

The following supplement accompanies the article

Vertical movements of shortfin mako sharks *Isurus oxyrinchus* in the western North Atlantic Ocean are strongly influenced by temperature

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Table S1. Fixed parameter estimates (\pm SE) for the best fit models and the percentage of variability of each model attributable to random effects (i.e. individual sharks).

	Habitat A	Habitat B	Habitat C	Habitat D	Size	Habitat B \times Size	Habitat C \times Size	Habitat D \times Size	Variability Attributable to Random Effects
Difference between Daytime and Nighttime Maximum Depth	-32.29 \pm 22.98	-6.23 \pm 19.08	17.13 \pm 22.76	32.62 \pm 24.24	-0.25 \pm 0.10				29.0%
Daytime Maximum Depth	-155.61 \pm 29.23	-82.44 \pm 28.51	39.14 \pm 28.28	85.72 \pm 28.95	-0.74 \pm 0.12				50.5%
Nighttime Maximum Depth	-109.89 \pm 27.16	-69.94 \pm 29.75	30.50 \pm 24.67	53.64 \pm 25.12	-0.51 \pm 0.12				54.0%
Daytime Maximum Temperature	32.27 \pm 0.67	30.83 \pm 0.88	28.27 \pm 0.78	26.46 \pm 1.01	-0.04 \pm 0.01				41.5%
Nighttime Maximum Temperature	28.73 \pm 0.72	28.60 \pm 0.79	24.66 \pm 0.79	22.12 \pm 0.91	-0.01 \pm 0.01				37.1%
Daytime Minimum Temperature	0.52 \pm 7.24	21.73 \pm 2.24	15.56 \pm 1.27	10.61 \pm 3.37	0.10 \pm 0.04	-0.13 \pm 0.05	-0.11 \pm 0.04	-0.09 \pm 0.04	67.2%
Nighttime Minimum Temperature	19.95 \pm 0.37	18.11 \pm 0.44	16.18 \pm 0.35	15.30 \pm 0.64					21.7%

