

Figure S1. bADLs for short-finned pilot whales calculated using a range of dive thresholds. Box and whisker plots show the distribution of behavior aerobic dive limits (bADLs) calculated for all individuals from dives above the dive threshold and individual bADLs are marked with black circles. **A.** Red squares and **B.** Blue squares indicate the overall bADL calculated as the 95th percentile and the 97th percentile of dive durations from all tags which recorded dives at least as shallow as 75 m. **C.** Red squares indicate the 95th percentile bADL and **D.** Blue squares indicate the 97th percentile bADL of dive durations from 2014–2016 tags only which recorded dives at least as shallow as 30 m.

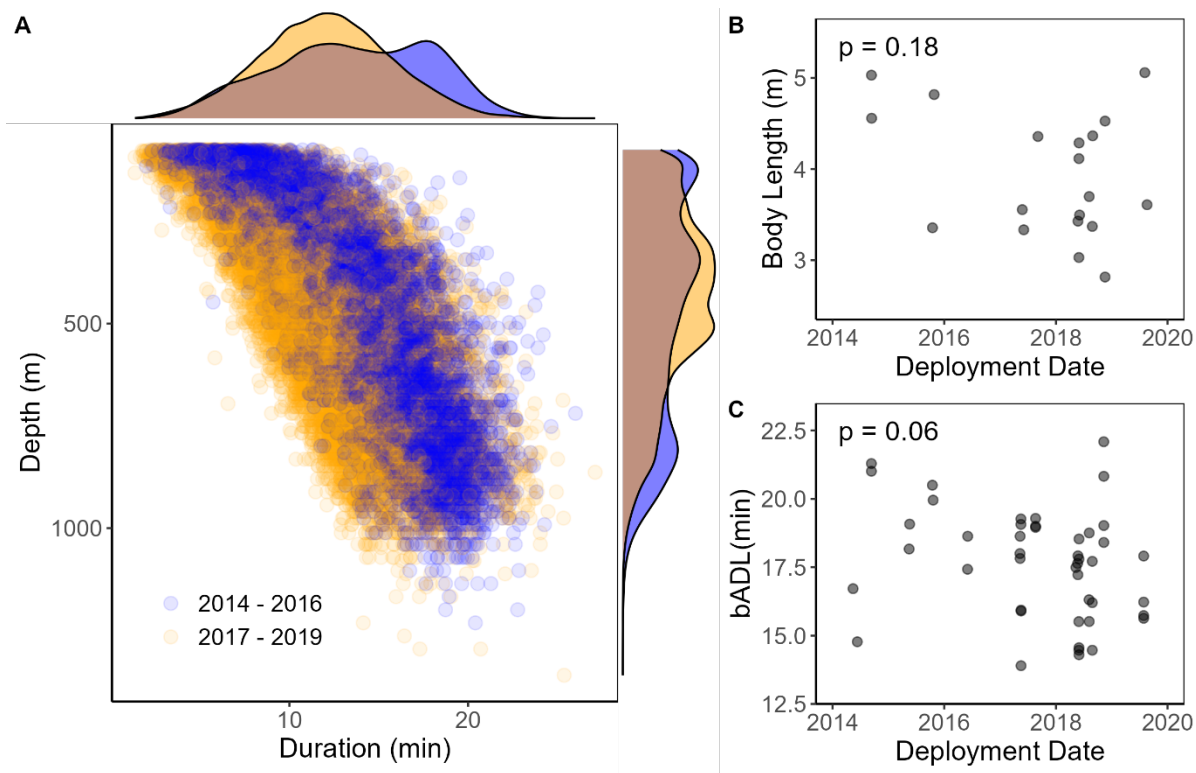


Figure S2. Dive characteristics over time. **A.** Depth plotted versus duration for all dives ≥ 75 m. Blue circles indicate dives recorded by tag deployed in 2014-2016 and orange circles indicate dives recorded by tag deployed in 2017-2019. **B.** Body length versus deployment date for all available body length estimates ($n=19$) with the p -value of a linear model relating the variables. **C.** Individual behavioral aerobic dive limits (bADL) versus deployment date for all tags with the p -value of a linear model relating the variables.

