Table S1. Number and accuracy of locations of tracked Black-capped Petrels captured off Cape Hatteras, North Carolina, USA, May 2019, based on Argos location classes (LC)

Bird ID [a]	No. of locations	LC 3 < 250m	LC 2 250-500m	LC 1 500-1500m	LC 0 > 1500m	LC A -	LC B -
441	442	16	42	84	168	39	93
442	1132	45	100	222	447	101	215
462	916	83	99	155	342	64	173
463	84	5	7	15	30	10	17
464	309	28	32	67	105	28	48
465	374	53	58	78	84	27	74
466	55	5	3	10	15	9	13
467	695	65	82	139	236	60	113
468	566	32	42	119	214	51	108
469	83	1	6	12	49	5	10
Total [b]	4656	333	471	901	1690	394	864
Proportion [c] (%)	100.0	7.2	10.1	19.4	36.3	8.5	18.6
Error radius (m)							
Mean		192.1	354.6	975.6	5288.1		
Minimum		127	250	501	1502		
Maximum		249	500	1500	216041		

[a] Bold lettering indicates dark phenotypes.

[b] Total number of locations includes n = 3 location classes Z. Location class (3, 2, 1, 0, B, A, Z, in decreasing order of quality) was assigned by Argos.

[c] Total proportion of locations includes 0.1% of location classes Z.

Table S2. Area and proportion of overlap, and Bhattacharyya's affinity for core area (50%UD) and home range (90%UD) of dark and light forms of Black-capped Petrels tracked from May 2019 – August 2019. UD = Utilization distribution, BA = Bhattacharyya's affinity.

UD	Area (km^2)			Proportion of UD overlapping (%)		BA
	Dark	Light	Overlap	Dark	Light	
50	87344.3	81987.2	5275.8	6.04	6.43	0.03
90	291794.0	356155.7	103260.1	35.39	28.99	0.29

Table S3. Area and proportion of core area (50% UD) and home range (90% UD) of dark and light forms of Black-capped Petrels tracked from May 2019 – August 2019 overlapping with exclusive economic zones of the western North Atlantic. INT: International waters. UD = Utilization distribution.

UD	Dark			Light		
	EEZ	Area (km^2)	Proportion in EEZ (%)	EEZ	Area (km^2)	Proportion in EEZ (%)
50	USA	86595	99.2	USA	61040	74.4
	INT	736	0.8	INT	20947	25.6
90	USA	225856	77.4	USA	200283	56.2
	INT	44419	15.2	INT	149382	41.9
	Bahamas	21519	7.4	Canada	6491	1.9

Table S4. Area and proportion of core area (50% UD) and home range (90% UD) of dark and light forms of Black-capped Petrels tracked from May 2019 – August 2019 within marine ecoregions of the western North Atlantic. UD = Utilization distribution.

	Dark			Light		
UD	**Ecoregion**	**Area (km^2)**	**Proportion in ecoregion (%)**	**Ecoregion**	**Area (km^2)**	**Proportion in ecoregion (%)**
50	Carolinian	43783	50.1	Virginian	58177	71.0
	Virginian	32075	36.7	High Seas	23811	29.0
	Bahamian	6429	7.4			
	High Seas	5058	5.8			
90	Carolinian	114585	39.3	High Seas	170099	47.8
	Virginian	82545	28.3	Virginian	142178	39.9
	High Seas	60812	20.8	GoM/BoF*	30784	8.6
	Bahamian	33852	11.6	Carolinian	12836	3.6
				Scotian Shelf	258	0.1

* Gulf of Maine/Bay of Fundy

Table S5. Distance of tracking locations to nearest marine energy lease area, and area and proportion of core area (50% UD) and home range (90% UD) of petrels within marine energy lease areas in the United States and Canada. Distance to nearest lease was calculated from tracking locations between May 2019 and January 2020; overlap with leases was calculated from tracking locations between May – August 2019. Bold lettering denotes overlap. UD = Utilization distribution.

		Overall	Dark				Light			
			50% UD		90% UD		50% UD		90% UD	
		Distance to nearest lease (km)	Area of overlap (km2)	Prop. in lease area (%)	Area of overlap (km2)	Prop. in lease area (%)	Area of overlap (km2)	Prop. in lease area (%)	Area of overlap (km2)	Prop. in lease area (%)
Wind										
Active	Delaware	94.0	0	0	0	0	0	0	0	0
	Massachusetts[a]	94.7	0	0	0	0	0	0	0	0
	Maryland	74.2	0	0	0	0	0	0	0	0
	North Carolina	**29.5**	**0**	**0**	**138.5**	**0.05**	**0**	**0**	**0**	**0**
	New Jersey	106.2	0	0	0	0	0	0	0	0
	New York	135.7	0	0	0	0	0	0	0	0
	Virginia	65.0	0	0	0	0	0	0	0	0
Planned	North Carolina	70.8	0	0	0	0	0	0	0	0
	New Jersey	80.4	0	0	0	0	0	0	0	0
	New York	90.2	0	0	0	0	0	0	0	0
	South Carolina	76.7	0	0	0	0	0	0	0	0
Proposed[b]	**OCS (D)**	**24.1**	**0**	**0**	**102.8**	**0.04**	**0**	**0**	**0**	**0**
	E-1	**0.0**	**0**	**0**	**1551.8**	**0.53**	**616.6**	**0.75**	**1905.5**	**0.54**
	E-2	**0.0**	**821.4**	**0.94**	**1391.6**	**0.48**	**73.3**	**0.09**	**1391.6**	**0.39**
	F	**0.0**	**170.0**	**0.19**	**170.0**	**0.06**	**0**	**0**	**170.0**	**0.05**
Oil and gas[c]										
	NS: 2434R	126.7	0	0	0	0	0	0	0	0
	NS: 2435	**0.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	NS: 2436	**0.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Newfoundland	648.5	0	0	0	0	0	0	0	0

[a] Corresponds to lease areas in the U.S. states of Rhode Island and Massachusetts

[b] OCS (Outer Continental Shelf): corresponds to areas A-D in Randall et al. (2022), though overlap occurs only in area D.

[c] NS = Nova Scotia

Table S6. Proportion of lease areas proposed in BOEM's Central Atlantic DRAFT Call for Information and Nomination within core area (50% UD) and home range (90% UD) of dark and light forms of Black-capped Petrels tracked from May – August 2019. UD = Utilization distribution.

	Dark				Light			
	50% UD		90% UD		50% UD		90% UD	
	Area of overlap (km2)	Proportion in UD (%)	Area of overlap (km2)	Proportion in UD (%)	Area of overlap (km2)	Proportion in UD (%)	Area of overlap (km2)	Proportion in UD (%)
OCS (D)	0	0.0	102.8	13.7	0	0.0	0	0.0
E-1	0	0.0	1551.8	81.4	616.6	32.4	1905.5	100.0
E-2	821.4	59.0	1391.6	100.0	73.3	5.3	1391.6	100.0
F	170.0	100.0	170.0	100.0	0	0.0	170.0	100.0

OCS (Outer Continental Shelf): corresponds to areas A-D in Randall et al. (2022), though overlap occurs only in area D.