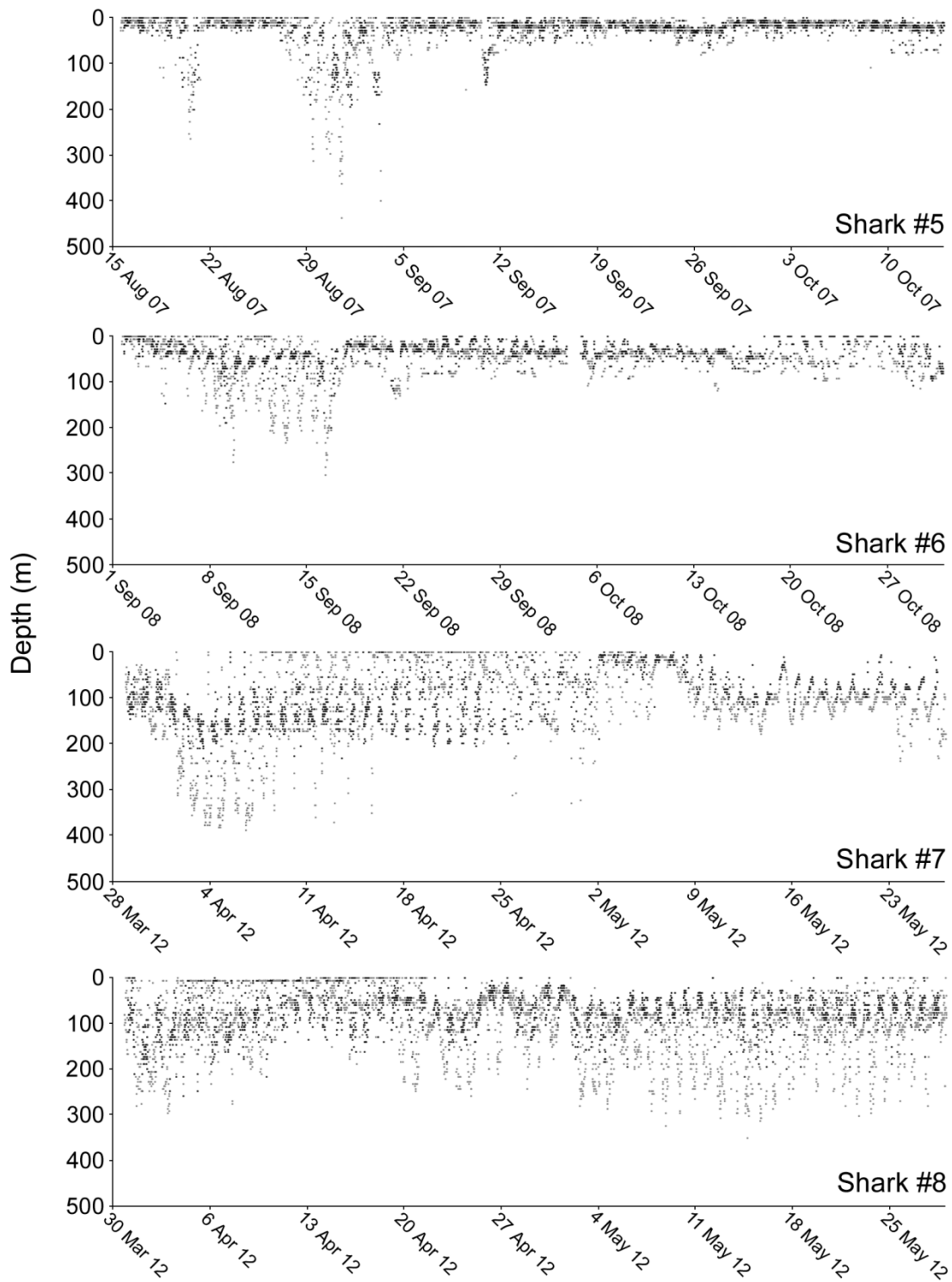


Fig. S1. The first two months of dive behavior of shortfin mako sharks, *Isurus oxyrinchus*, tagged with PTT-100 tags. Gray and black points represent depth during the daytime and nighttime, respectively. There are no clear differences in dive behavior immediately after tagging compared to the rest of the tracks.

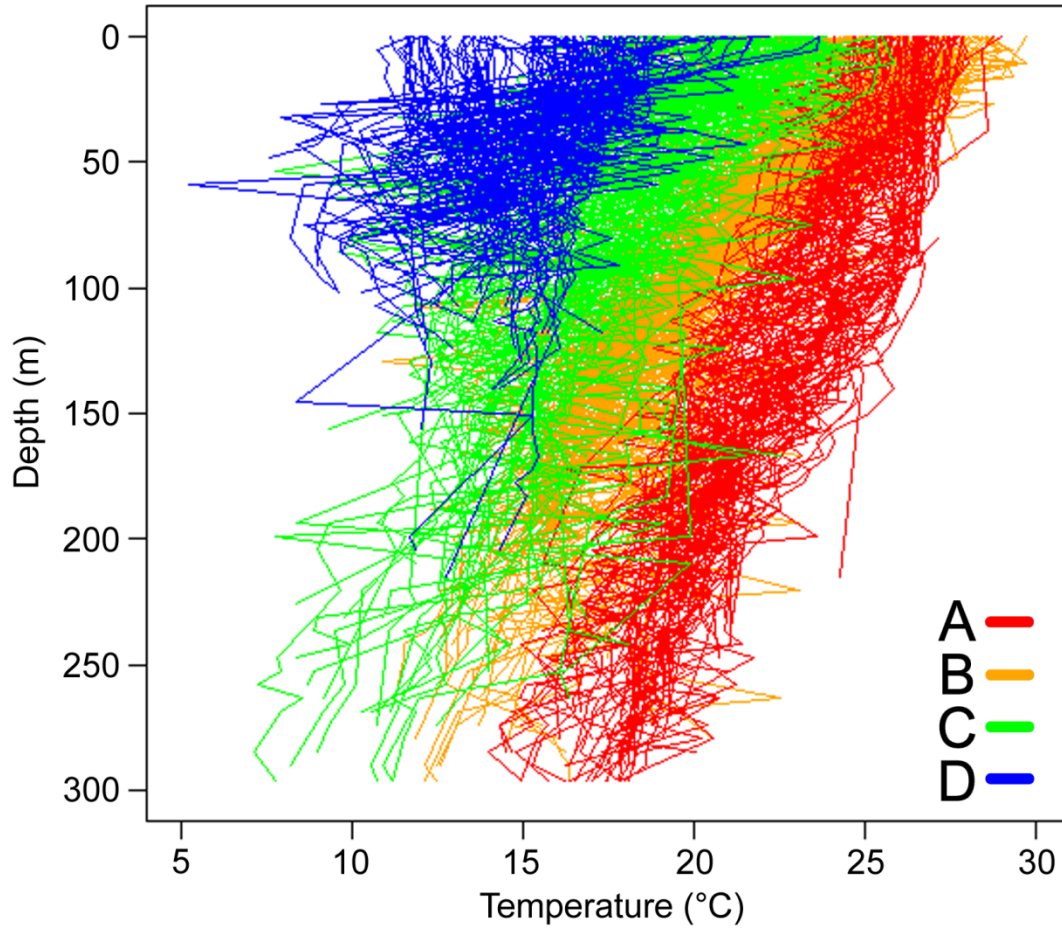


Fig. S2. Daily temperature-depth profiles experienced by tagged shortfin mako sharks, *Isurus oxyrinchus*, as recorded by pop-up satellite archival tags. Temperature-depth profiles are color coded by habitat.

