

The following supplement accompanies the article

Marine protected areas and migratory species: residency of green turtles at Palmyra Atoll, Central Pacific

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Table S1. Characteristics of location data accepted for each transmitter. Three types of tags were used: Smart Position or Temperature tags ((Wildlife Computers (WC)): MK10 Fastloc GPS (n = 2) and SPOT 5 (n = 10), and Telonics: ST-series (n = 6). Argos provided the positional data accuracy specified as Location Classes 3, 2, 1, 0, A, B, and Z. The lowest quality positions (Z, not shown) were not accepted. Fastloc GPS data were available on the two WC MK10-AFB transmitters. Fastloc GPS positions are reportedly accurate to 20–75 m, although the linear error can exceed 75 m (Hazel 2009, Dujon et al. 2014). Fine-scale filtering procedures used for residency calculations used only Argos Location Classes 1, 2, and 3 data, or Fastloc GPS data taken from the earliest position in a day (shown in parentheses).

Year / Argos ID / Accuracy	Tag Type	Fastloc locations	Argos locations	Argos LC class and accuracy					
				3 20-75 m	2 < 250 m	1 250-500 m	0 500-1500 m	A > 1500 m	B
2008									
85923	WC SPOT 5	N/A	771	4	8	6	6	100	647
23513	Telonics ST-series	N/A	500	3	22	11	8	65	391
85924	WC SPOT 5	N/A	2671	128	226	170	69	517	1561
85946	WC MK10-AFB	81 (20)	226	1	6	6	10	49	154
85945	WC MK10-AFB	92 (37)	84	1	1	1	-	20	61
85922	WC SPOT 5	N/A	58	-	2	3	3	10	40
2009									
85921	WC SPOT 5	N/A	1212	41	90	98	55	211	717
85920	WC SPOT 5	N/A	485	46	77	77	64	70	151
93344	Telonics ST-series	N/A	10	-	-	-	-	2	8
93342	Telonics ST-series	N/A	28	1	3	2	-	6	16
93343	Telonics ST-series	N/A	26	1	3	4	3	5	10
93341	Telonics ST-series	N/A	29	-	1	-	2	8	18
2010									
54162	WC SPOT 5	N/A	42	-	-	-	2	5	35
2011									
54158	WC SPOT 5	N/A	817	7	17	21	16	108	648
106301	WC SPOT 5	N/A	470	9	16	16	15	89	325
106300	WC SPOT 5	N/A	90	2	1	5	6	20	56
106302	WC SPOT 5	N/A	9	-	-	1	-	1	7
2012									
36501	Telonics ST-series	N/A	58	16	6	6	7	6	17
Total			7586	260	479	427	266	1292	4862

Figs. S1 – S6. Residency patterns of satellite-tracked turtles. A) Minimum Convex Polygon and Kernel Density (MCP / KDE), B) Grid density estimation (Hexagon grid), and C) Time-Local Convex Hull analysis (T-LoCoh) are shown for turtles 23513 (Fig. S1), 36501 (Fig. S2), 85923 (Fig. S3), 93342 (Fig. S4 A and B; there was insufficient data for C), 93343 (Fig. S5), and 106300 (Fig. S6). Symbols in Figs. S1 – S6 A represent capture (star), release (diamond), and final transmission (square) sites.