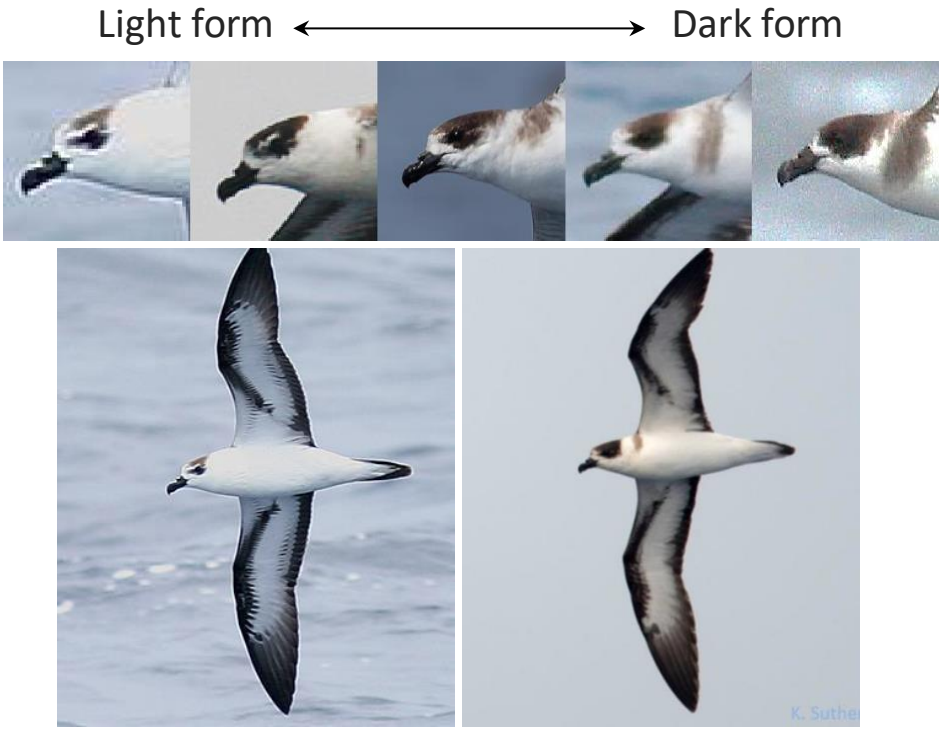
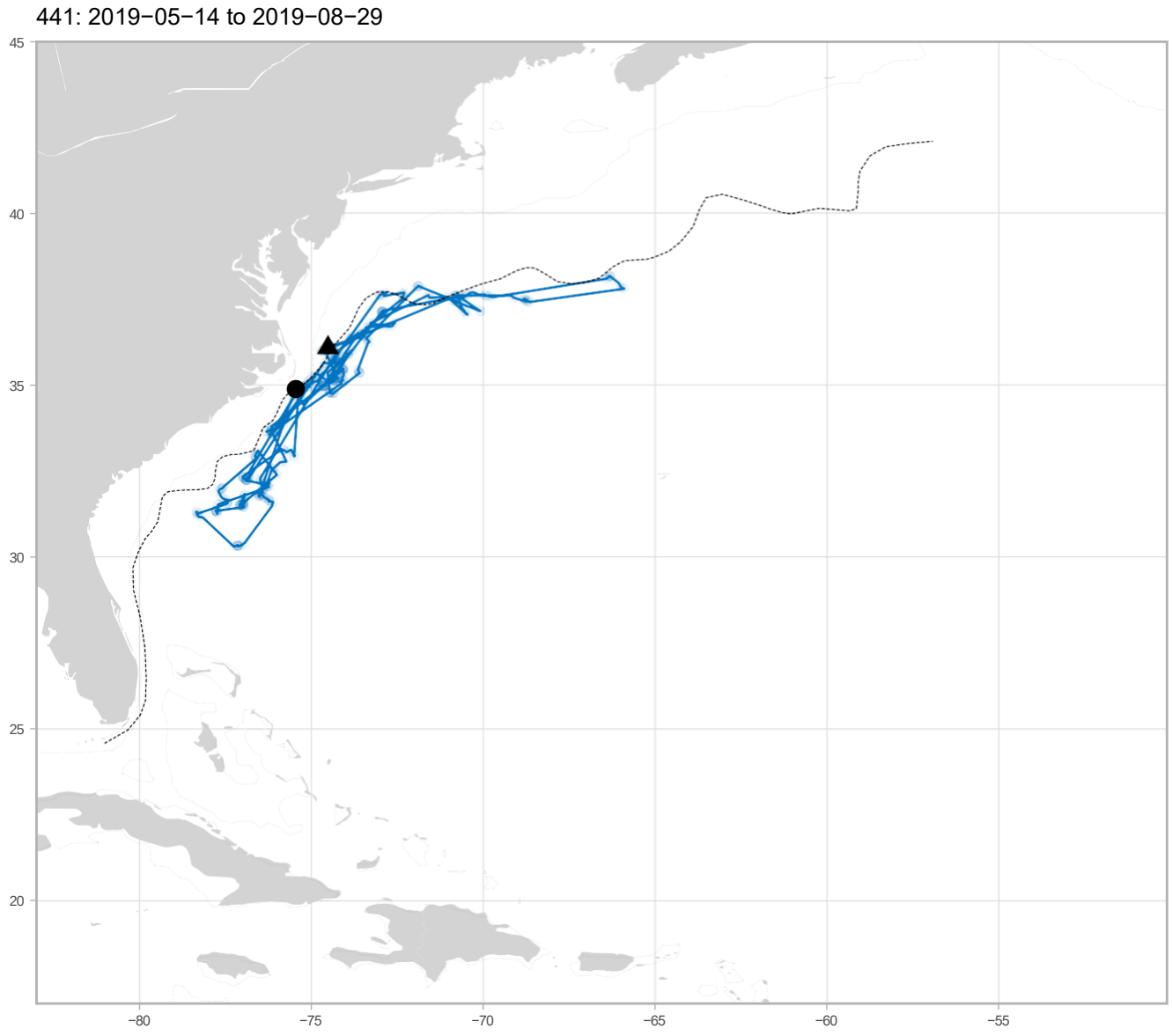
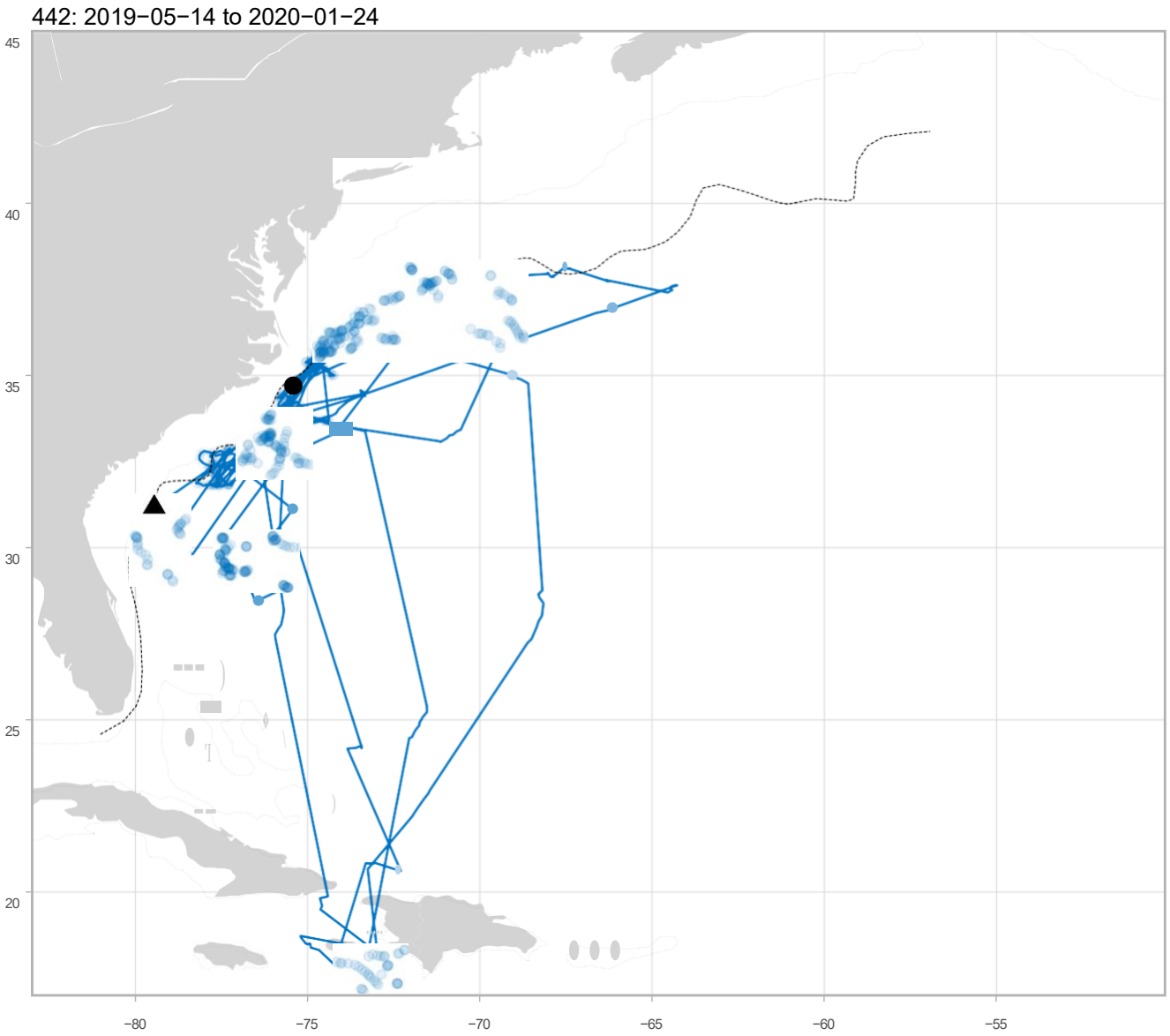


Figure S1. Photographs showing variation in Black-capped Petrel phenotypes. Image credits: Kate Sutherland.

Figure S2. Maps of individual movements of Black-capped Petrels tracked in 2019. In each map, the black circle represents the first tracked location, and the black triangle represents the last tracked location. Blue: dark form; yellow: light form. Black dashed lines indicate the general location of the western edge of the Gulf Stream. Dotted grey line indicates the -250-m isobath.




442: 2019−05−14 to 2020−01−24
45
40
35
30
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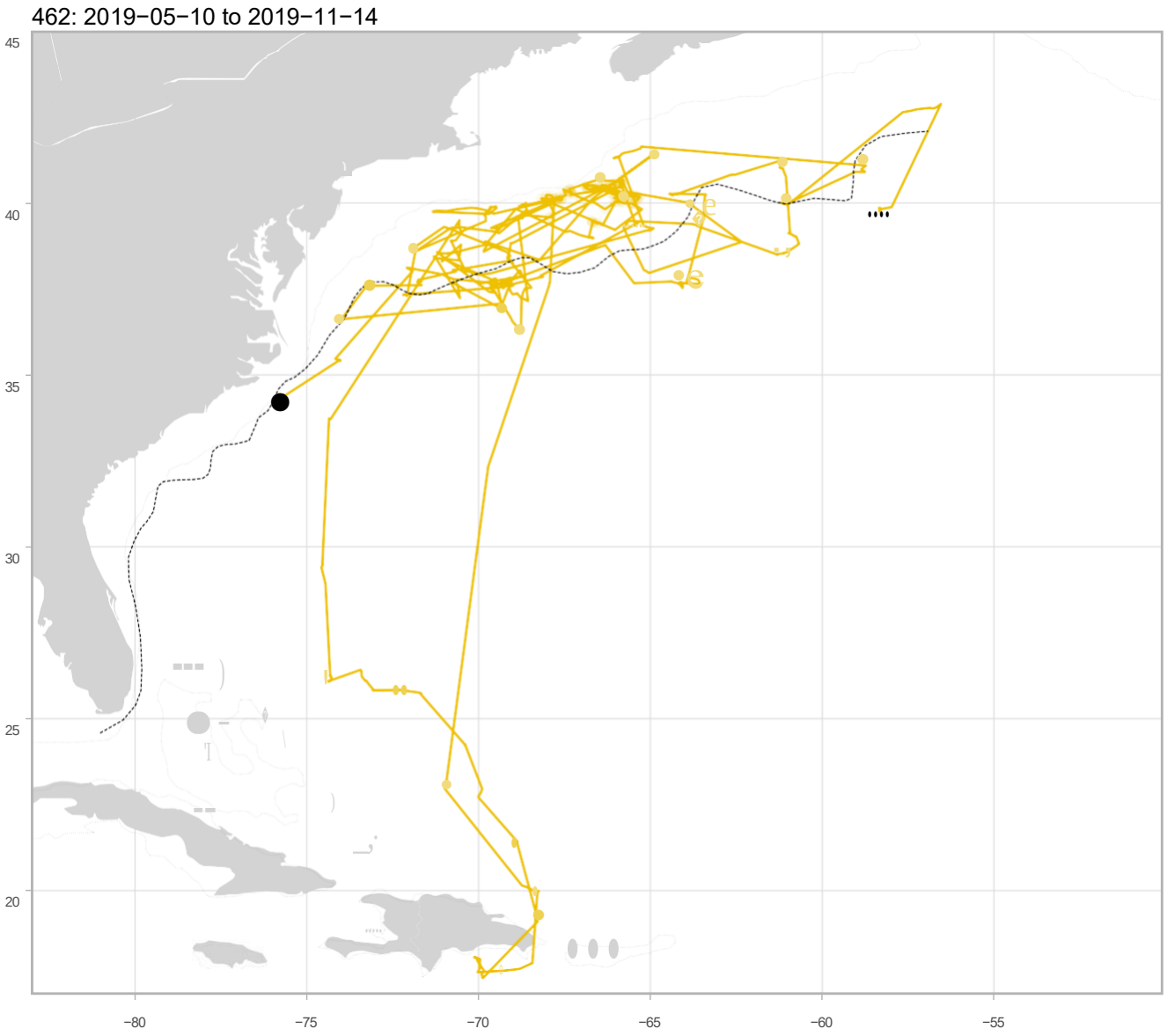
20
−80
−75
−70
−65
−60
−55


