

Table S1. Percentage of deployments for each time sampling resolution in each year and for all years grouped together.

Year	GPS sampling resolution			
	0.5h	1h	2h	3h
2018	0	63.0	29.6	7.4
2019	0	100	0	0
2020	10.5	89.5	0	0
2021	76.5	23.5	0	0
All	14.7	75.5	7.8	2.0

Table S2. Summary of sample sizes of Monteiro’s storm-petrels tracked from Praia Islet, Graciosa Island, Azores from 2018–2021 and respective distance covered and trip duration.

Year	Breeding stage	Sex	N deployments (N recoveries)	N tracks (N birds) in analyses	Mean maximum trip dist. (km ± S.E.; range)	Mean total distance covered (km ± S.E.; range)	Mean trip dur. (days ± S.E.; range)
2018	Incubation	Male	14 (12)	11 (11)	383.76 (± 68.66; 109.53–820.64)	1058.35 (± 141.81; 388.07–1796.71)	3.95 (± 0.42; 1.79–6.54)
		Female	8 (6)	4 (4)	200.42 (± 34.05; 106.65–354.45)	597.05 (± 131.19; 271.56–1131.71)	2.32 (± 0.43; 0.88–3.83)
	Chick-rearing	Male	5 (4)	4 (4)	146.80 (± 34.63; 58.75–356.09)	431.27 (± 106.24; 139.42–865.56)	1.55 (± 0.36; 0.75–3.71)
		Female	8 (8)	5 (5)	200.12 (± 56.61; 49.97–610.95)	589.52 (± 139.15; 172.32–1615.77)	2.34 (± 0.41; 0.71–4.75)
2019	Incubation	Male	13 (13)	12 (12)	327.10 (± 60.00; 43.96–790.25)	1021.18 (± 163.05; 102.36–2099.27)	3.54 (± 0.40; 0.79–5.17)
		Female	13 (13)	12 (12)	373.25 (± 73.66; 34.47–963.82)	1004 (± 165.56; 114.40–2039.81)	3.28 (± 0.43; 0.67–5.92)
	Chick-rearing	Male	6 (6)	6 (5)	148.67 (± 19.32; 54.73–345.53)	446.70 (± 66.81; 123.11–1141.30)	2.42 (± 0.53; 0.67–9.67)
		Female	7 (7)	7 (7)	107.57 (± 10.17; 46.23–173.84)	362.47 (± 53.53; 124.64–859.52)	2.51 (± 0.67; 0.63–8.5)
2020	Incubation	Male	8 (8)	8 (8)	297.65 (± 53.26; 94.93–612.26)	944.34 (± 185.67; 204.29–1747.42)	5.17 (± 2.39; 0.71–10.9)
		Female	10 (10)	9 (9)	427.55 (± 82.73; 105.55–868.78)	1207.36 (± 197.96; 221.02–2195.65)	3.98 (± 0.45; 0.88–5.83)
	Chick-rearing	Female	2 (2)	2 (2)	491.73 (± 60.14; 431.59–551.87)	1137.62 (± 96.35; 1041.27–1233.96)	2.85 (± 0.06; 2.79–2.92)
2021	Incubation	Male	6 (6)	6 (6)	551.72 (± 138.72; 198.29–1154.35)	1380.01 (± 288.49; 501.13–2551.42)	4.51 (± 0.52; 2.79–6.88)
		Female	8 (8)	7 (7)	603.78 (± 105.44; 242.97–952.21)	1697.17 (± 163.69; 1053.84–2209.57)	4.74 (± 0.17; 3.83–5.25)

Table S3. Results of the post hoc Tukey tests with simple step adjusted p values for a multiple comparison of GEE estimates to account for differences in maximum distance, total distance and trip duration between study years.

Pairwise comparison	Maximum distance	Total distance	Trip duration
2019:2018	0.97 ± 1.16 z = -0.20 p = 1.000	1.75 ± 1.34 z = 0.52 p = 0.951	1.22 ± 1.15 z = 1.41 p = 0.492
2020:2018	1.29 ± 1.21 z = 1.31 p = 0.542	1.31 ± 1.23 z = 1.29 p = 0.562	1.22 ± 1.21 z = 0.80 p = 0.853
2021:2018	1.70 ± 1.34 z = 1.83 p = 0.250	1.69 ± 1.32 z = 1.83 p = 0.220	1.49 ± 1.19 z = 2.31 p = 0.095
2020:2019	1.33 ± 1.19 z = 1.56 p = 0.382	1.33 ± 1.19 z = 1.56 p = 0.382	0.95 ± 1.19 z = -0.28 p = 0.993
2021:2019	1.75 ± 1.34 z = 2.11 p = 0.142	1.75 ± 1.34 z = 2.11 p = 0.142	1.22 ± 1.17 z = 1.28 p = 0.575
2021:2020	1.32 ± 1.29 z = 1.09 p = 0.681	1.32 ± 1.29 z = 1.09 p = 0.681	1.28 ± 1.21 z = 1.30 p = 0.559

