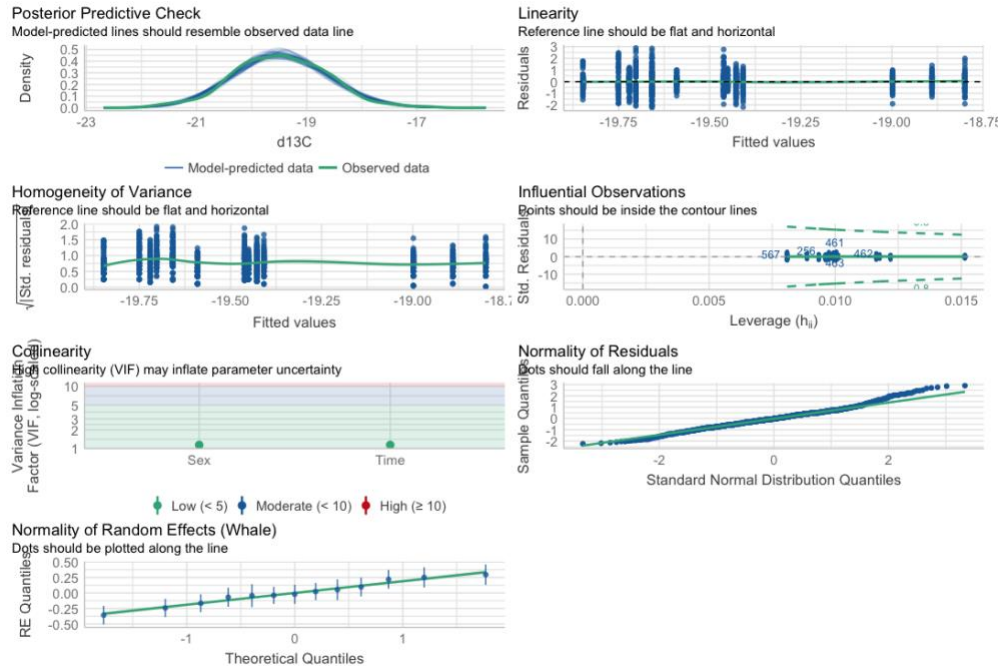


Figure S1.  $\delta^{13}\text{C}$  (A) and  $\delta^{15}\text{N}$  (B) values along the lengths of two right whale baleen plates from an individual named Delilah (Eg#1223). Blue points represent Lysiak (2008) data ( $n = 102$ ) and orange points represent Forbes data ( $n = 57$ ). The number of subsamples differ between the two baleen plates because the plate that we sampled was shorter than Lysiak's (2008) plate, and we were unable to sample beneath the gum tissue. The isotope values show similar patterns in both plates from the same individual. The paired sample t-test of the peak and valley nitrogen and carbon isotope ratios data were not significantly different between the two baleen plates ( $\delta^{15}\text{N}$  peaks:  $t(3) = 1.10$ ,  $p = 0.35$ ;  $\delta^{15}\text{N}$  valleys:  $t(3) = 1.06$ ,  $p = 0.37$ ;  $\delta^{13}\text{C}$  peaks:  $t(3) = 0.11$ ,  $p = 0.92$ ;  $\delta^{13}\text{C}$  valleys:  $t(3) = 0.63$ ,  $p = 0.58$ ).

A)



B)

