

Appendix

Capture history

Table S1: Gaps in capture history of females (N=316) first and last captured from 2011-2018 at S.A.Lombard nature reserve. Trapping history is available until 2022, however, we excluded females last captured in 2019 (N=133), 2021 (N=76) and 2022 (N=102) as subsequent 3 years of history was unavailable, and because 2020 and 2021 had an unusual field schedule due to the COVID-19 pandemic travel restrictions created a gap in the trapping records (2020) and led to a shorter and later field season in 2021 at our study site.

	Skipped trapping					Total females
	0 years	1 year	2 years	3 years	4+ years	
Unique females	297	15	3	1	0	316
Proportion	0.94	0.05	0.01	0.003	0	

Trapping response (docility)

Table S2: Mean \pm SE docility score during approach, transfer, handling and release for all adult females sampled, by year. Females were sampled 1267 times over the years, and this represented 361 unique females that were sampled on average 3.5 times each (range 1-24 times per individual).

Year	N sample size*	N unique females*	Mean \pm SE trapping response score			
			Approach	Transfer	Handling	Release
2014	91	39	0.85 \pm 0.07	0.46 \pm 0.08	0.47 \pm 0.07	0.87 \pm 0.04
2015	221	79	0.74 \pm 0.04	0.36 \pm 0.04	0.30 \pm 0.04	0.93 \pm 0.02
2016	61	56	0.80 \pm 0.10	0.49 \pm 0.09	0.31 \pm 0.08	0.85 \pm 0.05
2017	65	58	0.63 \pm 0.08	0.28 \pm 0.06	0.23 \pm 0.06	0.88 \pm 0.04
2018	216	95	0.34 \pm 0.04	0.25 \pm 0.03	0.21 \pm 0.03	0.72 \pm 0.03
2019	374	123	0.51 \pm 0.03	0.26 \pm 0.03	0.24 \pm 0.02	0.87 \pm 0.02
2021	239	153	0.89 \pm 0.04	0.29 \pm 0.04	0.24 \pm 0.03	0.94 \pm 0.02
2014-2021	1267	361				

*N sample size (N unique females) for approach in N₂₀₁₈ = 215(95); handling in N₂₀₁₈ = 209(95); for release N₂₀₁₅ = 211(78), N₂₀₁₇ = 59(57), N₂₀₁₈ = 204(95), N₂₀₁₉ = 363(123)

Trappability and trap diversity

Table S3: Mean \pm SE trappability and trap diversity score by year. N sample size is the same as N unique females, as trappability and trap diversity is calculated for each female per year.

Year	N sample size (unique females per year)	Mean \pm SE score	
		Encounter/ hour	Colonies/ hour
2011	45	0.008 \pm 0.001	0.002 \pm 0.001
2012	48	0.013 \pm 0.001	0.005 \pm 0.001
2013	62	0.008 \pm 0.001	0.002 \pm 0.0004
2014	54	0.005 \pm 0.001	0.002 \pm 0.0002
2015	64	0.018 \pm 0.004	0.004 \pm 0.0004
2016	59	0.015 \pm 0.002	0.007 \pm 0.0007
2017	60	0.008 \pm 0.003	0.008 \pm 0.003
2018	84	0.012 \pm 0.001	0.006 \pm 0.0006
2019	103	0.009 \pm 0.001	0.004 \pm 0.0004
2011-2019	300		

