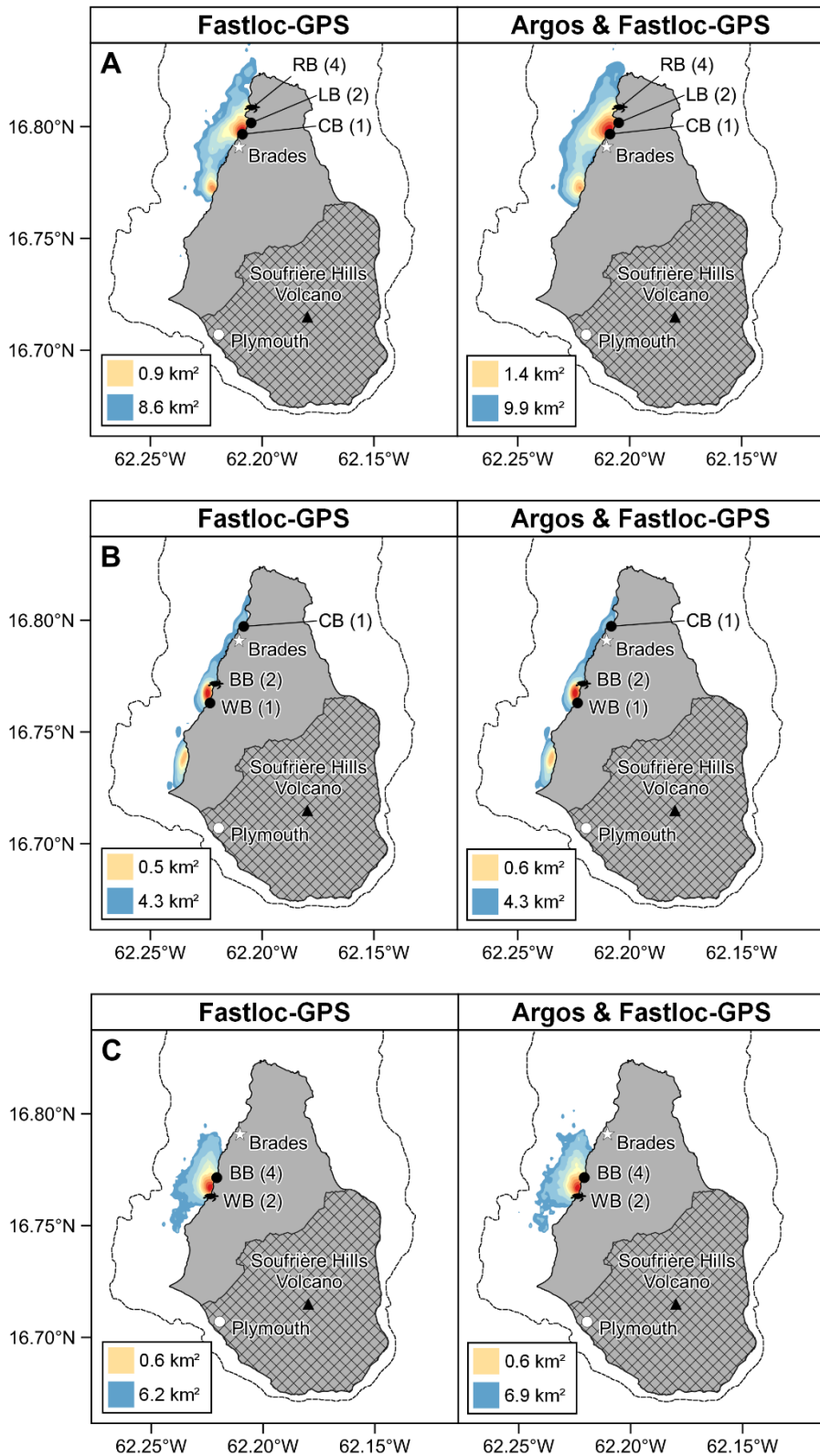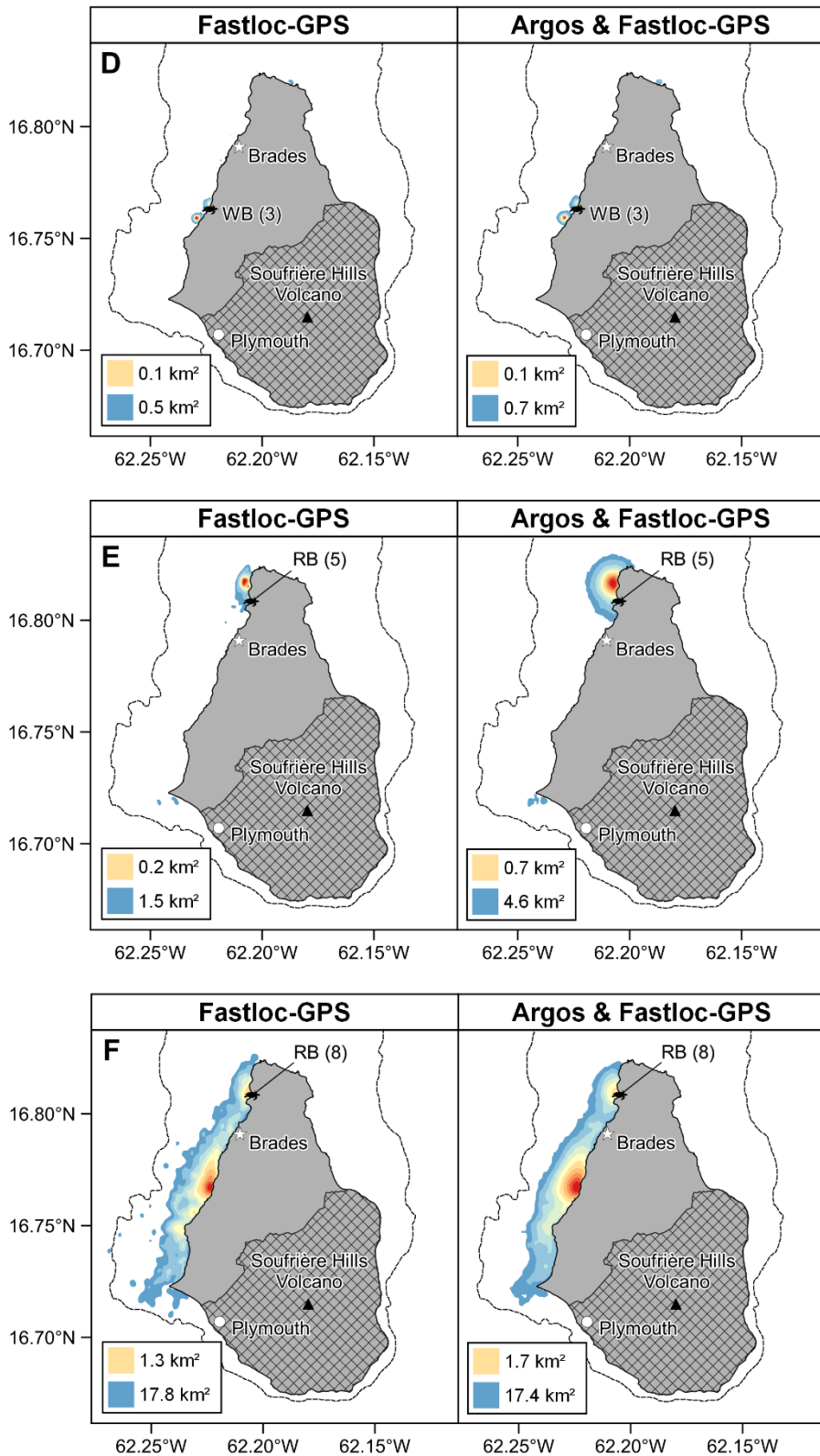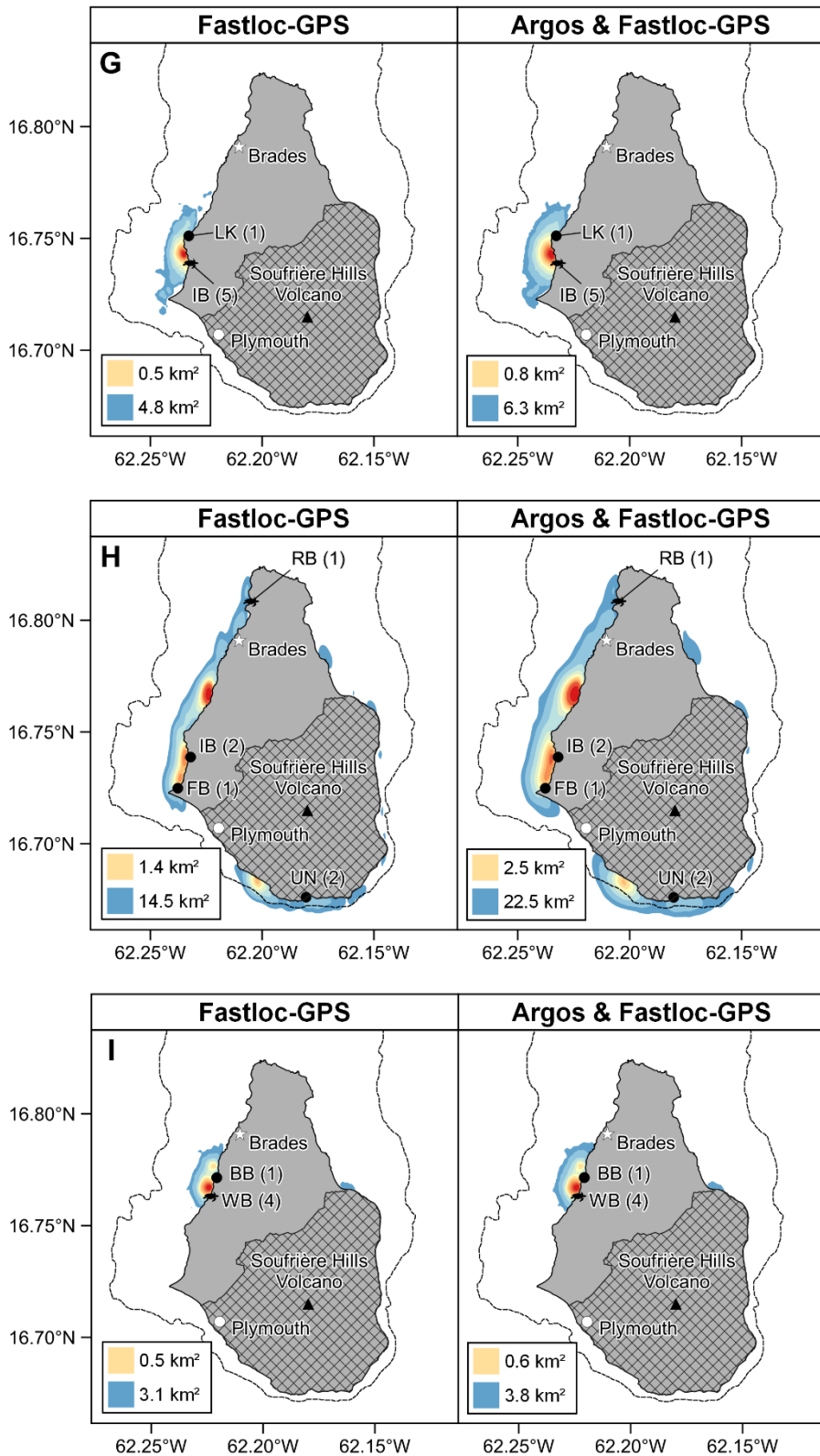**Figure S1.** Inter-nesting migration of Turtle J between Montserrat (MSR), Guadeloupe (GLP), and Dominica (DOM) between 11 September 2021 to 19 September 2021. The green and red dots represent the start and end location of Turtle J's inter-nesting migration, respectively, and the purple dots represent locations where Turtle J displayed inter-nesting ('resident') type