

TABLE S1 Posttagging location summary for two sets of animals tagged within a day of each other (SbTag006 & SbTag007 and SbTag009 & SbTag010) and one set tagged during the same encounter (SbTag017 & SbTag018). Distance between each pair were calculated when locations from each were obtained during the same satellite overpass. Sample size represents the number of satellite overpasses when locations were received from both tags.

Tag ID	Days of overlap	Number of paired locations	Time <1 km apart (%)	<i>M (SD)</i> distance apart (km)	Median distance apart (km)	Maximum distance apart (km)
SbTag006	9.4	79	6.3	9.1 (7.1)	7.9	29.4
SbTag007						
SbTag009	7.1	83	3.6	14.7 (11.6)	11.3	37.5
SbTag010						
SbTag017	9.5	90	3.3	11.8 (12.4)	7.0	52.5
SbTag018						

TABLE S2 Top generalized additive mixed-effect models (GAMM) for dive depth (m) of rough-toothed dolphin tagged off Kaua'i. TOD is time of day, LUN is lunar phase, and DAY is day length. Model rank number eight contains none of the explanatory variables.

Rank	Model	logLik	AIC	Δ AIC	Weight
1	TOD + LUN + DAY	-16,300.25	32,618.5	0.00	0.761
2	TOD + LUN	-16,302.41	32,620.8	2.32	0.238
3	LUN + DAY	-16,310.97	32,633.9	15.45	0.000
4	LUN	-16,312.95	32,635.9	17.40	0.000
5	TOD + DAY	-16,311.21	32,638.4	19.92	0.000
6	TOD	-16,312.80	32,639.6	21.10	0.000
7	DAY	-16,322.07	32,654.1	35.65	0.000
8		-16,323.66	32,655.3	36.83	0.000

TABLE S3 Generalized additive mixed-effect model (GAMM) results for top model of the effect of time of day (dawn, day, dusk, night), lunar phase, and daylength on dive depth (m) for rough-toothed dolphins off Kaua'i.

Parametric coefficients	Estimate	SE	<i>t</i> -value	<i>p</i> -value
(Intercept)	4.021	0.122	33.036	<.001
Time of day Day	0.223	0.127	1.753	.080
Time of day Dusk	0.505	0.135	3.746	<.001
Time of day Night	0.254	0.122	2.080	.038
Smooth terms	edf	Ref.df	<i>F</i> -value	<i>p</i> -value
s(Lunar phase)	2.178	3	81.50	<.001
s(Day length)	1.014	4	23.42	<.001

TABLE S4 Top generalized additive mixed-effect models (GAMM) for dive duration (min) of rough-toothed dolphin tagged off Kaua‘i. TOD is time of day, LUN is lunar phase, and DAY is daylength. Model rank number six contains none of the explanatory variables.

Rank	Model	logLik	AIC	ΔAIC	Weight
1	TOD + LUN	-4,484.348	8,984.7	0.00	0.303
2	TOD + DAY	-4,484.441	8,984.9	0.19	0.276
3	TOD	-4,485.492	8,985.0	0.29	0.262
4	TOD + LUN + DAY	-4,483.994	8,986.0	1.29	0.159
5	LUN	-4,506.671	9,023.3	38.65	0.000
6		-4,508.058	9,024.1	39.42	0.000
7	DAY	-4,507.154	9,024.3	39.61	0.000
8	LUN + DAY	-4,506.501	9025.0	40.31	0.000

TABLE S5 Generalized additive mixed-effect model (GAMM) results for top model of the effect of time of day (dawn, day, dusk, night) and lunar phase on dive duration (min) for rough-toothed dolphins off Kaua‘i.