23513

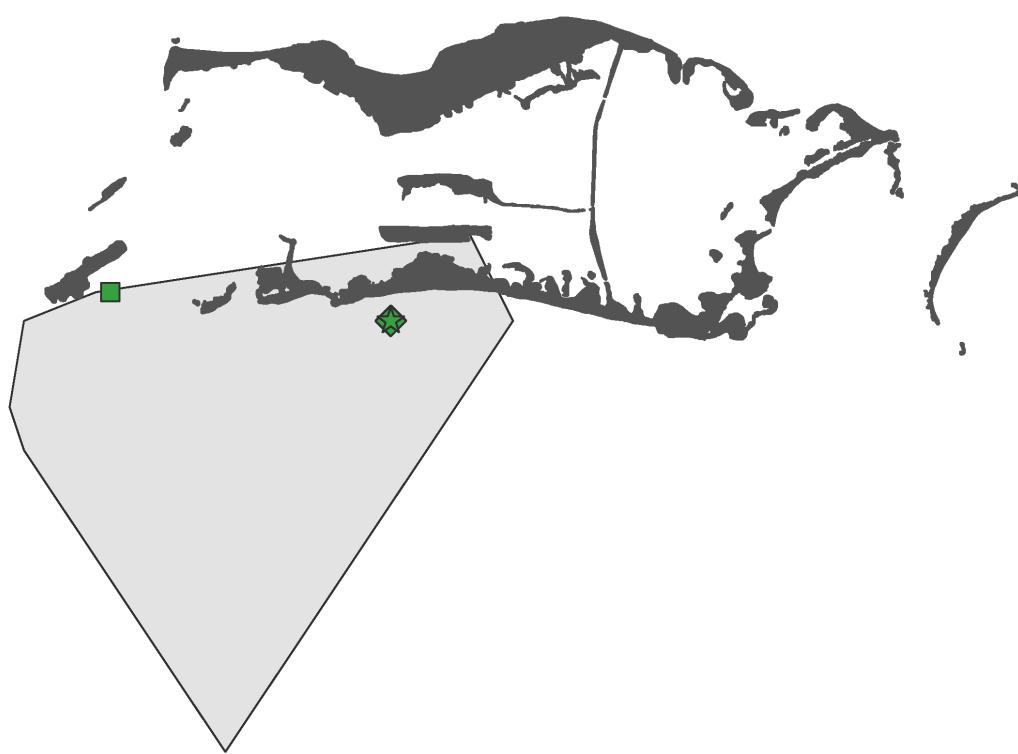


Fig. S1 A.