behaviours within the coastal waters of Dominica. White dashed lines depict Exclusive Economic Zone (EEZ) boundaries.
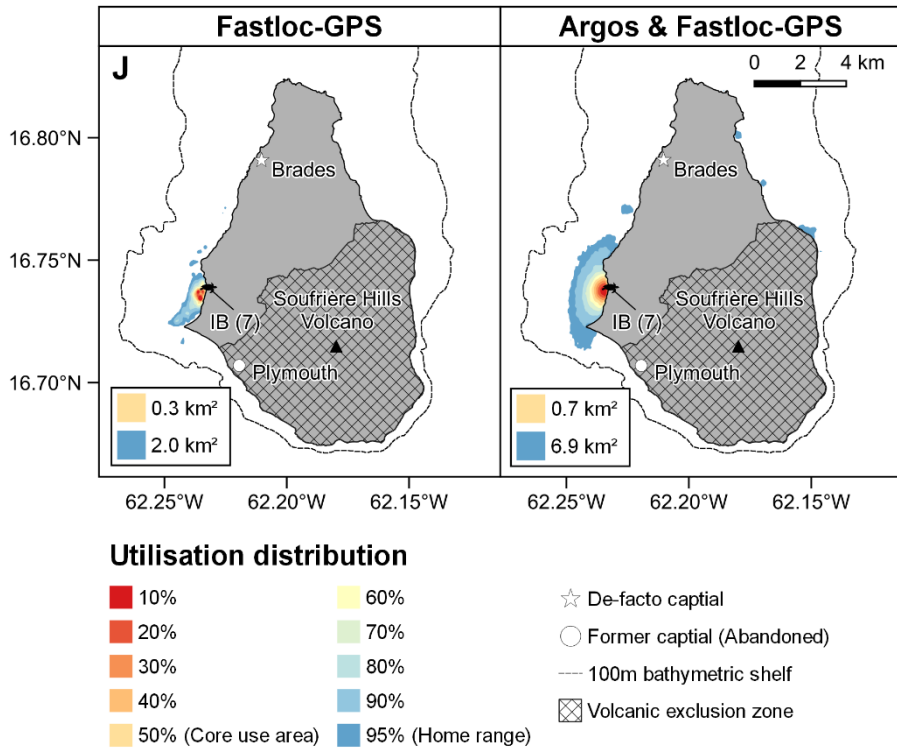
Figure S2. Inter-nesting utilisation distributions and nesting locations for the green (n = 9) and hawksbill (n = 1) turtles tagged in Montserrat during August 2021. Turtle IDs match those in Table 1. Numbers in parentheses indicate the number of clutches laid at each nesting beach. Note a single final nesting