462: 2019−05−10 to 2019−11−14
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−80
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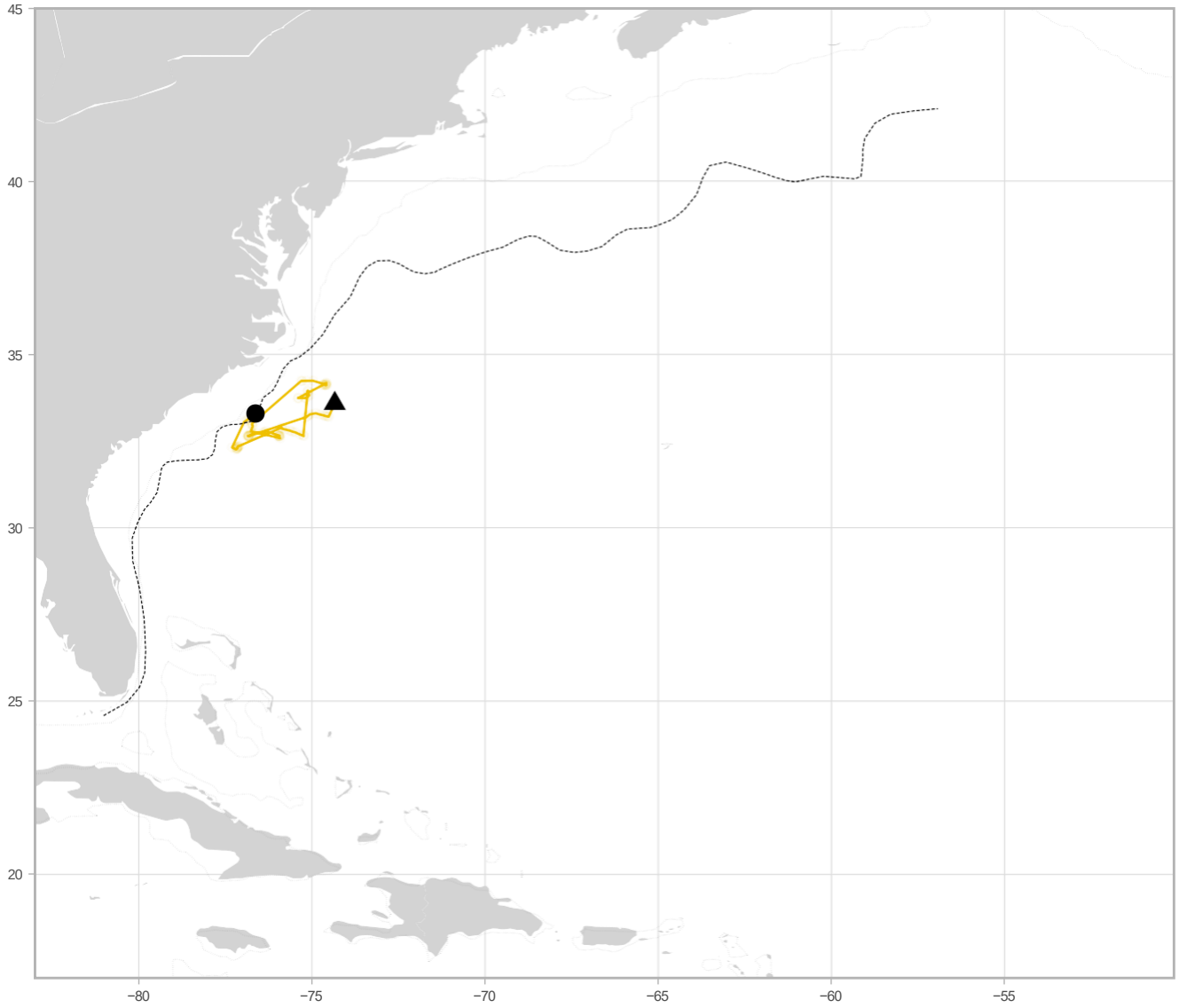
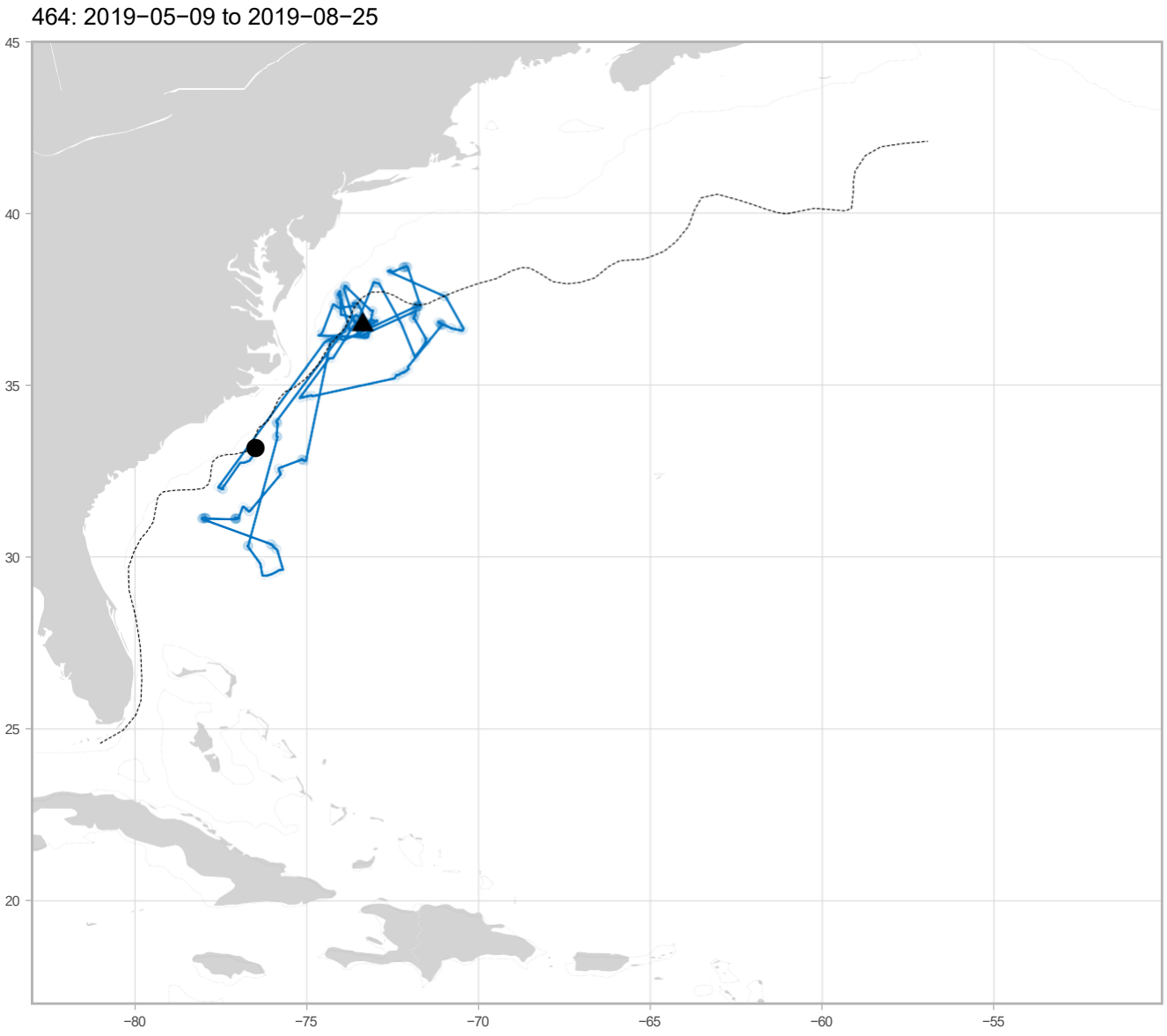
−65
−60
−55

463: 2019−05−15 to 2019−05−30




464: 2019−05−09 to 2019−08−25
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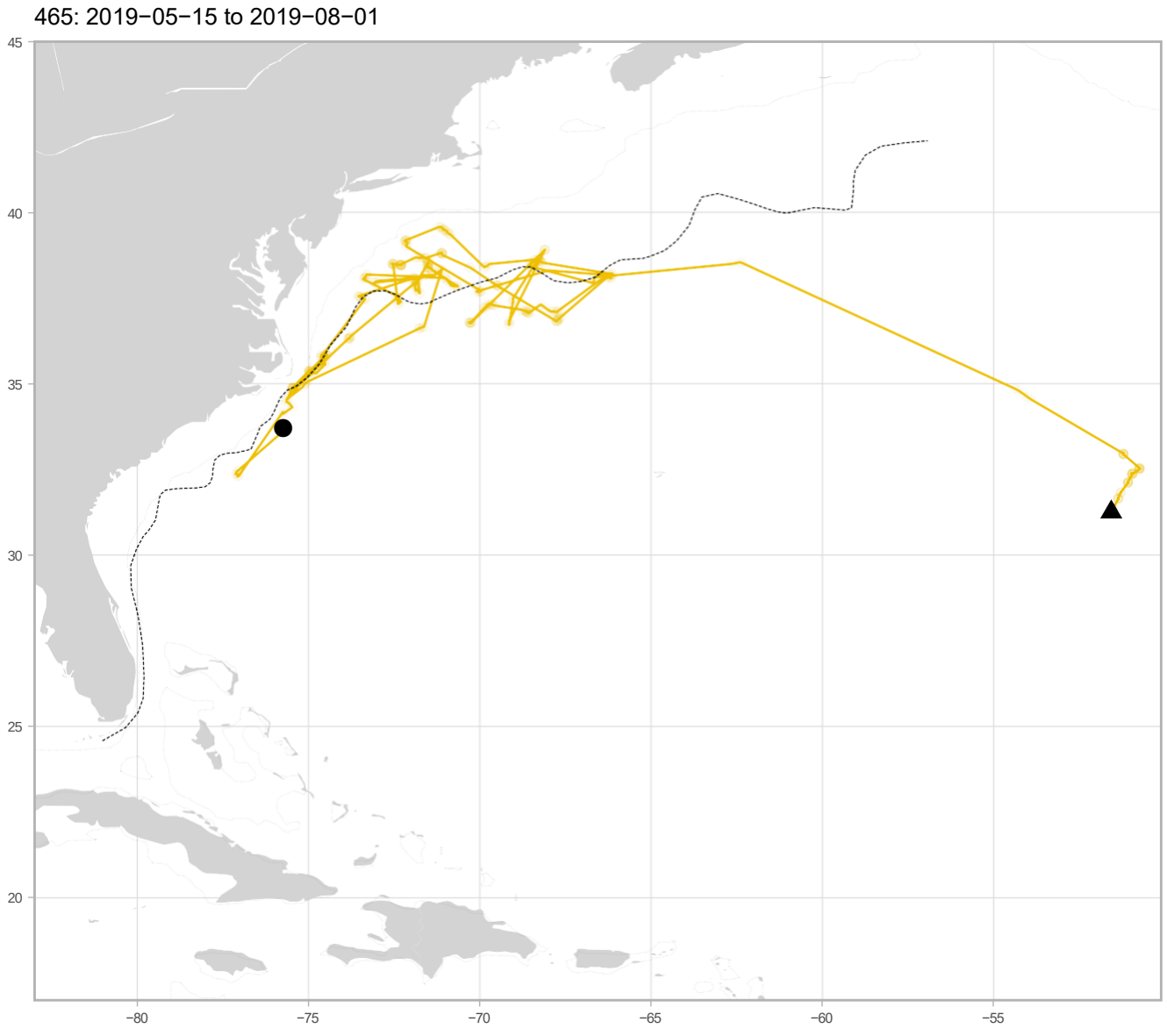
−80
−75
−70
−65
−60
−55


