Supplemental materials

Supplementary Table 1: Model scores from WC-GPE3 geolocation estimates using different maximum migration speeds.

Supplementary Table 2: Akaike information criterion (AIC) and Bayesian information criterion (BIC) values for generalized linear models (GLMs) evaluating the relationships among activity time series (A), diel period (f_{Period}), and diving behavior (f_{Dive}).

Supplementary Table 3: AIC and BIC values for generalized additive models (GAMs) evaluating the relationships among activity time series (A), solar altitude (h), and diving behavior (f_{Dive}).

Supplementary Figure 1: Daily sea surface temperature (SST) recorded by pop-up satellite archival tags (PSATs).

Supplementary Figure 2: Partial effects of all terms of the final generalized additive model.

Supplemental Tables

Supplementary Table 1: Model scores from WC-GPE3 geolocation estimates using different maximum migration speeds. The model with the highest score is shown in bold.

| Maximum swim speed (m·s^{-1})	Model score
0.3	66.54
0.4	69.72
0.5	72.44
0.6	74.06
0.7	75.02
0.8	75.42
0.9	75.70
1.0	75.92
1.1	76.10
1.2	**76.20**

Supplementary Table 2: AIC and BIC values for GLMs evaluating the relationships among activity time series (A), diel periods (f_{Period}: daytime, nighttime, and twilight), and diving behavior (f_{Dive}: diving and surfacing). The best-fitting model (i.e., those with the lowest AIC and BIC) is shown in bold.

| Model	Formula	df	AIC	BIC
GLM-Full	$A \sim f_{Period} * f_{Dive}$	7	**32472.3**	**32516.0**
GLM-f_{Period}	$A \sim f_{Period}$	4	32825.2	32850.2
GLM-f_{Dive}	$A \sim f_{Dive}$	3	32904.6	32923.3
GLM-Null	$A \sim I$	2	33214.5	33227.0

Supplementary Table 3: AIC and BIC values for GAMs evaluating the relationships among activity time series (A), solar altitude (h), and diving behavior (f_{Dive}). The best-fitting model is shown in bold.

Model	Model formula	df	AIC	BIC
GAM-hf_{Dive}-h-f_{Dive}	$A \sim s(h, \text{by} = f_{Dive}) + s(h) + f_{Dive}$	**12.68**	**32360.0**	**32439.3**
GAM-h-f_{Dive}	$A \sim s(h) + f_{Dive}$	11.70	32419.2	32492.3
GAM-hf_{Dive}-f_{Dive}	$A \sim s(h, \text{by} = f_{Dive}) + f_{Dive}$	11.62	32672.3	32744.98
GAM-h	$A \sim s(h)$	10.59	32758.8	32825.08
GAM-f_{Dive}	$A \sim f_{Dive}$	3.0	32904.6	32923.32
GAM-Null	$A \sim I$	2.0	33214.5	33227.02