attempt for turtles A and H could not be assigned a nesting beach and have therefore been excluded from this figure. Abbreviations for beach names are as follows: RB, Rendezvous Bay; LB, Little Bay, CB, Carr's Bay; BB, Bunkum Bay, WB, Woodlands Bay; LK, Lime Kiln Bay; IB, Isles Bay; FB, Fox's Bay; UN, Unknown Nesting Beach.
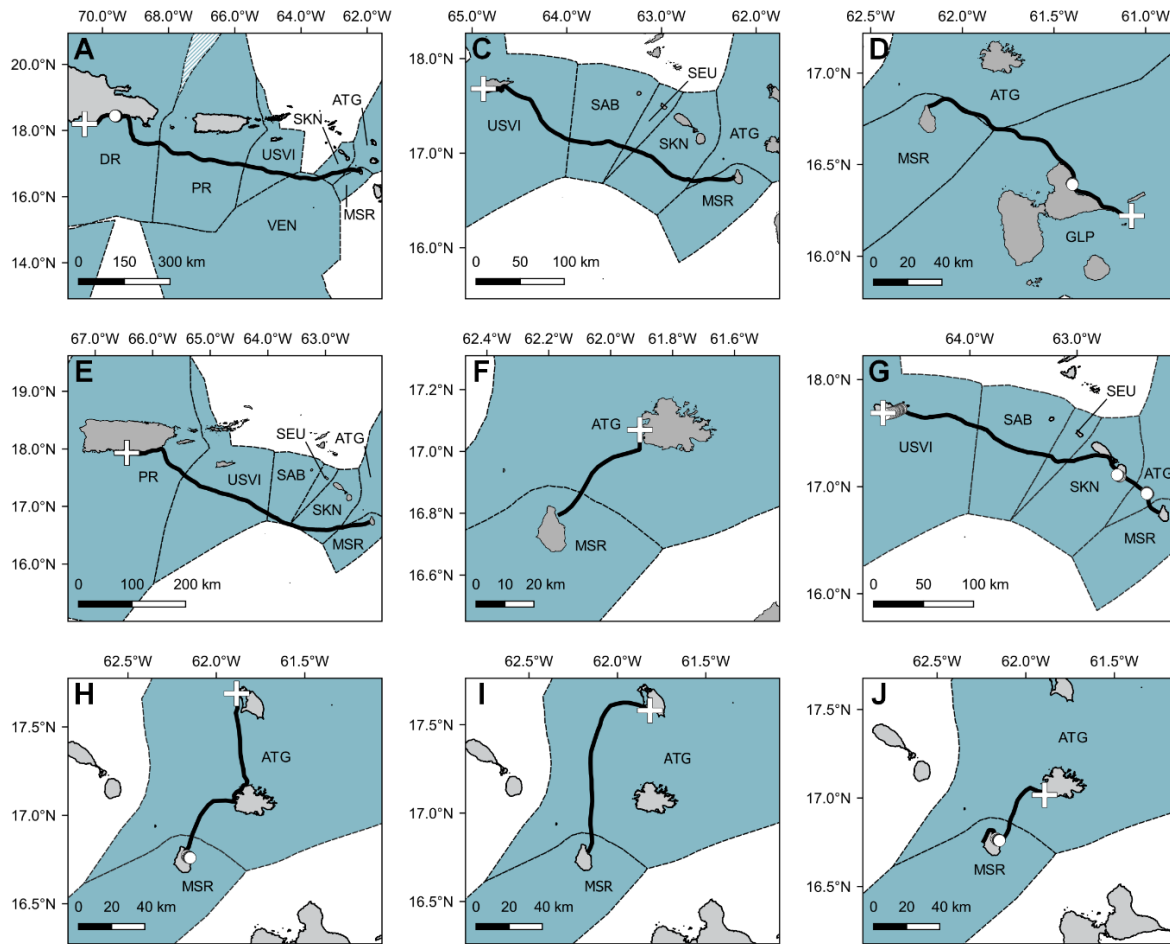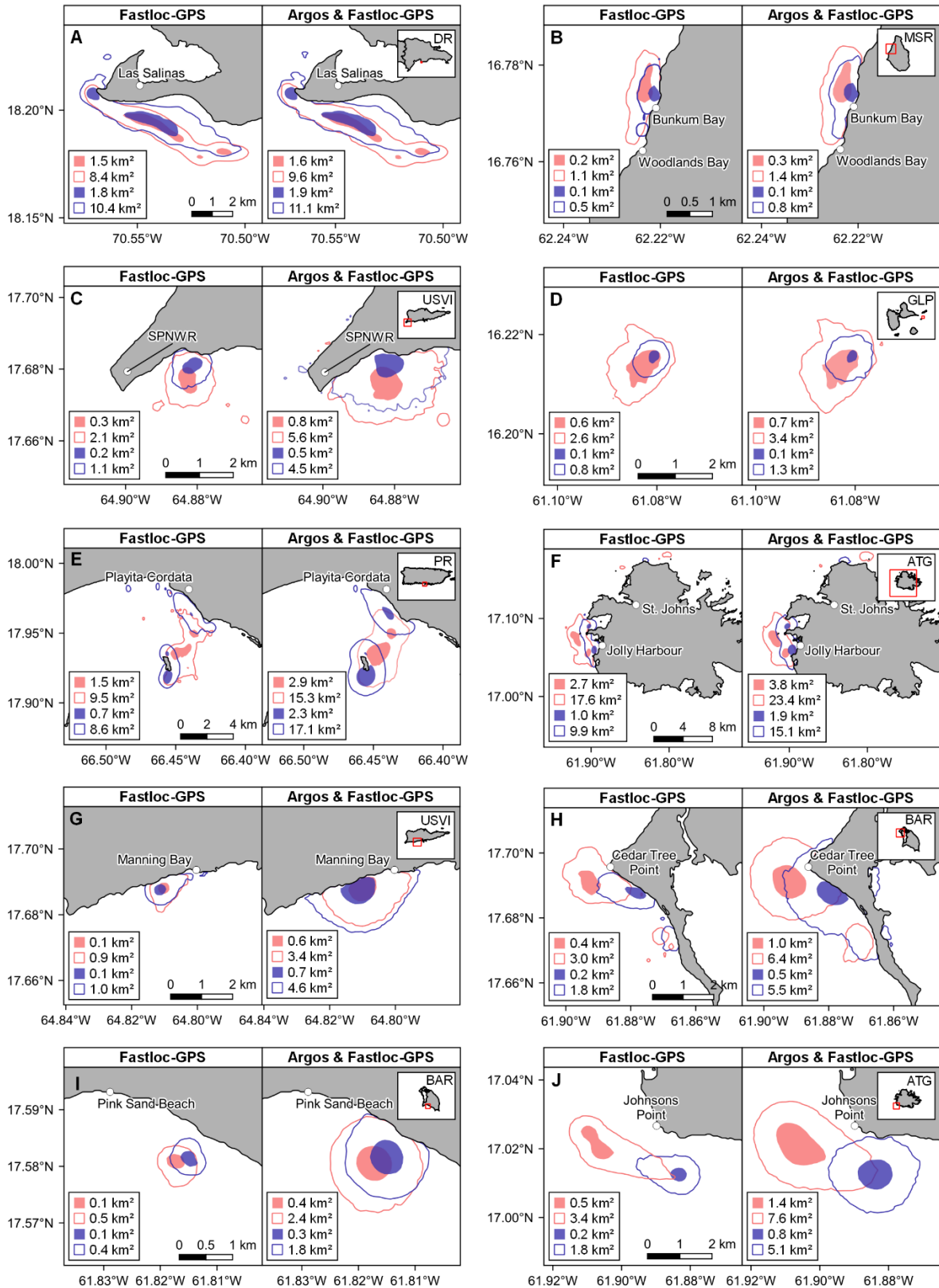
Figure S3. Post-nesting migrations of eight female green turtles and one female hawksbill turtle tagged in Montserrat (MSR) in relation to Exclusive Economic Zone (EEZ) boundaries. Figure letters correspond to turtle IDs provided in Table 1. Turtle B is excluded from this figure as this individual did not perform a post-nesting migration and remained resident within Montserrat's EEZ. Blue polygons display the extent of EEZs for countries and territories that each turtle transited through. Blue hashed areas indicate overlapping maritime claims, white crosses display the median centroid of foraging home ranges, and white circles show the locations where turtles displayed short bouts of resident type behaviour (i.e., stopovers) during post-nesting migrations. Note scale differences. Abbreviations for countries and territories are as follows: DR, Dominican Republic; PR, Puerto Rico; USVI, United States Virgin Islands; SAB, Saba; SEU, Saint Eustatius; SKN, Saint Kitts & Nevis; ATG, Antigua & Barbuda; MSR, Montserrat; GLP, Guadeloupe.

