

Table S1: Details of satellite tagged turtles from Aldabra Atoll and their nesting history.

Date tag deployed	Satellite tag ID	Tag type	No. of days at Aldabra before tag deployed	No. of encounters before tag deployed (same season)	Right flipper tag	Left flipper tag	Previous season encounters
17/10/2011	108797	Sirtrack Kiwisat 101 PTT	34	1	SCA3123	SCA3155	None
23/02/2012	108798	Sirtrack Kiwisat 101 PTT	69	2	SCA4323	SCA4324	None
22/06/2012	108793	Sirtrack Kiwisat 101 PTT	59	4	SEY3326	SCA4427	26/04/1998
26/06/2012	108794	Sirtrack Kiwisat 101 PTT	48	1	SCA4582	SCA4584	None
08/07/2012	108795	Sirtrack Kiwisat 101 PTT	58	3	SCA0135	SCA0136	18/04/2007
10/07/2012	108796	Sirtrack Kiwisat 101 PTT	68	1	SCA4554	SCA4556	None
14/05/2014	108800	Sirtrack Kiwisat 101 PTT	71	3	SCA0191	SCA0192	05/05/2007; 17/05/2007; 30/05/2007

Date tag deployed	Satellite tag ID	Tag type	No. of days at Aldabra before tag deployed	No. of encounters before tag deployed (same season)	Right flipper tag	Left flipper tag	Previous season encounters
18/05/2014	108799	Sirtrack Kiwisat 101 PTT	57	2	SEY8034	SCA6337	12/06/2005; 25/06/2005; 26/06/2005; 11/07/2005; 12/07/2005
28/01/2022	724920	Telonics SeaTrkr-4370- 4	0	-	SCA7990	SCA7991	23/03/2015
28/01/2022	712502	Telonics SeaTrkr-4370- 4	0	-	SCA0107	SCA0108	10/04/2007; 21/04/201
28/01/2022	724919	Telonics SeaTrkr-4370- 4	0	-	SXX3254	SXX3255	None
01/03/2022	224007	Wildlife Computers SPLASH10- 344D	38	1	SXX3277	SXX3278	None
04/03/2022	224009	Wildlife Computers SPLASH10- 344D	47	1	SCA9782	SCA9784	None
08/03/2022	224010	Wildlife Computers SPLASH10- 344D	40	1	SXX3251	SXX3252	None

Date tag deployed	Satellite tag ID	Tag type	No. of days at Aldabra before tag deployed	No. of encounters before tag deployed (same season)	Right flipper tag	Left flipper tag	Previous season encounters
10/03/2022	224011	Wildlife Computers SPLASH10-344D	53	1	SCA9496	SCA9497	None
12/03/2022	224017	Wildlife Computers SPLASH10-344D	54	1	SXX3253	SCA9721	None
15/03/2022	226017	Lotek Kiwisat®K2G 376E Dive	0	0	SEY1701	SCA9794	28/04/2005; 10/05/2005; 25/04/2012; 08/05/2012; 22/05/2012
16/03/2022	226016	Lotek Kiwisat®K2G 376E Dive	0	0	SXX3268	SXX3269	None
23/03/2022	226013	Lotek Kiwisat®K2G 376E Dive	0	0	SXX3231	SXX3232	None
24/03/2022	226014	Lotek Kiwisat®K2G 376E Dive	0	0	SXX3255	SXX3236	None
25/03/2022	226015	Lotek Kiwisat®K2G 376E Dive	0	0	SCA8243	SXX3237	None

Table S2. Additional information on the satellite tag application and tag programming. PTTs = Position tracking terminals; FA = foraging area.

Tag type	Dates	# Turtles	Epoxy	Antifouling Paint	Extra carapace fiberglass	Satellite system	Transmission programming for migration/ FA
Sirtrack Kiwisat 101 PTT	Oct 2011– July 2012	6	MAS Epoxies Flexbond 5000	Yes	No	Argos	24 hrs every 5 days
Sirtrack Kiwisat 101 PTT	May 2014	2	Sika Anchorfix 3	Yes	Yes	Argos	24 hrs every 5 days
Telonics SeaTrkr-4370-4	28 Jan 2022	3	DeWalt Pure 150-Pro	No	No	GPS/ Iridium	1 transmission every hr/ every 3 hrs
Wildlife Computers SPLASH10-344D	1–12 Mar 2022	5	DeWalt Pure 150-Pro	No	No	Argos	Maximise transmissions (to up 500/day)
Lotek Kiwisat®K2G 376E Dive	15–26 Mar 2022	5	DeWalt Pure 150-Pro	No	No	Argos	Maximise transmissions (to up 500/day)

Table S3. Details of the use of MPAs by the satellite tagged green turtles, both during migration and at their foraging area. All MPAs have been included, but unvalidated MPAs are indicated *

