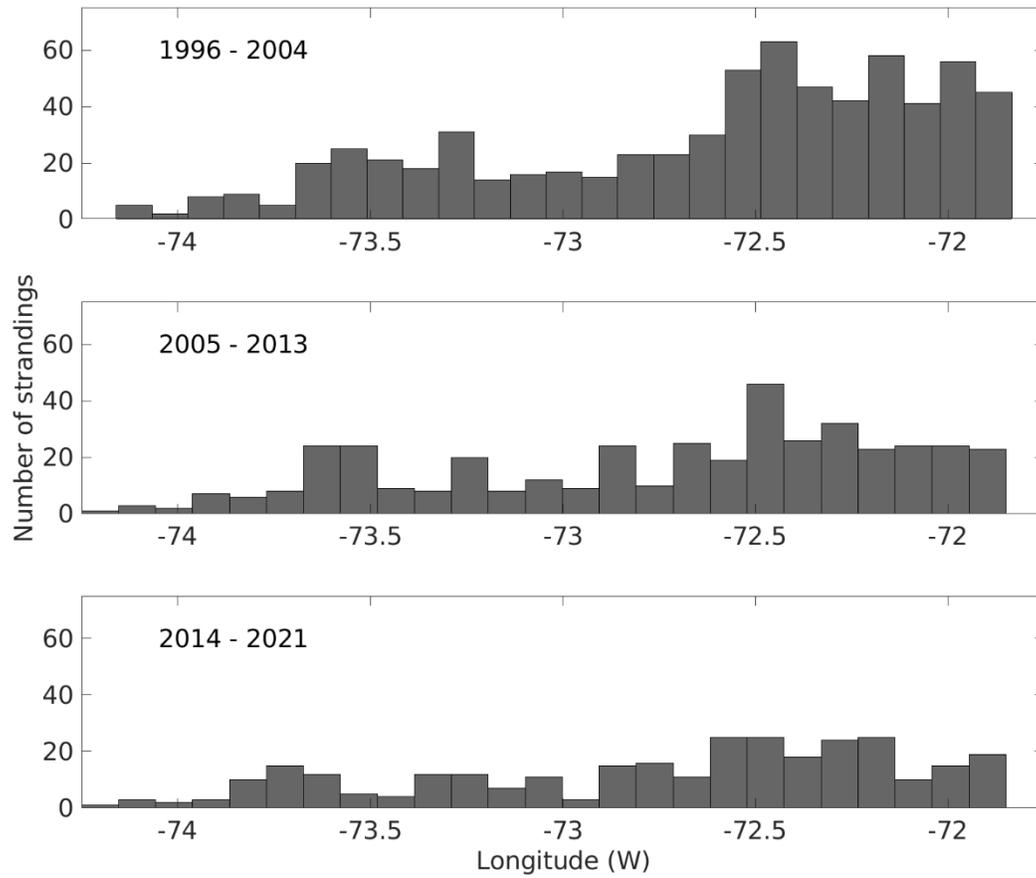


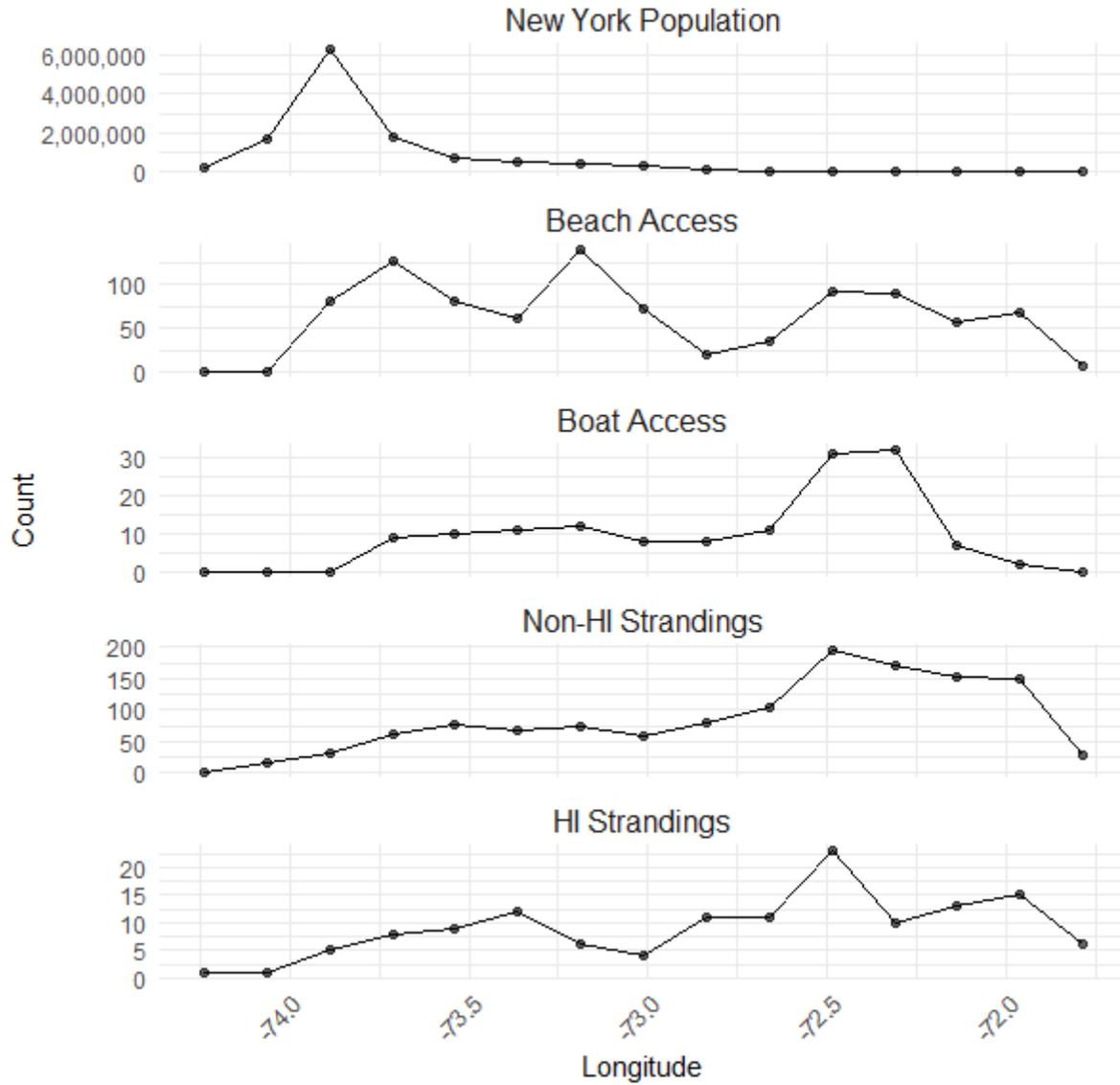
Supplementary Table 1. Presenting correlation between non-HI and HI strandings and three Human Encounter Parameters (HEPs)—human population, beach access and boat access—was analysed across longitudinal bins. Stranding patterns were examined alongside measures of human access to coastal areas. Of the three factors, only boat access showed a significant correlation with strandings, affecting both non-HI and HI cases ($p < 0.05$). These findings suggest that increased boat access may be a key driver of pinniped strandings regardless of the presence of direct human interaction.

Longitude bin (West to East)	HI count	NON-HI count	*Boat Access (# of sites)	Beach Access (# of sites)	NY Population (individual estimate)
(-74.325, -74.15)	1	0	0	1	198,697
(-74.15, -73.975)	1	0	0	15	1,721,348
(-73.975, -73.8)	5	0	81	32	6,270,360
(-73.8, -73.625)	8	9	127	61	1,755,433
(-73.625, -73.45)	9	10	81	78	722,192
(-73.45-73.275)	12	11	61	67	500,273
(-73.275, -73.1)	6	12	139	75	400,424
(-73.1, -72.925)	4	8	72	59	355,950
(-72.925, -72.75)	11	8	20	81	134,060
(-72.75, -72.575)	11	11	35	105	39,908
(-72.575, -72.4)	23	31	91	195	43,488
(-72.4, -72.225)	10	32	90	172	22,034
(-72,225, -72.05)	13	7	57	153	17,607
(-72.05, -71.875)	15	2	67	150	3,563
(-71.875, -71.7)	6	0	6	28	0

An * indicates a statistically significant difference ($p < 0.05$)



Supplementary Figure 1. Live pinniped strandings ($N = 1,407$) by longitude from 1996 to 2021, binned into three time periods: 1996–2004 (upper), 2005–2013 (middle), and 2014–2021 (bottom). Strandings were consistently highest on the eastern part of the study area (longitudes east of -72.5° W) throughout the study period.



Supplementary Figure 2. Relationships between longitude and three Human Encounter Parameters (HEPs) and stranding counts (Non-HI and HI) across Long Island, New York. The five panels show New York population, beach access, boat, non-HI strandings and HI strandings along the same longitude gradient. Each panel displays individual data points with connecting lines to illustrate trends.