465: 2019−05−15 to 2019−08−01
45
40
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25
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−80
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−65
−60
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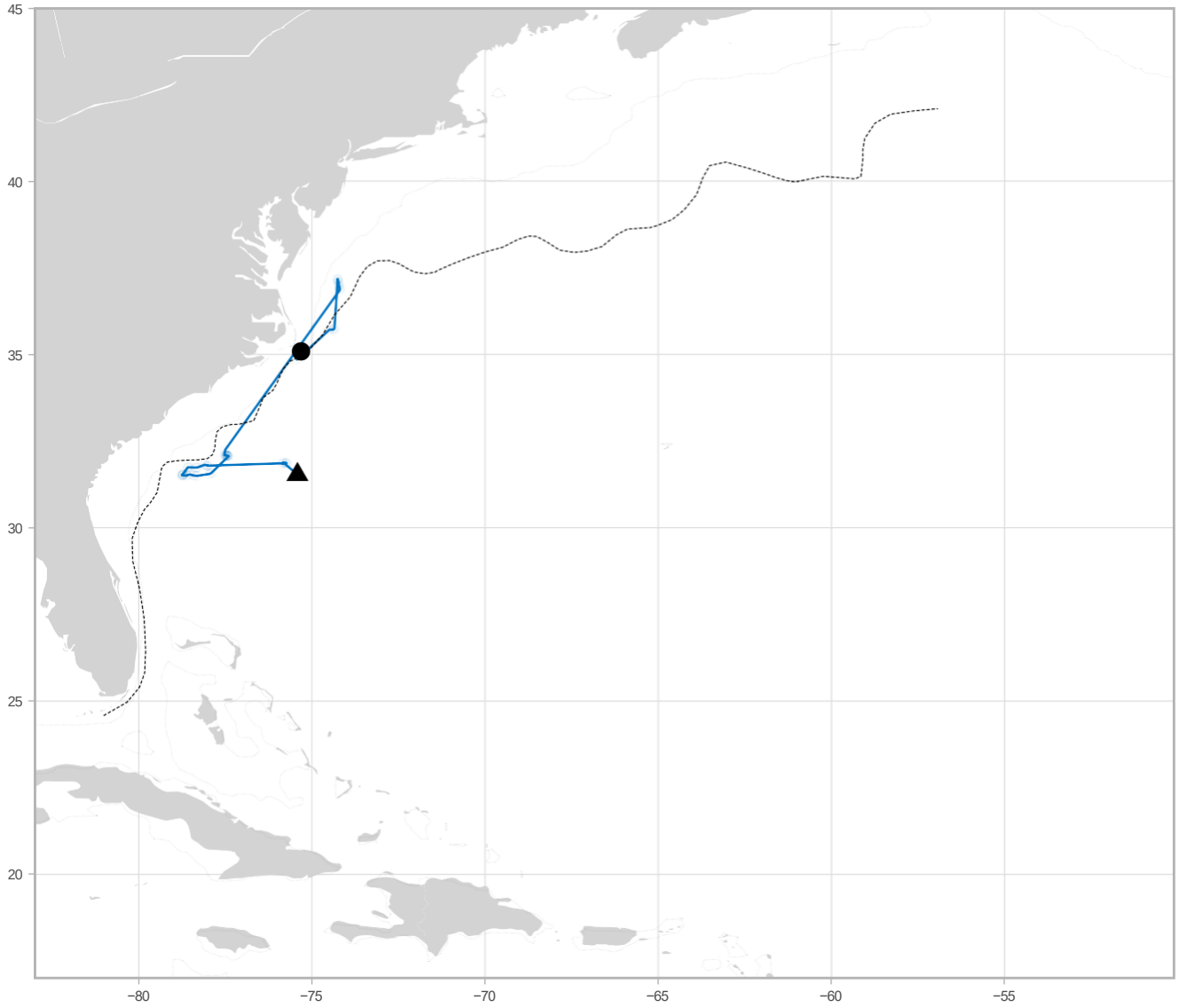
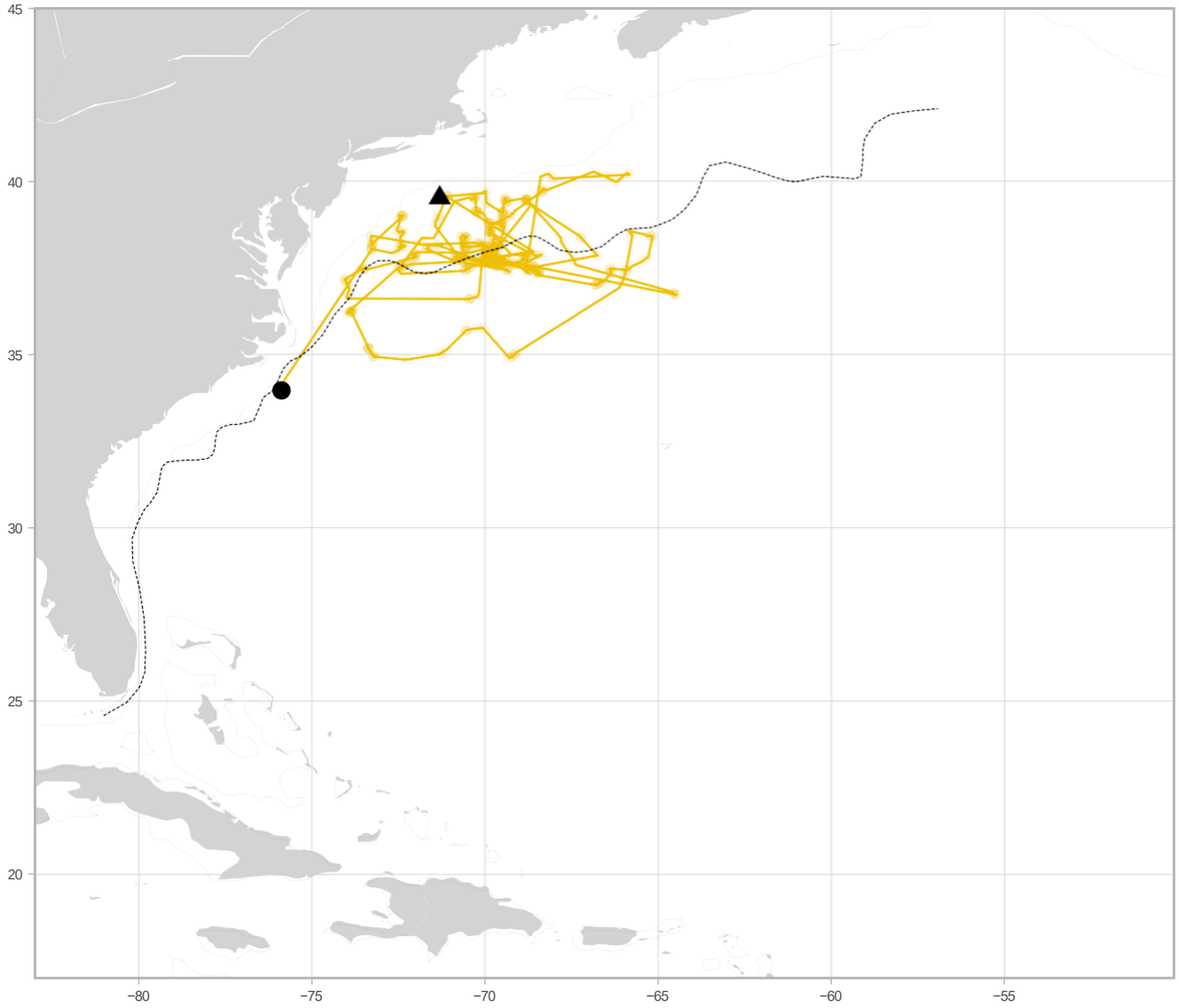
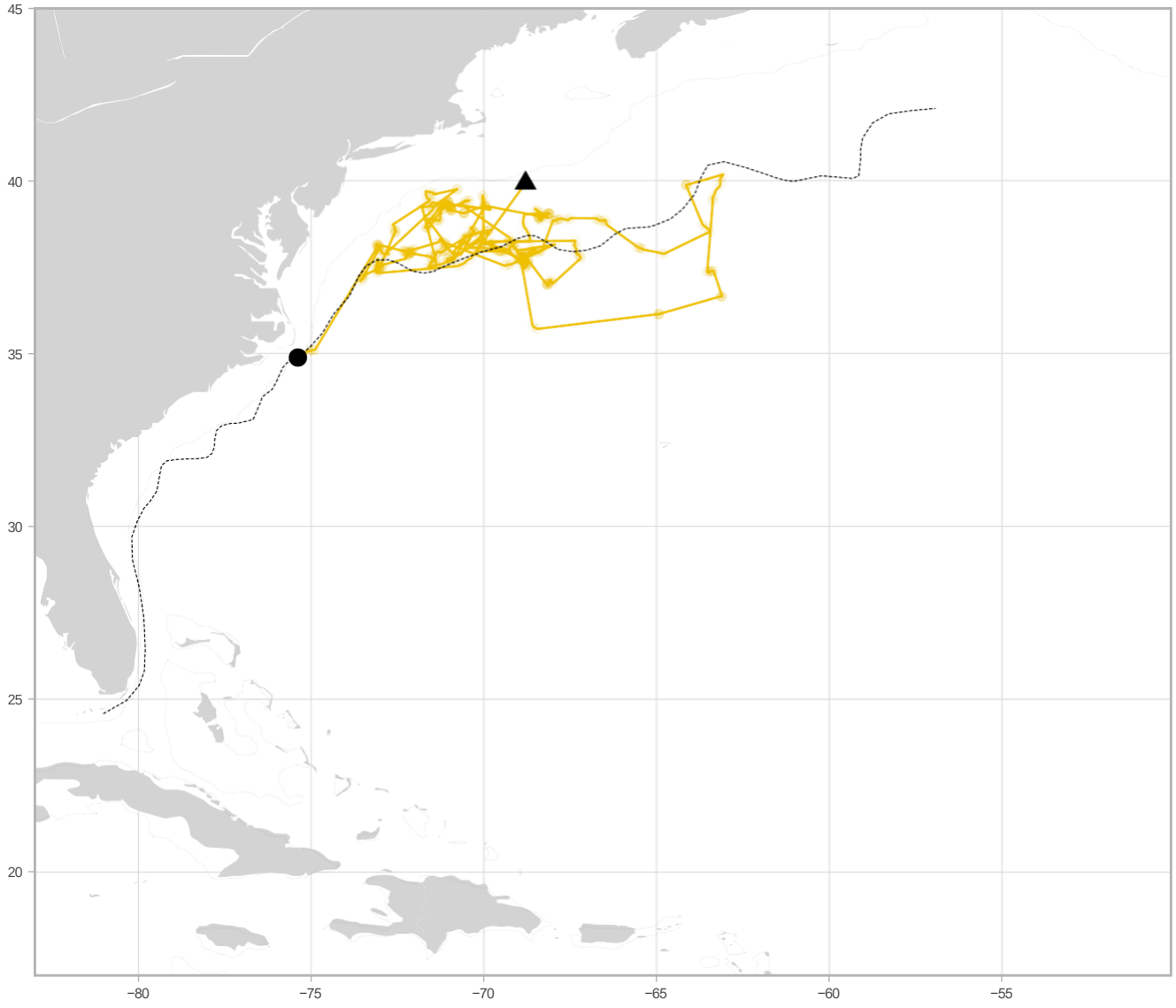
466: 2019−05−09 to 2019−05−20