6

Utilisation Distribution

Diurnal core use area (50% UD)   Nocturnal core use area (50% UD)
Diurnal home range (95% UD)   Nocturnal home range (95% UD)

Figure S4 (previous page). Diurnal and nocturnal foraging home ranges (95% UD) and core use areas (50% UD) of the nine nesting green turtles and one nesting hawksbill turtle tagged in Montserrat derived from Fastloc-GPS and Fastloc-GPS and Argos posterior estimates combined. Figure letters correspond to turtle ID's provided in Table 1. Inset maps display the locations of foraging grounds (red box) in relation to the corresponding country, island, or territory. Abbreviations of countries, islands and territories are as follows: DR, Dominican Republic; MSR, Montserrat; USVI, United States Virgin Islands; GLP, Guadeloupe; PR, Puerto Rico; ATG, Antigua; BAR, Barbuda. Note different scales.

Table S1. Mean inter-nesting water column depth use estimates and 95% credible intervals for green and hawksbill turtles tagged after nesting in Montserrat derived from Fastloc-GPS locations. 95% credible intervals are displayed in parentheses. Turtle IDs match those in Table 1.

	Mean inter-nesting water column depth use estimates (95% credible interval)			
Turtle ID	**≤ 25 m**	**26 m to 50 m**	**51 m to 75 m**	**>75 m**
Turtle A	69.4% (68.3 – 70.4%)	28.1% (27.0 – 29.3%)	2.5% (2.1 – 2.9%)	<0.1% (0.0 – 0.1%)
Turtle B	95.3% (94.0 – 96.4%)	4.7% (3.6– 6.0%)	0.0 % (0.0 – 0.0%)	0.0% (0.0 – 0.0%)
Turtle C	60.9% (59.1 – 62.7%)	32.0% (30.2 – 33.9%)	7.1% (6.1 – 8.1%)	0.1% (0.0 – 0.2%)
Turtle D	99.7% (98.9 – 100.0%)	0.3% (0.0 – 1.1%)	0.0% (0.0 – 0.0%)	0.0% (0.0 – 0.0%)
Turtle E	85.2% (83.7 – 86.4%)	14.8% (13.6 – 16.3%)	0.0% (0.0 – 0.0%)	0.0% (0.0 – 0.0%)
Turtle F	70.5% (69.4 – 71.8%)	24.0% (22.8 – 25.2%)	5.1% (4.5 – 5.6%)	0.4% (0.3 – 0.5%)
Turtle G	72.6% (70.7 – 74.7%)	25.2% (22.7 – 27.1%)	2.2% (1.5 – 3.2%)	<0.1% (0.0 – 0.1%)
Turtle H	83.0% (81.7 – 84.2%)	13.1% (11.9 – 14.2%)	2.0% (1.4 – 2.6%)	1.9% (1.5 – 2.6%)
Turtle I	73.5% (71.6 – 75.3%)	25.1% (23.2 – 27.1%)	1.4% (0.8 – 2.0%)	<0.1% (0.0 – 0.1%)
Turtle J	70.5% (68.5 – 72.2%)	19.2% (17.6 – 21.1%)	0.9% (0.4 – 1.6%)	9.4% (7.9 – 11.9%)

Table S2. Foraging mean water column depth use estimates and 95% credible intervals for green and hawksbill turtles tagged in Montserrat derived from Fastloc-GPS posterior estimates and Argos and Fastloc-GPS posterior estimates combined. 95% credible intervals are displayed in parentheses. Turtle IDs match those in Table 1.

Turtle ID	Fastloc-GPS				Argos & Fastloc-GPS			
	≤ 25 m	26 m to 50 m	51 m to 75 m	>75 m	≤ 25 m	26 m to 50 m	51 m to 75 m	>75 m
Turtle A	66.7% (66.2–67.4%)	23.7% (22.8–24.5%)	6.9% (6.2–7.6%)	2.7% (2.4–3.1%)	66.5% (65.6–67.4%)	23.7% (22.8–24.6%)	6.8% (6.2–7.3%)	3.0% (2.7–3.4%)
Turtle B	93.5% (92.7–94.2%)	6.5% (5.8–7.2%)	0.0% (0.0–0.1%)	0.0% (0.0–0.0%)	89.5% (88.6–90.3%)	10.4% (9.7–11.3%)	0.1% (0.0–0.4%)	0.0% (0.0–0.0%)
Turtle C	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	98.4% (96.6–99.4%)	0.4% (0.0–0.1%)	0.3% (0.0–0.9%)	1.0% (0.1–2.5%)
Turtle D	58.4% (56.7–60.2%)	41.6% (39.8–43.3%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	58.0% (56.5–59.5%)	41.9% (40.5–43.5%)	<0.1% (0.0–0.2%)	<0.1% (0.0–0.1%)
Turtle E	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0 -0.0%)	100% (100–100%)	0.0% (0.0–0.0%	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)
Turtle F	100% (100–100%)	0.0% (0.0 -0.0%)	0.0% (0.0–0.0%)	0.0% (0.0 -0.0%)	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)
Turtle G	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)
Turtle H	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)
Turtle I	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	100% (100–100%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)	0.0% (0.0–0.0%)
Turtle J	99.9% (98.8–100%)	<0.1% (0.0–0.1%)	<0.1% (0.0–0.1%)	<0.1% (0.0–0.1%)	99.2% (98.9–99.4%)	0.4% (0.3–0.6%)	0.1% (0.1–0.3%)	0.2% (0.1–0.4%)

Table S3. Observed and permutated overlaps (Bhattacharyya's Affinity) between diurnal and nocturnal foraging utilisation distributions for green and hawksbill turtles tagged in Montserrat derived from Fastloc-GPS posterior estimates. Significant differences (*P* < 0.05*)* between observed and permutated overlaps are shown in bold. Species abbreviations are as follows: CM; *Chelonia mydas*, EI; *Eretmochelys imbricata.* Turtle ID's match those in Table 1.

