Table S1. Metabolic rate (MR) conditions that were used to calculate aerobic dive limits of *Mesoplodon* spp. and *Globicephala macrorhynchus*

Species	Animal condition at time of measurement	Source
Leptonychotes weddellii (387.4 kg individual)	Lowest MR after dive <23 min	Williams et al., 2004
Leptonychotes weddellii (450 kg individual)	Calculated based on organ MR of rat/human scaled to weight of seal	Davis and Kanatous, 1999
Mammal	Basal MR	Kleiber, 1975
Mesoplodon densirostris	Calculated using COT and average vertical velocity of 1.15 m s^{-1}	Williams et al., 2011; Tyack et al., 2006
Globicephala macrorhynchus	Calculated using COT and average vertical velocity of 2.1 m s^{-1}	Williams et al., 2011; Soto et al., 2008
Globicephala macrorhynchus	Calculated using COT and average sprint speed of 4 m s^{-1}	Williams et al., 2011; Soto et al., 2008
Tursiops truncatus (145 kg individual)	Pushing against a load cell at full exertion	Williams et al., 1993

COT, cost of transport.

Table S2. Mean (±s.d.) percent of Type I fibers by area and myoglobin concentration for a subadult *Globicephala macrorhynchus* (used for mitochondrial volume density measurement) and relative percentage of mean adult value for each measurement

	Subadult *G. macrorhynchus*	% of mean adult value
% Type I fibers (alkaline myosin ATPase)	67.3±9.9	108
% Type I fibers (acidic myosin ATPase)	68.3±10.7	104
[Mb] (g Mb 100 g^{-1} tissue)	6.88±0.29	100