Ecosystem attributes of the Northwest Shelf

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My work integrates ecological data with a range of ecosystem, fisheries and socioeconomic models. This multidisciplinary approach has generated a series of papers involving benthic ecology, ecosystem dynamics, marine protected areas and climate change impacts.

My Project

Here, I present the application of R packages (i.e. `tidyverse`) to explore basic attributes of the NorthWest Shelf (NWS) ecosystem. Biological data collected in 2017 on board of R/V Investigtor was used to estimate biomass and catch distributions (**Figure 1**) and a keystone index for the region (**Figures 2 and 3**). These results suggested that the system is dominated by lower trophic levels (i.e. invertebrate species). Understanding the process and interactions within the NWS ecosystem can promote and support plans for conservation and management.

My Digital Toolbox

In the 10 weeks of the Data School FOCUS Program, I have learnt and developed new skills in R for data analysis. I have gained better organization and planning skills to manage and design my projects in the future. Applying the visualisation packages learnt (i.e. `ggplot`, `ggforce`) will improve my interaction with clients and stakeholders.

Next steps

The Data School FOCUS' mission is to create the next generation of data visualisation and analytics experts to provide support and help meet the growing demand for R tools among business units of CSIRO. At the moment, I feel far from being that expert, but I know the tools and skills needed to reach this goal in the near future.

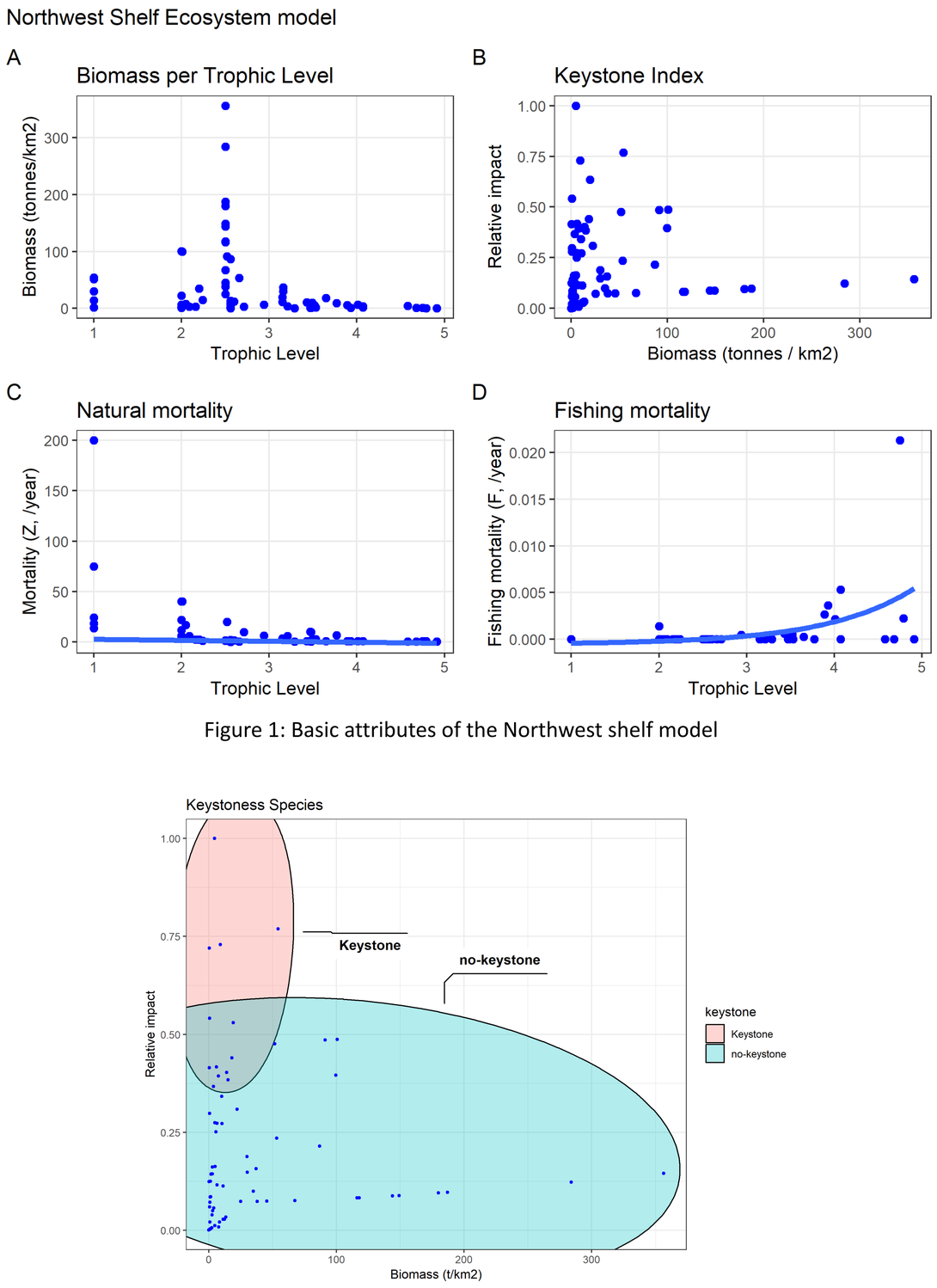

Figure 1: Basic attributes of the Northwest shelf model

Figure 2: Interpreting a keystone index. Keystone species have low biomass, but high relative impact on the ecosystem.

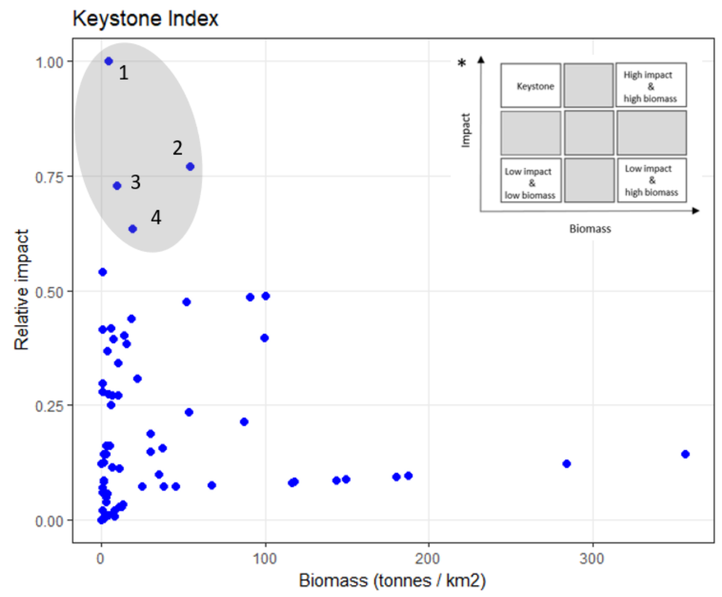

Figure 3: Keystone species in the NWS food web model.

MY DATA SCHOOL EXPERIENCE

I really liked the approach of Data School FOCUS rooted in knowledge sharing and learning, and the program's focus on helping each participant forward being a future "guru" in the tools we use. I appreciate the opportunity for growth, and will provide support in the future to my research group.