23513

0 1 2 3 4 5 km

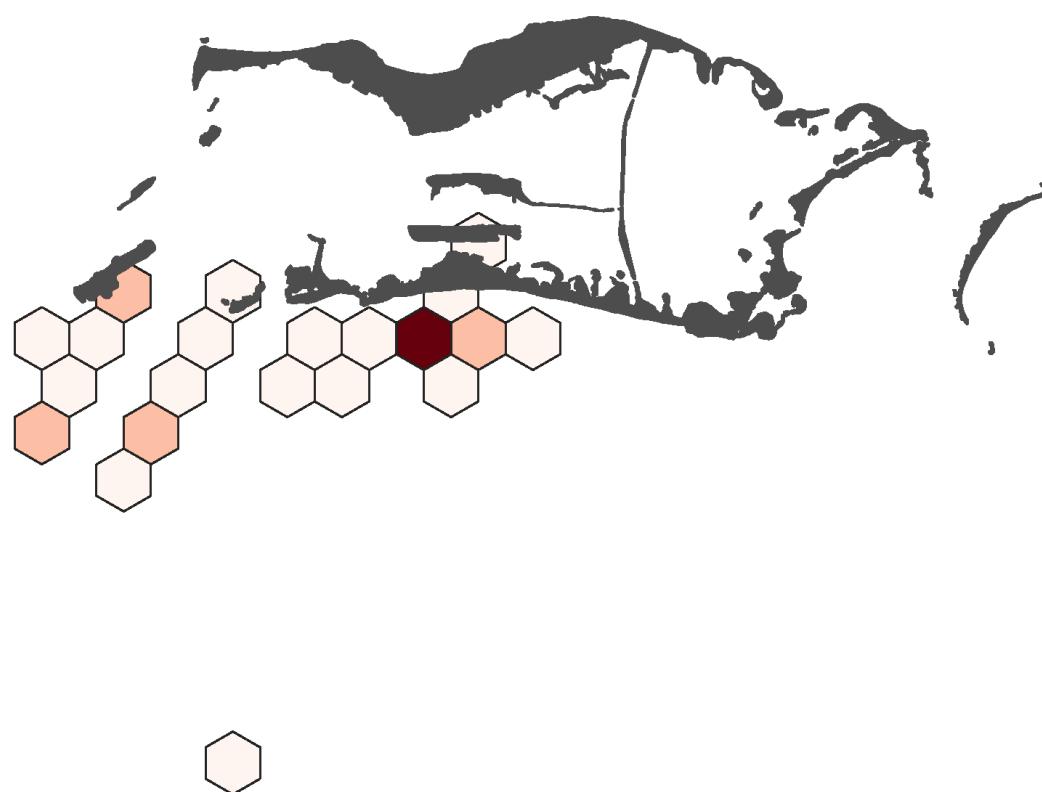


Fig. S1 B.

23513

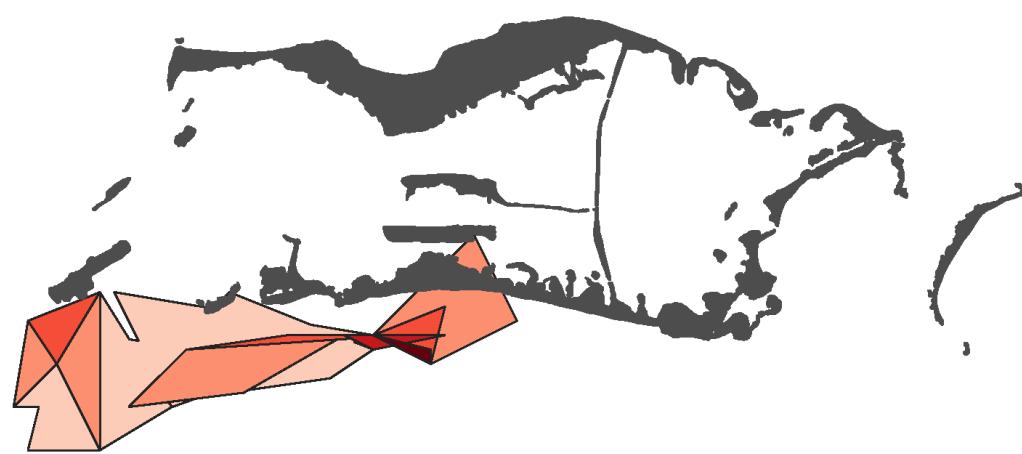


Fig. S1 C.

36501

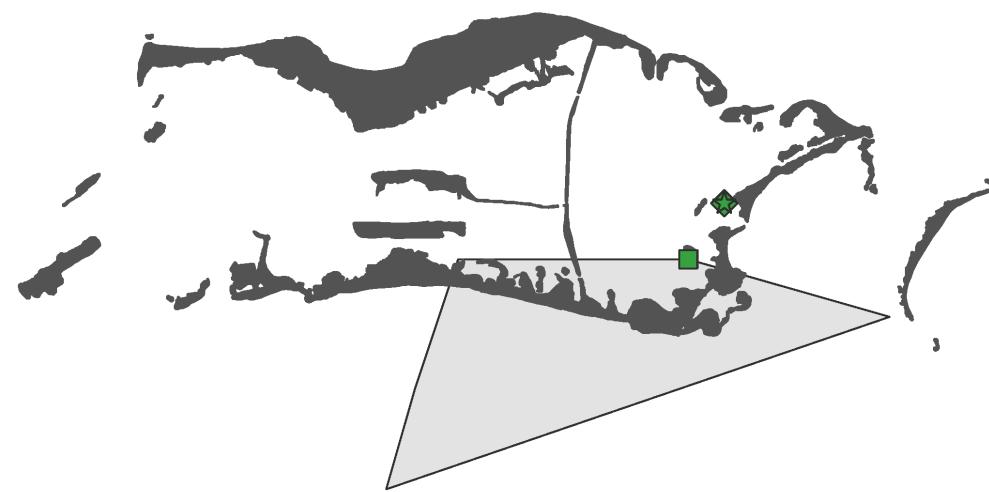


Fig. S2 A.

