Assessing somatic growth rate and gonad development of the Cape sea urchin (Parachinus angulosus) - Student Full DMP

1. Project Details

PROJECT NAME - Replicate the title of your project, dissertation or thesis exactly as it appears in your proposal document.

Assessing somatic growth rate and gonad development of the Cape sea urchin (Parachinus angulosus)

PERSONAL DETAILS - Indicate the name(s) and student number(s) of the student(s) who will be involved in this project, dissertation or thesis.

Aimee Cloete (CLTAIM001)

SUPERVISOR(S) DETAILS - Indicate who will supervise this project, dissertation or thesis. If you do not yet have a supervisor, leave this section blank.

Prof John J. Bolton (Emeritus Professor) Dr Marissa Brink-Hull (UCT Postdoctoral Research Fellow) Dr Brett M. Macey (DFFE)

2. Project Summary

RESEARCH SUMMARY - Briefly summarise your study. Include the study's objectives, design, and methods.

The aim of the study is to assess the potential of the Cape sea urchin, Parechinus angulosus, as an additional value-added product from an integrated aquaculture system under 8 different treatments (2 temperature levels and 4 diets). Objectives: 1. Assess somatic growth and gonad development of the Cape sea urchin held at different temperatures: ambient and 17°C. 2. Assess the effects of different diets on somatic growth and gonad development of the Cape sea urchin: Ulva lacinulata (U), Ecklonia maxima kelp (K) , 20U formulated feed (F), and a combination of the forementioned diets (U, K, F) rotated on a weekly basis to form a mixed diet (M). 3. Evaluate gonad quality (colour, texture, firmness), under the above-mentioned temperatures and feeding regimes, to assess the feasibility of gonad enhancement and marketability of the Cape sea urchin. 4. Assess feed conversion rate, under the above-mentioned temperatures and feeding regimes, of the Cape sea urchin. 5. Assess nutritional components of Cape sea urchin faecal matter under different feeding regimes, to correlate urchin faecal matter nutritional components with juvenile abalone nutritional requirements.

3. Description of the Data

DATA REUSE DESCRIPTION - If you re-used data from third-party sources in your study, record pertinent details here such as the source of the data, the extent of the data, usage rights or restrictions pertaining to the data, and how it was incorporated into your study.

- I have not used existing data in my study (skip question).

DATA DESCRIPTION - Describe the data you have gathered for your study. Briefly describe the nature, scope and scale of the data you have produced.

Data collected will include weight (g), size (cm) extracted from images (png format) and GSI (%) measurements. The total dataset size is expected to be less than 10GB.

4. Formats and Quality Control

QUALITY CONTROL - Describe what measures you took to ensure the data you collected were of high-quality.

All measurements (weight measurements (g) & GSI measurements (g converted to %)) to be taken with an observer at all times. Size measurements (cm) to be taken using images (taken with the same phone at all times) which are processed using a python script. This ensures standardized data collection.

FILE FORMATS - Indicate the formats in which your data will be collected and processed. Clarify whether these formats require specialised proprietary software to access or if they will be produced in or converted to more open, accessible formats for long-term accessibility and preservation. In the case of physical data objects (such as artworks or models) indicate whether these will be digitised or otherwise preserved for accessibility.

images (jpg) converted to (png), all other data will be captured onto an Excel spreadsheet (xlsx).

5. Data Management, Documentation and Curation

CURATION (MANAGING AND STORING) DATA - Describe how you organise and manage your data. Specify any file-naming conventions or community data standards you have adopted.

Folder management: - data - code - write up File-naming conventions adhered to: - No spaces or special characters (other than “-” and “_”) - Use of descriptive file names, including date information and keywords regarding the content of the file, within a reasonable length. - Date information in the following format: YYYY-MM-DD.

BACKUP AND STORAGE - Describe how your data is being stored and backed-up. If you are using a data service provider, provide details on for how long they will retain the data.

All project data, code and write ups will be backed up on Github, on an external hard drive and on UCT Onedrive.

METADATA STANDARDS AND DATA DOCUMENTATION - Articulate what metadata and documentation you have produced about the data you have generated, collected or re-used.

Data collection methodology as well as links to the required python scripts used to process the images for size measurements will be provided.

6. Data Security and Confidentiality of Potentially Disclosive Information

SECURITY - Indicate to what extent your data can be considered sensitive or at-risk. Describe how you will control access to your data. Indicate whether you anticipate a need for encryption or password-controlled access, and if so, how you will enforce that access.

My data is not considered to be sensitive. It does not contain sensitive, disclosive or personal information.

ETHICS AND PRIVACY - Describe, as per your Ethics Clearance form or other similar documentation, any ethical or privacy issues that your data are subject to (if any). Summarise the main risks to the confidentiality and security of information related to human participants, the level of risk, and how this risk will be managed. If your project did not require ethical clearance, you may ignore this section.

This project does not require an ethics permit as it involves echinoderms. Currently, ethics ethics permits are not required for research on echinoderms or molluscs with the Science Faculty Ethics Committee (only vertebrates, cephalopods and decapods). The DFFE has its own processes, which Dr Brett Macey has arranged (AEEC Approval nr 20210224_su_03_Macey).

7. Data Sharing and Open Access

DATA OWNERSHIP - If you have used existing datasets, note down any restrictions the data providers have indicated regarding data sharing. Otherwise, leave blank.

- I have not used existing data in my study.

DATA LICENCE - Indicate under which licence you intend to share your research data. If you are not sharing your data, provide the appropriate justification as per the UCT Research Data Management guidelines.

- CC BY

DATA PUBLICATION - Indicate where you intend to publish your research data at the end of your project.

This project forms part of a larger EU funded project and may be published as a subset of this larger research project.

8. Relevant Institutional or Study Policies

Indicate the relevant departmental, unit, or institutional policies that influence your data management activities.

The UCT Intellectual Property Policy; the UCT Open Access Policy; the UCT Research Data Management Policy.