Reproductive success

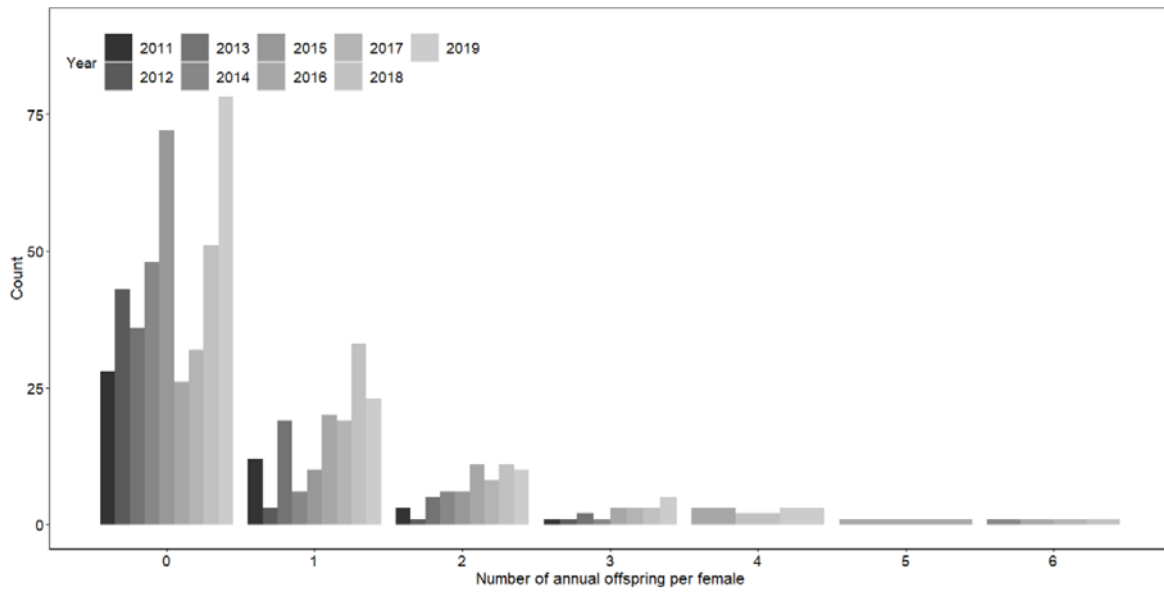


Fig.S1: Histogram of the number of annual offspring for each unique female by year (unique TagYear).

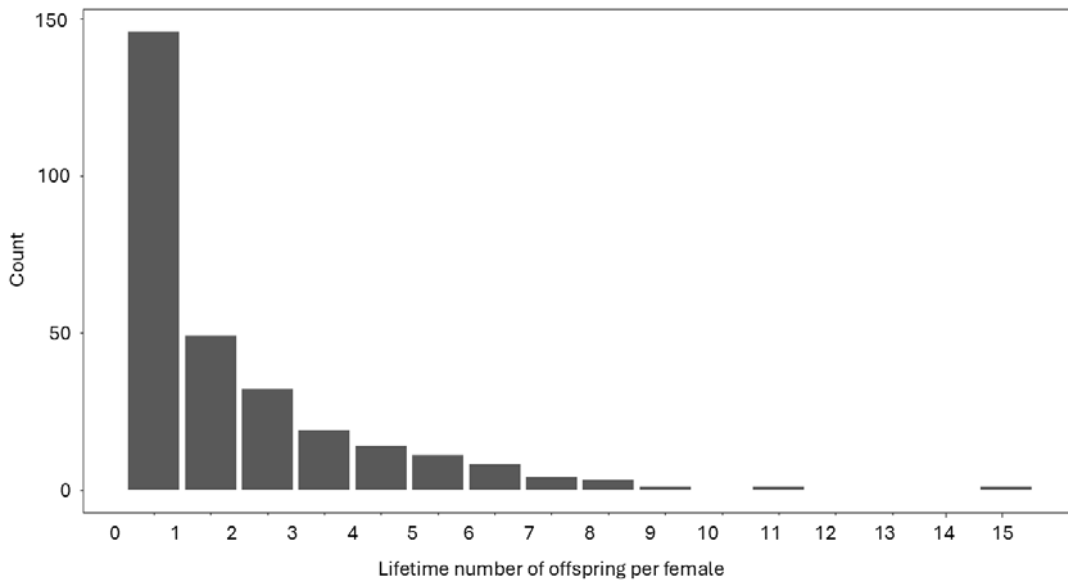


Fig.S2: Histogram of the total number of offspring over their lifetime for each unique female (unique Tag ID).

Table S4: Number of annual offspring for each unique female by year (unique TagID-Year).