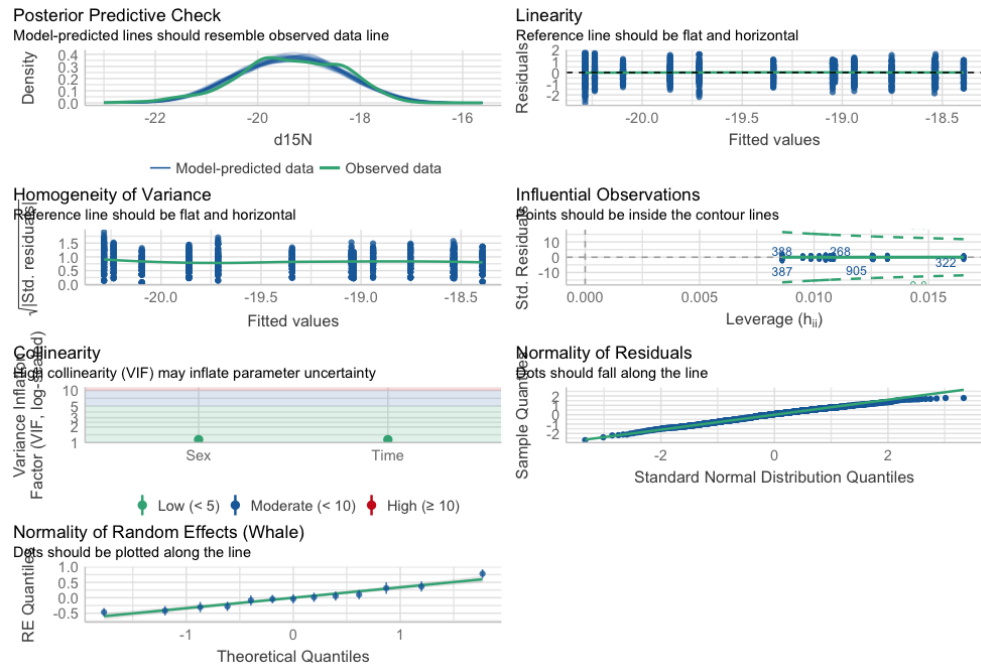


Figure S2. Output from the R package ‘Performance’ that tests the linear mixed effects model assumptions for the  $\delta^{13}\text{C}$  (A) and  $\delta^{15}\text{N}$  (B) datasets of 13 North Atlantic right whale baleen plates.

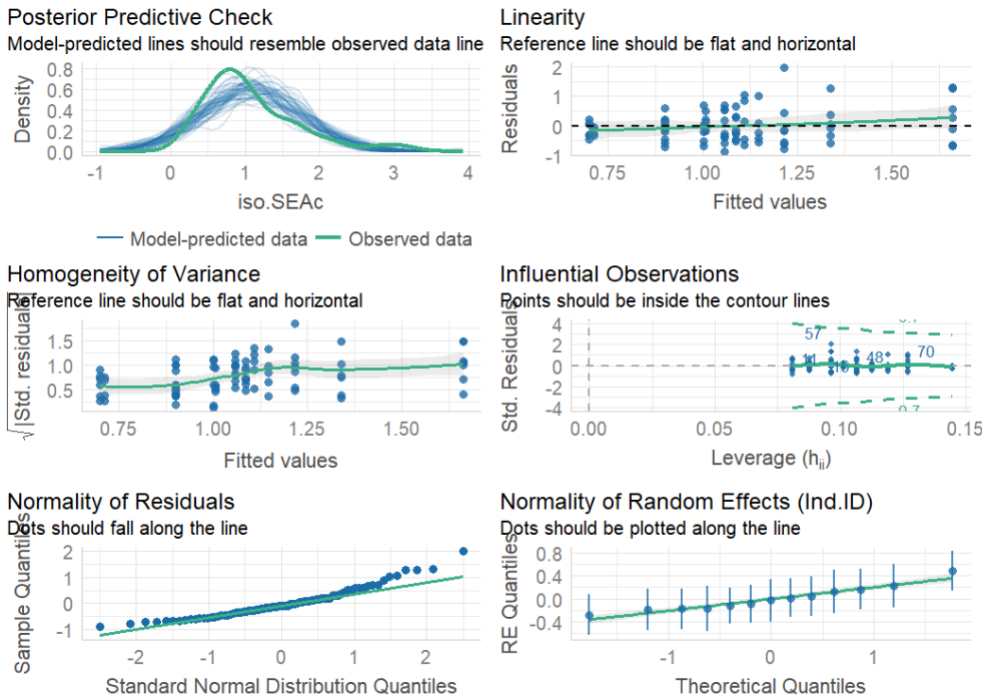


Figure S3. Output from the R package ‘Performance’ that tests the linear mixed effects model assumptions for the SEAc (Standard Ellipse Area – corrected) dataset of  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  analyzed from the baleen of 13 North Atlantic right whales.

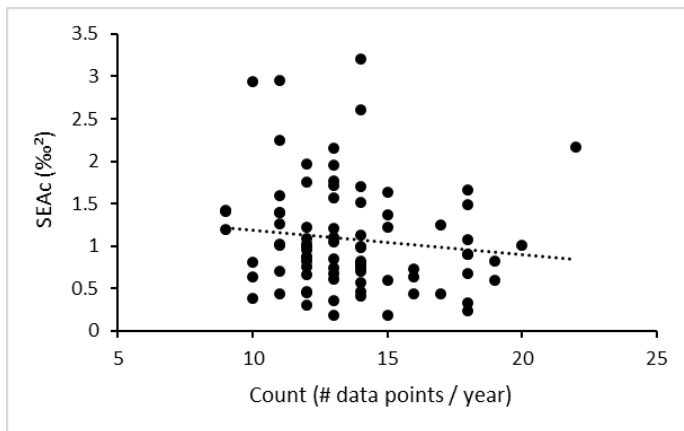


Figure S4. Scatter plot of SEAc (Standard Ellipse Area – corrected) values over the number of isotopic data points per year per individual right whale used in the SIBER (Stable Isotope Bayesian Ellipses in R) analysis (i.e., count).

## LITERATURE CITED

Lysiak NSJ (2008) Investigating the migration and foraging ecology of North Atlantic right whales with stable isotope geochemistry of baleen and zooplankton. PhD dissertation, Boston University, Boston, MA