

1

A punny title

2

A less punny subtitle

3

Amisha Bhojwani

4

1st December, 2020

5	Contents	
6	1 Introduction	2
7	2 Methods	2
8	2.1 Computing tools	2
9	2.2 Model fitting	2
10	3 Results	3
11	4 Discussion	3
12	5 Conclusion	3
13	6 Bibliography	3

1 Introduction

- Explain what a functional response is
- How do we analyse a functional response? Explain the phenomenological approach
- Explain the types of functional response. A brief timeline of functional response models, variables and ecological theory considered.
- Explain the limitations of each type according to foraging theory, including the consideration that the Holling disc equation should be considered phenomenological rather than mechanistic (cite Jeschke 2002) - maybe this should go in discussion
- Introduce the dataset: whats recorded and for what main taxons
- Ask the study question

2 Methods

2.1 Computing tools

- Used R for model fitting and plotting. Wrangling and data visualisation seems more comfortable for me in R. I am more familiar with the commands and syntax, it is more logical to me than using Python. I like working with matrices in R because they are easily manipulatable, don't have a grasp on objects in Python yet, although it would have been interesting to have written model fitting in python simply to make the scripts easily importable modules in a final model compiling script.
- Used Python to write a compiling script. Will use subprocess module in Python to run the different stages of model fitting.
- Used Latex to compile report (because Samraat said so)

2.2 Model fitting

- Models chosen: quadratic linear, cubic linear - achieved, need polishing for figures. Want to pursue Holling Type II but starting values obtained from sampling are devoid of biological meaning. Must be an error in syntax that i cant spot. For some subsets it looks ok when using sampling and bounding.

- If Holling II achieved: explain parameter estimating and sampling/reasoning behind bounding
- Explain parameters chosen to compare fits: R^2 , AIC, BIC . Still need to consider AICc and other options.

3 Results

- Summary table showing statistics of various fits
- Example figure of how quadratic and cubic linear models fit on a subset of the data:

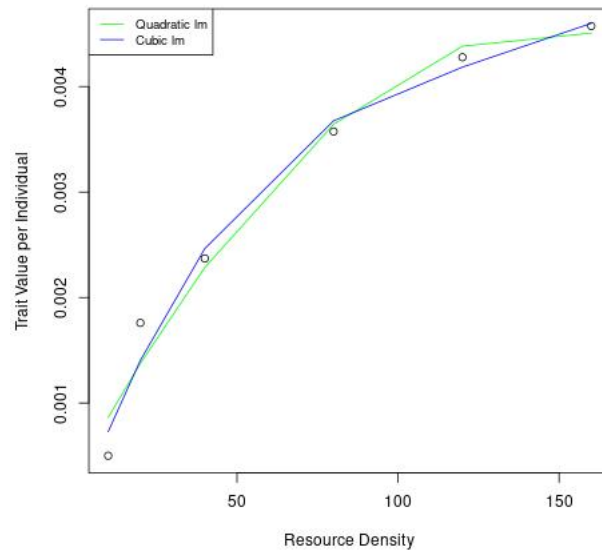


Figure 1: A very polishable figure. Working on smooth and clean versions on ggplot. This one is jpeg but submission ones will be pdf.

4 Discussion

5 Conclusion

6 Bibliography

- So far i have gone through the core readings. I'm reading the paper Alex posted where he got samples for fitting Holling type III (Rosenbaum 2018)