



## Utilizing Meta-Analysis to parameterize an agent-based model of tropical tuna movements and mixed schooling

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### Abstract

As technology permits us to access more information through massive databases, the efforts to summarize and compile that information need to improve. For my dissertation, I will be developing an agent-based model (ABM) of tropical tuna movements in the Atlantic Ocean validated by the Atlantic Ocean Tropical tuna Tagging Programme (AOTTP). To parameterize this model, I will need information about all the possible drivers of tuna movement including temperature, salinity, oxygen, prey availability, Fish Aggregating Devices (FADs), Oceanographic features (Seamounts, Eddies, Fronts) and schooling behaviors. The literature already contains a vast amount of information about tuna movements and behaviors so I will develop a database of parameters for each driver that I can pull from when developing rules for the ABM. By utilizing meta-analysis methods instead of a single, well-known paper, I will improve the characterization of the driver effects and create a more realistic simulation of species movement.

### About Alex:

Alexandra Norelli completed her undergraduate degree in marine science with a focus in biology at University of South Carolina in 2016. Following an internship with the South Carolina Department of Natural Resources Freshwater fisheries research team she returned to school for her Masters of Professional Science in fisheries management and conservation at University of Miami. After completing the MPS she joined the MES PhD program and is currently in her 3<sup>rd</sup> year. Thus far she has completed all of her coursework and teaching requirements so she is just now producing some preliminary results which she will be sharing today.