Parametric coefficients	Estimate	SE	t-value	p-value
(Intercept)	0.866	0.079	10.919	<.001
Time of day Day	0.153	0.084	1.827	.068
Time of day Dusk	0.381	0.087	4.364	<.001
Time of day Night	0.124	0.079	1.558	.119
Smooth terms	edf	Ref.df	F-value	p-value
s(Lunar phase)	1.335	3	23.6	<.001

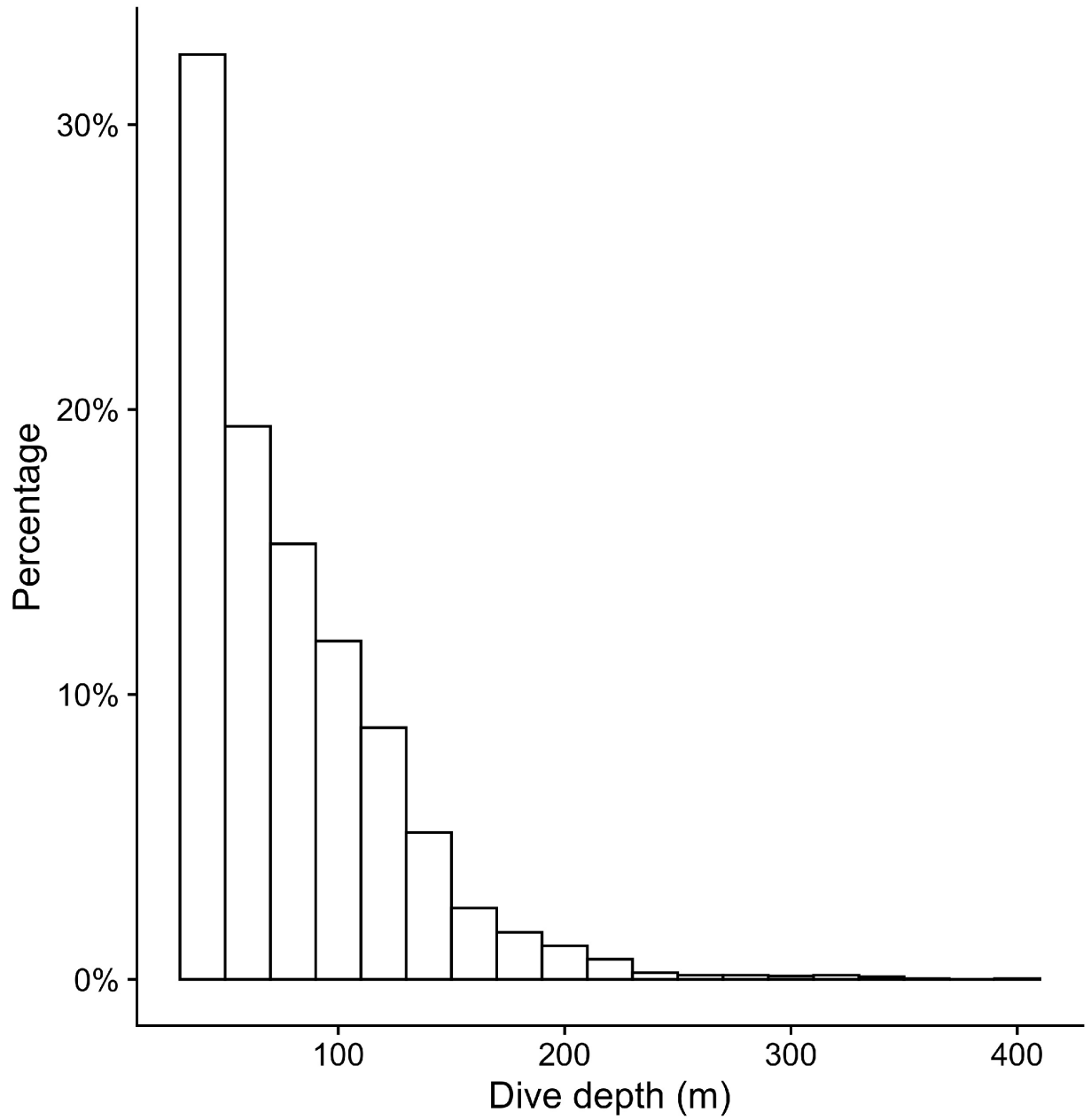


FIGURE S1 Relative frequency histogram of dive depths (m) for rough-toothed dolphins tagged off Kaua'i. Bins are divided into 20 m blocks. Vertical excursions to less than 30 m or for less than 30 s were not considered dives.