Year	Number of females						
	Zero offspring	1 offspring	2 offspring	3 offspring	4 offspring	5 offspring	6 offspring
2011	28	12	3	1	0	0	0
2012	43	3	1	1	0	0	0
2013	36	19	5	2	0	0	0
2014	48	6	6	1	0	0	1
2015	72	10	6	0	0	0	0
2016	26	20	11	3	3	1	1
2017	32	19	8	3	0	0	1
2018	51	33	11	3	2	0	1
2019	84	23	10	5	3	0	0
Total	420	145	61	19	8	1	4
Prop.	0.638	0.220	0.093	0.029	0.012	0.002	0.006

Table S5: Lifetime reproductive success (measured by the total number of offspring) for each unique female (unique Tag ID). For N = 57 females, we could not determine lifetime reproductive success because they were still alive at the end of the study (in 2021).

Total # offspring	# unique females
0	146
1	49
2	32
3	19
4	14
5	11
6	8
7	4
8	3
9	1
10	0
11	1
12	0
13	0
14	0
15	1
Reproductive skew	0.49

Effect of fixed factors on fitness proxies

Table S6: The effect of fixed factors on all behavioural response covariates (repeatable trapping response measures (approach, transfer, handling) and trappability (encounter rate). Significant effects are bolded.

Model	Fixed effect	β	Lower 95% CI	Upper 95% CI	pMCMC
Trapping response					
M1- Annual Offspring: Continuous	Maximum temperature	0.43	0.18	0.71	0.002
	Minimum temperature	-0.13	-0.34	0.06	0.21
	Total Seasonal Rainfall	-0.03	-0.16	0.08	0.58
	Body Condition	-0.36	-0.51	-0.23	<0.001
	Tenure	0.07	-0.08	0.24	0.38
M2 - Annual Offspring: Binary	Maximum temperature	19.69	-2.25	46.44	0.07
	Minimum temperature	-5.36	-24.94	10.16	0.50
	Total Seasonal Rainfall	-2.12	-12.65	7.03	0.63
	Body Condition	-21.10	-36.06	-4.06	<0.001
	Tenure	4.50	-8.87	18.56	0.48
M3 - Lifetime Offspring: Continuous	Maximum temperature	-0.16	-0.37	0.06	0.14
	Minimum temperature	-0.06	-0.17	0.07	0.33
	Total Seasonal Rainfall	0.04	-0.03	0.11	0.29
	Body Condition	0.00	-0.06	0.08	0.91
	Tenure	0.11	-0.01	0.24	0.08
M4 - Lifetime Offspring: Binary	Maximum temperature	-0.78	-1.70	0.10	0.13
	Minimum temperature	-0.37	-0.79	0.01	0.06
	Total Seasonal Rainfall	0.16	-0.29	0.54	0.67
	Body Condition	0.41	-0.07	0.86	0.13
	Tenure	0.46	0.10	0.93	0.00
M5 - Annual Survival	Maximum temperature (S1)	-3.82	-10.57	1.76	0.19
	Minimum temperature (S1)	12.34	-0.01	24.24	0.04
	Total Seasonal Rainfall (S1)	-4.57	-11.98	1.00	0.12
	Body Condition	-4.22	-10.40	0.52	0.09
	Tenure	-63.23	-94.10	-21.76	<0.001
M6 - On-site Persistence: Continuous	Maximum temperature (S1)	-0.05	-0.11	0.02	0.17
	Minimum temperature (S1)	-0.02	-0.11	0.08	0.70
	Total Seasonal Rainfall (S1)	0.00	-0.08	0.07	0.92
	Body Condition	-0.02	-0.07	0.04	0.48
M7 - On-site Persistence: Binary	Maximum temperature (S1)	-0.07	-0.45	0.18	0.80
	Minimum temperature (S1)	-0.22	-0.55	0.06	0.15
	Total Seasonal Rainfall (S1)	-0.09	-0.43	0.31	0.71
	Body Condition	-0.07	-0.36	0.29	0.61

