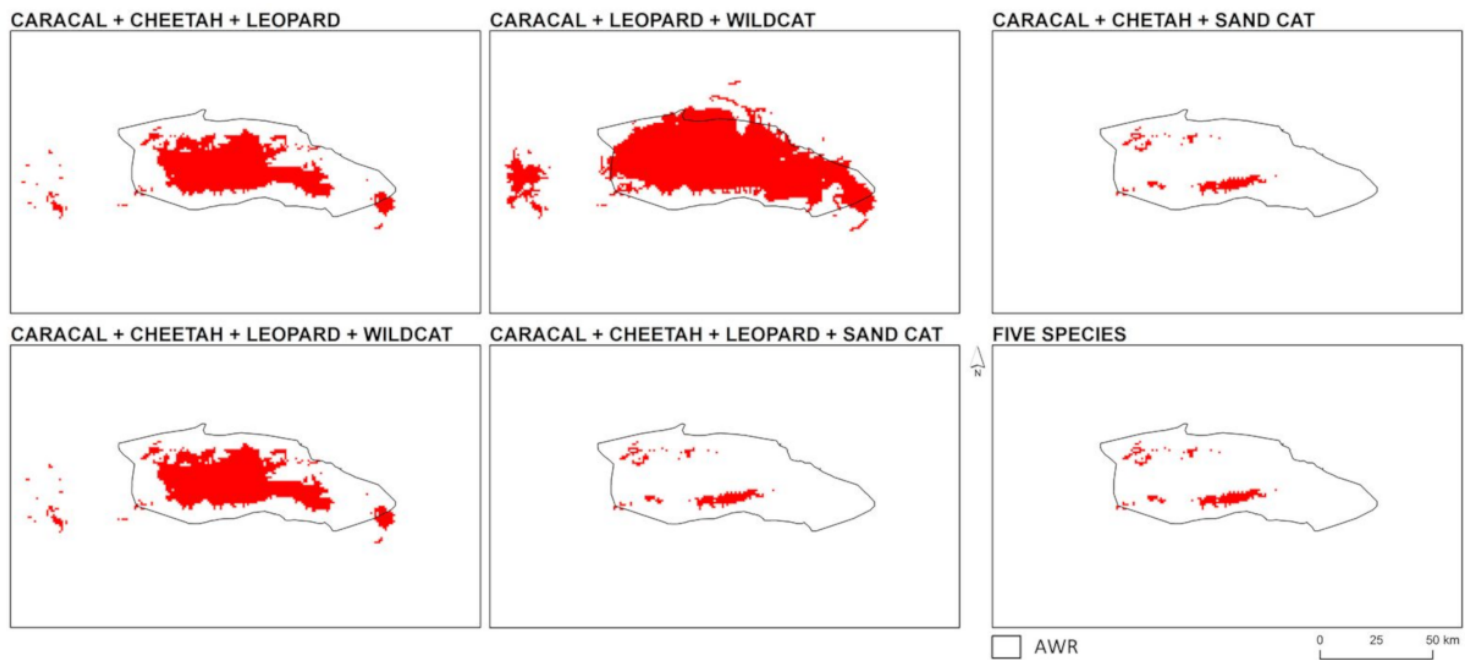
Species	N	Occurrence data source				
		DO/FS 2005-2007	DO/FS 2008-2013	DO/FS 2014-2015	CT 2005-2007	CT 2014-2015
Sand cat	29	5	9	13	0	2
Wild cat	16	0	1	12	1	2
Caracal	47	10	15	12	2	8
Cheetah	30	0	26	2	0	2
Leopard	15	0	9	3	0	3

**Table S2:** Number of sympatry cells and % of sympatry area in relation to the whole study area for different assemblages of two, three, four and five felid species in the Abbasabad Wildlife Refuge, derived from ecological models.

species assemblage	n cells	% area
Caracal + cheetah	1804	7.4
Caracal + leopard	4064	16.669
Caracal + sand cat	1338	5.488
Caracal + wildcat	4104	16.833
Cheetah + leopard	2755	11.3
Cheetah + sand cat	310	1.272
Cheetah + wildcat	2028	8.318
Leopard + sand cat	1593	6.534
Leopard + wildcat	5202	21.337
Sand cat + wildcat	1372	5.628
Caracal + cheetah + leopard	1802	7.391
Caracal + cheetah + wildcat	1784	7.317
Caracal + cheetah + sand cat	233	0.956
Caracal + leopard + wildcat	3933	16.132
Caracal + leopard + sand cat	1043	4.278
Caracal + wildcat + sand cat	1055	4.327
Cheetah + leopard + wildcat	2026	8.31
Cheetah + leopard + sand cat	310	1.272
Cheetah + wildcat + sand cat	273	1.12
Leopard + wildcat + sand cat	1256	5.152
Caracal + cheetah + leopard + sand cat	233	0.956
Caracal + cheetah + leopard + wildcat	1782	7.309
Caracal + leopard + sand cat + wildcat	971	3.983
Cheetah + leopard + sand cat + wildcat	273	1.12
Caracal + cheetah + sand cat + wildcat	232	0.952
Caracal + cheetah + leopard + sand cat + wildcat	232	0.952



**Figure S3:** Suitable areas for each of the five felid species in the Abbasabad Wildlife Refuge derived from average suitability ecological models. Species presence records are signalled as white dots. Standard deviation (SD) plots from average ecological models are presented inside the square at bottom right, following the same order of species as suitable areas.



**Figure S4:** Selected cases of predicted sympatry areas among three, four and five felid species in the Abbasabad Wildlife Refuge, derived from ecological models.