36501

0 1 2 3 4 5 km

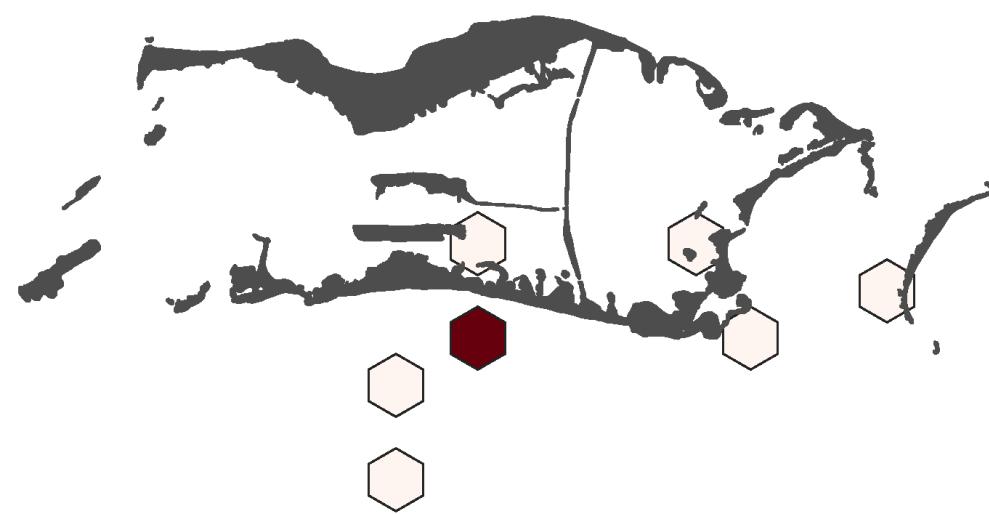


Fig. S2 B.

36501

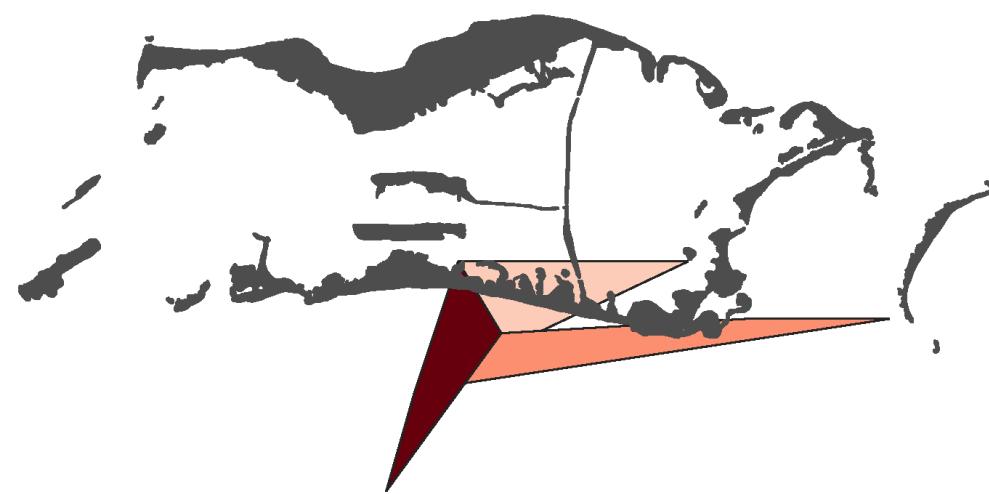


Fig. S2 C.

85923



Fig. S3 A.