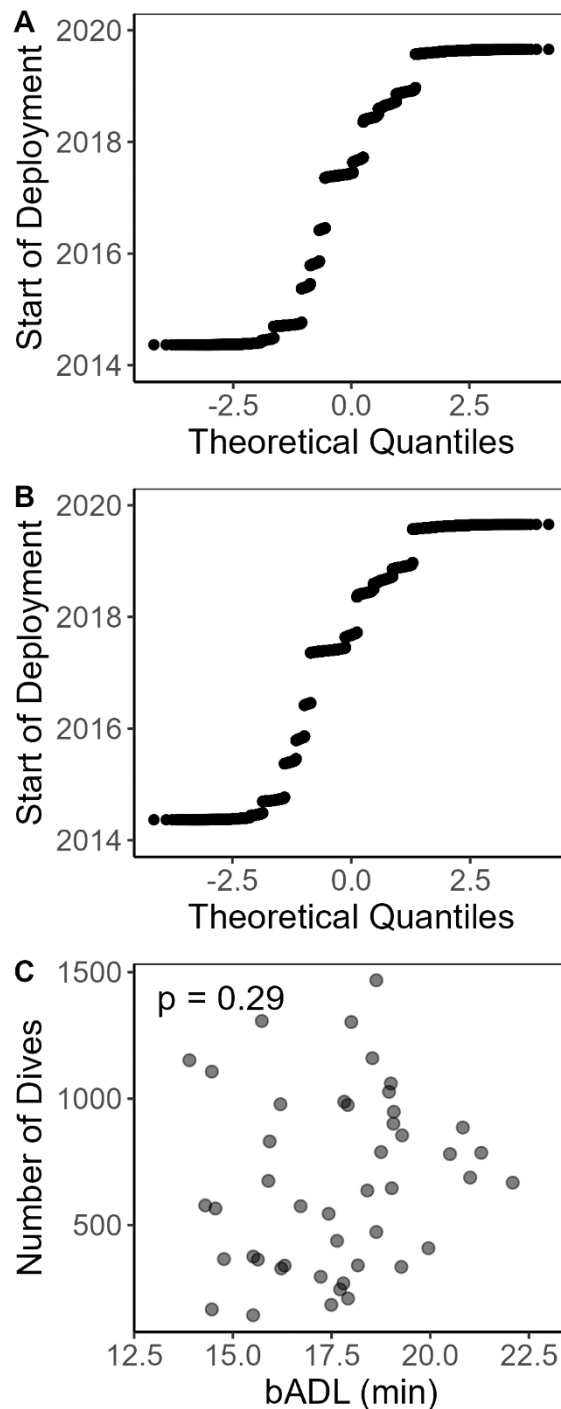


Figure S3. Plots for examining potential biases in dataset. Q-Q plots for all dives (**A**) and dives ≥ 75 m (**B**) to demonstrate an approximately even representation of dives across years. **C.** Individual behavioral aerobic dive limits (bADL) versus number of dives contributed by that individual to the overall dive dataset indicates an even representation of individuals to group bADL with the p-value of a linear model relating the variables.

Table S1. Dive information for each tag. Tag ID, year of deployment, location of deployment (HAT – Cape Hatteras, NC; JAX – Jacksonville, FL), body length, mean (max) dive duration, mean (max) dive depth, and behavioral aerobic dive limit (bADL) for all tags.

