

Critical in-water habitats for post-nesting sea turtles from the southern Gulf of Mexico

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Supplementary Materials.

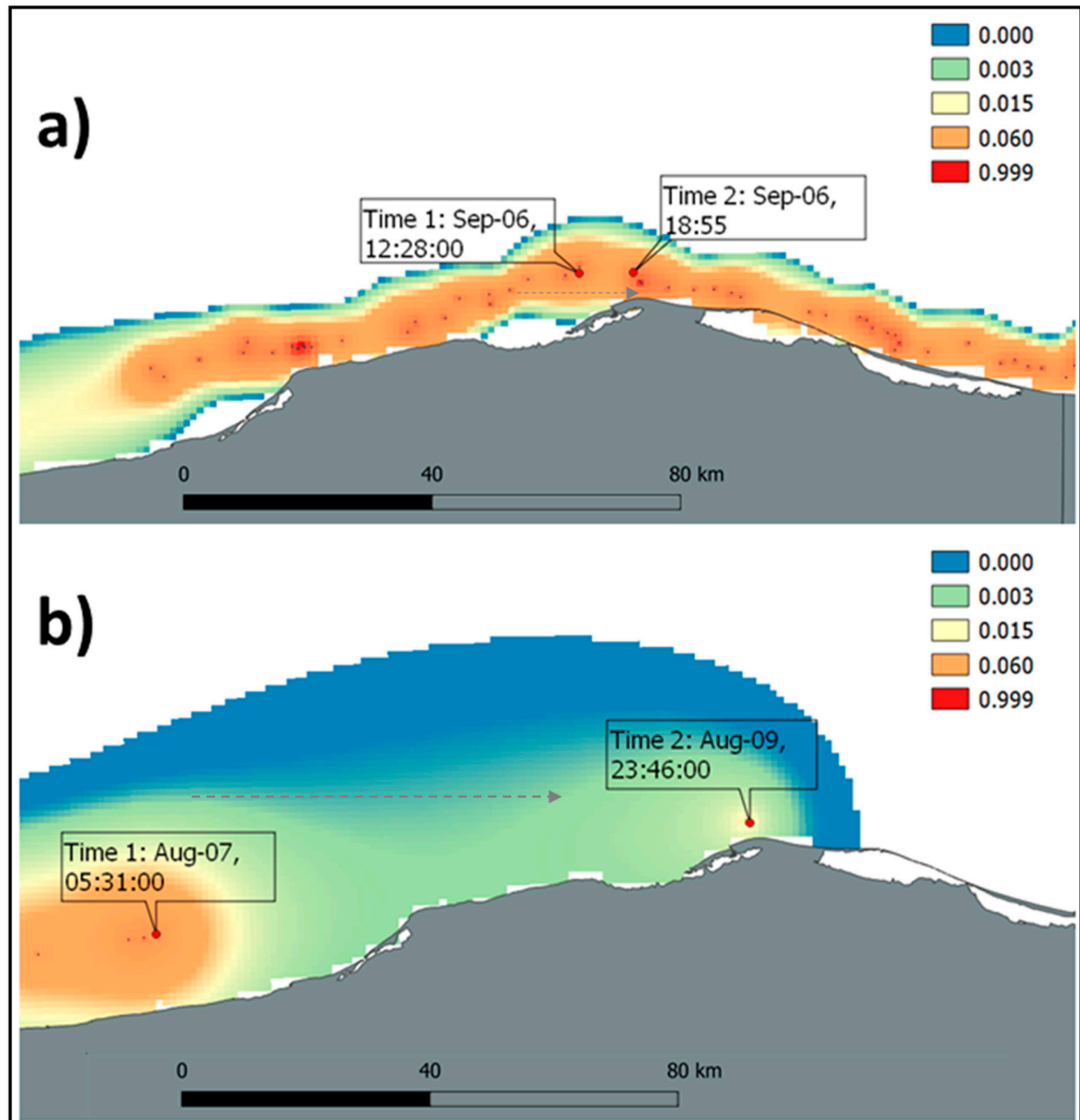


Figure S1. Brownian Bridge Movement Model (BBMM) probability surface examples (probability values 0 to 0.999) for two different conditions between consecutive location records, (a) relatively short time elapsed between points and (b) longer time between records, underlining that the shorter

the elapsed time, the narrower the highest probability region. Gray dashed arrows show the direction of the individual movement.

