

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 For Assessor's use only					
Achievement	Achievement with Merit	Achievement with Excellence			
Describe the evolution of New Zealand plants and animals including the factors and processes involved.	Make reasoned links between the factors and the processes involved in the evolution of New Zealand plants and animals.	Make valid generalisations by applying the linked factors and processes to a wider group of New Zealand plants and animals.			
Describe the key conditions necessary for the survival of a New Zealand endemic plant or animal.	Explain key conditions necessary for the survival of a New Zealand endemic plant or animal, and discuss implications for survival.	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.			
Overall Level of Performance (all criteria within a column are met)					

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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: <i>Examples of Evolution in New Zealand</i> , 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.

(C)	Explain the	factors that	led to the	evolution c	of the pūkeko	from the pur	ple swamp hen.
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Assessor's use only

Research species.	suggests the North Island a	nd South Island takal	hē are possibly two different
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Discuss e	rolutionary processes that o	ould have operated to	o form the two different spec
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QUESTION TWO – The Hebe

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

Photograph of hebe

The *Hebe* species complex is an evolutionary group of shrubby trees with about 100 species in New Zealand. Fossil evidence suggests a recent origin with an ancestral plant found in Pliocene sediments (5–2 million years ago).

Discuss geological factors that influenced the **adaptive radiation** amongst the *Hebe* in the last five million years.

QUESTION THREE – The Takahē: A Southern Bird

[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 <i>Southland Times</i> 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.

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Discuss the future long-term survival chances of the takahē in New Zealand.	

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QUESTION FOUR: New Zealand Endemic Plants

There are a number of methods used to conserve New Zealand's endemic plants. Discuss these methods **and** give examples where they are used.

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

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Question Number

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

Assessor's use only

Question Number