



For Supervisor's use only

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90314



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA



National Certificate of Educational Achievement
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

Level 2 Science, 2003

90314 Describe aspects of New Zealand's endemic life

Credits: Four

9.30 am Thursday 13 November 2003

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 pages 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.

| Achievement Criteria | | | <i>For Assessor's use only</i> | | |
|--|--------------------------|--|--------------------------------|--|--------------------------|
| Achievement | | Achievement with Merit | | Achievement with Excellence | |
| Describe the evolution of New Zealand plants and animals including the factors and processes involved. | <input type="checkbox"/> | Make reasoned links between the factors and the processes involved in the evolution of New Zealand plants and animals. | <input type="checkbox"/> | Make valid generalisations by applying the linked factors and processes to a wider group of New Zealand plants and animals. | <input type="checkbox"/> |
| Describe the key conditions necessary for the survival of a New Zealand endemic plant or animal. | <input type="checkbox"/> | Explain key conditions necessary for the survival of a New Zealand endemic plant or animal, and discuss implications for survival. | <input type="checkbox"/> | Explain, in detail, a range of conditions necessary for the survival of a New Zealand endemic plant or animal, discuss implications and evaluate the chances for survival. | <input type="checkbox"/> |
| Overall Level of Performance (all criteria within a column are met) | | | | | <input type="checkbox"/> |

You are advised to spend 45 minutes answering the questions in this booklet.

QUESTION ONE – The Pūkeko: New Zealand's Swamp Hen

[For copyright reasons the resources cannot be reproduced here. See below.]

Photograph of pūkeko

Text from:

Examples of Evolution in New Zealand, A Paterson and P Smith, Lincoln University, 1998.

- (a) Describe ONE **main** adaptation the pūkeko has that lets it survive in a swamp environment.

- (b) (i) The arrival of the purple swamp hen in New Zealand is an example of the founder effect. Describe what is meant by the **founder effect**.

- (ii) Explain the evolutionary significance of the founder effect.

QUESTION THREE – The Takahē: A Southern BirdAssessor's
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[For copyright reasons the resources cannot be reproduced here. See below.]

Photograph of takahē:
www.kcc.org.nz/birds/takahe.htm

Text:
adapted from an article in the *Southland Times* 28/10/02

- (a) Describe how harsh winters can reduce the population of takahē.

- (b) Explain why the use of takahē foster parents has improved the survival rate of chicks released back into the wild.