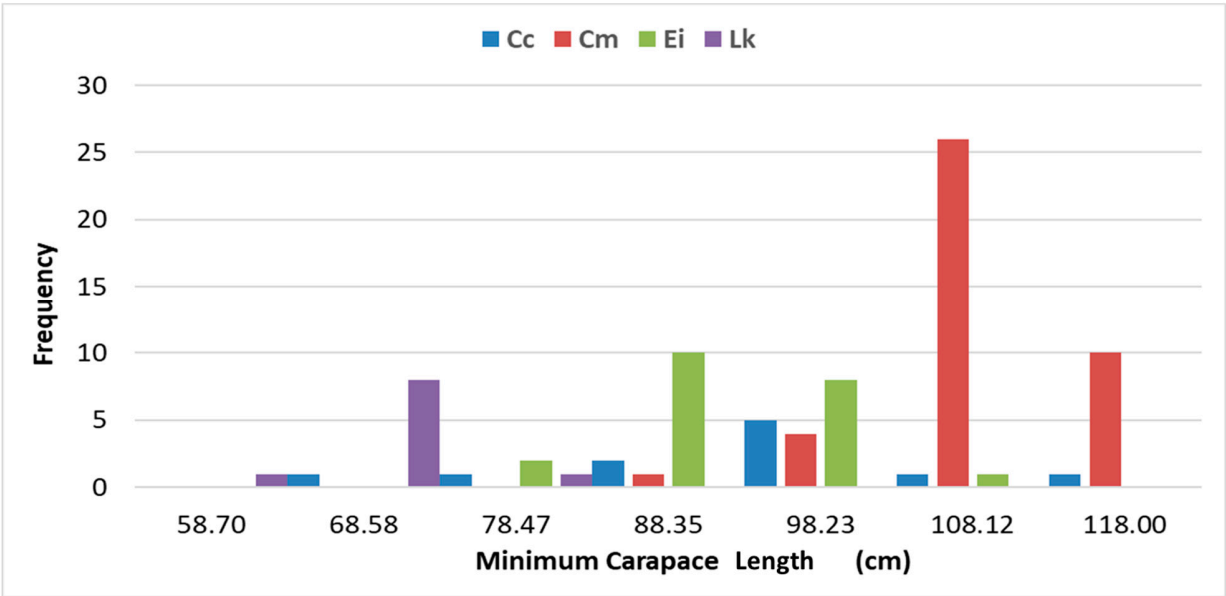


Figure S2. Frequency distribution per species of the satellite-tracked post-nesting individuals from the southern Gulf of Mexico.

