








Data Paper

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Global data set for nitrogen and carbon stable isotopes of tunas

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Abstract. Nitrogen and carbon stable isotope data sets are commonly used to assess complex population to ecosystem responses to natural or anthropogenic changes at regional to global spatial scales, and monthly to decadal timescales. Measured in the tissues of consumers, nitrogen isotopes ($\delta^{15}\text{N}$) are primarily used to estimate trophic position while carbon isotopes ($\delta^{13}\text{C}$) describe habitat associations and feeding pathways. Models of both $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ values and their associated variance can be used to estimate likely dietary contributions and niche width and provide inferences about consumer movement and migration. Stable isotope data have added utility when used in combination with other empirical data sets (e.g., stomach content, movement tracking, bioregionalization, contaminant, or fisheries data) and are increasingly relied upon in food web and ecosystem models. While numerous regional studies publish tables of mean $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ values, limited individual records have been made available for wider use. Such a deficiency has impeded full utility of the data, which otherwise would facilitate identification of macroscale patterns. The data provided here consist of 4,498 records of individuals of three tuna species, *Thunnus alahunga*, *T. obesus*, and *T. albacares* sampled from all major ocean basins from 2000 to 2015. For each individual tuna, we provide a record of the following: species name, sampling date, sampling location, tuna length, muscle bulk and baseline corrected $\delta^{15}\text{N}$ values, and muscle bulk and, where available, lipid corrected $\delta^{13}\text{C}$ values. We provide these individual records to support comparative studies and more robust modeling projects seeking to improve understanding of complex marine ecosystem dynamics and their responses to a changing environment. There are no copyright restrictions for research and/or teaching purposes. Users are requested to acknowledge their use of the data in publications, research proposals, websites, and other outlets following the citation instructions in Class III, Section B.

Key words: baseline isotopic variability; food web dynamics; Global Ocean; marine top predators; pelagic ecosystem; scombrids; trophic position.

The complete data sets corresponding to abstracts published in the Data Papers section in the journal are published electronically as Supporting Information in the online version of this article at <http://onlinelibrary.wiley.com/doi/10.1002/ecy.3265/supinfo>.

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