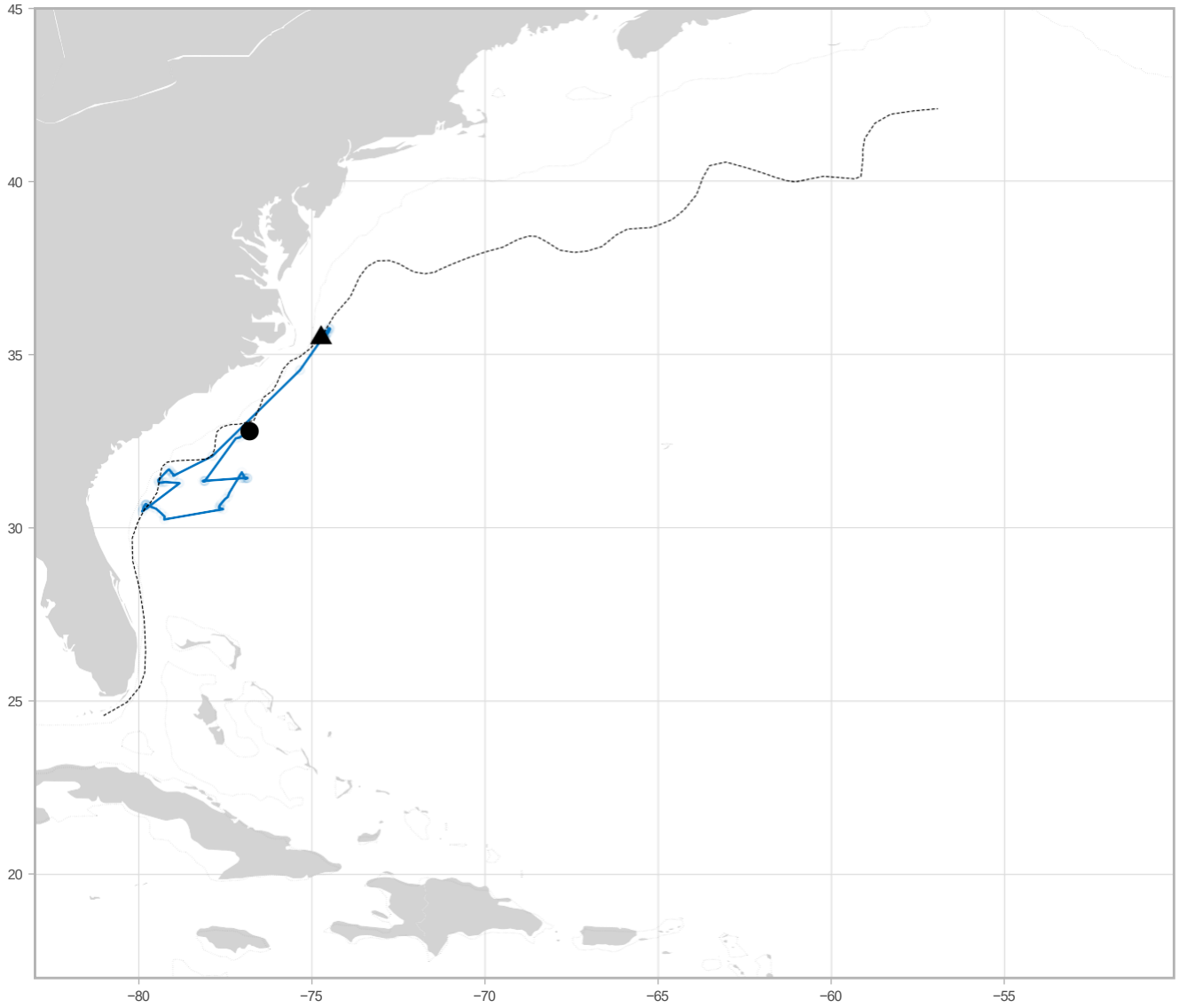
467: 2019−05−10 to 2019−09−14



468: 2019−05−09 to 2019−08−31



469: 2019−05−09 to 2019−05−25



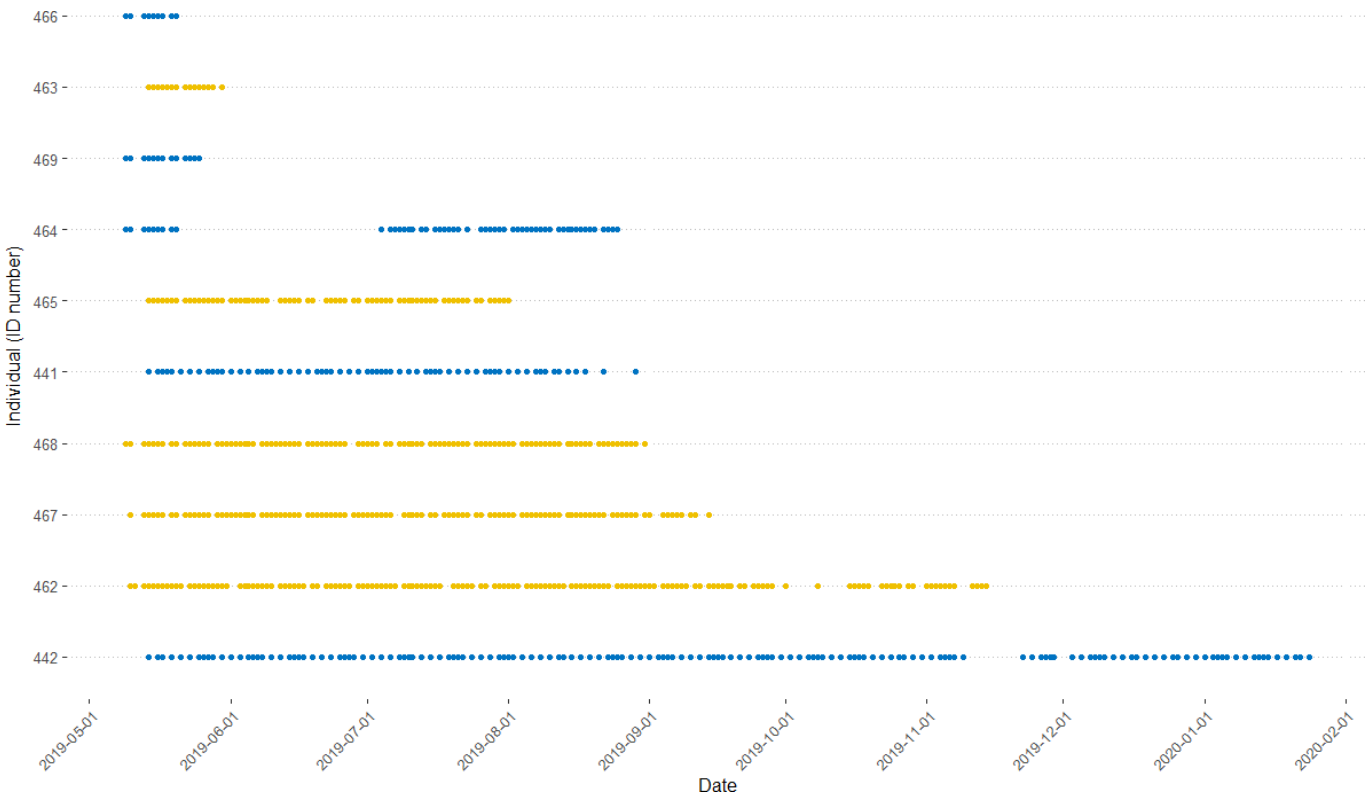


Figure S3. Tracking durations for Black-capped Petrels captured at sea off Cape Hatteras, North Carolina, USA, May 2019. Blue: dark form; yellow: light form. Individuals are ordered by tracking duration.