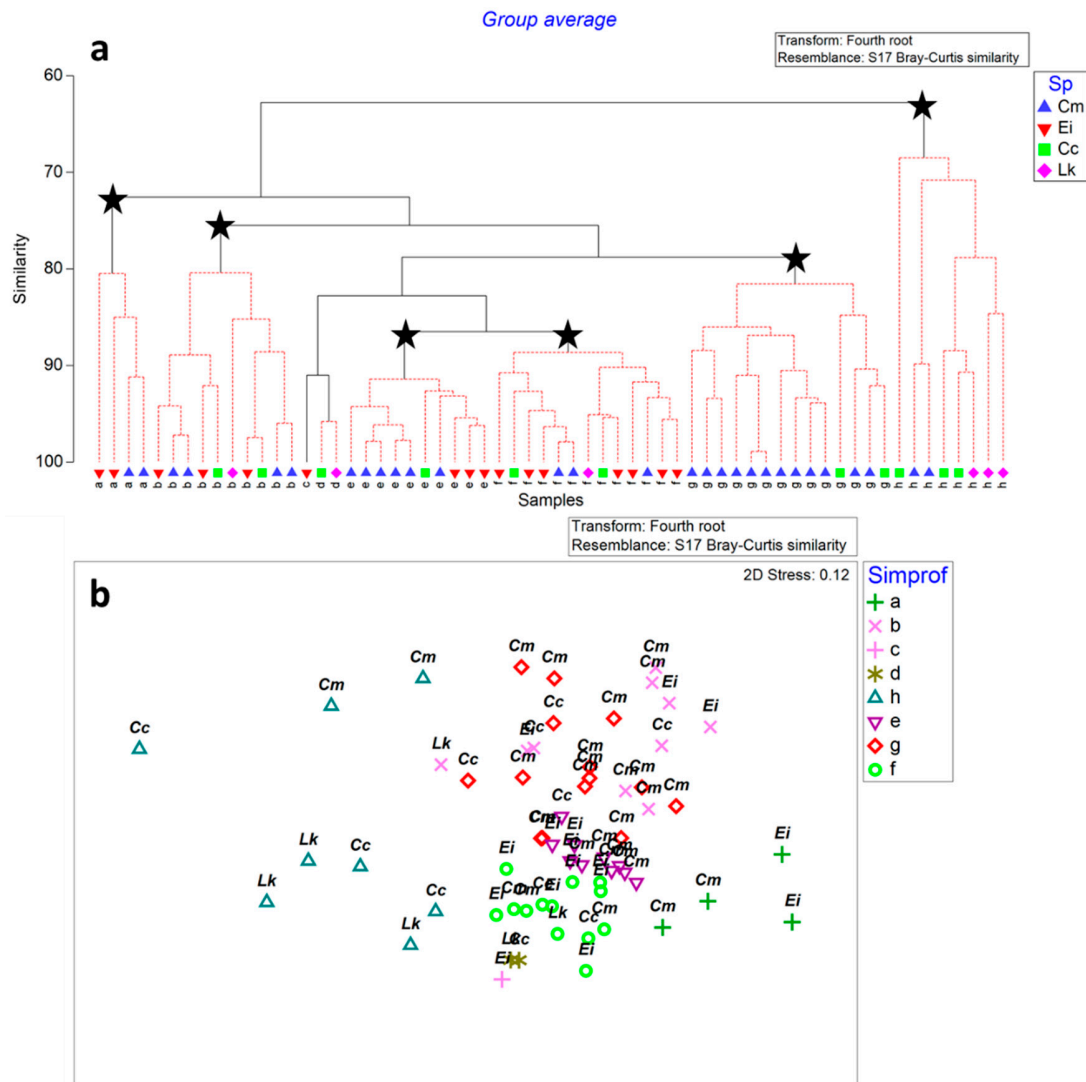


Figure S3. Classification plots of the multiple physical variables assessed for the feeding and residency home ranges (50%) of the post-nesting females from the southern Gulf of Mexico. (a) Cluster-by-group average method based on a Bray-Curtis similarity matrix. Red dashed lines represent not significantly different clusters (SIMPROF, $\alpha = 0.05$). Black stars indicate the eight-final described feeding home range clusters. (b) An n-MDS plot for the six classification clusters.