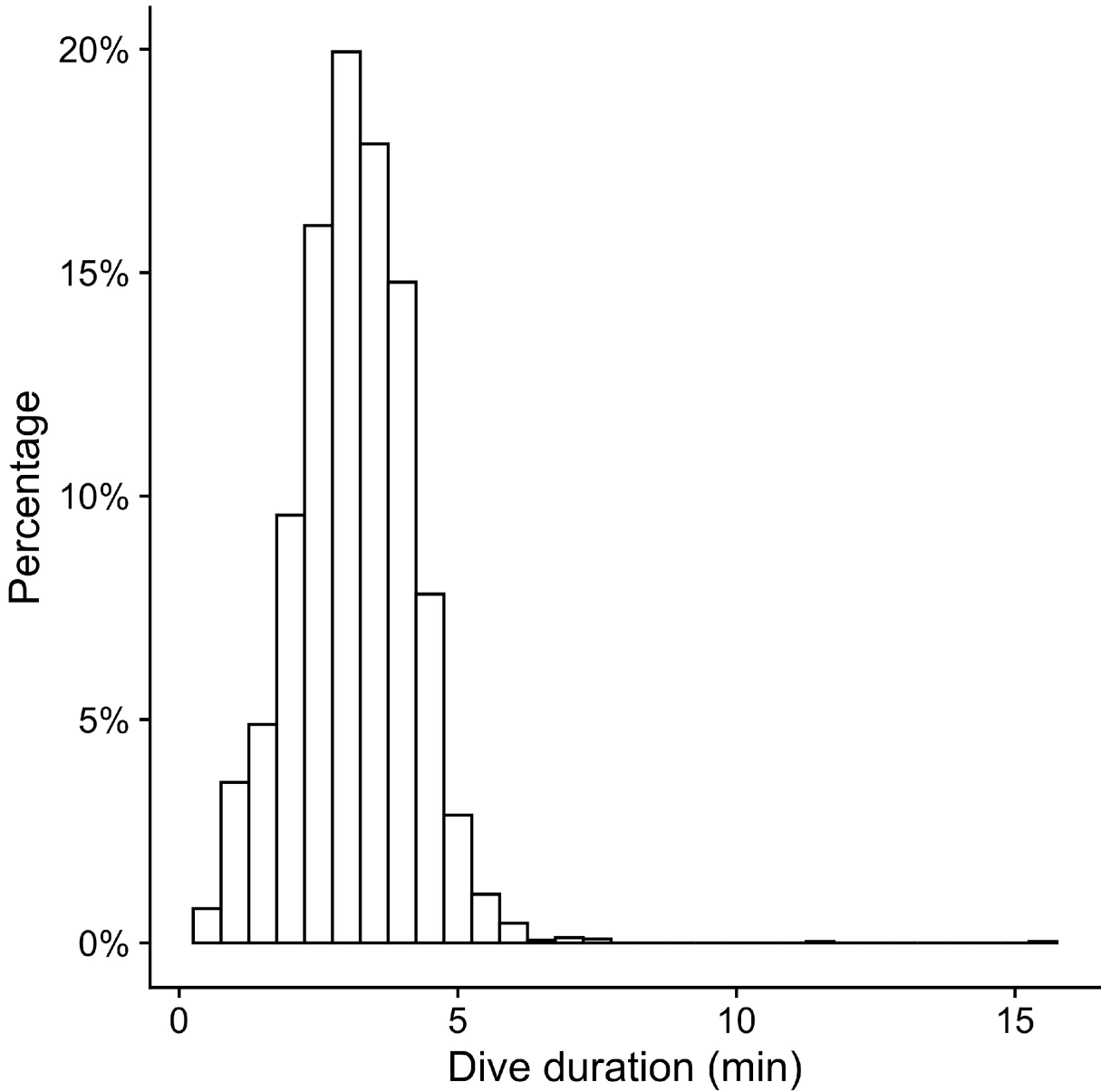


FIGURE S2 Relative frequency histogram of dive durations (min) for rough-toothed dolphins tagged off Kaua'i. Bins are divided into 30 s blocks. Vertical excursions to less than 30 m or for less than 30 s were not considered dives.