

Table S1. Summary of models of foraging behavior.

Response	Distribution	Model	Fixed effects	Random effects	Null hypothesis
Predation event (visual detection)	Binomial	GLMM	Sex Bottom:whole dur. Jerk peak Rate of ascent Roll Mean VeDBA Heading variance	Deploy.ID Year	No effect of kinematic & descriptive variables on predation event
Dive type (kinematic detection)	Binomial	GLMM	ln(dive duration) Bottom:whole dur. Jerk peak Rate of ascent Roll Mean VeDBA Heading variance	Deploy.ID Year	No effect of kinematic & descriptive variables on dive type
Kinematic or descriptive variable ^a	Gaussian	LME	Sex	Deploy.ID Year	No effect of sex on kinematic variable
No. of prey capture dives	Poisson	GLMM	Sex ln(deployment dur.)	Year	No effect of sex on counts of prey capture dives
No. of dives to Chinook depth	Poisson	GLMM	Sex ln(deployment dur.)	Year	No effect of sex on counts of dives to Chinook depth
ln(Cumulative time spent at Chinook depth)	Gaussian	LME	Sex ln(deployment dur.)	Year	No effect of sex on cumulative time spent at Chinook depth

^a We fit several independent models with each of the following as the single response variable:
 ln(dive duration), bottom:whole duration, jerk peak, roll, rate of ascent, heading variance, and mean VeDBA.

Table S2. Summary of metadata and kinematic predictor variables of prey capture dives associated with surface-confirmed predation events.

Tag ID	Whale ID	Sex	Age	Date and local onset time of dive	Maximum dive depth (m)	Predictor variables		
						Jerk peak	Roll (deg)	Heading variance
oo10_265m	K33	M	9	2010-09-22 15:25:13	135.0	70.8	152.7	0.94
oo10_265m	K33	M	9	2010-09-22 16:22:08	100.8	40.9	115.5	0.71
oo10_265m	K33	M	9	2010-09-22 17:20:10	164.4	59.9	66.2	0.48
oo10_265m	K33	M	9	2010-09-22 18:21:31	47.0	14.4	170.2	0.40
oo12_261m	L84	M	22	2012-09-17 11:57:19	89.5	28.6	142.0	0.77
oo12_266m	L91	F	17	2012-09-22 11:49:46	97.3	21.7	165.8	0.67
oo14_249m	L113	F	5	2014-09-06 15:35:22	77.2	46.6	86.3	0.80
oo14_249m	L113	F	5	2012-09-06 15:57:59	119.7	37.5	22.9	0.59
oo14_250m	L89	M	21	2014-09-07 16:16:08	138.9	15.6	96.0	0.50
oo14_250m	L89	M	21	2014-09-07 16:24:36	115.9	43.2	87.7	0.51
oo14_266m	K35	M	12	2014-09-23 12:24:33	176.3	57.7	151.7	0.78
oo14_266m	K35	M	12	2014-09-23 13:44:07	157.6	80.3	175.3	0.65

Table S3. Results from generalized linear mixed effects model testing significant predictors of prey capture dives associated with confirmed predation events.

Response	Fixed effects	Estimate	s.e.	z-value	p-value
Predation event	Sex	0.390	2.002	0.195	0.846
	Jerk peak	0.030	0.013	2.206	0.028
	Bottom:whole dur.	2.472	2.898	0.853	0.394
	Rate of ascent	0.085	0.692	0.122	0.903
	Roll	1.196	0.482	2.481	0.013
	Mean VeDBA	3.615	5.331	0.678	0.498
	Heading variance	4.383	1.748	2.497	0.012

Table S4. Comparison of combinations of variables used in detector and resulting true positive and false positive rates on all dives and on subset of dives that excluded those near the surface.

Detector variables	All dives		Dives ≥ 5 m	
	TP (%)	FP (%)	TP (%)	FP (%)
Jerk peak, roll, heading var.	78.7	0.2	80.4	1.6
Jerk peak, heading var.	80.9	0.4	82.6	2.7
Jerk peak, roll	80.9	0.9	82.6	4.6
Jerk peak	85.1	2.7	87.0	11.9
Roll, heading var.	89.4	1.0	91.3	6.4
Roll	91.5	14.0	93.5	33.2
Heading var.	93.6	1.5	95.7	9.0