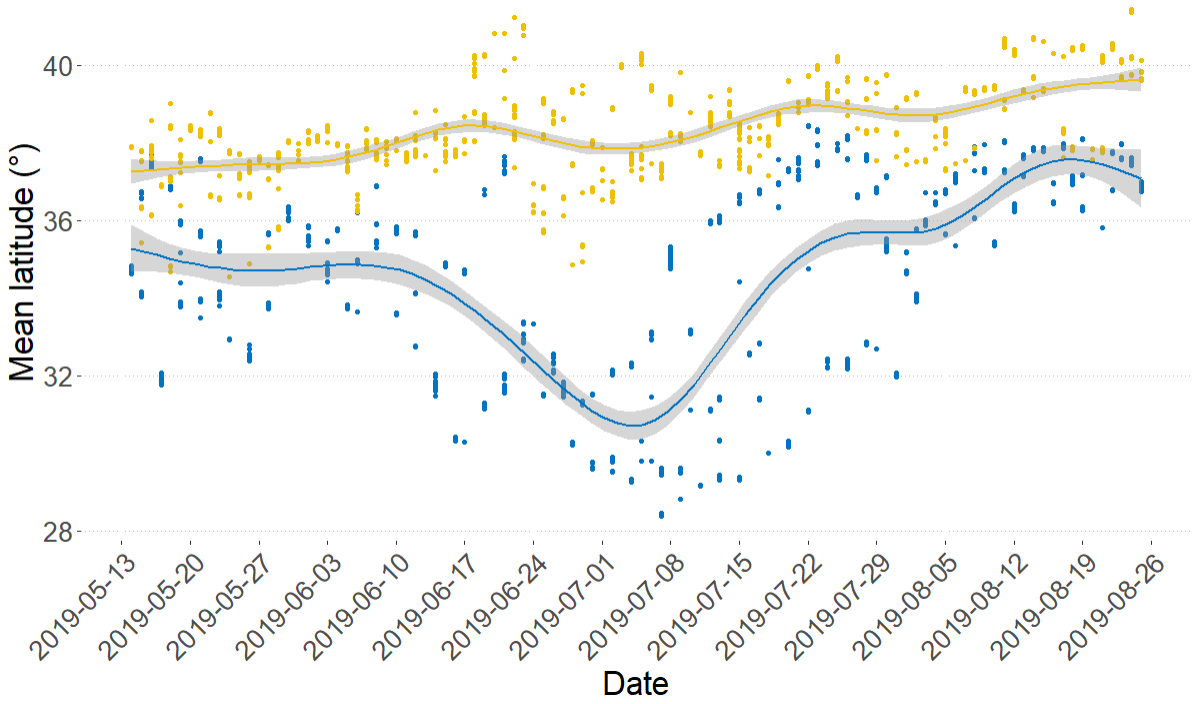
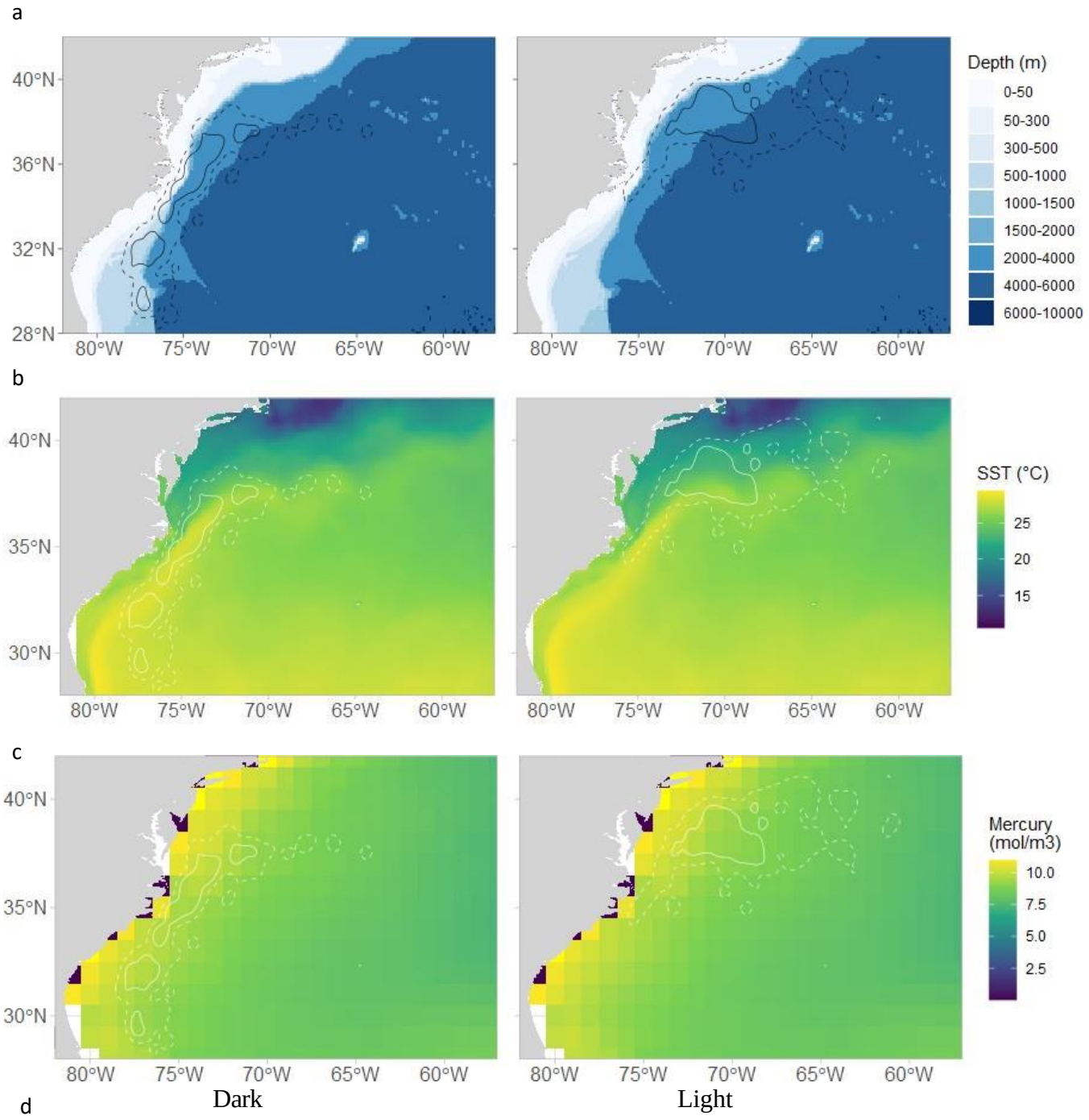
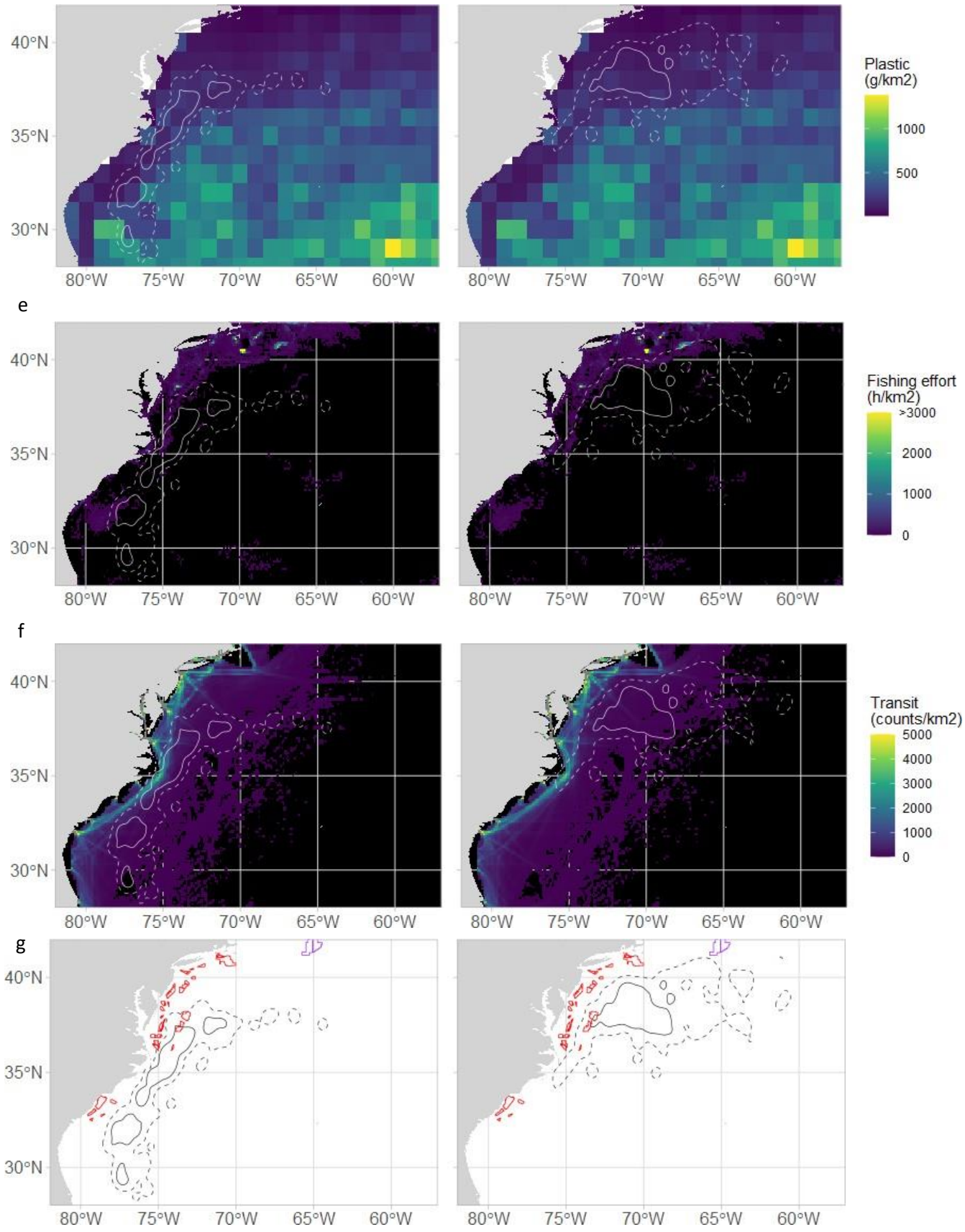


Figure S4. Daily latitude for Black-capped Petrels captured at sea off Cape Hatteras, North Carolina, USA and tracked from May 2019 to August 2019. Blue: dark form; yellow: light form. Shaded area is 95% confidence interval.

Figure S5. Maps of habitat attributes and marine threats to Black-capped Petrels in the western North Atlantic. a) Bathymetry, b) Sea surface temperature, c) Mercury concentration, d) Microplastics concentration, e) Fishing effort, f) Ship traffic, and g) Marine energy. Left panel: dark forms; right panel: light forms. In all panels, solid black or white lines represent core areas (50% utilization distribution (UD)) and dashed black or white lines represent home range (90% UD) of petrels tracked from May 2019 – August 2019. In panel g, purple polygons indicate the location of petroleum leases, and red polygons offshore wind leases.