Supplemental Figures
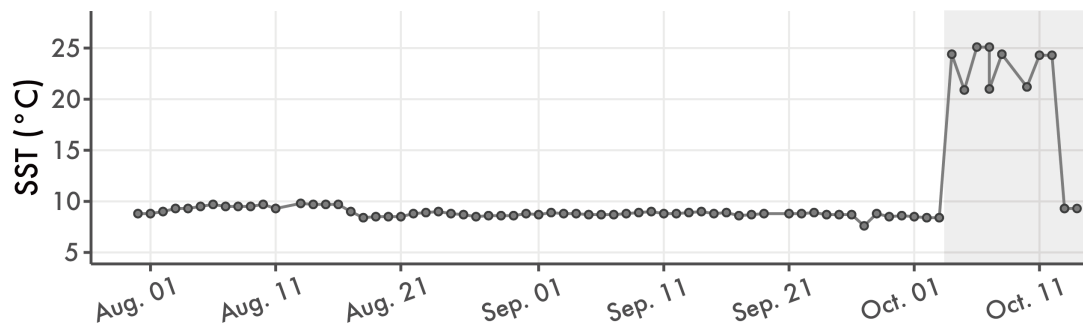
Supplementary Figure 1: Daily sea surface temperature (SST) recorded by pop-up satellite archival tags (PSATs). The shaded area represents the presumable predated periods.
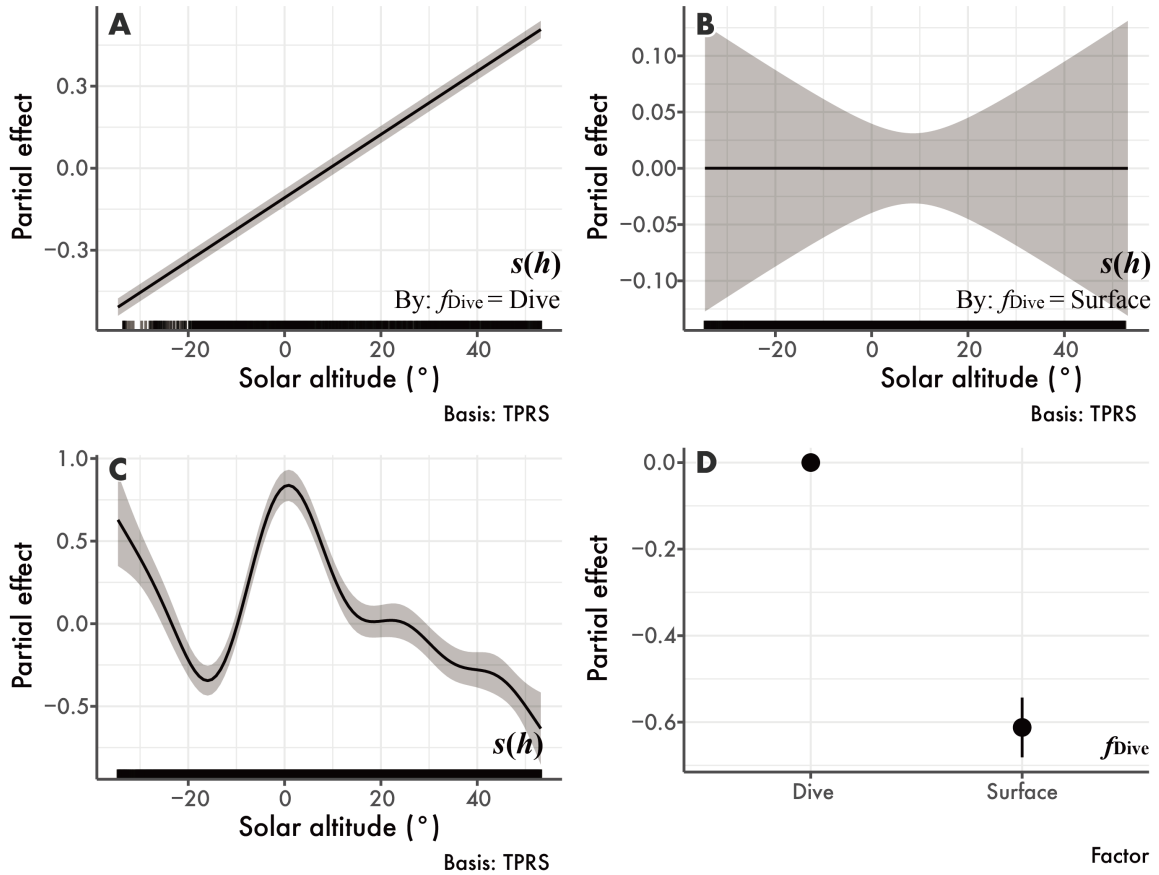
Supplementary Figure 2: Partial effects of all terms of the final generalized additive model (GAM-hf_{Dive}-h-f_{Dive} in Supplementary Table 3). (A, B) Estimated smooth effect of solar altitude $s(h)$ stratified diving behavior: diving (A) and surfacing (B), using thin-plate regression splines (TPRS). (C) Estimated smooth effect of solar altitude $s(h)$. (D) Estimated fixed effect of diving behavior. Shaded areas in (A)–(C) and error bars in (D) represent the 95% confidence intervals.