Table S4. Overlap between kernel utilisation distributions (KUDs) between pairs of years, expressed as a % of the KUD area of each year.

Year 1	Year 2	Overlap as % of year 1 KUD
Incubation		
2018	2019	78 %
2018	2020	78 %
2018	2021	88 %
2019	2018	77 %
2019	2020	62 %
2019	2021	61 %
2020	2018	77 %
2020	2019	62 %
2020	2021	92 %
2021	2018	66 %
2021	2019	47 %
2021	2020	71 %
Mean overlap		71.6 ± 3.7 %
Chick-rearing		
2018	2019	34 %
2019	2018	100 %
Mean overlap		67 ± 33 %

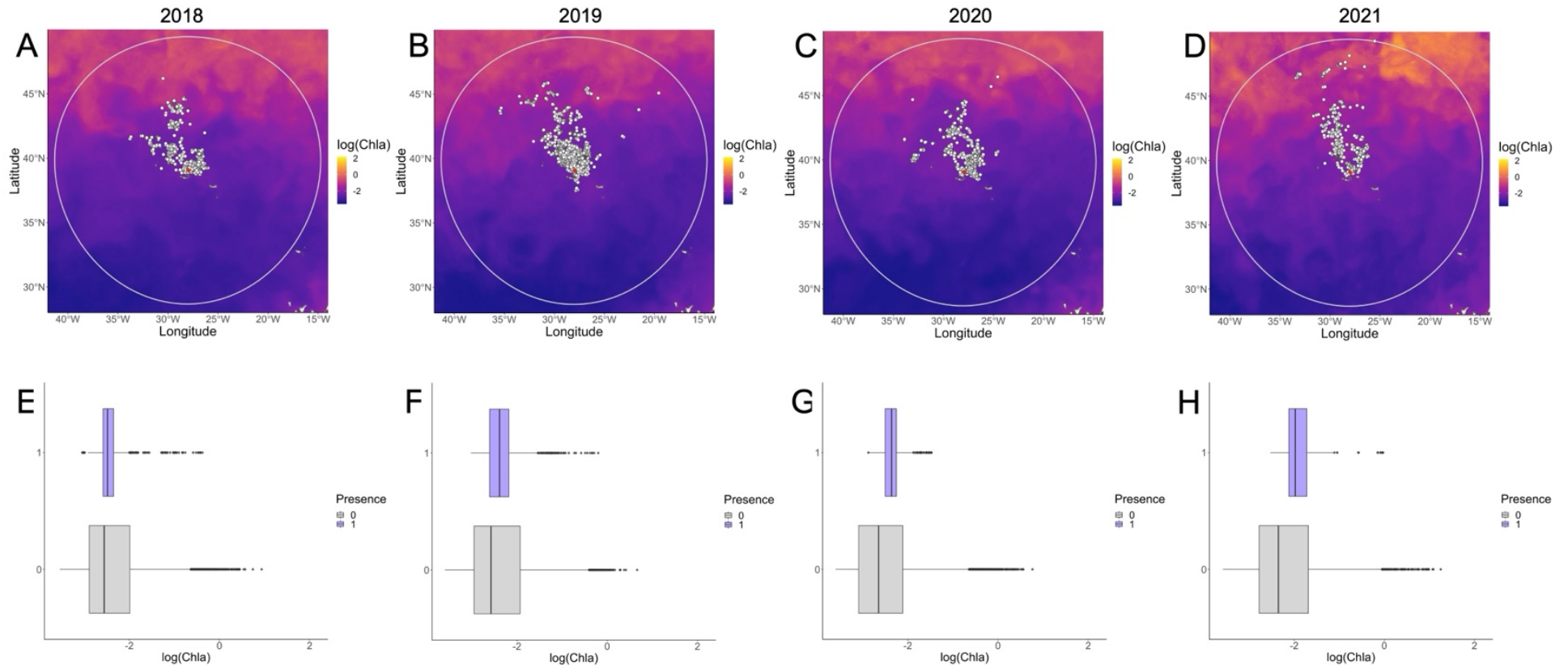


Fig. S1. (A–D) Foraging locations of Monteiro’s storm-petrels (grey) in each of the study years (2018–2021) shown with mean chlorophyll *a* concentration; (E–H) distribution of chlorophyll *a* concentrations associated with foraging locations (purple) and random pseudo-absence locations (grey) in each year. Red diamond indicates the study colony. The grey circle represents the potential foraging range and has a radius of 1154 km (max foraging range) around the center of the colony.