85923

0 1 2 3 4 5 km

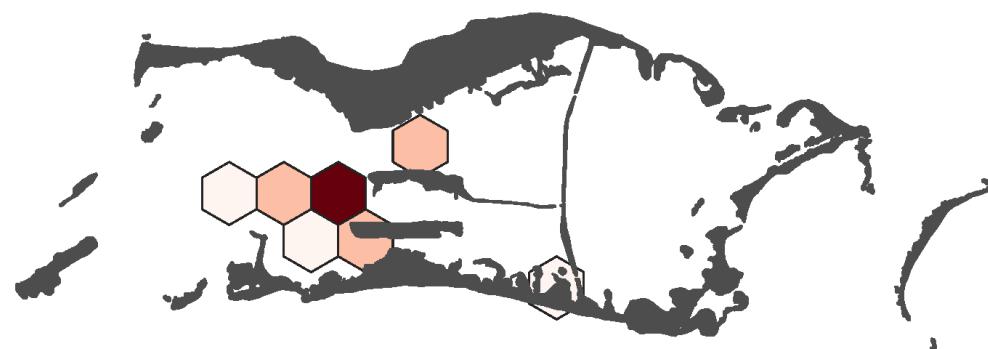


Fig. S3 B.

85923

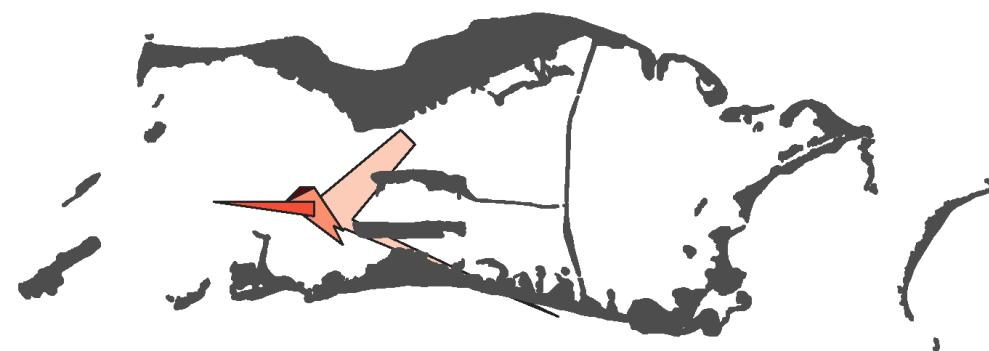


Fig. S3 C.

0 1 2 3 4 5 km

93342

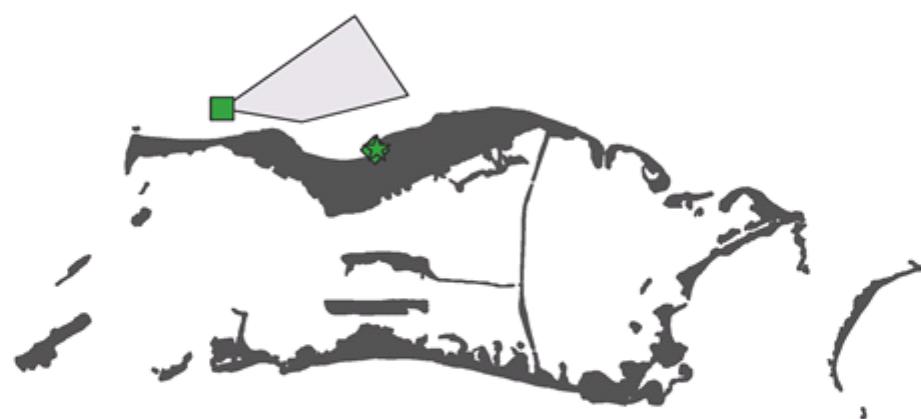


Fig. S4 A.