Turtle ID	Species	Observed overlap	Mean permuted overlap (95% credible interval)	*P*
Turtle A	CM	0.87	0.95 (0.90 – 0.98)	**<0.01**
Turtle B	CM	0.67	0.87 (0.70 – 0.99)	**<0.01**
Turtle C	CM	0.70	0.89 (0.74 – 0.97)	**<0.01**
Turtle D	EI	0.73	0.94 (0.81 – 0.99)	**<0.01**
Turtle E	CM	0.47	0.87 (0.55 – 0.98)	**<0.01**
Turtle F	CM	0.47	0.82 (0.51 – 0.98)	**<0.01**
Turtle G	CM	0.93	0.97 (0.93 – 0.99)	**0.02**
Turtle H	CM	0.36	0.78 (0.41 – 0.98)	**<0.01**
Turtle I	CM	0.62	0.93 (0.73 – 0.99)	**<0.01**
Turtle J	CM	0.24	0.89 (0.56 – 0.99)	**<0.01**

Table S4. Foraging mean habitat utilisation estimates and 95% credible intervals for green and hawksbill turtles tagged in Montserrat drived from Fastloc-GPS posterior estimates. 95% credible intervals are displayed in parentheses. Turtle IDs match those in Table 1. Hypens indicate habitat was not used or probability estimates were <0.1%. Habitat abbreviations are: RC; Reef Crest, FR; Fringing Reef, BR; Back Reef, CR; Coral/Algae, SGR; Spur & Groove Reef, HSA; Hardbottom Sparse Algae, HDA; Hardbottom Dense Algae, MB; Muddy Bottom, DR; Dredged, SA; Sand, BLR; Boulders & Rock, SS; Sparse Seagrass, DS; Dense Seagrass, UN; Unclassified.

Turtle ID	Mean habitat use estimates (95% credible interval)													
	RC	FR	BR	CR	SGR	HSA	HDA	MB	DR	SA	BLR	SS	DS	UN
Turtle A	-	-	-	3.4% (3.0–3.7%)	-	32.7% (31.6–34.0%)	29.3% (28.2–30.7%)	-	-	26.2% (25.1–27.5%)	-	3.7% (3.2–4.2%)	0.7% (0.4–1.0%)	4.0% (3.6–4.5%)
Turtle B	-	-	-	0.2% (0.1–0.3%)	-	36.8% (35.7 -37.9%)	24.3% (23.1–25.4%)	-	-	13.5% (12.5–14.4%)	-	-	<0.1% (0.0–0.1%)	25.1% (24.3–26.2%)
Turtle C	-	-	-	-	-	-	-	-	-	91.3% (89.1–93.1%)	-	8.7% (6.9–10.9%)	<0.1% (0.0–0.2%)	-
Turtle D	-	-	-	-	-	5.0% (4.4–5.6%)	24.1% (22.9–25.2%)	-	-	<0.1% (0.0–<0.1%)	-	-	-	70.9% (69.6–72.1%)
Turtle E	-	-	0.1% (0.0–0.1%)	26.4% (25.6–27.2%)	-	<0.1% (0.0–0.1%)	7.1% (6.5–7.7%)	-	-	36.0% (35.1–36.7%)	-	29.9% (29.2–30.6%)	0.5% (0.4–0.7%)	<0.1% (<0.1–0.2%)
Turtle F	-	-	-	3.5% (3.0–4.1%)	-	5.2% (4.6–5.6%)	0.2% (0.1–0.3%)	-	<0.1% (<.0–0.1%)	81.3% (80.3–82.4%)	-	0.1% (<0.1–0.2%)	9.6% (8.6–10.6%)	0.1% (<0.1–0.2%)
Turtle G	<0.1% (<0.1–<0.1%)	<0.1% (<0.1–<0.1%)	<0.1% (<0.1–<0.1%)	<0.1% (0.0–0.1%)	-	<0.1% (<0.1–<0.1%)	0.1% (<0.1–0.1%)	-	<0.1% (0.0–<0.1%)	66.2% (64.8–67.6%)	-	30.7% (29.4–31.7%)	2.5% (2.1–3.2%)	0.4% (0.3–0.7%)
Turtle H	-	-	-	0.1% (<0.1–0.2%)	-	-	-	<0.1% (0.0–<0.1%)	-	37.3% (36.1–38.3%)	-	3.0% (2.4–3.4%)	59.2% (58.3–60.2%)	0.5% (0.3–0.7%)
Turtle I	-	-	-	18.8% (17.6–20.1%)	-	-	-	-	-	6.9% (6.3–7.6%)	-	74.2% (73.0–75.5%)	<0.1% (0.0–0.1%)	<0.1% (0.0–<0.1%)
Turtle J	<0.1% (0.0–<0.1%)	<0.1% (0.0–0.1%)	0.3% (0.1–0.4%)	18.8% (17.9–19.7%)	-	<0.1% (0.0–0.1%)	58.1% (56.6 –59.4%)	-	-	18.7% (17.7–19.6%)	-	3.9% (3.4–4.5%)	0.2% (0.1–0.3%)	<0.1% (0.0–0.1%)

Table S5. Mean inter-nesting zone use estimates and 95% credible intervals for green and hawksbill turtles tagged in Montserrat in relation to the marine spatial plan proposed for Montserrat currently under cabinet review (for details see Flower et al., 2020) derived from Fastloc-GPS posterior estimates. Credible intervals are displayed in parentheses. Turtle IDs match those in Table 1. Hyphens indicate no locations were observed within the boundaries of the specified zone type.