ID	Year	Location	Length (m)	Dives ≥75 (count)	Mean Dive Duration (min)	Mean Dive Depth (m)	bADL (min)
GmTag085	2014	HAT		575	14.8 (26.0)	556.5 (1103.5)	16.7
GmTag093	2014	HAT		366	14.7 (24.2)	560.3 (1071.5)	14.8
GmTag098	2014	HAT	4.6	786	14.7 (24.6)	526.7 (1071.5)	21.3
GmTag100	2014	HAT	5.0	688	16.6 (21.9)	757.5 (1231.5)	21.0
GmTag123	2015	HAT		341	13.1 (23.1)	529.1 (1111.8)	18.2
GmTag127	2015	HAT		948	9.5 (18.4)	336.2 (871.8)	19.1
GmTag135	2015	HAT	3.4	781	13.6 (22.8)	484.3 (1263.5)	20.5
GmTag138	2015	HAT	4.8	409	13.2 (20.4)	474.3 (943.5)	20.0
GmTag163	2016	JAX		545	11.2 (18.2)	381.3 (671.5)	17.4
GmTag165	2016	JAX		473	10.6 (17.3)	428.1 (767.5)	18.6
GmTag172	2017	HAT		1303	10.6 (20.4)	435.2 (1071.5)	18.0
GmTag173	2017	HAT		988	12.2 (21.3)	486.4 (959.5)	17.8
GmTag174	2017	HAT		1468	11.1 (19.4)	364.7 (911.5)	18.6
GmTag175	2017	HAT		901	12.0 (20.5)	411.1 (943.5)	19.1
GmTag176	2017	HAT	3.6	335	10.8 (22.2)	443.5 (1039.5)	19.3
GmTag177	2017	HAT	3.3	1152	12.3 (23.2)	379.9 (1039.5)	13.9
GmTag178	2017	HAT		675	14.3 (23.9)	443.2 (959.5)	15.9
GmTag180	2017	HAT		831	11.6 (19.8)	457.0 (1167.5)	15.9
GmTag181	2017	HAT		1027	12.0 (21.1)	501.5 (991.5)	19.0
GmTag182	2017	HAT		855	11.8 (20.0)	455.8 (1071.5)	19.3
GmTag183	2017	HAT	4.4	1060	9.5 (18.6)	329.0 (815.5)	19.0
GmTag197	2018	HAT		185	13.0 (19.5)	454.3 (991.5)	17.5
GmTag198	2018	HAT		438	13.4 (23.9)	373.1 (1199.5)	17.6
GmTag199	2018	HAT		296	11.6 (21.1)	332.9 (871.8)	17.2
GmTag200	2018	HAT	3.4	210	13.6 (21.7)	392.6 (887.8)	17.9
GmTag201	2018	HAT	4.1	144	12.2 (23.2)	421.0 (1047.8)	15.5
GmTag202	2018	HAT	3.0	167	11.9 (21.6)	478.3 (1079.8)	14.5
GmTag203	2018	HAT		578	12.9 (22.6)	481.1 (1079.8)	14.3
GmTag204	2018	HAT	3.5	566	13.3 (22.2)	531.4 (999.8)	14.6
GmTag205	2018	HAT	4.3	270	12.1 (20.1)	486.9 (1047.8)	17.8
GmTag206	2018	HAT		1160	11.3 (19.1)	449.7 (1143.8)	18.5
GmTag207	2018	HAT	3.7	340	13.8 (23.7)	456.0 (1111.8)	16.3
GmTag210	2018	HAT		789	13.8 (24.7)	546.7 (1071.5)	18.8
GmTag211	2018	HAT		376	12.1 (21.5)	462.1 (911.5)	15.5
GmTag216	2018	HAT	3.4	246	12.1 (21.9)	451.4 (895.5)	17.7
GmTag217	2018	HAT		1107	12.5 (19.2)	407.7 (927.5)	14.5
GmTag218	2018	HAT	4.4	978	9.1 (19.2)	319.6 (863.5)	16.2
GmTag219	2018	JAX		668	12.2 (23.5)	445.3 (1011.5)	22.1
GmTag220	2018	JAX	2.8	637	12.9 (25.4)	471.2 (1359.5)	18.4
GmTag221	2018	JAX		646	10.5 (21.1)	321.5 (879.5)	19.0
GmTag222	2018	JAX	4.5	886	9.0 (17.1)	352.9 (1103.5)	20.8
GmTag224	2019	HAT	3.6	1307	14.3 (27.1)	499.0 (1103.5)	15.7
GmTag225	2019	HAT		364	13.0 (22.6)	423.0 (927.5)	15.6
GmTag226	2019	HAT		975	10.8 (17.3)	416.1 (1039.5)	17.9
GmTag227	2019	HAT	5.1	329	12.5 (20.9)	485.3 (1167.5)	16.2