Satellite tag ID	MPA used during migration (and distance travelled within it; (km))	Name of MPA, if the final location was within an MPA
108793	Ankarea (51)	
108794	Menai Bay (23)	
108795	NA	
108796	NA	
108797	Amirantes to Fortune Bank Area of Outstanding Natural Beauty (290)	Amirantes to Fortune Bank Area of Outstanding Natural Beauty
108798	NA	
108799	NA	
108800	Tanga (2)	
724920	Malindi (36)	
712502	Ambodivahibe (39); Ankarea (6); Nosy Hara* (136)	
724919	Rufiji-Mafia-Kilwa* (19);	Rufiji Mafia-Kilwa MPA (Tanzania)*
226017	Ambodivahibe (14); Ankarea (21); Ankivonjy (61); Nosy Hara* (82); Sahamalaza Iles Radama* (35)	Ambodivahibe (Madagascar)
226016	Primeiras & Segundas* (217)	Primeirus and Segundas Marine Reserve (Mozambique)*

Satellite tag ID	MPA used during migration (and distance travelled within it; (km))	Name of MPA, if the final location was within an MPA
226015	Rufiji-Mafia-Kilwa* (106) of which 25 km inside Mafia Island	
226014	Iles Barren (95); Kirindy Mite* (35); Manjaboaka* (21), Soariake (18); Velondriake (64)	
226013	NA	
224017	Ankivonjy (13)	
224011	Menai Bay (3); Pemba Channel Conservation Area* (64)	Pemba Channel Conservation Area (Tanzania)
224010	Ankivonjy (10)	
224009	NA	
224007	NA	