Turtle ID	Mean zone use estimates (95% credible interval)							
	MPA - No Take	MPA - Partial Take	Multiuse Zone	Volcanic Exclusion Zone	Recreational Zone	Shipping Zone	Mooring Anchorage Zone	Port Authority Zone
Turtle A	13.3% (12.7–13.9%)	0.2% (0.1–0.3%)	80.1% (79.0–81.2%)	-	1.0% (0.7–1.4%)	3.2% (2.4–3.9%)	2.2% (1.6–2.7%)	-
Turtle B	26.6% (25.6–27.8%)	-	62.2% (61.8–62.5%)	0.1% (0.0–0.2%)	<0.1% (0.0–0.2)	0.1% (0.0–0.4%)	11.0% (9.9–12.1%)	-
Turtle C	5.3% (4.6–5.9%)	0.1% (0.0–0.2%)	94.6% (94.0–95.2%)	-	-	-	<0.1 (0.0–0.1)	-
Turtle D	78.3% (77.8–78.7%)	-	21.7% (21.3–22.2%)	-	-	-	-	-
Turtle E	95.3% (95.0–95.6%)	-	2.9% (2.6–3.3%)	1.2% (1.1–1.3%)	0.1% (0.0–0.2%)	0.2% (0.1–0.5%)	0.2% (0.1–0.4%)	-
Turtle F	25.5% (24.9–26.2%)	0.3% (0.2–0.4%)	72.2% (71.6–72.8%)	0.7% (0.5–0.9%)	<0.1% (0.0–0.1%)	0.3% (0.1–0.4%)	0.9% (0.6–1.3%)	-
Turtle G	72.8% (70.9–74.6%)	<0.1% (0.0–0.1%)	3.1% (2.8–3.5%)	0.6% (0.3–0.9%)	-	-	23.5% (21.5–25.3%)	-
Turtle H	31.2% (30.3–32.1%)	0.1% (0.0–0.2%)	42.9% (42.3–43.3%)	18.5% (18.2–18.7%)	<0.1% (0.0–0.1%)	0.1% (0.0–0.2%)	7.2% (6.6–8.0%)	<0.1% (0.0–0.1%)
Turtle I	2.5% (2.0–3.3%)	<0.1% (0.0–0.1%)	96.5% (95.7–97.2%)	0.8% (0.5–1.1%)	-	-	-	-
Turtle J	83.2% (81.8–84.6%)	-	1.6% (1.4–1.7%)	0.7% (0.6–0.9%)	-	-	14.4% (13.1–16.0%)	-

Table S6. Marine Protected Area (MPA) use estimates and 95% credible intervals for green and hawksbill turtles during migration and within foraging grounds derived from Fastloc-GPS posterior estimates. 95% credible intervals are displayed in parentheses. Turtle IDs match those in Table 1.

Turtle ID	MPAs transited during migration	Mean MPA use estimates during migration (95% credible interval)	Mean MPA use estimates within foraging grounds (95% credible intervals)	
			Locations inside MPAs	Locations outside MPAs
Turtle A	4	11.8% (11.3–12.3%)	0.0% (0.0–0.0%)	100% (100–100%)
Turtle B	-	-	0.0% (0.0–0.0%)	100% (100–100%)
Turtle C	2	23.8% (22.6–24.5%)	0.0% (0.0–0.0%)	100% (100–100%)
Turtle D	1	70.5% (69.5–70.5%)	100% (100–100%)	0.0% (0.0–0.0%)
Turtle E	6	13.0% (12.3–13.6%)	75.7% (75.3–76.0%)	24.3% (24.0–24.7%)
Turtle F	0	0.0% (0.0–0.0%)	0.8% (0.7–1.0%)	99.2% (99.0–99.3%)
Turtle G	5	63.4% (62.8–64.0%)	0.0% (0.0–0.0%)	100% (100–100%)
Turtle H	3	5.6% (2.7–8.1%)	0.3% (0.2–0.4%)	99.7% (99.6–99.8%)
Turtle I	2	6.6% (6.1–9.1%)	0.0% (0.0–0.0%)	100% (100–100%)
Turtle J	0	0.0% (0.0–0.0%)	61.2% (60.8–61.6%)	38.8% (38.4–39.2%)