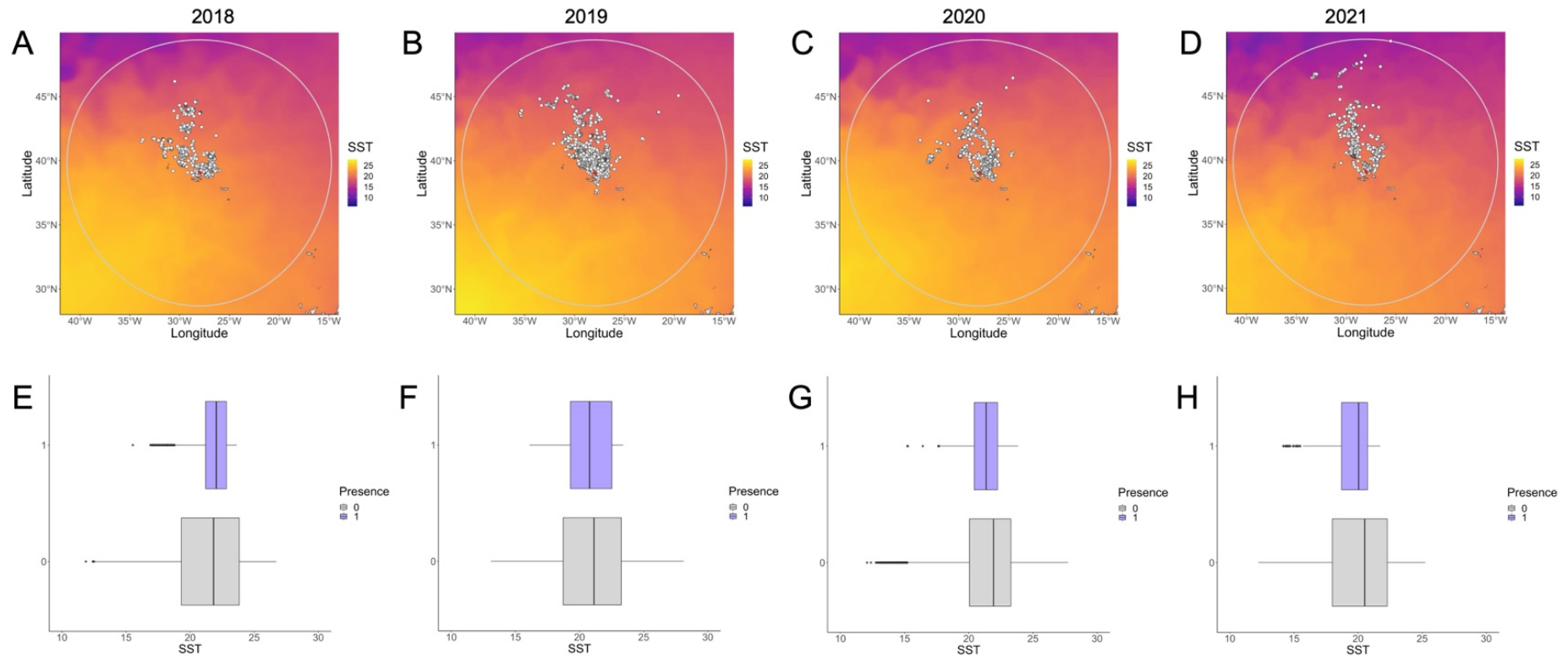


Fig. S2. (A–D) Foraging locations of Monteiro’s storm-petrels (grey) in each of the study years (2018–2021) shown with mean sea surface temperature (SST) concentrations; (E–H) distribution of SST concentrations associated with foraging locations (purple) and random pseudo-absence locations (grey) in each year. Red diamond indicates the study colony. The grey circle represents the potential foraging range and has a radius of 1154 km (max foraging range) around the center of the colony.