Trappability

M8 - Annual Offspring: Continuous	Maximum temperature	0.29	0.11	0.49	0.001
	Minimum temperature	0.09	-0.09	0.27	0.30
	Total Seasonal Rainfall	0.22	0.04	0.38	0.01
	Body Condition	0.08	-0.22	0.07	0.30
	Tenure	-0.01	-0.17	0.12	0.90
M9 - Annual Offspring: Binary	Maximum temperature	42.08	8.80	81.57	0.01
	Minimum temperature	16.98	-13.54	46.24	0.24
	Total Seasonal Rainfall	57.21	24.33	94.47	0.001
	Body Condition	-3.57	29.20	25.01	0.79
	Tenure	0.89	-25.37	26.44	0.92
M10 - Lifetime Offspring: Continuous	Maximum temperature	0.06	-0.15	0.28	0.58
	Minimum temperature	0.14	-0.04	0.33	0.16
	Total Seasonal Rainfall	0.12	-0.06	0.31	0.18
	Body Condition	0.04	-0.11	0.21	0.58
	Tenure	0.14	-0.04	0.34	0.15
M11 - Lifetime Offspring: Binary	Maximum temperature	0.02	-0.19	0.24	0.80
	Minimum temperature	0.08	-0.11	0.24	0.38
	Total Seasonal Rainfall	0.10	-0.08	0.31	0.33
	Body Condition	0.06	-0.10	0.23	0.46
	Tenure	0.15	0.00	0.31	0.06
M12 - Annual Survival	Maximum temperature (S1)	9.02	-19.21	40.64	0.54
	Minimum temperature (S1)	13.15	-12.36	42.19	0.32
	Total Seasonal Rainfall (S1)	-21.35	-48.53	0.98	0.07
	Body Condition	-12.66	-35.46	8.92	0.24
	Tenure	-28.74	-82.38	15.69	0.28
M13 - On-site Persistence: Continuous	Maximum temperature (S1)	-0.14	-0.27	0.01	0.08
	Minimum temperature (S1)	0.06	-0.07	0.18	0.36
	Total Seasonal Rainfall (S1)	0.00	-0.12	0.11	0.96
	Body Condition	0.02	-0.09	0.12	0.78
M14 - On-site Persistence: Binary	Maximum temperature (S1)	-2.89	-13.65	7.61	0.57
	Minimum temperature (S1)	-1.41	-9.51	6.81	0.75
	Total Seasonal Rainfall (S1)	-0.84	-7.46	5.49	0.82
	Body Condition	-0.32	-8.92	7.75	0.93