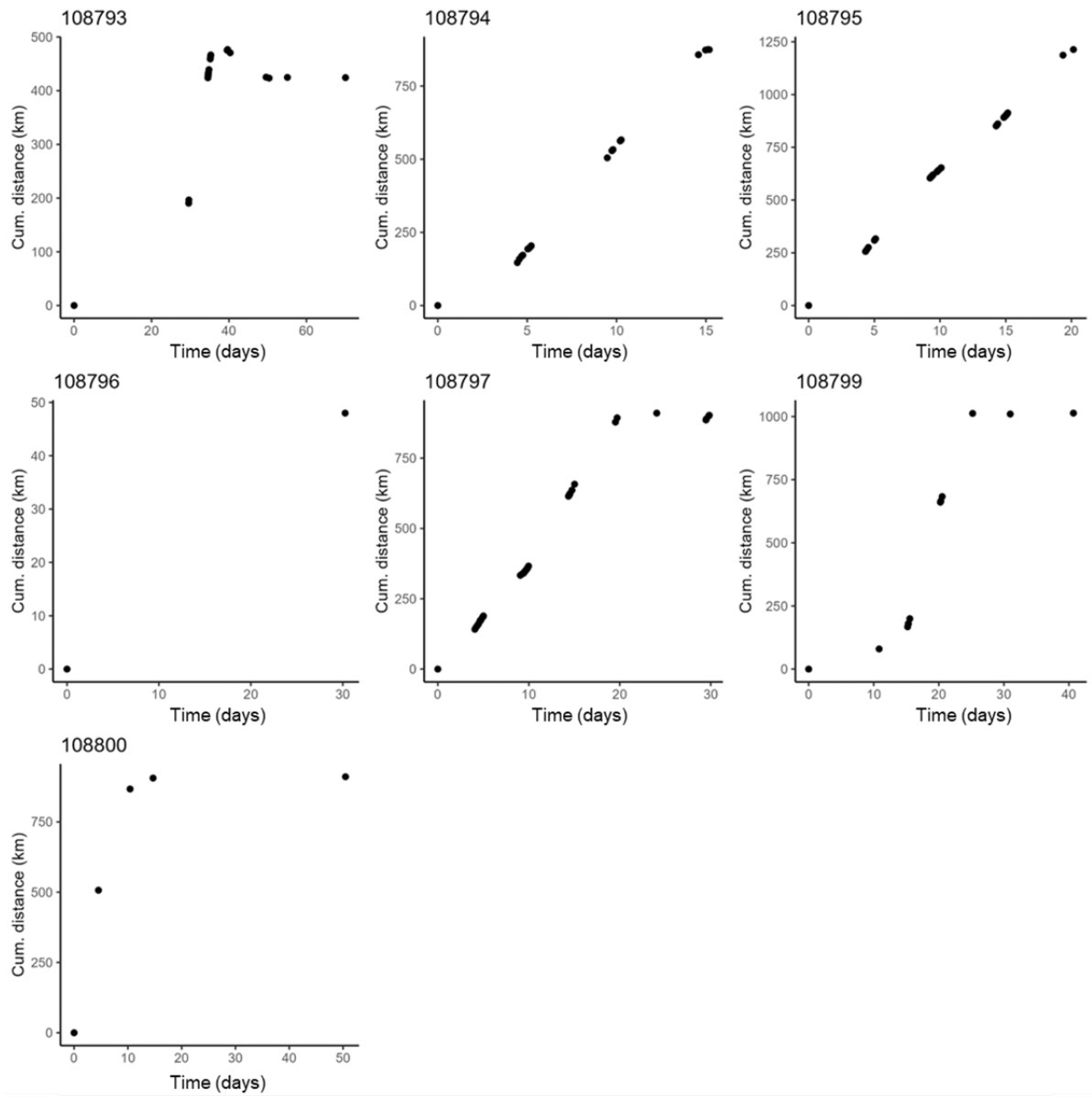


Figure S1. Cumulative distance curves for satellite tagged turtles in 2012/14 from Aldabra.

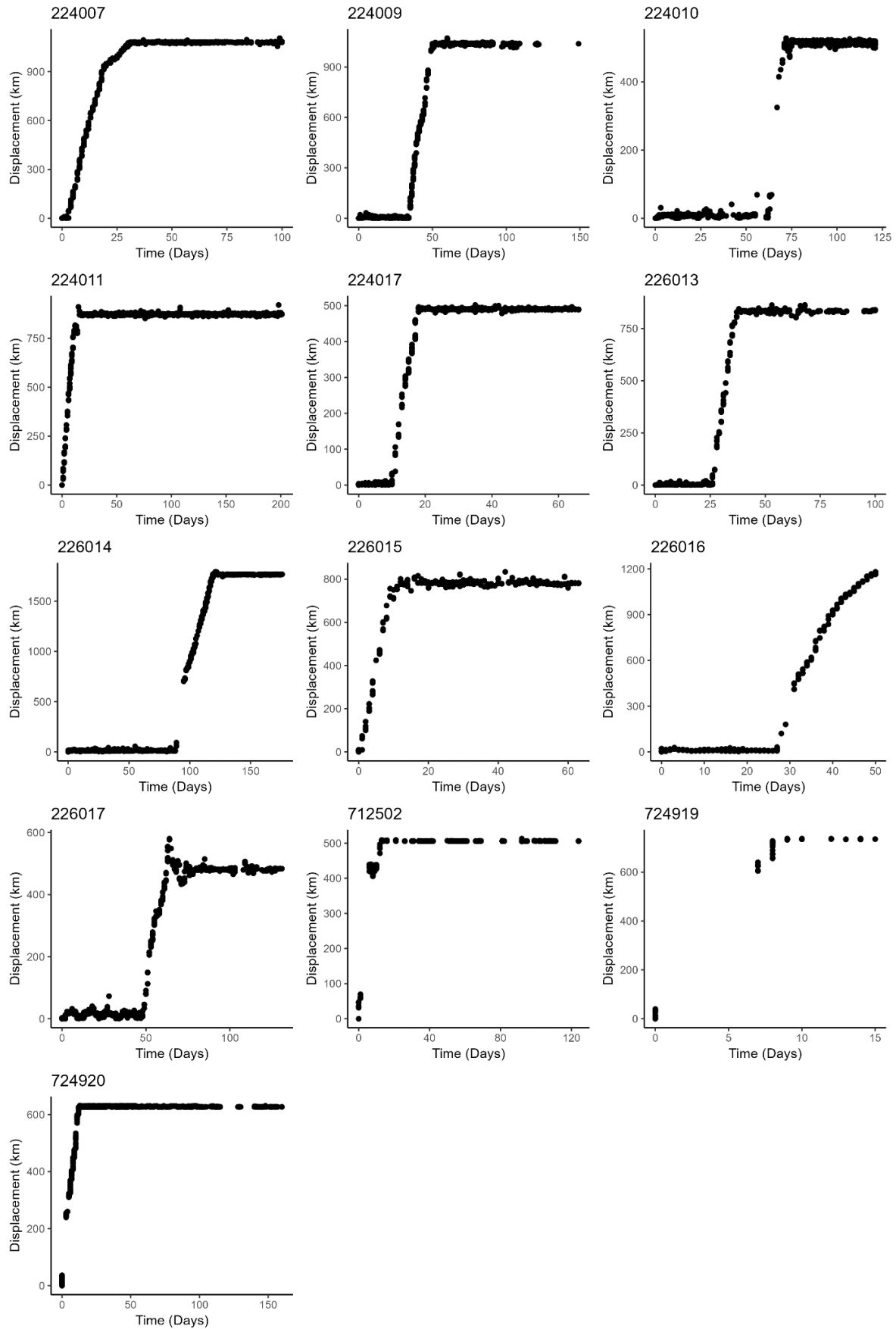


Figure S2. Cumulative distance curves for satellite tagged turtles in 2022 from Aldabra.