40°N
35°N
30°N
80°W
75°W
70°W
65°W
60°W
Plastic (g/km2)
1000
500
e
Fishing effort (h/km2)
>3000
2000
1000
0
f
Transit (counts/km2)
5000
4000
3000
2000
1000
0
g

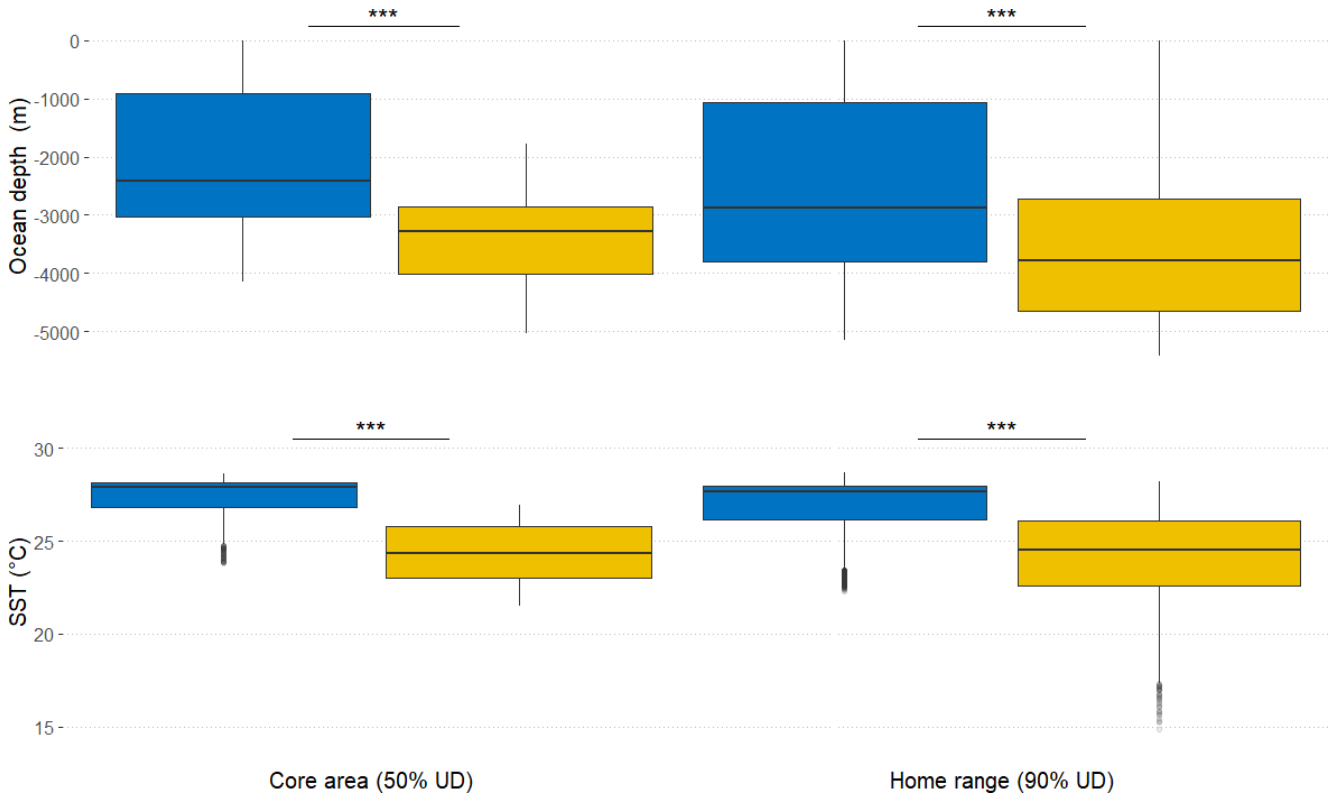


Figure S6. Distribution of values of ocean depth and sea surface temperature in core area and home range of Black-capped Petrels tracked from May 2019 – August 2019. Blue represents dark forms and yellow represents light forms. Solid lines within boxes depict the median, edge of boxes depicts quartiles, whiskers extend to 5th and 95th percentiles, and circles depict data beyond the 95th percentile. P-value of Wilcoxon sum rank test: *** <0.005. UD: utilization distribution.

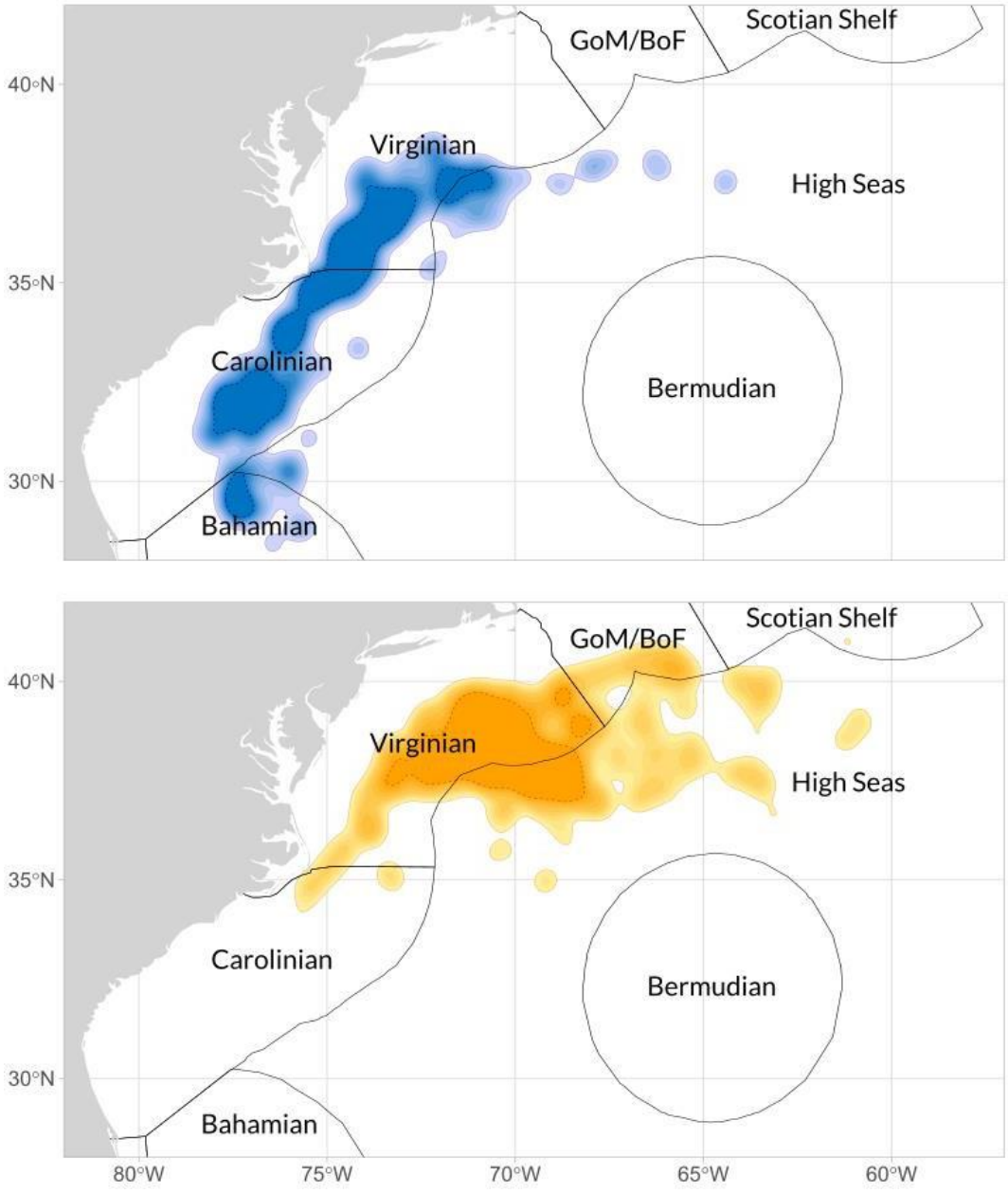


Figure S7. Overlap between marine ecoregions in the western North Atlantic and the distribution of Black-capped Petrels tracked from May 2019 – August 2019. Top: dark form; bottom: light form. Black lines delineate marine ecoregions (Spalding et al. 2007). Colored dashed lines indicate core areas. GoM/BoF is Gulf of Maine/Bay of Fundy.

Reference:

Spalding, M. D., Fox, H. E., Allen, G. R., Davidson, N., Ferdaña, Z. A., Finlayson, M. A. X., ... & Robertson, J. (2007). Marine ecoregions of the world: a bioregionalization of coastal and shelf areas. *BioScience*, *57*(7), 573-583.

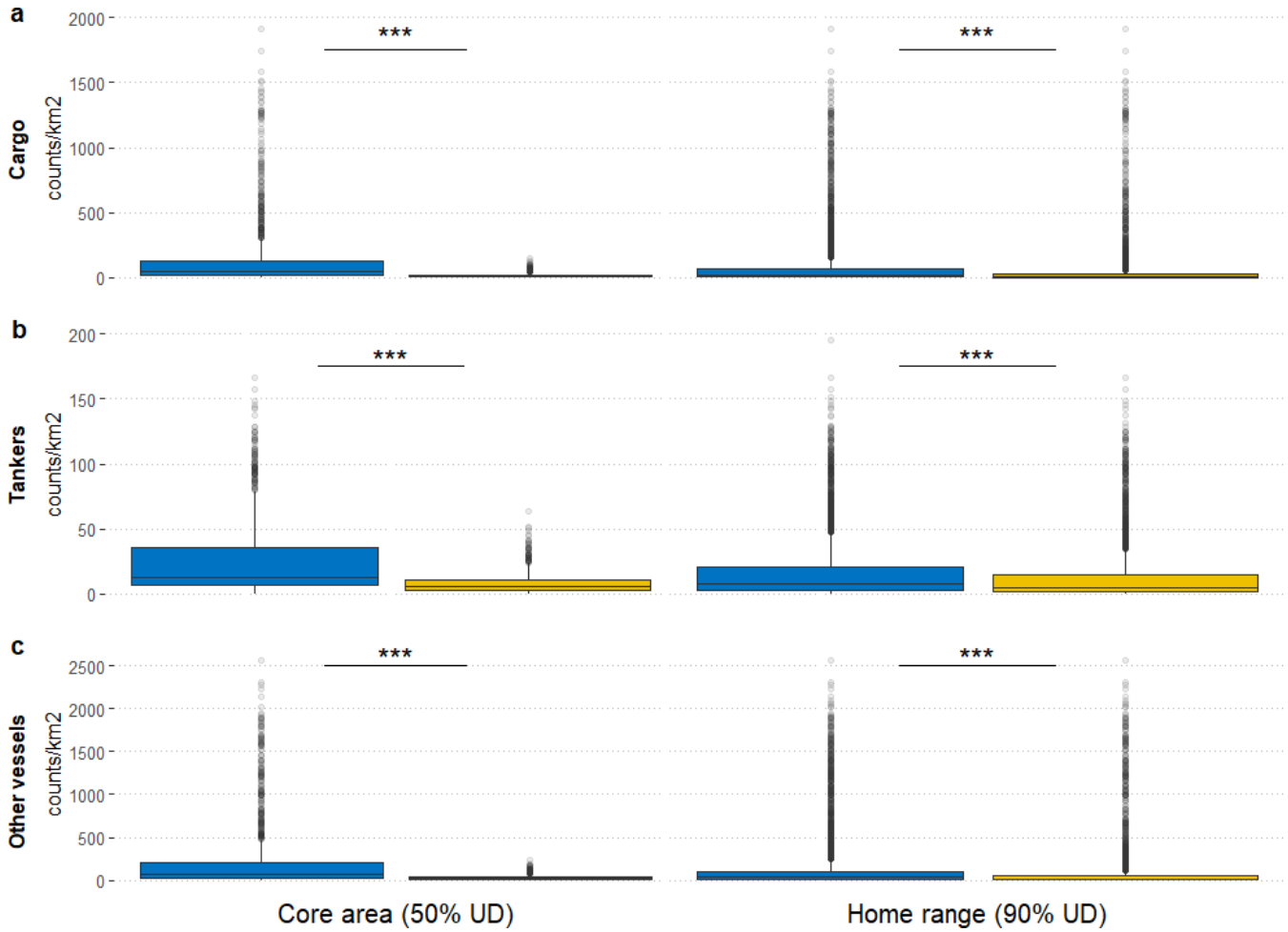


Figure S8. Distribution of values of exposure to vessel transit in core area and home range of Black-capped Petrels tracked from May 2019 – August 2019. Blue represent dark forms and yellow represents light forms. P-value of Wilcoxon sum rank test: *** <0.005. Solid lines within boxes depict the median, edge of boxes depicts quartiles, whiskers extend to 5th and 95th percentiles, and circles depict data beyond the 95th percentile. UD: utilization distribution.