0 1 2 3 4 5 km

93342

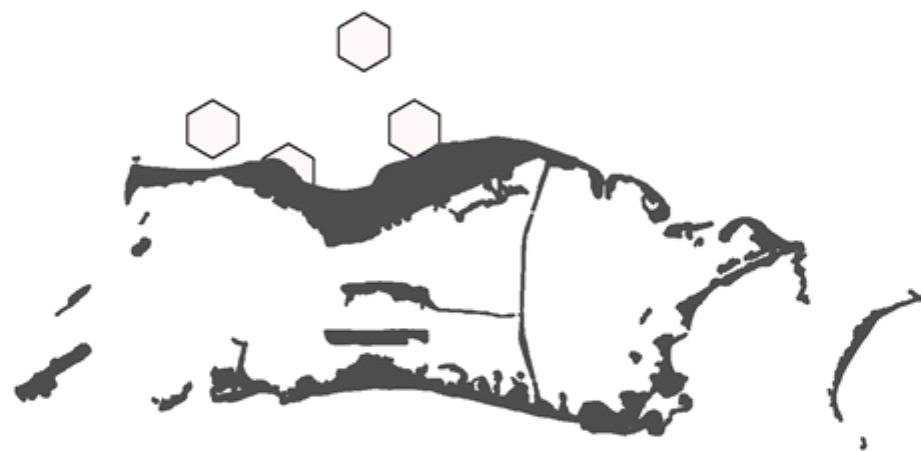


Fig. S4. B.

93343



Fig. S5 A.

93343

0 1 2 3 4 5 km



Fig. S5 B.

93343

0 1 2 3 4 5 km

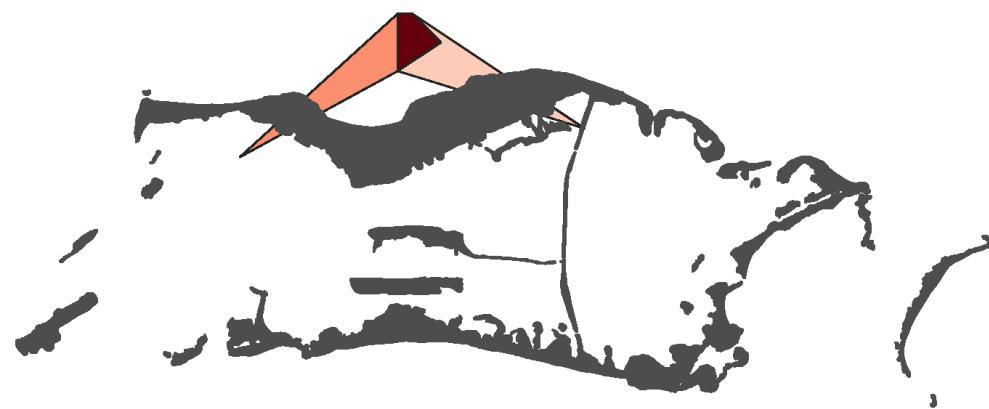


Fig. S5 C.

106300

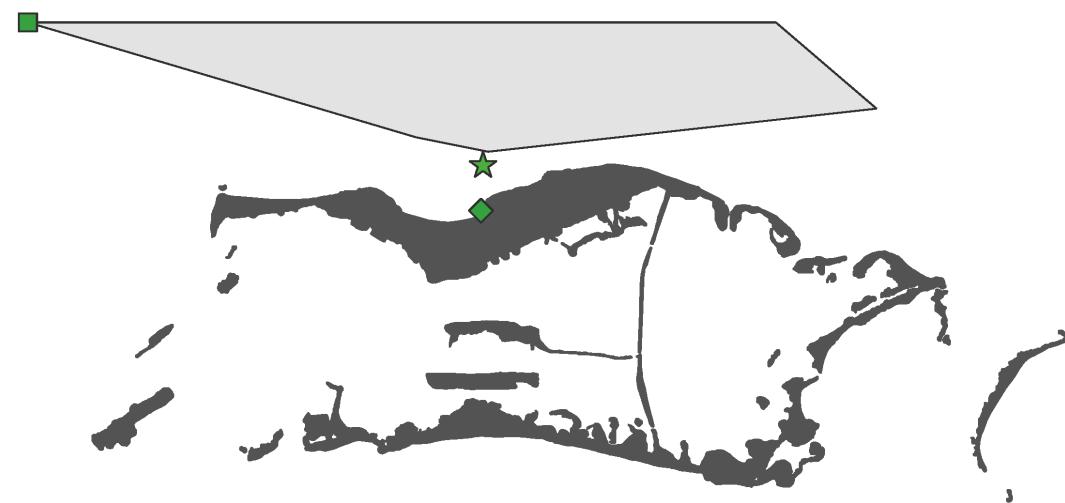


Fig. S6 A.