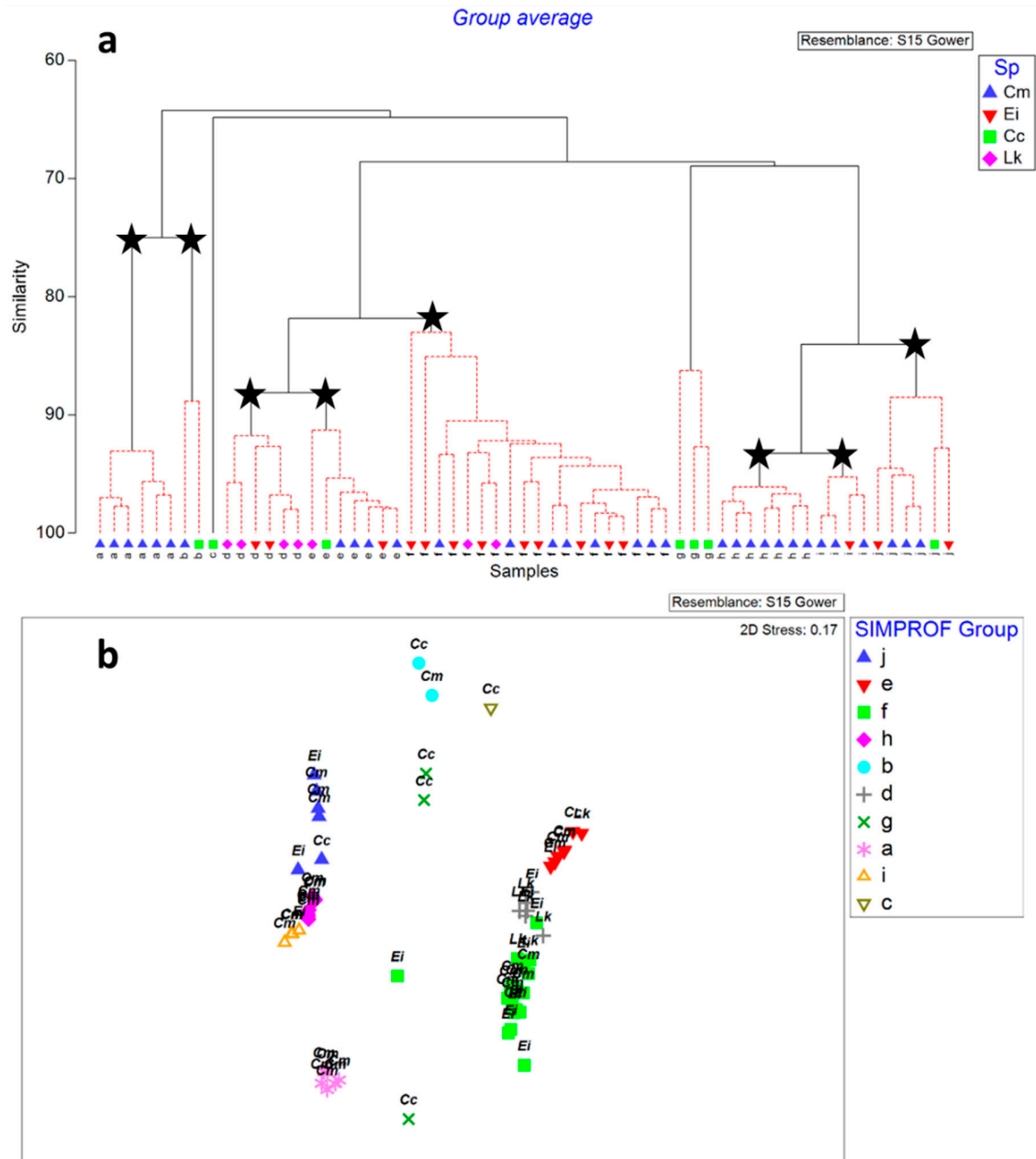


Figure S4. Classification plots of the multiple physical variables assessed for the migratory routes of the post-nesting females from the southern Gulf of Mexico. **(a)** Cluster-by-group average method based on a Gower similarity matrix. Red dashed lines represent not significantly different clusters (SIMPROF, $\alpha = 0.05$). Black stars indicate the eight-final described migratory patterns. **(b)** An n-MDS plot for the ten classification clusters.

Table S1. Frequency and percentage distribution of the different level classes for all acquired location records before (original) and after (filtered) filtering process. Locations classes A and B represent 80% of data collected. Records with no class location or Z class were eliminated.

Location Class Distribution				
Location Class	Original		Filtered	
	N	%	N	%
No class	4843	9.17	-	0.00
0	1436	2.72	1164	3.26
1	1419	2.69	983	2.75
2	1201	2.27	595	1.66
3	2791	5.29	430	1.20
A	5364	10.16	4226	11.82
B	35,594	67.42	28,365	79.30
Z	149	0.28	-	0.00
Total	52,797		35,763	

Table S2. Descriptive statistics of physical variables recorded for migratory routes of post-nesting females of four sea turtle species. Differences in precision levels among variables depend on whether the variable is derived from the ARGOS tracking data (rounded to integer numbers because of its location accuracy) or from ancillary products (presented with tenths or hundredths).

Migratory routes						
		Median	Q 25%	Q 75%	Mean	Std.Dev.
Traveled Distance (km)	<i>C. caretta</i>	971	809	1532	1163	690
	<i>C. mydas</i>	377	170	661	495	404
	<i>E. imbricata</i>	439	159	712	519	430
	<i>L. kempii</i>	1453	937	1894	1514	696
	Kruskal-Wallis chi-squared = 18.216, df = 3, p-value = 0.0003969					
Distance to Coast (km)	<i>C. caretta</i>	46	18	87	57	48
	<i>C. mydas</i>	29	10	70	47	48
	<i>E. imbricata</i>	45	13	77	52	44
	<i>L. kempii</i>	29	15	48	44	56
	Kruskal-Wallis chi-squared = 85.011, df = 3, p-value < 0.0001					
Depth (m)	<i>C. caretta</i>	163	18	1362	1014	1488
	<i>C. mydas</i>	27	10	1181	678	1181
	<i>E. imbricata</i>	44	15	503	523	1045
	<i>L. kempii</i>	30	17	65	351	876
	Kruskal-Wallis chi-squared = 69.269, df = 3, p-value < 0.0001					
Speed (m/s)	<i>C. caretta</i>	0.57	0.35	0.77	0.52	0.36
	<i>C. mydas</i>	0.69	0.56	0.93	0.74	0.22
	<i>E. imbricata</i>	0.63	0.49	0.73	0.62	0.19
	<i>L. kempii</i>	0.57	0.51	0.59	0.57	0.09
	Kruskal-Wallis chi-squared = 5.0288, df = 3, p-value = 0.1697					