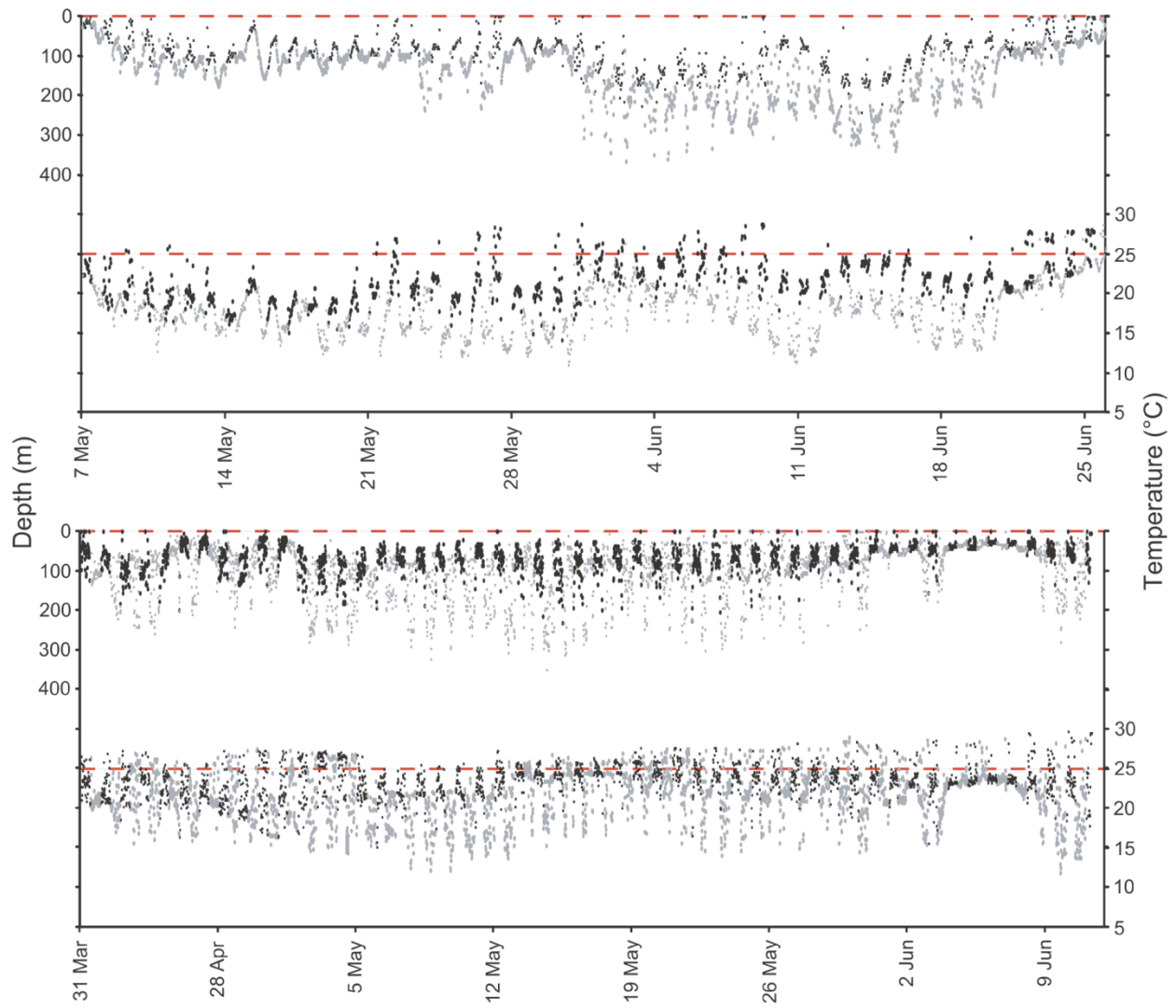


Fig. S3. Warm water submergence of shortfin mako sharks, *Isurus oxyrinchus*, in the Gulf of Mexico. Diving behavior of Sharks 7 (top) and 8 (bottom). Gray and black points represent depth and temperature data recorded from PTT-100 tags during the daytime and nighttime, respectively. Red dashed lines indicate sea surface (depth = 0 m) on the depth scale and 25° C on the temperature scale. Sharks tended to avoid temperatures in excess of 27° C, which were associated with shallower depths.