Survival

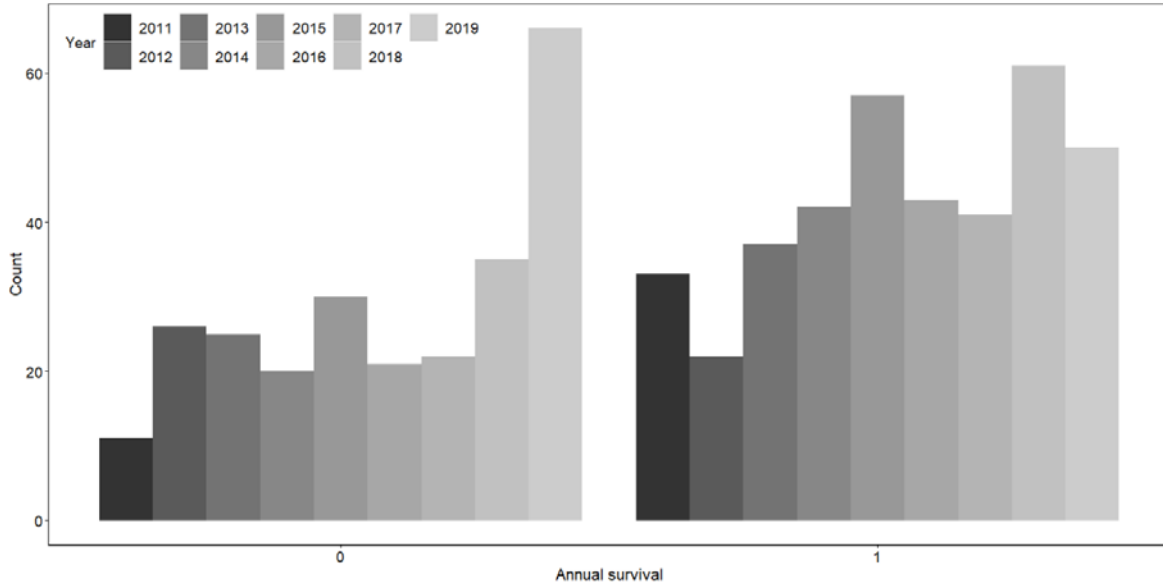


Fig. S3: Histogram of the annual survival (0 = disappeared/ not re-sighted; 1= trapped or observed) the followed year for each unique female per year (unique TagYear).

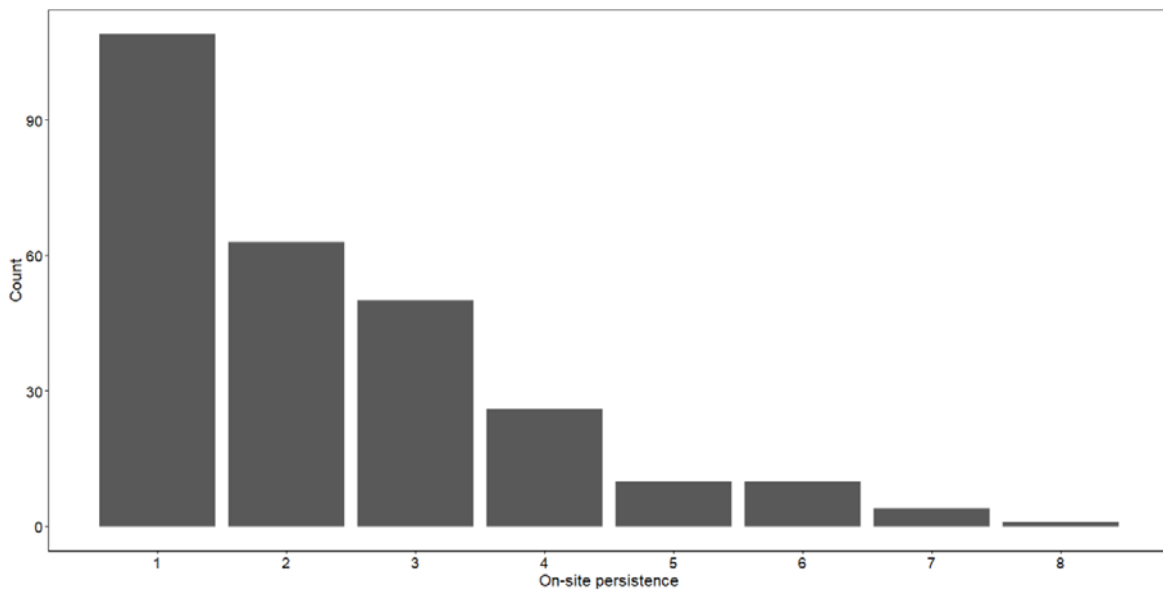


Fig. S4: On-site persistence, a proxy for lifespan for unique females (N=273) captured and scored for docility, trappability and/or trap diversity at S.A. Lombard Nature reserve from 2011-2021. We excluded all females (N=165) seen in 2021 (as they were alive at the end of the study). We accounted for age of first capture (adult versus juvenile/subadult).

Table SA7: Annual survival: the number and proportion of females (unique TagYears) that were re-sighted (survived) the following year.

Year	Number disappeared	Number survived	Prop survival
2011	11	33	0.75
2012	26	22	0.46
2013	25	37	0.60
2014	20	42	0.68
2015	31	57	0.65
2016	21	43	0.67
2017	22	41	0.65
2018	35	61	0.64
2019	66	50	0.43

Table SA8: On-site persistence, a proxy for lifespan for females (N=273) captured and scored for docility and/or trappability at S.A. Lombard nature reserve from 2011-2021.

Persistence on-site	# Unique females	Prop of females
1	109	0.40
2	63	0.23
3	50	0.18
4	26	0.10
5	10	0.04
6	10	0.04
7	4	0.01
8	1	0.004
Total	273	