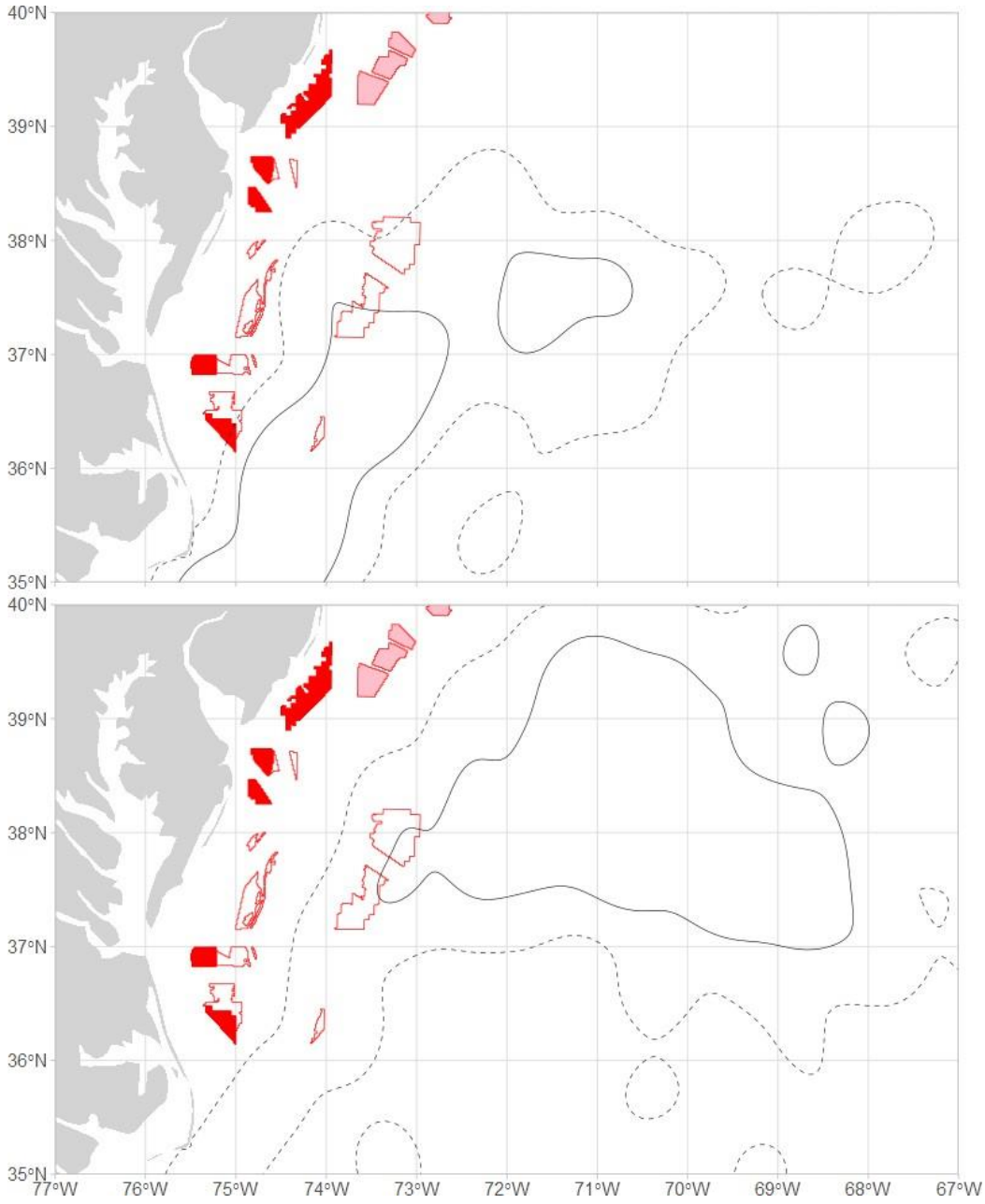


Figure S9. Overlap between lease areas for wind energy production and Black-capped Petrels use areas in the western North Atlantic. Top panel: utilization distributions (UD) of dark forms; bottom panel: utilization distributions of light forms. Solid black lines represent core areas (50% UD) and dashed black lines represent home range (90% UD) of petrels tracked from May 2019 – August 2019. Red-filled polygons indicate the location of active leases, pink-filled polygons indicate planned areas (New York Bight), and red-outlined polygons indicate proposed areas (Central Atlantic).

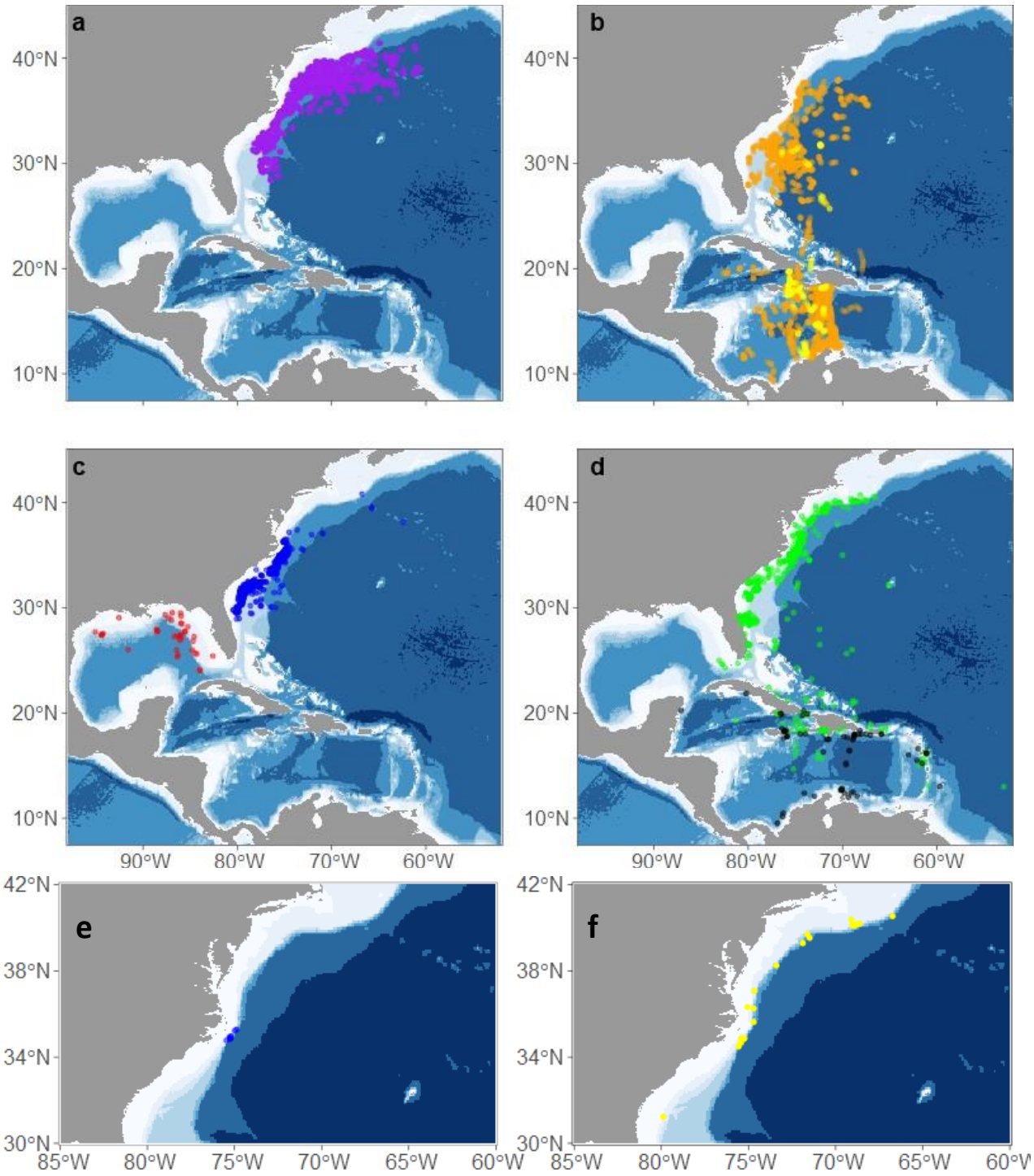


Figure S10. Existing datasets of Black-capped Petrel tracking and observations at sea. a) This study. b) Orange: Jodice et al. 2015; yellow: Satgé et al. 2019. c) Blue: Sussman and U.S. Geological Survey 2014; red: Jodice et al. 2021. d) Black: Leopold et al. 2019, green: eBird 2021. e) eBird 2021: individuals reported as Subspecies "Pterodroma hasitata (Black-faced)" (n=11). f) eBird 2021: individuals reported as Subspecies "Pterodroma hasitata (White-faced)" (n=25).

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eBird (2021). eBird: An online database of bird distribution and abundance. eBird, Cornell Lab of Ornithology, Ithaca, New York. Accessed from http://www.ebird.org on 01 November 2021.

Jodice, P. G., Ronconi, R. A., Rupp, E., Wallace, G. E., & Satgé, Y. (2015). First satellite tracks of the endangered black-capped petrel. *Endangered Species Research*, *29*(1), 23-33.

Jodice, P. G., Michael, P. E., Gleason, J. S., Haney, J. C., & Satgé, Y. G. (2021). Revising the marine range of the endangered black-capped petrel *Pterodroma hasitata*: occurrence in the northern Gulf of Mexico and exposure to conservation threats. *Endangered Species Research*, *46*, 49-65.

Leopold, M. F., Geelhoed, S. C., Scheidat, M., Cremer, J., Debrot, A. O., & Van Halewijn, R. (2019). A review of records of the Black-capped Petrel *Pterodroma hasitata* in the Caribbean Sea. *Marine Ornithology*, *47*, 235-241.

Satgé, Y. G., Rupp, E., & Jodice, P. G. (2019). *A preliminary report of ongoing research of the ecology of Black-capped Petrel (*Pterodroma hasitata*) in Sierra de Bahoruco, Dominican Republic–I: GPS tracking of breeding adults*. South Carolina Cooperative Fish and Wildlife Research Unit.

Sussman, Allison & US Geological Survey (2014). *Atlantic Offshore Seabird Dataset Catalog, Atlantic Coast and Outer Continental Shelf, from 1938-01-01 to 2013-12-31 (NCEI Accession 0115356)*. NOAA National Centers for Environmental Information. Dataset. https://accession.nodc.noaa.gov/0115356. Accessed [2020-11-01].