Table S3. Descriptive statistics of the internesting home range physical variables of post-nesting females of four sea turtle species. Differences in precision levels among variables depend on whether the variable is derived from the ARGOS tracking data (rounded to integer numbers because of its location accuracy) or from ancillary products (presented with tenths or hundredths).

Internesting Home Ranges	
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		Median	Q 25%	Q 75%	Mean	Std.Dev.
Area (km ²)	<i>C. caretta</i>	634	347	1017	1078	1258
	<i>C. mydas</i>	189	90	483	2210	6121
	<i>E. imbricata</i>	670	183	2520	7255	22,183
	<i>L. kempii</i>	283	163	1840	1556	2418
Kruskal–Wallis chi-squared = 6.9534, df = 3, p-value = 0.0734						
Distance to Coast (km)	<i>C. caretta</i>	4	2	7	5	4
	<i>C. mydas</i>	3	1	6	6	10
	<i>E. imbricata</i>	5	2	13	13	25
	<i>L. kempii</i>	3	1	7	5	5
Kruskal–Wallis chi-squared = 83.687, df = 3, p-value < 0.0001						
Depth (m)	<i>C. caretta</i>	34	0	227	165	268
	<i>C. mydas</i>	19	4	47	56	185
	<i>E. imbricata</i>	10	4	21	46	250
	<i>L. kempii</i>	15	4	25	11	45
Kruskal–Wallis chi-squared = 64.659, df = 3, p-value < 0.0001						
Slope (%)	<i>C. caretta</i>	1.37	0.22	3.82	2.34	2.50
	<i>C. mydas</i>	0.30	0.12	0.79	1.10	2.03
	<i>E. imbricata</i>	0.09	0.04	0.23	0.33	0.99
	<i>L. kempii</i>	0.27	0.15	0.57	0.56	0.95
Kruskal–Wallis chi-squared = 368.69, df = 3, p-value < 0.0001						

Table S4. Descriptive statistics of the feeding home range physical variables of post-nesting females of four sea turtle species. Differences in precision levels among variables depend on whether the variable is derived from the ARGOS tracking data (rounded to integer numbers because of its location accuracy) or from ancillary products (presented with tenths or hundredths).

Feeding home ranges						
		Median	Q 25%	Q 75%	Mean	Std.Dev.
Area (km ²)	<i>C. caretta</i>	358	157	1236	13,444	41,195
	<i>C. mydas</i>	137	66	224	315	757
	<i>E. imbricata</i>	166	79	385	250	233
	<i>L. kempii</i>	3207	668	11,697	11,218	18,005
Kruskal–Wallis chi-squared = 12.997, df = 3, p-value = 0.004643						
Distance to Coast (km)	<i>C. caretta</i>	17	5	48	28	27
	<i>C. mydas</i>	6	2	11	9	10
	<i>E. imbricata</i>	10	4	19	20	35
	<i>L. kempii</i>	38	25	68	44	29
Kruskal–Wallis chi-squared = 346.88, df = 3, p-value < 0.0001						
Depth (m)	<i>C. caretta</i>	23	15	35	67	167
	<i>C. mydas</i>	10	4	31	41	111
	<i>E. imbricata</i>	13	4	22	15	15
	<i>L. kempii</i>	22	14	38	25	15
Kruskal–Wallis chi-squared = 127.82, df = 3, p-value < 0.0001						
Slope (%)	<i>C. caretta</i>	0.15	0.07	0.32	0.49	1.03
	<i>C. mydas</i>	0.13	0.04	0.52	0.51	1.10
	<i>E. imbricata</i>	0.07	0.04	0.15	0.14	0.22
	<i>L. kempii</i>	0.05	0.02	0.08	0.06	0.06
Kruskal–Wallis chi-squared = 177.97, df = 3, p-value < 0.0001						

