

90461



904610

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

For Supervisor's use only

Level 2 Biology, 2009

90461 Describe concepts and processes relating to ecology

Credits: Three
2.00 pm Wednesday 18 November 2009

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should answer ALL the questions in this booklet.

If you need more space for any answer, use the page(s) provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–9 in the correct order and that none of these pages is blank.

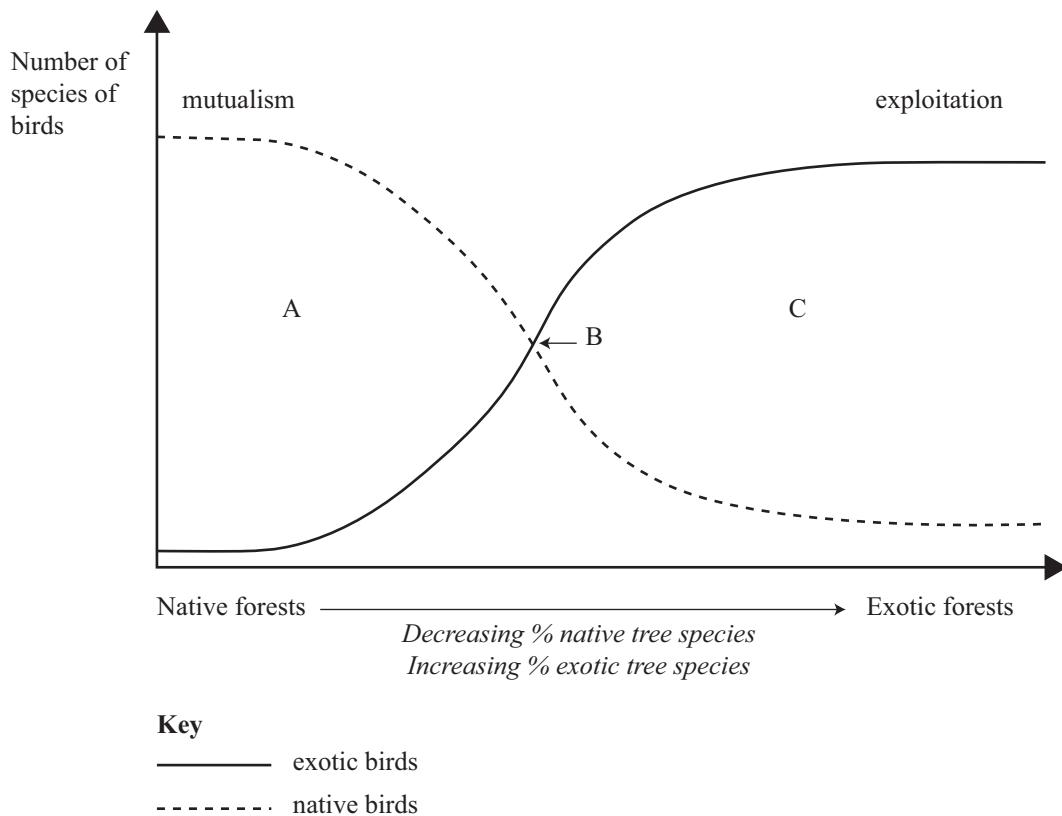
YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

| For Assessor's use only | | Achievement Criteria | | |
|---|--------------------------|--|--------------------------------|--|
| Achievement | | Achievement with Merit | Achievement with Excellence | |
| Describe biological concepts and processes relating to ecology. | <input type="checkbox"/> | Explain biological concepts and processes relating to ecology. | <input type="checkbox"/> | Discuss biological concepts and processes relating to ecology. |
| Overall Level of Performance | | | | <input type="checkbox"/> |

You are advised to spend 35 minutes answering the questions in this booklet.

QUESTION ONE

The diagram below shows the number of native bird species versus introduced (exotic) bird species found in native plant areas, compared with those in areas planted with introduced species.



(a) Mutualism and exploitation are two interrelationships between different species.

Define these two terms.

Mutualism: _____

Exploitation: _____

(b) Inter-specific competition differs from intra-specific competition.

Explain, with reasons, which type of competition is occurring in each of the zones A, B and C in the diagram on the facing page.

Assessor's
use only

(c) **Discuss** how and why animal species show different types of adaptation.

In your answer consider:

- structural adaptations
- physiological adaptations
- behavioural adaptations.

Give appropriate examples for each type of adaptation.

QUESTION TWO

Discuss how the ecological pattern of succession is different from the patterns of zonation and stratification.

In your answer you should include:

- a **description** and **example** of each pattern
- an **explanation** of how each pattern occurs.

A description of the differences between primary and secondary succession is **not** required.

Assessor's
use only

QUESTION THREE

Estuary food webs are amongst the richest in New Zealand. An example of one is shown in the diagram below.

Assessor's
use only

*For copyright reasons,
this resource cannot be
reproduced here.*

<http://www.teara.govt.nz/NR/rdonlyres/67693D26-9E1F-4C3E-AE75-15CED2EA24C4/207537/di4620enz.gif>

(a) Describe what is meant by the following terms, and identify, **from the diagram**, an example of each.

Producer: _____

Example: _____

Primary consumer: _____

Assessor's
use only

Example: _____

Secondary consumer: _____

Example: _____

(b) Explain why **food chains** are usually limited to only four or five steps.

Question Three (c) is on the following page.

(c) Discuss the importance of decomposers in an ecosystem. Include what would happen if decomposers were unavailable or inactive.

Assessor's
use only

**Extra paper for continuation of answers if required.
Clearly number the question.**

Assessor's
use only

Question number