106300

0 1 2 3 4 5 km

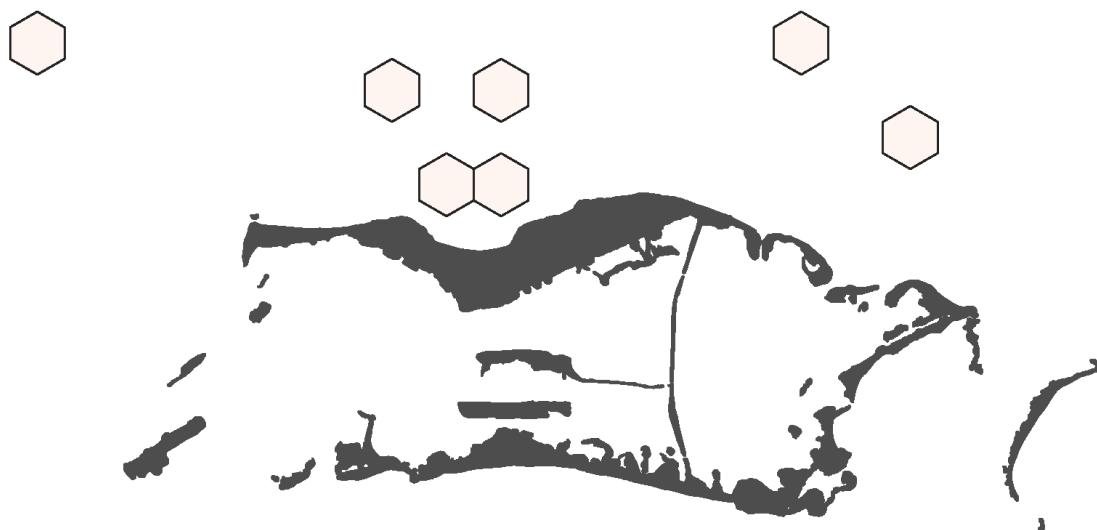


Fig. S6 B.

106300

0 1 2 3 4 5 km

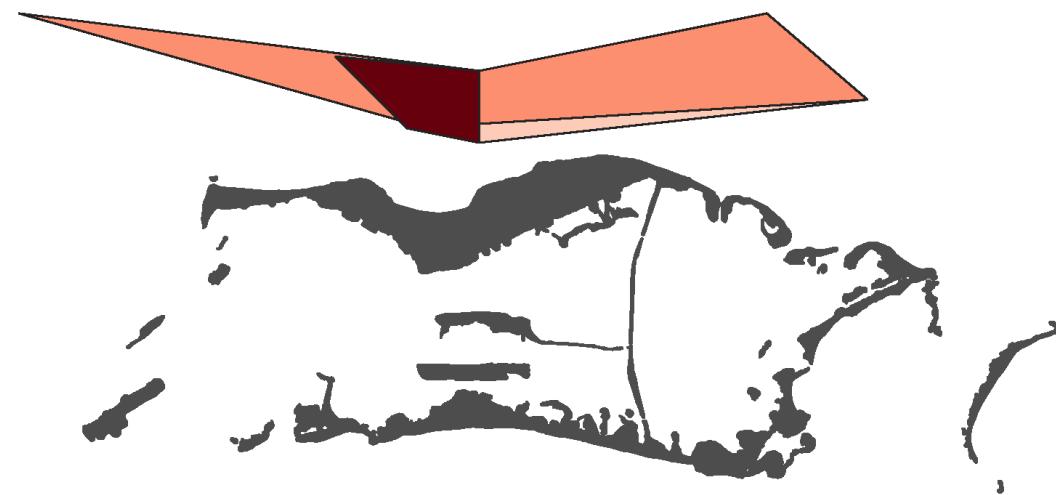


Fig. S6 C.