#### *Oyster Island…. It’s changing!*

Investigate a pattern in an ecological community, with supervision

AS 91158 Credits: 4

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| Achievement | Achievement with Merit | Achievement with Excellence |
| Investigate a pattern in an ecological community, with supervision. | Investigate in-depth a pattern in an ecological community, with supervision | Comprehensively investigate a pattern in an ecological community, with supervision. |

Student instructions

This assessment activity requires you to produce a report about a pattern in an ecological community. The investigation will involve gathering, analysing and interpreting information about the Oyster Island community, an environmental factor relating to the pattern and how this might affect at least two species in the ecosystem (ie. the community and abiotic environment).

You will have about 1-2 weeks to carry out research into the organisms and environmental factors relevant to your investigation. During this time you can discuss ideas with other students. You may choose to compare the field data you collected during your field work with the data from another group, or data provided by your teacher.

You will then **complete your written report individually**.

Your report will be assessed on how comprehensively you identify, describe and explain the pattern in the community, by relating it to environmental factors (biotic and abiotic) and the biology (adaptations) of interrelated organisms of different species.

**The learning bit….**

Collect information relevant to your investigation, by carrying out research and gathering field data during the trip to Oyster Island

Look at : <http://bloomscool.weebly.com/oyster-island-images.html>

You should investigate at least two named organisms (ideally more) that are inter-related to each other, and to the pattern you are investigating.

Make sure you have collected enough information to allow you to discuss:

* the biology of your chosen organisms (ecological niche, adaptations – structural, behavioural or physiological)
* the environmental factors that could affect your organisms (biotic and abiotic)
* interrelationships between organisms in your chosen ecological community.

Record details of the information sources you use and include this in a bibliography at the end of your report.

You should organise and store your information (including field work data) in OneNote. Your final assessment document will need to be submitted via Turnitin.

**The reporting bit....**

Your report, using the data and information you gathered, should include:

* **Introduction** – a description of the Oyster Island ecosystem and why the council ‘messed’ with it…. Ie What did they do and why.
* **Biology of the Ecological Community** – information about the organisms in the community you investigated. Describe the ecological niche and adaptations of at least two species, and relevant interrelationships between these organisms.
* **Abiotic Environment** – description of the abiotic factors found in the area you investigated. You should include observations and measurements collected in fieldwork.
* **Description of Pattern** – describe the findings (and/or observations) from the fieldwork/collected data and use these to identify the distribution pattern (or absence of a pattern) in the ecological community. You should include images, tables or graphs in this section, to clearly show the distribution pattern.
* **Discussion** – relate the pattern in the community to the biology of the organisms and the environmental factors in the ecosystem. Include:
* explanations for how or why the biology (adaptations, interrelationships) of at least two species relates to the pattern (or absence of a pattern)
* a discussion of how environmental factors (abiotic and/or biotic) might affect the organisms in the community, and how this relates to the observed distribution pattern, or absence of a pattern. This could involve elaborating, applying, justifying, relating, evaluating, comparing and contrasting, and/or analysing.
* **Bibliography** – a list of the information sources you used to help you write your report, written in a format that allows other people to find the information sources. This will not be assessed, but it is expected good practice to acknowledge information sources you used in your work.

**Something to get you started *(you will need more):***

Grass adaptations:
[Bio Factsheet](http://pmt.physicsandmathstutor.com/download/Biology/A-level/Notes/OCR-Old/Unit-2/3-Biodiversity-and-Evolution/Plant%20Adaptations%20to%20Dry%20Environments.pdf)
<http://wiki.answers.com/Q/What_are_the_adaptations_of_grass>
<http://www.gerrymarten.com/human-ecology/chapter06.html>
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Tree Lucerne:
<http://en.wikipedia.org/wiki/Tagasaste>
<http://www.doc.govt.nz/publications/conservation/protecting-and-restoring-our-natural-heritage-a-practical-guide/site-preparation/>

Tauhino:
<http://www.terrain.net.nz/friends-of-te-henui-group/trees-native-botanical-names-m-to-q/tauhinu-cassinia-leptophylla.html>

Marking schedule below

Assessment schedule: Biology 91158

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| Evidence/Judgements for Achievement  | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| The student is able to **investigate** a pattern in an ecological community, with supervision.The report includes evidence of:* **Analysing**, and **interpreting** information about a NZ forest community.
* Describing observations or findings, and using those findings to **identify the pattern** (or absence) in a NZ forest community
* *This could include zonation, stratification, succession or another distribution pattern.*
* Relating this pattern to **one environmental factor** (abiotic or biotic)
* Describing how the environmental factor might affect **two species** within the community.
 | The student is able **to investigate in-depth** a pattern in an ecological community, with supervision.The report includes evidence of: **As for A plus:*** Providing a **reason** to explain *how* or *why* the biology of one of the chosen species relates to the pattern (or absence).
* *The biology relates to at least* ***one*** *structural, behavioural or physiological* ***adaptation*** *of the organism.*
* *Adaptations (structural, behavioural or physiological) relate to the environmental factor and an interrelationship with an organism of another species (e.g. competition, predation, or mutualism).*
 | The student is able to **comprehensively investigate** a pattern in an ecological community, with supervision.The report includes evidence of:**As for M plus:** * Using an *environmental factor* (abiotic or biotic) and the *biology of interrelated organisms* of two different species to **explain the pattern** (or absence).
* *The explanation may involve elaborating, applying, justifying, relating, evaluating, comparing and contrasting, and analysing.*
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Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the Achievement Standard.